



*Fine Precision Tools*



### Welcome to the GROBET USA® catalog.

We have a proud heritage of over 134 years in the design, production and distribution of precision tools for professional technicians and craftsmen.

GROBET USA® maintains state-of-the-art production facilities in the US and Switzerland as well as a global network of suppliers to provide an offering of more than 18,000 products used by:

- Jewelers
- Lapidaries
- Machinists / Metal Workers
- Dental Laboratory Technicians
- Manufacturers
- Hobbyists & Model Makers

GROBET USA® products are available worldwide through our international network of authorized distributors.

**Look for these symbols throughout this catalog:**



= a new product

**HAZARDOUS**

= handle with care

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## HARD ARKANSAS STONES

Natural, close-density oilstones with qualities that make them unequalled for sharpening tools such as gravers, knives, etc.



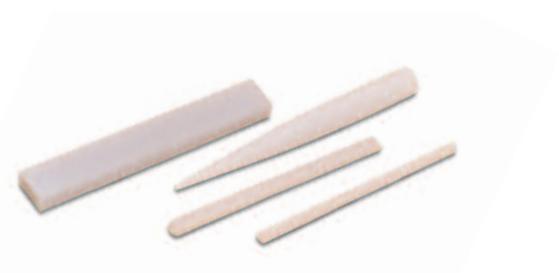
### 1 BENCH STONES

#### Mounted

No.	Description	Diameter
10.547	Extra Fine	4" x 1½" x ½"
10.548	Extra Fine	6" x 2" x ½"
10.550	Extra Fine	3" x 1" x ½"
10.552	Extra Fine	4" x 2" x ½"
10.554	Extra Fine	5" x 2" x ½"
10.551	Hard/Fine	4" x 2" x ½"
10.553	Hard/Fine	5" x 2" x ½"
10.555	Hard/Fine	6" x 2" x ½"
10.557	Hard/Fine	8" x 2" x ½"

#### Unmounted

No.	Description	Diameter
10.564	Extra Fine	4" x 2" x ½"



### 3 HARD ARKANSAS SLIPS

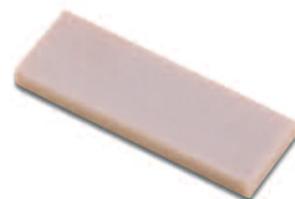
Available in a variety of shapes and sizes.

No.	Shape	Diameter
10.574	Beveled	3" x ¾" x ⅛"
10.578	Pointed	4" x ¼"
10.580	Square	2½" x ⅛"
10.588	Triangular	2½" x ⅛"

### 5 ARKERAM BENCH STONES

Made from Arkansas stone powder, solidified by fire. Has more cutting action than regular Arkansas stones. Bench stone can be used on both sides with oil. Packed in hardwood box.

No.	Diameter
10.608	4" x 1" x ½"
10.609	5" x 2" x ⅞"
10.610	6" x 2" x 1"



### 2 PENKNIFE PIECES

Translucent (extra fine) unmounted stones in leather pouch.

No.	Diameter
10.560	3" x 1" x ¼"
10.561	4" x 1" x ¼"



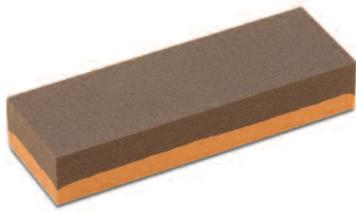
### 4 HARD ARKANSAS WHEELS

No.	Style	Diameter	Thickness	Mandrel Dia.
10.599	Mounted	¾"	¼"	⅜"
10.604	Unmounted	2"	¼"	—



## INDIA STONE

Long recognized for the clean, sharp surfaces they produce on tools, dies, blades, molds and almost any other metal piece requiring sharpening or smoothing.



### 1 COMBINATION and SINGLE GRIT BENCH STONES

Use both sides. Combination stones have fine grit on one side, coarse on the other.

Combination	Diameter
10.450	4" x 1 3/4" x 5/8"
10.451	6" x 2" x 1"
10.452	8" x 2" x 1"
Fine	
10.456	4" x 1" x 1/2"
10.457	6" x 2" x 1"
10.458	8" x 2" x 1"
Medium	
10.461	4" x 1" x 1/2"
10.462	6" x 2" x 1"
10.463	8" x 2" x 1"

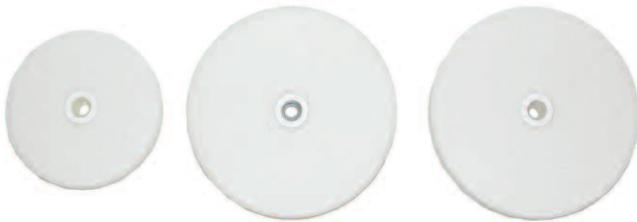


### 2 SLIPS

Available in 6 different shapes, in fine or medium grits.

Shape	Diameter	Fine	Medium
Flat	4" x 1/2"	—	10.472
Knife	4" x 1"	10.478	10.479
Round	4" x 3/8"	—	10.485
Round Edge	4" x 1"	10.486	—
Square	4" x 1/4"	10.489	10.490
Square	4" x 1/2"	—	10.497

## ALUMINUM OXIDE WHEELS



### 3 WHITE LATHE WHEELS

These coarse, knock-down wheels are designed for fast material removal. They are supplied with 1/4" leaded arbor hole.

No.	Diameter	Price
10.525	3" x 3/8"	
10.526	4" x 3/8"	
10.527	4" x 1/2"	



### 4 NORTON PIKE OIL

Primarily used as sharpening oil, but also useful as a general purpose machine oil. Net contents 4 1/2 oz.

No. 42.480

## FINISHING STONES



### 5 TRU-STONE

Quickly reshapes and resurfaces abrasive stones to like-new condition. A very hard and coarse silicon carbide stone with 4 different sized half-round grooves on one side measuring 1/16", 1/8", 3/16", and 1/4". Measures 3 1/2" x 1 3/8" x 3/16" overall.

No. 10.408



### 6 DRESSER STICK for DIAMOND WHEELS

Premium quality white aluminum oxide for dressing, truing, roughing and finishing diamond wheels. Measures 6" x 1/2" x 1/2".

No. 10.406 100 grit

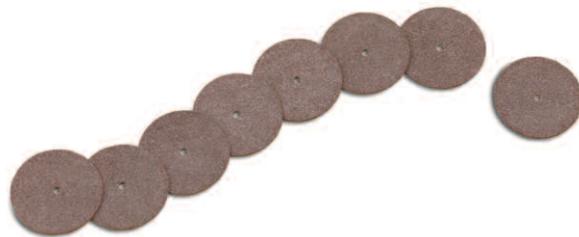
No. 10.411 320 grit



**1 UNMOUNTED CUT-OFF WHEELS**

Made of rubber-bonded aluminum oxide grains. Excellent for sprue removal and other cut-off operations. Mount on mandrels. Sold in box of 100.

No.	Diameter	Thickness	Max Safe Speed (RPM's)
10.541	7/8"	.010"	30,000
10.537	7/8"	.030"	30,000
10.538	1"	.030"	30,000
10.542	1"	.015"	30,000
10.539	1 1/4"	.033"	25,000
10.543	1 1/4"	.062"	25,000
10.540	1 1/2"	.025"	25,000



**2 HIGH-SPEED SEPARATING DISC**

Resin-bonded aluminum oxide is fast, cool, odor-free and long-lasting. Cuts all metals smoothly and rapidly. Sold in box of 100. Measures 7/8" x .025". No. 11.01310



**3 SEPARATING DISKS**

Extra thin disks for cutting gold and porcelain.

- 11.900 .009" Box of 25
- 11.901 .009" Box of 100
- 11.902 .006" Box of 25
- 11.903 .006" Box of 100



**4 SILICON CARBIDE SEPARATING DISKS**

Thin grinding disks cut on the edge and on one or both sides. Excellent for cutting chrome casting and non-precious metal casting sprues. Available in 3/4", 7/8" and 1" diameters, with pin hole for mandrel mounting. Sold by box of 100.

No.	Diameter	Thickness	Cutting Sides
11.778	3/4"	.022"	Both
11.777	7/8"	.005"	Both
11.776	7/8"	.015"	Both
11.780	7/8"	.022"	Both
11.781	7/8"	.020"	One
11.782	1"	.022"	Both

## SANDING DISCS

Yellow abrasive with press-on/flip-off center hole feature. Exclusive grit and backing are designed for jewelry applications and provide exceptionally long life. Aluminum oxide grit in three grades, mounted on thin backing, provides outstanding results in sanding and smoothing operations. The flexible backing allows accessibility to hard-to-reach areas. Available in 3/4" or 7/8" diameter. Used with 3/32" mandrel number 10.740.



### 1 SINGLE GRIT DISCS

Supplied in tubes of 100.

Diameter	Coarse Grit	Medium Grit	Fine Grit
3/4"	<b>10.714</b>	<b>10.715</b>	<b>10.716</b>
7/8"	<b>10.718</b>	<b>10.719</b>	<b>10.720</b>

### DISC ASSORTMENT

Contains 25 fine, 25 coarse, and 50 medium, 7/8" sanding discs, plus one mandrel, in compartmented plastic box.

No. 10.712



### 3 MOORE SANDING DISCS MASTER PACK

Buy in bulk and save - 12 boxes of 50 discs per box.

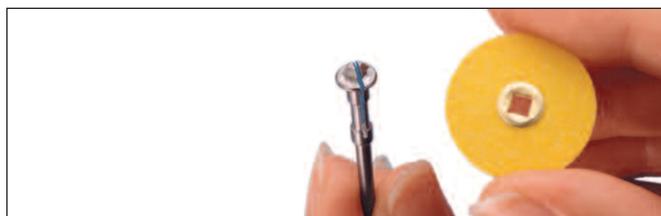
Coarse	Medium	Fine	Diameter
<b>10.01077/B</b>	<b>10.01082/B</b>	<b>10.01087/B</b>	1/2"
<b>10.01075/B</b>	<b>10.01080/B</b>	<b>10.01085/B</b>	3/4"
<b>10.01076/B</b>	<b>10.01081/B</b>	<b>10.01086/B</b>	7/8"



### 5 ADALOX® PIN HOLE SANDING DISCS

Aluminum oxide grit mounted on flexible backing allows for easy accessibility into those hard-to-reach places. With pin hole centers for use with reinforced mandrel No. 43.128. Sold by pack of 100 discs.

Coarse	Medium	Fine	Diameter
—	<b>10.01101</b>	<b>10.01102</b>	1 1/2"
<b>10.01103</b>	<b>10.01104</b>	<b>10.01105</b>	7/8"



### 2 PRESS-ON/FLIP-OFF MANDREL

High-quality steel with 3/32" shank.

No. 10.740



### 4 ADALOX® ABRASIVE SANDING DISCS

Aluminum oxide grit, mounted on thin backing, provides excellent results in sanding and smoothing operations. The flexible backing allows accessibility to hard-to-reach areas. Use with 3/32" mandrel No. 10.740. Sold by box of 100 with mandrel.

Coarse (Brown)	Medium (White)	Fine (Green)	Diameter
<b>10.01077</b>	<b>10.01082</b>	<b>10.01087</b>	1/2"
<b>10.01075</b>	<b>10.01080</b>	<b>10.01085</b>	3/4"
<b>10.01076</b>	<b>10.01081</b>	<b>10.01086</b>	7/8"



### 6 MAGNUM SANDING DISCS

Aluminum oxide grit mounted on a special reinforced plastic backing. Lasts 2 to 3 times longer than conventional paper-backed discs. Brass centers for use with press-on/flip-off 3/32" mandrel No. 10.740. Sold by pack of 100 discs.

Fine (Green)	Medium (White)	Coarse (Brown)	Diameter
<b>10.01120</b>	<b>10.01123</b>	<b>10.01126</b>	7/8"
<b>10.01121</b>	<b>10.01124</b>	<b>10.01127</b>	3/4"
<b>10.01122</b>	<b>10.01125</b>	<b>10.01128</b>	5/8"

## RUBY® STONES



### 1 RUBY® BENCH STONES

For sharpening and flattening hard metals, as well as glass, quartz and porcelain.

#### Finished Both Sides (Loose)

Diameter	Medium	Fine
4" x 1" x 3/8"	<b>10.421</b>	<b>10.422</b>

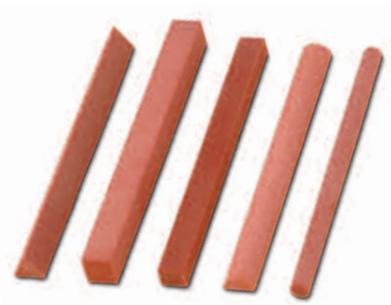
#### Finished One Side (Boxed)

Diameter	Medium
4" x 1" x 3/8"	<b>10.423</b>
4 3/4" x 2" x 3/8"	<b>10.425</b>

### 3 RUBY® MIDGET FILES

For high-detail and ultra-precision work. Files may be broken off and cemented onto a holder or used with a pin vise. Fine grit only.

No.	Shape	Length & Thickness
<b>10.431</b>	Square	2" x .04"
<b>10.432</b>	Round	2" x .04"
<b>10.433</b>	Triangular	2" x .08"
<b>10.434</b>	Square	4" x .08"
<b>10.435</b>	Round	4" x .08"
<b>10.436</b>	Round	4" x .12"
<b>10.437</b>	Flat	2" x .12" x .001"
<b>10.438</b>	Half-Round	4" x .16"
<b>10.439</b>	Barrette	4" x .2" x .06"
<b>10.441</b>	Triangular	4" x .12"



### 2 RUBY® STONE KIT

No. **10.429**

Contains one of each of the following:

Shape	Diameter	Grit
Triangular	4" x 3/8"	Medium
Square	4" x 3/8"	Medium
Flat	4" x 5/16" x 1/4"	Fine
Half Round	4" x 3/8"	Coarse
Round	4" x 1/4"	Medium



### MIDGET FILE KIT

For high detail and ultra-precision work. Kit contains one of each file listed above, plus one double-ended holder with two reversible collets.

No. **10.445**

## RUBY CRYSTAL POINTS

Fast cutting, tough points and cones for accurate grinding of steel, porcelain and glass, as well as for soft and precious metals.

### 4 INDIVIDUAL MOUNTED POINTS

Shapes are securely mounted on 3/8" mandrels for use on flexible shaft machines.

See illustrations for individual shapes. Sold by the dozen.

Prices vary.

### SET of 12 MOUNTED POINTS

Contains one each of the most popular points:

Nos: 11.502, 11.507, 11.508, 11.510, 11.512, 11.513, 11.518, 11.520, 11.524, 11.525, 11.526 and 11.530.

No. **11.502**



## BRIGHTBOY®

For deburring, finishing and polishing. The resilient rubber binder cushions the aluminum oxide abrasive and bridges the gap between grinding and polishing. Recommended for use on stainless steel, chrome and precious metals. All approximately 70 grit.



### 1 BRIGHTBOY® ASSORTMENT

57-piece kit contains wheels, cylinders, points, mandrels and chuck. Ideal for those who want a selection on hand to meet the needs of specific production requirements.

No. 10.650

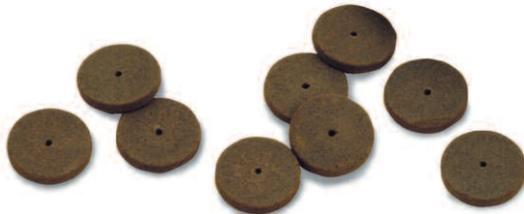


### 2 BRIGHTBOY® ROD

Cleans in deep cavities otherwise unreachable by hand. Measures 5/8" W x 5" L. Plastic holder available separately.

No. 10.656 Rod only

No. 10.657 Plastic holder only



### 3 BRIGHTBOY® MINIATURE WHEELS

Use with mandrels on flexible shaft machines. With 1/16" center holes.

Sold by box of 100.

No.	Diameter	Thickness
10.672	5/8"	1/4"
10.670	5/8"	1/8"
10.678	7/8"	1/8"



### 4 BRIGHTBOY® LARGE WHEELS

For use on standard polishing motors.

No.	Diameter	Thickness	Hole Size
10.690	1 1/2"	3/16"	1/4"
10.693	3"	3/8"	1/4"
10.694	3"	1/2"	1/4"
10.695	4"	1/2"	1/2"
10.698	4"	3/4"	1/2"



### 5 BRIGHTBOY® TABLET

Ideal for removing scratches and rust, as well as general surface cleaning and finishing. Measures 2 1/4" x 1 1/8" x 3/8".

No. 10.658



### 6 BRIGHTBOY® WHEEL

Measures 1 1/4" x 1/8" x 1/8".

No. 10.980

#### SAFETY TIPS

Improper use of grinding wheels is dangerous. Comply with American National Standards Institute Safety Code B7.1 and Occupational Safety and Health Act covering: speed, safety guards, flanges, mounting procedures, general operating rules, handling, storage and inspection, and general machine conditions. Maximum RPM for the wheels listed in this section is as follows:

#### Miniature Wheels

Diameter	Maximum RPM	Diameter	Maximum RPM
1/2"	20,350	7/8"	11,600
3/8"	16,250	1"	10,175
3/4"	13,540	1 1/4"	10,125

#### Standard Wheels

Diameter	Maximum RPM	Diameter	Maximum RPM
1 1/2"	10,125	3"	5,060
2"	7,625	4"	3,800
2 1/2"	6,100	5"	3,050

## CRATEX® ABRASIVES

**Grit Textures:** Each Cratex size and shape is made in four standard grit textures or compositions which differ in accordance with the mesh size of the abrasive grain used: COARSE (Green); MEDIUM (Dark Brown); FINE (Reddish Brown); EXTRA FINE (Grey Green).

**CONES** For use with light pressure at much less than 20,000 RPM maximum safe speed. Use with No. 43.166 steel mandrel. Sold individually.

Style No	Length	Diameter	Coarse	Medium	Fine	Extra Fine	Shape
1350	1"	7/8"	<b>10.790</b>	<b>10.791</b>	<b>10.792</b>	<b>10.793</b>	Cylinder
1357	1 1/4"	7/8"	<b>10.798</b>	<b>10.799</b>	<b>10.800</b>	—	Pt.Cyl.
1340	1"	5/8" to 1/4"	<b>10.780</b>	<b>10.781</b>	<b>10.782</b>	<b>10.783</b>	Tapered
4707	1 1/4"	7/8"	<b>10.80101</b>	<b>10.80102</b>	<b>10.80103</b>	<b>10.80104</b>	Bullet



**POINTS** For use with light pressure at much less than 25,000 RPM maximum safe speed. 1/16" holes for use with mandrel Nos. 43.124 or 43.154. Sold by box of 100.

Style No	Length	Diameter	Coarse	Medium	Fine	Extra Fine	Shape
6	7/8"	1/4"	<b>10.804</b>	<b>10.805</b>	<b>10.806</b>	<b>10.807</b>	Cylinder
8	1"	9/32"	<b>10.809</b>	<b>10.810</b>	<b>10.811</b>	<b>10.812</b>	Bullet
10	5/8"	3/8"	<b>10.80801</b>	<b>10.80802</b>	<b>10.80803</b>	—	Bullet
11	1"	3/8"	<b>10.80805</b>	<b>10.80806</b>	<b>10.80807</b>	<b>10.80808</b>	Bullet



**BLOCKS & STICKS** For manual or mechanical applications. Can be mounted in fixtures, chucks or cradles. Dependable for automated operations. Sold individually.

Style No.	Dimensions	Coarse	Medium	Fine	Extra Fine	Shape
036	6" x 3/16"	—	<b>10.82702</b>	<b>10.82703</b>	<b>10.82704</b>	Round
046	6" x 1/4"	<b>10.818</b>	<b>10.819</b>	<b>10.820</b>	<b>10.821</b>	Round
066	6" x 3/8"	<b>10.823</b>	<b>10.824</b>	<b>10.825</b>	<b>10.826</b>	Round
086	6" x 1/2"	<b>10.828</b>	<b>10.829</b>	<b>10.830</b>	<b>10.831</b>	Round
0126	6" x 3/4"	<b>10.815</b>	<b>10.816</b>	—	—	Round
6404	6" x 1/2" x 1/2"	—	<b>10.757</b>	<b>10.758</b>	<b>10.759</b>	Square
6803	6" x 1" x 3/8"	<b>10.772</b>	<b>10.773</b>	<b>10.774</b>	—	Oblong



**SMALL WHEELS** Available in diameters from 5/8" to 1". Supplied with 1/16" center hole and can be used with mandrels with 3/32" or 1/8" shank in power tools with safe maximum speed of 25,000 RPM. Sold by box of 100.

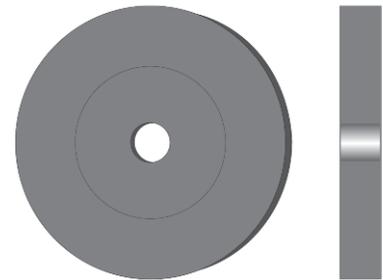
Style No.	Dia.	Thickness	Edge	Coarse	Medium	Fine	Extra Fine	Pumitex
2	5/8"	3/32"	Tapered	<b>10.837</b>	<b>10.838</b>	<b>10.839</b>	<b>10.840</b>	<b>10.846</b>
5	1"	1/8"	Tapered	<b>10.842</b>	<b>10.843</b>	<b>10.844</b>	<b>10.845</b>	<b>10.841</b>
53	5/8"	3/32"	Square	<b>10.855</b>	<b>10.856</b>	<b>10.857</b>	<b>10.858</b>	<b>10.859</b>
54	5/8"	1/8"	Square	<b>10.860</b>	<b>10.861</b>	<b>10.862</b>	<b>10.863</b>	—
59	5/8"	1/4"	Square	<b>10.849</b>	<b>10.850</b>	<b>10.851</b>	<b>10.852</b>	—
74	7/8"	1/8"	Square	<b>10.865</b>	<b>10.866</b>	<b>10.867</b>	<b>10.868</b>	<b>10.869</b>
80	1"	7/8"	Square	<b>10.875</b>	<b>10.876</b>	<b>10.877</b>	<b>10.878</b>	—
*88-2	1"	1/4"	Square	<b>10.879</b>	<b>10.880</b>	<b>10.881</b>	<b>10.882</b>	—



\*Has 1/8" hole

**LARGE WHEELS** Diameters from 2" to 6". Best performance speed may be well below the maximum safe speed indicated. Sold individually.

Style No.	Dia.	Thickness	Hole	Coarse	Medium	Fine	Extra Fine	Max. Safe
202	2"	1/8"	1/4"	—	<b>10.89202</b>	<b>10.89203</b>	—	10,500
204	2"	1/4"	1/4"	<b>10.894</b>	<b>10.895</b>	<b>10.896</b>	<b>10.897</b>	10,500
208	2"	1/2"	1/4"	—	<b>10.899</b>	<b>10.900</b>	<b>10.901</b>	10,500
302	3"	1/8"	1/4"	<b>10.91201</b>	<b>10.91202</b>	<b>10.91203</b>	<b>10.91204</b>	7,000
304	3"	1/4"	1/4"	<b>10.913</b>	<b>10.914</b>	<b>10.915</b>	<b>10.916</b>	7,000
306	3"	3/8"	1/4"	<b>10.918</b>	<b>10.919</b>	<b>10.920</b>	<b>10.921</b>	7,000
308	3"	1/2"	1/4"	<b>10.923</b>	<b>10.924</b>	<b>10.925</b>	<b>10.926</b>	7,000
404	4"	1/4"	1/2"	<b>10.928</b>	<b>10.929</b>	<b>10.930</b>	—	5,250
408	4"	1/2"	1/2"	<b>10.937</b>	<b>10.938</b>	<b>10.939</b>	<b>10.940</b>	5,250
506	5"	3/8"	1/2"	—	—	—	<b>10.950</b>	4,200
508	5"	1/2"	1/2"	—	<b>10.953</b>	<b>10.954</b>	<b>10.955</b>	4,200
512	5"	3/4"	1/2"	<b>10.956</b>	<b>10.957</b>	—	—	4,200
604	6"	1/4"	1/2"	—	<b>10.962</b>	<b>10.963</b>	<b>10.964</b>	3,500
608	6"	1/2"	1/2"	<b>10.970</b>	<b>10.971</b>	<b>10.972</b>	<b>10.973</b>	3,500
612	6"	3/4"	1/2"	<b>10.975</b>	<b>10.976</b>	<b>10.977</b>	<b>10.978</b>	3,500
616	6"	1"	1/2"	<b>10.97801</b>	<b>10.97802</b>	<b>10.97803</b>	<b>10.97804</b>	3,500



Other sizes and styles available upon request.

## CRATEX® ABRASIVE ASSORTMENTS

Rubberized abrasives for light deburring, smoothing and polishing. Made from a special formula, combining pure silicon carbide granules with a special oil-resistant rubber bond. They deliver cushion-action performance in a variety of applications on a wide range of materials such as metal, plastic, glass and porcelain. Cratex abrasives can be shaped with conventional wheel dressers and do not harden or soften during use or storage.

### 1 26-PIECE INTRODUCTORY KIT

Contains a popular selection of wheels and points, in  $\frac{5}{8}$ ",  $\frac{7}{8}$ " and 1" diameters, in various grit textures, plus one point mandrel and one wheel mandrel. Packed in a handy box. Style #773.  
No. 10.750



### 2 796-PIECE PRODUCTION ASSORTMENT

Designed to meet the demands of a production shop. 200 tapered wheels, 300 straight wheels, and 200 points, in various textures. Plus 96 mandrels. Compartmented dispensing tray is a real time-saver. Style #796.  
No. 10.755



### 3 44-PIECE SMALL POINT KIT

Contains two points each of the five most popular small points, in each of the four grit textures, plus 4 mandrels. Packed in a convenient plastic case. Style #767.  
No. 10.751



### 4 46-PIECE SMALL WHEEL KIT

Contains two each of the most popular small wheels, 44 pieces, equally assorted in sizes and textures, plus two mandrels. Packed in a convenient plastic case. Style #707.  
No. 10.752



### 5 68-PIECE POINT KIT

Contains two each of all eight point shapes, equally assorted in four grit textures, for a total of 64 points, plus four mandrels. Packed in a convenient plastic case. Style #778.  
No. 10.754



### 6 123-PIECE TIME-SAVER KIT

Practical kit contains 120 wheels and points, plus two wheel mandrels and one point mandrel. Packed in a convenient plastic case. Style #776.  
No. 10.749



### 7 49-PIECE SANDING KIT

Contains 45 wheels and points, plus four mandrels, for all of your sanding needs. Packed in a convenient plastic case. Style #779.  
No. 10.756



### 8 80-PIECE ALL PURPOSE KIT

Contains the most popular wheels ranging from  $\frac{5}{8}$ " to 1" in diameter, and points from  $\frac{5}{8}$ " to 1" in length, along with 2 wheel mandrels and 2 point mandrels. Packed in a convenient plastic case. Style #777.  
No. 10.753



## WR PUMICE WHEELS

For cleaning, polishing and finishing. Made from natural rubber with graded pumice grain evenly distributed to assure uniform results. The light action produces a smooth finish on soft metals. All holes are 1/16".

### 1 PUMICE 72 WHEEL ASSORTMENT

Kit includes 12 wheels each of all six styles and 3 mandrels with 1/8" shanks.  
No. 11.465

### INDIVIDUAL WHEELS

Sold by box of 100.

No.	Style	Shape	Diameter	Thickness
11.450	822	Square	5/8"	3/32"
11.453	888	Square	7/8"	1/8"
11.461	999	Taper	5/8"	—
11.463*	999	Taper	5/8"	—

\*White version with more aggressive action.



## PACIFIC SILICONE CARBIDE ABRASIVES

A unique system for polishing gold and semi-precious alloys without the use of messy compounds or agents.

### 2 UNMOUNTED WHEELS, CYLINDERS and POINTS

#### Small Wheels



Size	Hole	Edge	Boxed	Extra Fine	Silipum Pumice	Lapidary Touch Ups	
						Coarse	Hi-Shine
7/8" x 1/8"	1/16"	Square	100	11.862	11.852	11.916	11.908
5/8" x 1/8"	1/16"	Square	100	11.866	11.854	11.918	11.910
7/8"	1/16"	Knife	100	11.864	11.856	11.912	11.904
5/8"	1/16"	Knife	100	11.868	11.858	11.914	11.906



Size	Hole	Edge	Boxed	Long Life Coarse Very Hard	Dark Grey for Softer Metals	White for Harder Metals	Pink Hi-Shine
7/8" x 1/8"	1/16"	Square	100	11.842	11.812	11.820	11.828
5/8" x 1/8"	1/16"	Square	100	—	11.814	11.822	11.830
7/8"	1/16"	Knife	100	—	11.816	11.824	11.832
5/8"	1/16"	Knife	100	—	11.818	11.826	11.834

#### Cylinder



Size	Boxed	Blue Coarse	Grey Fine	Green X-Fine	Pink Hi-Shine
1" x 1/2"	12	11.845	11.846	11.847	11.848

#### Mini-Points



Dark Brown Boxed	Brown Hard	Green Medium	Hi-Shine
100	11.836	11.838	11.840

#### Mandrels



Size		Item No.
3/32"	1" x 1/2" cylinders. Pk 3	11.898
1/8"	1" x 1/2" cylinders. Pk 10	11.899
3/32"	For mini points	11.894

### 3 KIT

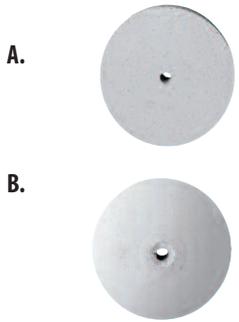
Assorted shapes, sizes and grits plus mandrels. 44 - piece kit  
No. 11.810



## UNMOUNTED & MOUNTED SILICONE POLISHING WHEELS

Premium silicone-carbide wheels, specially formulated to provide the smoothest finish without the use of messy polishing compounds. Mounted wheels are on  $\frac{3}{32}$ " shanks. Available grits: Coarse - 100G, white; Medium - 220G, black; Fine - 800G, blue; and Extra Fine - 1,200G, pink.

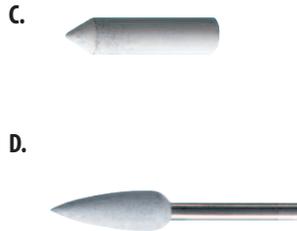
**1 WHITE (100G)** Coarse pre-polish wheels and cylinders. For smoothing surfaces. Operating speed range is 5,000 to 12,000 RPM.



**A. Wheel — Square Edge**  
Diameter:  $\frac{7}{8}$ " Shank: No  
No. **10.01368**  
No. **10.1368/C** box of 100

**B. Wheel — Knife Edge**  
Diameter:  $\frac{5}{8}$ " Shank: No  
No. **10.01369**  
No. **10.1369/C** box of 100

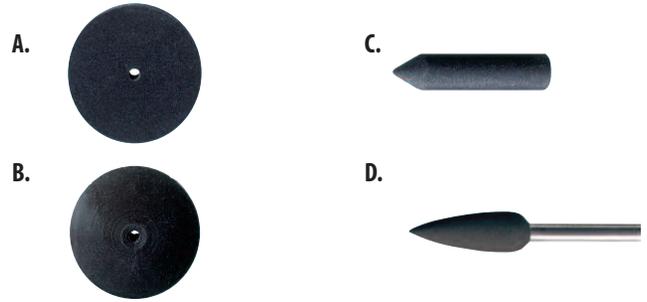
Diameter:  $\frac{7}{8}$ " Shank: No  
No. **10.01370**  
No. **10.1370/C** box of 100



**C. Bullet**  
Diameter: 1" Thickness:  $\frac{1}{4}$ "  
Shank: No  
No. **10.01373**  
No. **10.1373/C** box of 100

**D. Cone**  
Diameter:  $\frac{5}{8}$ " Thickness:  $\frac{7}{32}$ "  
Shank: Yes  
No. **10.01441**  
No. **10.1441/C** box of 100

**2 BLACK (220G)** Medium, soft and flexible. For smoothing surfaces and refining edges. Operating speed range is 5,000 to 12,000 RPM.



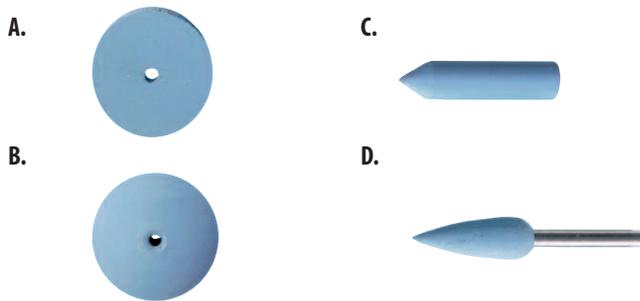
**A. Wheel — Square Edge**  
Diameter:  $\frac{7}{8}$ " Shank: No  
No. **10.01375**  
No. **10.1375/C** box of 100

**B. Wheel — Knife Edge**  
Diameter:  $\frac{7}{8}$ " Shank: No  
No. **10.01377**  
No. **10.1377/C** box of 100

**C. Bullet**  
Diameter: 1" Thickness:  $\frac{1}{4}$ "  
Shank: No  
No. **10.01379**  
No. **10.1379/C** box of 100

**D. Cone**  
Diameter:  $\frac{5}{8}$ " Thickness:  $\frac{7}{32}$ "  
Shank: Yes  
No. **10.1445**  
No. **10.1445/C** box of 100

**3 BLUE (800G)** Fine, soft and flexible. For medium lustre or smooth matte finish. Operating speed range is 5,000 to 10,000 rpm.



**A. Wheel — Square Edge**  
Diameter:  $\frac{5}{8}$ " Shank: No  
No. **10.1364/C** box of 100

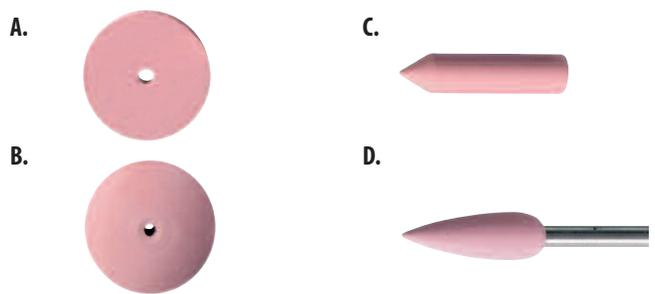
Diameter:  $\frac{7}{8}$ " Shank: No  
No. **10.01365**  
No. **10.1365/C** box of 100

**B. Wheel — Knife Edge**  
Diameter:  $\frac{7}{8}$ " Shank: No  
No. **10.01367**  
No. **10.1367/C** box of 100

**C. Bullet**  
Diameter: 1" Thickness:  $\frac{1}{4}$ "  
Shank: No  
No. **10.01363**  
No. **10.1363/C** box of 100

**D. Cone**  
Diameter:  $\frac{5}{8}$ " Thickness:  $\frac{7}{32}$ "  
Shank: Yes  
No. **10.01437**  
No. **10.1437/C** box of 100

**4 PINK (1200G)** Ultra Fine, soft and flexible for a super high lustre; final finish, medium lustre or smooth matte finish. Operating speed range is 5,000 to 10,000 rpm.



**A. Wheel — Square Edge**  
Diameter:  $\frac{5}{8}$ " Shank: No  
No. **10.01380**  
No. **10.1380/C** box of 100

Diameter:  $\frac{7}{8}$ " Shank: No  
No. **10.01381**  
No. **10.1381/C** box of 100

**B. Wheel — Knife Edge**  
Diameter:  $\frac{5}{8}$ " Shank: No  
No. **10.01383**  
No. **10.1383/C** box of 100

**C. Bullet**  
Diameter: 1" Thickness:  $\frac{1}{4}$ "  
Shank: No  
No. **10.01385**  
No. **10.1385/C** box of 100

**D. Cone**  
Diameter:  $\frac{5}{8}$ " Thickness:  $\frac{7}{32}$ "  
Shank: Yes  
No. **10.01449**  
No. **10.1449/C** box of 100

## SILICON CARBIDE

Grinding stones in a variety of shapes for grinding mild steel, soft metals, such as copper, bronze, gold, silver, etc., and some gemstones.



### 1 SILICON CARBIDE WHEELS

Available in fine (180) and medium (150) grits. The rating on these wheels is not to exceed 8500 RPM.

Fine	Medium	Diameter	Thickness	Hole
11.740	11.741	2"	1/4"	1/4"
11.754	11.755	3"	1/2"	3/8"
11.760	11.761	3"	1/2"	1/4"
11.763	11.764	3"	1/2"	1/2"

### 2 SILICON CARBIDE STONES

Specially shaped for dressing, sharpening and truing wheels that have become rounded or chipped.

No. 11.715 Sharpening stone. 4" x 1" x 1/16"

No. 11.716 Dressing and truing stone. 6" x 1" x 1"

## NO-LAP ABRASIVE BANDS



### 1 ABRASIVE BANDS

Glue bonded, silicon carbide for fast cutting. Far outlasts lapped bands. All are 1/2" long. Grit textures: COARSE (60); MEDIUM (80); FINE (120).

Grit	Diameter	Box 100	Box of 1000
Fine	1/4"	11.217	11.245
Medium	1/4"	11.218	11.246
Coarse	1/4"	11.219	11.247
Fine	3/8"	11.220	11.248
Medium	3/8"	11.221	11.249
Coarse	3/8"	11.222	11.250
Fine	1/2"	11.223	11.251
Medium	1/2"	11.224	11.252
Coarse	1/2"	11.225	11.253
Fine	3/4"	11.226	11.254
Medium	3/4"	11.227	11.255
Coarse	3/4"	11.228	11.256

### 2 ABRASIVE BAND ARBORS

Rubber heads on 3/32" and 1/8" shanks.

3/32" Shank Diameter	1/8" Shank Diameter	Band Diameter
11.200	11.201	1/4"
11.204	11.205	3/8"
11.208	11.209	1/2"
—	11.211	3/4"

### ABRASIVE BAND SET

Contains 2 arbors with 1/4" and 3/8" diameter and 3/32" shank and 12 assorted bands. No. 11.213



### 1 CARTRIDGE ROLLS

Rolled aluminum oxide abrasive material used for polishing and deburring. Use with special mandrels listed below. Sold by pack of 25. Measures 1/2" diameter, 1/8" hole.

Fine	Medium	Coarse	Length
11.01270	11.01271	11.01272	1"
11.01273	11.01274	11.01275	1 1/2"

#### MANDRELS for CARTRIDGE ROLLS

No.	Use with Rolls	Shank Diameter
11.01280	1" long	1/8"
11.01281	1 1/2" long	1/8"
11.01282	1" long	3/32"
11.01283	1 1/2" long	3/32"



### 3 WOOD MANDREL for INSIDE RING SHELLS

Use with Sangers® emery shells. Drilled to fit on a tapered spindle. Also handy as a holder for polishing rings, chains, etc. 4/4" with 1/8" arbor hole. No. 11.333



### 5 SPLIT WOOD MANDREL

Slot holds emery paper so it can be wound around mandrel to desired thickness. Sold by dozen. No. 11.306



### 2 SANGERS® EMERY INSIDE RING SHELLS

The finest made! To smooth and polish the insides of rings. Fits snugly over wood mandrel. Made in both emery paper and longer lasting cloth. Grits from 4/0 (finest) to 3 (coarsest). Packed one dozen per box. Note: Grits are not marked on individual shells.

Grit	Cloth	Paper
4/0	11.310	11.320
3/0	—	11.321
2/0	11.311	11.322
1/0	—	11.323
1	11.312	11.324
2	—	11.325
3	11.313	11.326

#### SANGERS® SHELL ASSORTMENTS

- No. 11.317 Cloth, 12 shells in assorted grits
- No. 11.330 Paper, 12 shells in assorted grits
- No. 11.318 Cloth, 6 assorted shells and wood mandrel
- No. 11.331 Paper, 6 assorted shells and wood mandrel



### 4 WOOD ARBOR

Coat with adhesive and roll in abrasive to form a polishing stick. Has 1/4" arbor hole for tapered spindle mounting. Made of birchwood. No. 11.266 7" No. 11.267 6"



### 6 SPLIT MANDRELS for HANDPIECE

Emery paper is wound around mandrel for polishing smaller pieces. 2 1/4" long, with 3/32" shank to fit in handpiece. Sold by dozen. No. 11.308 Straight No. 11.309 Tapered

### 1 3M™ 3-RADIAL BRISTLE DISCS

Great for cleaning and maintaining hard to reach areas on platinum, gold, silver, copper, pewter and brass pieces. Embedded mineral abrasive is harder than most metals. Removes oxides without messy compounds. These discs do not generate the same amount of heat as rubber wheels do. Can be used individually, or stacked.

Note: Bristle brushes up to 1" diameter use with mandrel hole 1/16" or 1/8". Those of 2" & 3" are to be used with adaptor mount, No. 10.3541.



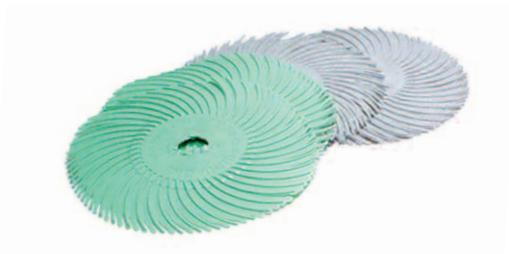
No.	Grit or Mesh	Diameter	Color	Min
10.3501	80	3/4"	Yellow	48
10.3502	220	3/4"	Red	48
10.3503	400	3/4"	Blue	48
10.3504	Pumice	3/4"	Pink	48
10.3505	6 Micron	3/4"	Peach	48
10.3506	1 Micron	3/4"	Lt. Green	48

No.	Grit or Mesh	Diameter	Color	Min
10.3507	120	9/16"	White	48
10.3508	220	9/16"	Red	48
10.3509	400	9/16"	Blue	48
10.3510	Pumice	9/16"	Pink	48
10.3511	Polish II	9/16"	Peach	48
10.3512	Polish I	9/16"	Lt. Green	48



No.	Grit or Mesh	Diameter	Color	Min
10.3513	36	1"	Brown	24
10.3514	50	1"	Green	24
10.3515	80	1"	Yellow	24
10.3516	120	1"	White	24

No.	Grit or Mesh	Diameter	Color	Min
10.3517	80	3"	Yellow	40
10.3518	120	3"	White	40
10.3519	220	3"	Red	40
10.3520	400	3"	Blue	40
10.3521	Pumice	3"	Pink	40
10.3522	6 Micron	3"	Peach	40
10.3523	1 Micron	3"	Lt. Green	40



No.	Grit or Mesh	Diameter	Color	Min
10.3524	80	3"	Yellow	40
10.3525	120	3"	White	40
10.3526	220	3"	Red	40
10.3527	400	3"	Blue	40
10.3528	Pumice	3"	Pink	40
10.3529	6 Micron	3"	Peach	40
10.3530	1 Micron	3"	Lt. Green	40



No.	Grit or Mesh	Diameter	Color	Min
10.3531	80	6"	Yellow	1
10.3532	120	6"	White	1
10.3533	220	6"	Red	1
10.3534	400	6"	Blue	1

Package quantity varies.  
See price list or call for details.



### 1 3M™ SPINDLE ADAPTORS

No. 10.3541 3/8" Tapered spindle Mount adaptor



### 2 3M™ FLEXIBLE DIAMOND HAND FILES

Made of rigid plastic with flex diamond laminated on the filing surface. The best sanding tool on the market and is ideal for hand sanding in small, hard-to-reach areas. Sets contain the same four styles in different grits. Set contains 1 1/2" x 3/4" flat, a 1 3/4" x 1/2" flat, a 2 1/2" x 1/4" flat, and a half-round, 1 3/4" x 3/8".

No.	Micron	Grit or Mesh	Color
10.39102	M74	200	Red



### 3 3M™ FLEXIBLE DIAMOND BANDS

Metal-bonded diamond bands cut sanding time in half. Excellent for shaping and carving on metal or stone. Great for quickly removing material on the inside of rings. Use water or coolant with bands to prolong life (try our 19.928 Pro-Cut Lubricant). Diameter on all measures 1/2" x 1/2" x 1/2".

No.	Micron	Grit or Mesh	Color
10.170	250	60	Green
10.171	125	120	Black
10.172	74	200	Red
10.173	40	400	Yellow
10.174	20	800	White



### 4 3M™ FLEXIBLE DIAMOND STRIPS

These flexible 1" x 8" strips can be wrapped around a dowel or attached to a sanding stick with the pressure sensitive adhesive. Smooths and shapes most materials.

No.	Micron	Grit or Mesh
10.33801	125	120
10.339	74	200
10.340	40	400
10.341	20	800



### 3 3M™ VETRAP

Natural latex rubber sticks to itself, not to your skin. It protects skin from burns and abrasions and provides excellent gripping ability for small workpieces. This wrap is light and durable. Individual roll: 2" x 5 yds. Available in 4 colors.

No.	Color
10.3570	Pink
10.3571	Red
10.3572	Green
10.3573	Blue



### 4 3M™ 96 GREEN PAD

New to the Scotchbrite family. Medium grade 3M 96 green pad leaves a smooth, satin finish and no scratches.

No. 10.301



### 1 3M™ SCOTCHBRITE™ HAND PADS

Excellent for hand finishing of metals and composites. for used wood finishing, paint prep, and general cleaning. Available in four grades as shown. Size is 6" x 9"

No.	Grade	Color
10.302	Ultra Fine	Gold
10.303	Coarse	Tan
10.304	Medium	Maroon
10.305	Fine	Gray



### 2 3M™ SANDING SPONGES

These closed-cell foam rubber sanding pads are great for working with platinum, and flexible enough to conform to almost any contour or surface. Can be folded or trimmed to fit into small spaces. Can be used wet or dry. Micron-graded aluminum oxide abrasives make them safe for a variety of applications.

No.	Grade	No.	Grade
10.295	Micro Fine	10.298	Fine
10.296	Ultra Fine	10.299	Medium
10.297	Superfine		



### 3 3M™ FILM SHEETS and POLISHING PAPER

#### Microfinishing Film Sheets

Use these 8½" x 12" sheets wet or dry. The micron grading technique produces particles of exactly the same size and shape so that you get consistent finishing every time.

No.	Micron	Grit or Mesh	Color
10.332	9	1200	Lt. Blue

#### WETorDRY™ Polishing Paper

Get around almost any contoured surface with these 8½" x 11" polishing papers. Soft, cloth-like backing and precise micron grading provide a unique, consistent finish. Can be used wet or dry.

No.	Micron	Grit or Mesh	Color
10.274	30	400	Green
10.275	15	600	Grey
10.276	9	1200	Blue
10.277	3	4000	Pink
10.278	2	6000	Mint
10.279	1	8000	Pale Green



### 4 3M™ IMPERIAL™ WET or DRY ABRASIVE SHEETS

Special resin-over-resin bonding technique resists heat and holds the abrasive particles to give you a more uniform cut. Highly wear-resistant and waterproof. All sheets are silicon carbide and can be used wet or dry. The lowest grit is the coarsest. Sheets are 9" x 11".

No.	Grit	No.	Grit
10.284	180	10.290	1000
10.285	220	10.291	1200
10.286	280	10.292	1500
10.287	320	10.293	2000
10.288	400	10.294	2500
10.289	600		



### 5 3M™ PLATINUM 405N PAPER SHEET

Use this abrasive paper as a pre-polish on platinum. Sheet size 8" x 10" in grits of 400, and 500.

No.	Micron	Grit or Mesh	Color
10.282	30	400	Gray
10.283	20	500	Gray



### 1 3M™ ROLLS

Metalite abrasive roll for use on a sanding drum.

No.	Grit	Size
11.56902	500	1½" x 50yds
11.560902	240	1½" x 50yds
11.560903	320	1½" x 50yds
11.560904	600	1½" x 50yds



### 2 3M™ SCOTCHBRITE™ DEBURRING and FINISHING WHEELS

Well suited for a wide range of deburring and finishing jobs. Superior performance on stainless steel, titanium and high nickel alloys. The "convolute", or "wrapped", construction is widely used for fine deburring and polishing because of conformability. Wheels will maintain critical tolerances and provide a highly polished finish. Use to debur fine threads, finish prior to buffing or for conditioning a soft metal surface before welding. Maximum RPM - 6,000.

Part No.	Grade	Diameter/Thickness/Hole	Color
10.3562	7S Fine	6" x 1" x 1"	Grey
10.3563	9S Fine/Medium	6" x 1" x 1"	Grey



### 3 3M™ CLEAN and FINISH WHEELS

Aluminum oxide wheels provide a uniform satin finish. Wheels can be stacked to build thickness you need. These wheels work fast to give you the right cut every time. ¼" thick. Hole size ⅜".

Part No.	Grit or Mesh	Diameter
10.311	Medium	6"
10.312	Fine	6"
10.313	Very Fine	6"



### 4 3M™ CUT and POLISH UNITIZED WHEELS

Unitized, or "layered" construction provides an excellent starting point where small diameters and narrow widths are needed in heavy duty blending and finishing jobs. Use instead of rubber bonded wheels. Maximum RPM - 18,100.

Part No.	Grade	Diameter/Thickness/Hole	Color
10.3559	5A Fine	3" x ¾" x ¼"	Tan

## 3M™ PARTICULATE AND WELDING RESPIRATORS

Innovative respirators from 3M feature patented technologies. The N95 classification means 95% of particles down to 0.3 microns are screened out. Observe manufacturer recommendations regarding usage.

- A.) **Cool Flow Exhalation Valve:** Patented one-way valve for easy exhalation and cool, dry comfort.
- B.) **M-Noseclip:** Adjusts easily for fewer pressure points and greater comfort.

- C.) **Electret Media:** Advanced electrostatically charged microfibers help make breathing easier and cooler.
- D.) **3M Welding Web:** Fiber media is flame resistant. Not a substitute for a faceshield.

### 5 RESPIRATOR – 3M™ 8511

Features **A**, **B**, & **C** listed above.  
No. 10.387

### 6 WELDING RESPIRATOR – 3M™ 8515

Features **A**, **B**, **C** & **D** listed above.  
No. 10.388

### 7 PARTICULATE RESPIRATOR – 3M™ 9211

Flat folding. Features **A**, **B**, & **C** listed above.  
No. 10.389





**1 MIZZY HEATLESS® WHEELS**

Used for deburring and finishing. Hard, square-edged wheels. Loose, coarse construction. Keeps the grinding process cool and suitable for materials such as plastic and metal. Can be used to produce a matte finish. With pin-hole for mounting on mandrel. The wheels may be trued with a file. White also available, see price list for details.

1/2" Dia.	5/8" Dia.	3/4" Dia.	7/8" Dia.	1" Dia.	Thickness
11.426	11.429	11.432	11.435	11.438	3/2"
11.427	11.430	11.433	11.436	11.439	1/8"
11.428	11.431	11.434	11.437	11.440	3/16"



**3 ALUMINUM OXIDE PAPER**

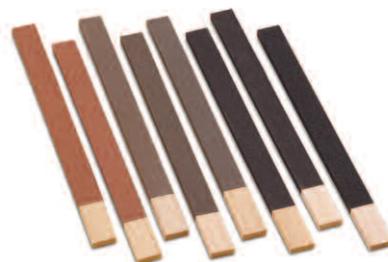
9" x 13 3/4", 1500 grit  
No. 11.274



**2 GROBET USA™ EMERY PAPER SHEETS**

Excellent small particle adhesion provides superior surface finishing. Specially processed micro grains provide additional cutting surfaces for fast material removal. Various grits available. Sold in boxes of 100. Size 9" x 13 3/4"

No.	Description	Grit
11.368	6/0	1200
11.369	5/0	1000
11.370	4/0	800
11.371	3/0	600
11.372	2/0	500
11.373	1/0	400
11.374	1	280
11.375	2	240
11.377	4	220
11.376	3	180



**4 FLAT EMERY STICKS**

Emery paper glued to wood handles, 11" long x 3/4" wide. Grits from 4/0 (finest) to 4 (coarsest). Sold by the dozen.

No.	Grit
11.340	4/0
11.341	3/0
11.342	2/0
11.343	1/0
11.344	1
11.345	2
11.346	3
11.347	4

**5 POLISHING STICK and STRIPS**

Plastic handle, 10 1/2" long, holds strips of emery paper or cloth 11" x 1". Strips can easily be replaced. Supplied with 2 strips, grit 120 and 240.

No. 11.350 Stick and strips

No. 11.351 Emery refills in 12 assorted grits



## NORTON® EMERY CLOTH & PAPER

### 1 METALITE EMERY CLOTH

Cloth sheets 9" x 11" with extra sharp particles for faster cutting. Sold individually.

No.	Grit
11.276	#320 (Fine)
11.277	#240
11.278	#180



### 2 EMERY CLOTH

Cloth sheets 9" x 11" with grits from fine to very coarse. Sold individually.

No.	Grit
11.269	Fine
11.270	Medium
11.271	Coarse

### 3 EMERY PAPER

Sheet size 9" x 13¾". Grits from 4/0 (finest) to 3 (coarsest). Sold individually or by box of 100.

Grit	Mesh	Individual Sheets	Box of 100
4/0	800	11.0776 4/0	11.297
3/0	600	11.0776 3/0	11.298
2/0	500	11.0776 2/0	11.299
1/0	400	11.0776/0	11.300
1	280	11.0776/1	11.301
2	240	11.0776/2	11.302
3	180	11.0776/3	11.303

## SANTAPER STICKS & BELTS

Fast, easy, economical way to reach detailed, hard-to-reach areas. Plastic stick, tapered at the end, holds a replaceable ¼" wide sanding belt. The aluminum oxide belt is held in place by a patented spring-loaded mechanism that allows the belt to be rotated 360°. Rotating the belt exposes a new sanding surface and allows the entire belt to be used.



### 4 SANTAPER STICKS

Sold individually.

No.	Color	Grit
11.571	Red	120
11.572	Blue	240
11.573	Green	320
11.574	Yellow	400
11.575	Black	600



### 5 SANTAPER BELTS

Sold by pack of 10.

No.	Grit
11.576	120
11.577	240
11.578	320
11.579	400
11.580	600

### SANTAPER KIT (not shown)

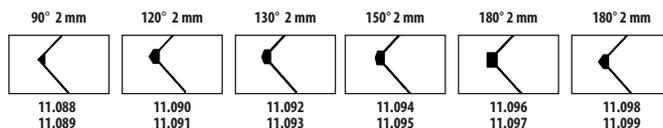
Includes three sticks and fifteen belts, three each of all five grits.

No. 11.570



### 1 DIAMOND ROUGHING TOOL

Extremely durable grinding and texturing diamond wheel will endure a long period of high-speed use. Measures  $\frac{5}{8}$ " x  $\frac{1}{8}$ ". Mandrel with  $\frac{1}{8}$ " shank included. No. 11.142



### 2 DIAMOND FLYWHEELS

Create interesting, unusual, and beautiful jewelry designs. Use with a high-speed handpiece up to 35,000 RPM to form faceting cuts, backgrounds, etc. Tool contains finest grade of diamond set in steel. Diameter of diamond is  $\frac{5}{64}$ ".

4mm Shank	3mm Shank	Description
11.088	11.089	90° Angle
11.090	11.091	120° Angle
11.092	11.093	130° Angle
11.094	11.095	150° Angle
11.096	11.097	Flat
11.098	11.099	180° Angle

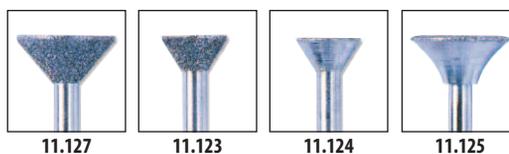
### 3 DIAMOND POINTS MOUNTED on 3/32" SHANKS

Long-lasting, high-quality industrial grade diamond points. Highly effective for fine detail work: carving ceramics, enlarging holes, and carving of all types. Use with a light touch at 10,000 RPM. Made in Israel.

Special shapes available on request. Not returnable.



Part No.	Style	Shape
11.126	H11	Round
11.108	H12	Round
11.109	H13	Round
11.134	H14	Round
11.110	H14B	Round



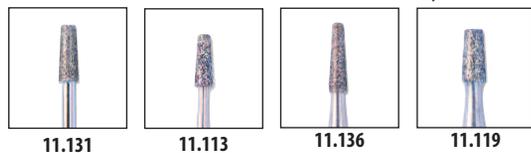
Part No.	Style	Shape
11.127	H34	Inv. Cone 75°
11.123	H33	Inv. Cone 75°
11.124	H35	Inv. Cone 75°
11.125	H36	Inv. Cone 75°



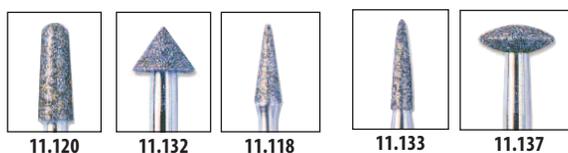
Part No.	Style	Shape
11.128	H23	Flat Cylinder
11.114	H20	Flat Cylinder
11.115	H21	Flat Cylinder
11.116	H22	Flat Cylinder
11.117	H23B	Flat Cylinder



Part No.	Style	Shape	Part No.	Style	Shape
11.129	H17	Inv. Cone	11.130	H30	Sq. Wheel
11.111	H15	Inv. Cone	11.121	H28	Sq. Wheel
11.112	H16	Inv. Cone	11.122	H29	Sq. Wheel



Part No.	Style	Shape
11.131	H27	Flat End Taper
11.113	H18	Flat End Taper
11.136	H19	Flat End Taper
11.119	H26	Flat End Taper



Part No.	Style	Shape	Part No.	Style	Shape
11.120	H27R	Rnd End Taper	11.133	H25	Flame
11.132	H32	Top Cone	11.137	H31	Knife
11.118	H24	Top Cone			

**IMPORTANT! KEEP SHANKS LUBRICATED TO AVOID OVERHEATING.**

**IMPORTANT! TOOLS MUST BE USED WITH HIGH-SPEED HAND PIECE.**

## VIGOR® SUPER GLUES

- Strong cyanoacrylate adhesive bonds any combination of metal, plastic, rubber, ceramic, or glass
  - Sets and cures rapidly at room temperature
  - Requires no surface treatment beyond cleaning
  - High resistance to chemicals and low temperatures
  - Bond is colorless and transparent with almost no shrinkage
- Low viscosity ensures smooth spreading over entire bonding area using a minimum amount of glue

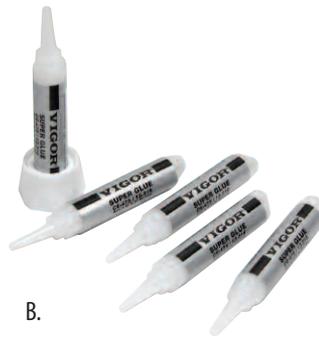


### 1 VIGOR® JEWELER'S EPOXY

For making and repairing jewelry. Will not shrink and is unaffected by water, oil or gasoline. Clear, permanent bond sets in 5 minutes. Withstands temperatures up to 175°F.  
No. 12.0451



A.



B.



C.



D.

### 1 45/60 Series — Setting time of 45-60 seconds

No.	Size
A. 12.215	2-Gram Tube
B. 12.216	2-Gram Tubes - 5 Pk.

No.	Size
C. 12.217	20-Gram Bottle
D. 12.218	2-Gram Pen



E.



F.



G.

### 2 10/20 Series — Setting time of 10-20 seconds

No.	Size
E. 12.219	2-Gram Tube
F. 12.220	2-Gram Tubes - 5 Pk.

No.	Size
G. 12.221	20-Gram Bottle

**Important! Cyanoacrylate-based adhesives are eye irritants and will also bond body tissue in seconds. Follow all label information and do not allow adhesive to contact skin or eyes. These adhesives must always be stored in a cool place. Keep out of the reach of children.**

## SUPER GLUE

- Formulated with the jewelers' needs in mind
- Excellent adhesion
- Chemical and heat resistant
- Improves your processing convenience
- Select the formula tailored to your job

**NEW**

### 1 SUPER GLUE EPOXY

5-minute quickset epoxy. Exceptional adhesion for metal, glass, ceramic, and plastic. 1200 psi strength.

No. 12.175



### 2 SUPER GLUE QUICK FIX

Original formula super glue. Use for bonding. Extra-strength adhesion on clean metal surface. Precision applicator and extended tip reach even the smallest and tightest areas. Packed in no-waste, reusable airtight container. May also be used for rubber and plastic applications.

No. 12.176



### 3 SUPER GLUE GEL ACCUTOOL

Take charge of your gluing application with Super Glue Gel. The same original Super Glue formula is now in gel form. Use this gel for porous surfaces and vertical applications. Save money by using the exact amount of glue you need. With this revolutionary, easy-to-use AccuTool precision applicator with self-piercing cap, you can apply one drop or a continuous stream. No mess – your fingers stay dry and clean.

No. 12.177



### 4 SUPER GLUE ACCUTOOL

Super Glue in the AccuTool applicator with self-piercing cap. Cyanoacrylate bonding made easy with this new, revolutionary easy-to-use applicator. Save money by using the exact amount of glue you need. Apply one drop or a continuous stream. No mess – your fingers stay dry and clean.

No. 12.178



### 5 SUPER GLUE THREAD LOCKER

The glue that withstands vibrations. Use the original Super Glue Blue Thread Locker to prevent threaded fasteners, nuts, bolts and screws from loosening. Use normal hand tools to release the bond.

No. 12.179



### 6 SUPER GLUE FUTURE GLUE BRUSH-ON

High performance Future Glue is the glue you need for larger jobs. Bonds instantly and is faster than other super glues. Works on multiple surfaces: porous and non-porous – metal, cardboard, corkboard, rubber -- oily and dirty. Easy-to-use brush applicator covers swiftly.

No. 12.180



### 7 SUPER GLUE FUTURE GLUE GEL

Future Glue Gel takes bonding to a new level. Use this high performance Future Glue Gel for metal bonding and pottery repair without cleaning the item. The same original Super Glue formula in gel form works on multiple surfaces – porous and non-porous -- including oily and dirty surfaces. Great for vertical applications too. Bonds instantly – faster than other super glues. Works well on leather and rubber too.

No. 12.181



### 8 SUPER GLUE FUTURE GLUE

Join the next generation. Place High Performance Future Glue on your bench and stop worrying about bonding metals that are oily or dirty. Future Glue bonds instantly and also works on porous and non-porous surfaces – cardboard, corkboard, rubber. The handy self-piercing tube eliminates waste.

No. 12.182





**1 EPOXY 330**

EPOXY 330 is a water clear epoxy system. Good for assembly of stones to metal findings. EPOXY 330 has a fast setting time. Will harden in about 1 hour at room temperature and in about 10 minutes under a heat lamp.  
No. 12.210

**3 SUPER GLUE DEBONDER GEL**

A high viscosity gelled solvent designed to remove cured cyanoacrylate adhesive from surfaces or to debond parts assembled with cyanoacrylate adhesive. Will not run or migrate on vertical surfaces. 10ml  
No. 12.224

**MASCOT® INSTANT ADHESIVE**

High performance, extended range cyanoacrylate adhesive bonds metals, most plastics, rubber, ceramics and glass. Requires only a clean surface. Bonds colorless and sets in about 30 seconds. Made in USA.



**2 MASCOT® INSTANT ADHESIVE**

Gel, No-drip formula fills gaps and is ideal for use on vertical surfaces. Supplied in 10 oz. tubes. Sold individually.  
No. 12.214



**SPECIALTY ADHESIVES**



**4 DIAMOND SETTER'S CEMENT**

Melted and applied to a wooden dowel, it securely holds bracelets and rings for setting. Measures 4" x 4" x 5/16".  
No. 12.208



**5 CRYSTAL CEMENT**

Provides excellent bond between plastic or glass watch crystal and bezel without flaking or cracking. Convenient tube with pin-point applicator.  
No. 12.205



**1 SUC ROCKET CEMENT**

Quality adhesive cement can be used on unbreakable crystal or foil back jobs. Pin point applicator ensures accurate dispensing.  
No. 12.206



**2 3M™ FEATHERING DISC ADHESIVE TYPE 2**

Pressure-sensitive adhesive holds firmly and peels away easily for quick interchange of discs.  
No. 10.333



**3 SEALING WAX**

Excellent as a setters cement. Also, seals packages and envelopes securely and efficiently. Also Melting point 170°. Box contains four ¼ lb. red sticks.  
No. 12.225



**4 CHASER'S CEMENT**

Melts easily and is used to attach items in boxwood slips for engraving. Can be cleaned with alcohol. Sold in bar form. Two ½ lb. bars per box.  
No. 12.203



**5 SHELLAC STICKS**

Use the opaque stick to set jewels and stones or to hold work temporarily. The transparent stick inconspicuously fills holes, dents, and scratches. Heat to apply. Sticks are 7" long.  
No. 12.230 Opaque stick  
No. 12.231 Transparent stick



**6 ORANGE SHELLAC**

Orange flake shellac holds objects for chasing, engraving, or setting. Heat to apply.  
No. 12.227 6 oz. container

## SILVERSMITHING

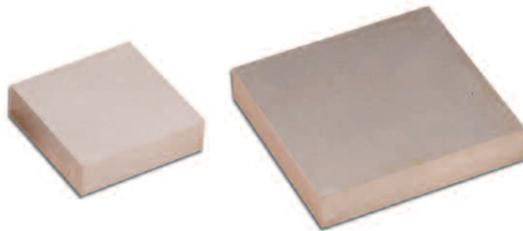
Silversmithing is the ancient art of shaping or raising metal from sheet form. For over 100 years, our silversmithing tools have had the reputation as the finest made, and their quality matches their reputation. Designed by silversmiths for silversmiths, as well as for students, these tools will provide a lifetime of service.



### 1 HORN ANVIL

Polished round and flat horns with hole in the top for riveting. Used for flattening and shaping.

- No. 12.305 4½" tip to tip, ⅜" wide, 1⅜" high
- No. 12.306 4¼" tip to tip, 1" wide, 3½" high
- No. 12.307 8" tip to tip, 1¼" wide, 5" high



### 2 STEEL BENCH BLOCK

Supports work for flattening and laying out designs. Case-hardened. Ground flat and smooth.

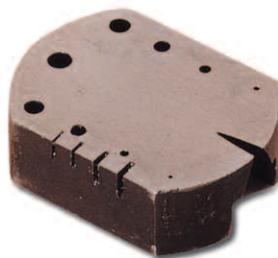
- No. 12.317 2½" sq. x 1"
- No. 12.319 4" sq. x ¾"



### 3 HORN ANVIL ON BASE

Used for flattening and shaping. Polished round and flat horns. Measures 3⅞" from tip to tip across the horns and 2⅞" high.

- No. 12.301



### 4 SLOT ANVIL

These anvils have a flat smooth case hardened surface and can be used as a base for staking, riveting and drilling small parts. V-slot is handy for removing pinions and similar items. Has 9 graduated holes, with one size for stumps, and 5 milled slots. Measures 1¾" long, 1¼" wide and ½" thick.

- No. 12.315



### 5 HEXAGON ANVIL

Has 16 holes, graduated from ⅜" to ¼", and 5 milled slots. Measures 1⅝" across the flat sides and ¾" thick.

- No. 12.312

## FORMING & RAISING STAKES

Raising is the technique of forming metal with hammers and stakes into the basic shape of the object being created.



### 1 DOME HEAD #1

For shaping small rounded objects such as ladles. Head diameter 2".  
No. 12.501



### 2 SPOON or LADLE HEAD #2

Primarily used for making spoons and ladles. Head 2 3/4" long, tapering from 2 3/8" width to blunt, rounded point.  
No. 12.502



### 3 COMBINATION #3

Anvil shaped, 10" long, with one cylindrical arm 3 1/4" long, 1 3/8" diameter, and the other arm 4" long and 1 1/2" wide. Flat top measures 2 3/4" x 1 1/2".  
No. 12.503



### 4 ROUNDED TOP with ANGULAR FACE #4

Head diameter 2 1/2".  
No. 12.504



### 5 CURVED ENDS #5

Overall length 7 1/4" with working faces 1 3/8" wide.  
No. 12.505



### 6 SLIGHT ROUND - INVERTED ROCKER #9

11 3/4" long with center width 1 1/2" tapering to 1 1/4" at tips.  
No. 12.509

## FORMING & RAISING STAKES



### 1 SLIGHT ROUND - UNDERCUT END AND ROLLED END #10

11<sup>3</sup>/<sub>4</sub>" long with center width 1<sup>1</sup>/<sub>2</sub>" tapering to 1<sup>1</sup>/<sub>4</sub>" at tips.  
No. 12.510



### 2 ANVIL SHAPE #12

For small conical and rectangular work. Length 12". Flat top 1<sup>1</sup>/<sub>4</sub>" wide at center. Arms taper to <sup>3</sup>/<sub>8</sub>".  
No. 12.512



### 3 KNOB ENDS #13

End widths are 1<sup>1</sup>/<sub>8</sub>" and <sup>7</sup>/<sub>8</sub>".  
No. 12.513



### 4 DEPRESSED #14

Horn shape, ideal for working depressed surfaces. 10" long x 1<sup>1</sup>/<sub>4</sub>" wide.  
No. 12.514



### 5 STAKE #90

Used by makers of fine tableware. All working surfaces are highly polished. High dome for cups and ladles. 2<sup>1</sup>/<sub>2</sub>" diameter x 2" deep.  
No. 12.690

For holder suitable for mounting these stakes,  
see No. 12.788 on page 29.

## PLANISHING STAKES

Planishing occurs after completion of the forming stage. Choose the stakes below that conform to the desired shape of the finished work. Using a lightweight hammer and starting at the middle, strike the piece with a steady pattern and work towards the edge. Each of these stakes has a highly polished, specially shaped working surface.



### 1 #19 SPOON STAKE

1<sup>3</sup>/<sub>8</sub>" long x 7/<sub>8</sub>" wide at center.  
No. 12.419



### 2 #20 SLIGHTLY CURVED TOP

For slightly depressed curves. 1<sup>3</sup>/<sub>4</sub>" long. Width tapers from 1<sup>1</sup>/<sub>8</sub>" to 7/<sub>8</sub>".  
No. 12.420



### 3 #21 SHARPLY CURVED TOP

For greatly depressed curves. 2" long. Width tapers from 1" to 3/<sub>4</sub>".  
No. 12.421



### 4 #23 CURVED TOP

For planishing curved surfaces. 2<sup>1</sup>/<sub>4</sub>" long. Width tapers from 1<sup>3</sup>/<sub>8</sub>" to 1".  
No. 12.423



### 5 #25 CURVED TOP

For planishing curved surfaces. 2<sup>1</sup>/<sub>4</sub>" long. Width tapers from 1<sup>3</sup>/<sub>8</sub>" to 1<sup>1</sup>/<sub>4</sub>".  
No. 12.425



### 6 #41 WEDGE SHAPED

For rolled-over edges. 1<sup>1</sup>/<sub>2</sub>" high x 1<sup>1</sup>/<sub>2</sub>" long x 1<sup>1</sup>/<sub>8</sub>" wide.  
No. 12.441

## SPOON STAKES



### 7 INDIVIDUAL SPOON STAKES

For use in bench vise. Working surfaces are highly polished.

- No. 12.583 #83 dessert spoon
- No. 12.584 #83A coffee spoon
- No. 12.585 #83B tablespoon
- No. 12.586 #83C teaspoon

## LARGE SPECIAL PURPOSE STAKE



### 8 STAKE #116

For forming cylinders, such as cups and jiggers, as small as 1" diameter. 14" long.  
No. 12.716

## HEAVY ROUNDED PLANISHING STAKES



No.	Type/Use	Diameter	Surface Radius
<b>1</b> 12.712	112/Small bowls	4"	3"



No.	Type/Use	Diameter	Surface Radius
<b>2</b> 12.713	113/Large bowls	5 1/2"	5"

No.	Type/Use	Diameter
<b>3</b> 12.714	114/Dishes and medium trays	3 7/8"



Use holder No. 12.717 listed below.

## STAKE HOLDERS



### **4** HOLDER for HEAVY ROUNDED PLANISHING STAKES #117

This is the only holder that takes type #112 to 114 stakes described above.  
No. **12.717**



### **5** HOLDER for MOUNTING all STAKES and ANVIL HEADS

Holds all except the heavy rounded planishing stakes (Nos. 12.712 to 12.714) and the spoon stakes (Nos. 12.583 to 12.586). Measures 7 3/4" long x 4" wide, with holes in the base for permanent mounting.  
No. **12.788**

### **6** HOLDER ADAPTER

Fits into No. 12.788 holder for mounting small stakes and anvil heads. 6" high.  
No. **12.790**



NEW



**1 MAGICAL CRIMPING PLIERS**

This unique patented tool was created exclusively for use with 2mm sterling silver and gold-filled tubular crimp beads. Just a few easy steps will form a 2mm crimp into a more appealing round bead! Designed exclusively for use with .014-.015" diameter Flex Wire.

- No. **46.625** .018 - .019
- No. **46.626** .014 - .015
- No. **46.627** .018 - .019 Ergo
- No. **46.628** .014 - .015 Ergo

NEW



**2 BEAD CRIMPING PLIERS**

A revolutionary hand tool that allows you to form smooth, unobtrusive crimps. Eliminates the unsightly sharp-edged crimps that result from traditional methods. Works equally well with either round or tube crimps. Length is 5½" (130 mm).

- No. **46.411** 2 to 3mm Beads
- No. **46.415** 3mm and Larger Beads

NEW



**3 BEAD HOLDING PLIERS**

Stronger than tweezers!  
Jaws are designed to hold beads securely.

- No. **46.416**

NEW



**4 BEAD PLIERS 4 in 1**

Features a tapered nose for coiling and flat jaw for straightening, flattening, and bending. A side cutter and a groove for closing coils and jump rings. 5"

- No. **46.417**

NEW

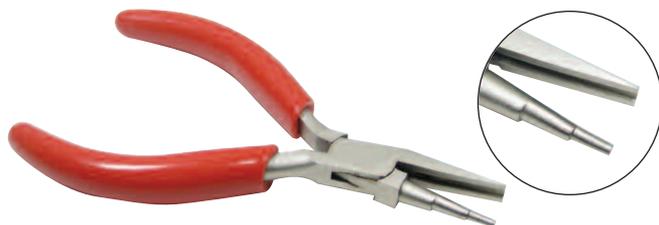


**5 SPLIT RING PLIER**

These pliers are perfect for bead stringing and assembly operations. Just insert tooth onto the side of the ring and squeeze gently.

- No. **46.140**

NEW



**6 WIRE LOOPING PLIERS**

Three tier design for forming three loop sizes. Lower jaw concave and fits over looping jaw to allow for easy bending. Overall length 5"

- No. **46.070**

**1 LOOP CLOSING PLIERS**

Jaws are shaped and smoothly finished to close loops, jump rings, bracelet links, bows, etc., without distorting or scratching. With box joint and cushion grip handles. Overall length is 4½".

No. 46.0057



**2 ROSARY PLIERS**

Combination round nose and side cutter. Use for making loops, bends and cutting wire without changing tools. Overall length 5¼".

No. 46.071

No. 46.190



**3 WIRE TWISTING PLIER**

One-pull action and auto return twists wire into a strand.

No. 46.374 6"

No. 46.375 9"



**FORMING PLIERS**

Stainless steel construction. These box-joint pliers are made to top quality standards. Long lasting, dependable for all your bending and forming needs.

**4 CONCAVE - CONVEX PLIER**

Used for shaping intricate wire designs. Also, used to shape earring wire and bend ring shanks.

No. 46.135



**5 ROUND-FLATNOSE LOOPING PLIER**

Used to shape, hold and form wire.

No. 46.136



**6 FLAT-HALF ROUND BENDING PLIER**

Perfect for bending and shaping flat metal and wire.

No. 46.137



**7 ROUND-CONCAVE BENDING PLIER**

Designed for jump rings and other small rings. Perfect for loops and bends in wire and flat metal.

No. 46.138



**NYLON JAW PLIERS**

High quality nylon jaw stainless steel pliers are a must when working with delicate wire. Choose from the large selection of nylon jaw pliers. Perfect for all your wire projects!

**NEW**



**1 NYLON COILING PLIERS**

No. 46.5751P Round

No. 46.5752P Round/Flat

No. 46.5753P Flat

**NEW**



**2 NYLON STRAIGHTENING PLIERS**

No. 46.5762P Flat

No. 46.5767P Wide Flat

**NEW**



**3 NYLON WIRE BENDING PLIERS**

No. 46.5770P

No. 46.5772P Groove

**NEW**



**4 NYLON WIRE SHAPING PLIERS**

No. 46.5721P

No. 46.5720P Mini

**NEW**



**5 NYLON BRACING PLIERS**

No. 46.5722P Vertical

No. 46.5723P Horizontal

## CUTTERS

### 1 BEADING SHEERS

This economical shear-action cutter is indispensable for anyone involved with bead stringing. It easily cuts regular bead cord and "Tigertail." Comfortable grip handles. Overall length is 4½".

No. 46.573



### 2 MEMORY WIRE CUTTERS

Quickly and easily make clean cuts in memory wire.

No. 46.572



### 3 FLUSH CUTTERS

This cutter is perfect for cutting soft wire or thread.

No. 46.571



### 4 SEMI FLUSH CUTTER

Great tool for cutting wires used in crafting and jewelry.

No. 46.148



### 5 TEBORG SEMI-FLUSH CUTTERS

Rockwell hardness. Harden and treated handles. Grips will not break with proper use.

No. 46.9141



### 6 MICRO SNIP

The perfect tool for bead stringing and thread snipping. Well-tempered steel with very sharp edges. Unique reflex action makes light work fast and easy.

Length is 4" (102 mm)

No. 46.555



### 7 SHARP POINT BEAD STRINGING SCISSORS

For reaching into tight places to snip cord. Length 3½" (89 mm).

No. 53.201



KNOTTING TOOLS



**1 BEADING AWL STAINLESS STEEL**

Knotting needle for beading.  
No. **15.180** 5¼"



**2 KNOTTING TWEEZERS**

For holding and tying knots. Length 4¼" (108 mm).  
No. **57.821**



**3 PATTERN NO. 5**

Similar to pattern No. 4, except but has very narrow needle-like points. Overall length 4½" (114 mm).  
No. **57.0755** Stainless Steel



**4 PATTERN NO. 1**

For general use, assembly, inspection, sorting. Tweezers feature tapered shanks with beveled edges, and sharp, plain-finished points. Length 4¾" (121 mm).  
No. **57.0651**



**5 MICRO-MINI BEAD KNOT PLIER**

Perfect pliers to knot bead cord. For use with heavier bead cord.  
No. **46.145**



**6 KNOTTING TOOL**

Creates secure, uniform knots. Useful for stringing pearls and other types of beads. Includes instructions with diagrams.  
No. **38.140**



**7 TRI-CORD™ KNOTTING TOOL**

An easy way to increase your bead and pearl stringing creativity.  
No. **38.01910**



**8 TRI-CORD™ REGULAR BEAD STRINGING KIT**

Includes: Tri-Cord™ knotter (No. 38.01910); white silk thread (400 yds. of size E); tube of glue; thread snips; chain nose pliers; Tri-Cord™ "Professional Bead Stringing" video tape (No. 63.01513); 30 stainless steel beading needles-10 each of small, medium, large; 40 bead tips-20 each silver-plated and gold-plated; and french wire in gold-filled and sterling silver. Comes in a sturdy organizer case with detachable lid which can be used as a designing tray.  
No. **38.01900**

## TWEEZERS



### 1 PEER® PEARL-HOLDING TWEEZERS

Tips are cup-shaped to hold small round objects. Overall length 4½".  
No. 57.641



### 2 PEARL/BEAD TWEEZER

No. 57.0346 6¼"



### 3 SHOVELS with HANDLES

Excellent for handling diamonds, pearls and other precious gemstones.  
No. 51.095 Nickel-plated with chrome finish  
No. 51.0552 Non-reflective black finish



### 5 WOOD HOLDER for BEADS

Will not scratch beads. Securely holds beads during cleaning and drilling. 7" overall length. Diameter of the 3 outer holes measure: 9.17mm, 5.12mm, and 2.8mm. Diameter of the 3 inner holes measure: 8.92 mm, 6.23mm, and 4.61mm.  
No. 57.9000



### 4 TWEEZER with SHOVEL

No. 51.099 Tweezer with shovel

## REAMERS



### 6 BEAD REAMERS SET

Diamond bead reamer comes with an aluminum handle and includes three diamond tips. Small, Large, and 45° Edge Reamer.  
No. 15.181



### 8 4 PIECE BEAD REAMER SET

Diamond tipped reamers are perfect for use on glass, ceramic, and stone beads. Includes long short, round and edge tips.  
No. 15.190



### 7 REPLACEMENT DIAMOND REAMER TIPS

No. 15.182 Small  
No. 15.183 Large



### 9 BEAD REAMER with REPLACEMENT TIPS

Bead reamer includes 4 interchangeable bits. Made with an aluminum handle.  
No. 15.191

### 10 BEAD REAMERS

Includes 1 short and 1 long bead reamer.  
No. 15.192



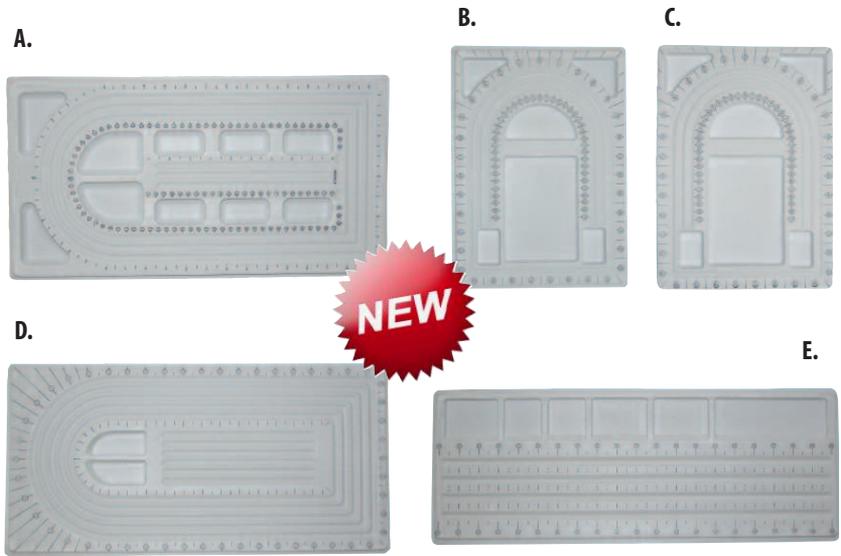
BEAD BOARDS



**1 BEAD BOARDS**

Flocked grey bead boards are perfect for all your bead stringing projects.

- A. No. 38.120 3-40", U-Channel
- B. No. 38.121 3-28", U-Channel
- C. No. 38.122 3-28", U-Channel with Lid
- D. No. 38.123 5-40", U-Channel
- E. No. 38.124 4-20", Straight Channel



**2 BEAD STRINGING BOARDS**

Used to align beads prior to stringing. Grooves are perfectly spaced for organizing work.

- No. 38.100 Wood, measures 14½" x 4"
- No. 38.105 Plastic, measures 8¾" x 13¼"

**3 BUGEL BEAD TRAY LIQUID SILICON**

Perfect for aligning long bugel beads.  
No. 38.125



**4 WOOD SORTING TRAY**

No. 38.01287 Wood, measures 22" x 4"



**5 STICKY BEAD MAT**

Ideal for keeping small beads and parts right where you want them. May be used as a mini bead board to arrange small jewelry pieces before stringing. When the mat starts to gather dust or debris, simply rinse it with water and let it dry. It will refresh and become as sticky as when it was new!

No. 38.131

**6 SORTING TRAYS**

Sort pearls, stones, findings, etc. Trays have grooves to assist stringing and round indentations for size sorting. Measures 7" x 3¾".

No. 38.102 White for dark colors

No. 38.103 Black for light colors



**1 SMALL PARTS TRAYS with COMPARTMENTS**

Sliding top opens one compartment at a time so parts will not spill or mix.

No. **15.610** 20 compartments w/a 7½" diameter

No. **15.611** 12 compartments w/a 3½" diameter

**3 PLASTIC BOXES with COMPARTMENTS**

For storing abrasives, small parts and mandrels.

No.	Dimensions	Compartments
<b>15.136</b>	4⅜" x 2⅝" x 1"	6
<b>15.137</b>	8¼" x 4¼" x 1¼"	12
<b>15.139</b>	10¾" x 6⅜" x 1¾"	18
<b>15.140</b>	8¼" x 4⅞" x 1¼"	18

**5 STACKABLE ROUND TRAY (SET x6)**

Trays have threaded bottoms that securely screw to the tray below allowing access to any tray at any level. Translucent plastic. Each tray measures 1" in height and 2" in diameter.

No. **15.148**



**NEW**

**2 PLASTIC TRAY with SLIDE**

Sliding top opens one compartment at a time so parts will not spill or mix.

No. **15.201** 18 Compartments

No. **15.202** 24 Compartments

**4 SMALL PLASTIC BOXES**

Great, inexpensive way to store parts safely.

No.	Dimensions
<b>15.128</b>	1⅞" x 1⅞" x ¾"
<b>15.129</b>	1⅞" x 1⅞" x ¾"
<b>15.130</b>	1" x 1" x ¾"
<b>15.131</b>	1" x 2" x ¾"
<b>15.132</b>	2" x 2" x ¾"

**6 PLASTIC BOTTLES with PLASTIC TOPS**

Perfect for storing parts. Sold by the dozen.

No. **15.112** 1⅝" x 1⅝"

No. **15.113** ⅝" x 1½"



**1 GLASS BOTTLES with SCREW TOP**

Ideal for storing small parts. Measures  $1\frac{9}{32}$ " x  $1\frac{3}{16}$ ". Sold by the dozen.

No. 15.108



**2 STORAGE CABINET 64 DRAWER**

64 equal compartments,  $2\frac{1}{4}$ "w x  $1\frac{1}{2}$ "h x  $5\frac{1}{4}$ "d each, total storage cabinet size,  $20$ "w x  $15\frac{3}{4}$ "h x  $6\frac{3}{8}$ "d.

No. 15.002



**3 KEEPER BOX**

Designed with a snug-fit track to keep beads or other small items from spilling from one compartment to another. All compartments feature rounded bottoms.

No. 15.160 Small

No. 15.161 Medium

No. 15.162 Large



**4 BEAD TRAVELER**

26 compartment travel case features durable plastic click close compartments and handy strap for easy carrying. Bag measures approximately:  $13$ " x  $7\frac{1}{2}$ " x  $11\frac{1}{2}$ ". Boxes measure:  $10\frac{3}{4}$ " x  $7$ " x  $1\frac{3}{4}$ ".

No. 15.163



**5 BLUE MINI TRAVEL BOX**

Great for beads and findings! Create 12-26 compartments with 14 removable dividers. Compact side-by-side design. Removable transparent inner lids prevent items from mixing. Convenient carry strap and sturdy snap-lock closure.

No. 15.164  $4\frac{3}{4}$ " x  $4\frac{1}{4}$ " x  $1\frac{1}{2}$ "

**1 SUPER GLUE EPOXY**

Use when extra positioning time is needed. 30-minute delayed setting time gives you that extra time to position your piece accurately. Exceptional adhesion for metal, glass, ceramic, and plastic.  
No. 12.175



**2 CRYSTAL CEMENT**

The needle-like applicator tip puts small amounts of cement where it's needed. Prevents bead cord from fraying. 1 oz. tube.  
No. 12.205



**3 EPOXY 330**

EPOXY 330 is a water clear epoxy system. Good for assembly of stones to metal findings. EPOXY 330 has a fast setting time. Will harden in about 1 hour at room temperature and in about 10 minutes under a heat lamp.  
No. 12.210



**4 VIGOR® SUPER GLUE**

Strong ethyl adhesive bonds any combination of metal, plastic, rubber, ceramic, or glass.  
No. 12.215 2 Gram (.07 fl. oz.) tube



**5 SYNTHETIC BEESWAX**

When rubbed on surface, leaves a film on which design can be marked. Also used as a lubricant for sawblades and wire drawing.  
No. 26.100 1 oz. (28 g) tube

BEAD STRINGING



**1 BEADING NEEDLES**

50 needles per pack.

Brass:	Stainless Steel:
No. <b>38.0907</b> Small	No. <b>38.0911</b> Small
No. <b>38.0908</b> Medium	No. <b>38.0912</b> Medium
No. <b>38.0909</b> Large	No. <b>38.0913</b> Large

**2 FRENCH WIRE**

14" per pack.

Silver	Gold
<b>68.105</b> 0.7mm	<b>68.111</b> 0.7mm
<b>68.106</b> 0.9mm	<b>68.112</b> 0.9mm
<b>68.107</b> 1.0mm	<b>68.116</b> 1.8mm
<b>68.108</b> 1.1mm	<b>68.113</b> 1.0mm
<b>68.109</b> 1.2mm	<b>68.114</b> 1.1mm
<b>68.110</b> 1.8mm	<b>68.115</b> 1.2mm



**3 CLEAR ELASTIC STRETCH CORD**

Great for making stretch jewelry. Provides the perfect elasticity without snapping or losing it's form. Available in two lengths.

<b>68.120</b> 0.5mm x 25m	<b>68.123</b> 0.5mm x 100m
<b>68.121</b> 0.8mm x 25m	<b>68.124</b> 0.8mm x 100m
<b>68.122</b> 1.0mm x 25m	<b>68.125</b> 1.0mm x 100m



**4 STRING LINE CORD**

Stainless steel nylon-coated cord. Can be knotted and tied, but cannot be cut by rough edges of drilled stones. 30' in length on spools.

No. <b>38.01001</b> .012" (.3 mm) Fine
No. <b>38.01003</b> .018" (.5 mm) Medium
No. <b>38.01005</b> .021" (.53 mm) Heavy

**5 SILK BEAD SPOOL**

No.	Color	Size
<b>68.130</b>	WHITE A	425 Yards
<b>68.131</b>	WHITE B	390 Yards
<b>68.132</b>	WHITE D	260 Yards
<b>68.133</b>	WHITE E	200 Yards
<b>68.134</b>	WHITE F	140 Yards
<b>68.135</b>	WHITE FF	115 Yards
<b>68.136</b>	WHITE FFF	92 Yards
<b>68.138</b>	BLACK A	425 Yards
<b>68.139</b>	BLACK B	390 Yards
<b>68.140</b>	BLACK D	260 Yards
<b>68.141</b>	BLACK E	200 Yards
<b>68.142</b>	BLACK F	140 Yards
<b>68.143</b>	BLACK FF	115 Yards
<b>68.144</b>	BLACK FFF	92 Yards



**Silk Spool Size Chart**

Size	Diameter
O	0.127mm
A	0.178mm
B	0.203mm
C	0.274mm
D	0.305mm
E	0.325mm
F	0.348mm
FF	0.381mm
FFF	0.419mm

**1 SILK CARD**

Silk Bead Card 2 meters with 1 Needle



No.	Color	Size
68.150	White	1
68.151	White	2
68.152	White	3
68.153	White	4
68.154	White	5
68.155	White	6
68.157	White	8
68.160	Black	1
68.161	Black	2
68.162	Black	3
68.163	Black	4
68.164	Black	5
68.165	Black	6
68.167	Black	8
68.170	Pale Pink	1
68.171	Pale Pink	2
68.172	Pale Pink	3
68.173	Pale Pink	4
68.174	Pale Pink	5
68.175	Pale Pink	6
68.177	Pale Pink	8

No.	Color	Size
68.180	Gray	1
68.181	Gray	2
68.182	Gray	3
68.183	Gray	4
68.184	Gray	5
68.185	Gray	6
68.187	Gray	8
68.190	Brown	1
68.191	Brown	2
68.192	Brown	3
68.193	Brown	4
68.194	Brown	5
68.195	Brown	6
68.197	Brown	8

**Thread Size Chart**

Number	Diameter	Length	Number	Diameter	Length
1	0.35 mm	2m	5	0.65 mm	2m
2	0.45 mm	2m	6	0.70 mm	2m
3	0.50 mm	2m	8	0.80 mm	2m
4	0.60 mm	2m			

**2 SILK THREAD ROUND SPOOL**

Length 65m

No.	Color	Size
68.200	White	1
68.201	White	2
68.202	White	3
68.203	White	4
68.204	White	5
68.205	White	6
68.207	White	8
68.210	Black	1
68.211	Black	2
68.212	Black	3
68.213	Black	4
68.214	Black	5
68.215	Black	6
68.217	Black	8
68.220	Pale Pink	4
68.221	Pale Pink	6
68.222	Pale Pink	8
68.230	Gray	4
68.231	Gray	6
68.232	Gray	8
68.240	Brown	4
68.241	Brown	6
68.242	Brown	8





**1 NYLON CARD**

Nylon Bead Cord 2 meters and 1 Needle

No.	Color	Size
68.312	White	6
68.313	White	8
68.322	Black	6
68.323	Black	8
68.332	Pale Pink	6
68.333	Pale Pink	8
68.342	Gray	6
68.343	Gray	8
68.442	Brown	6
68.443	Brown	8

**2 HEMP SET**

Each set 4 colors; 30 feet per color.

- 68.475 Black, White, Brown, Tan
- 68.476 Black, Coffee, Brown, Tan

**3 COPPER WIRE SPOOL**

No.	Color	Gauge	Meter
68.610	Gold	20	9.1
68.611	Gold	24	22
68.612	Gold	26	22
68.613	Gold	28	22
68.620	Silver	20	9.1
68.621	Silver	24	22
68.622	Silver	26	22
68.623	Silver	28	22
68.630	Red	20	9.1
68.631	Red	24	22
68.632	Red	26	22
68.633	Red	28	22
68.640	Green	20	9.1
68.641	Green	24	22
68.642	Green	26	22
68.643	Green	28	22
68.650	Blue	20	9.1
68.651	Blue	24	22
68.652	Blue	26	22
68.653	Blue	28	22
68.660	Purple	20	9.1
68.661	Purple	24	22
68.662	Purple	26	22
68.663	Purple	28	22

**1 STRAND WIRE**

**49 Strand**

No.	Color	Thickness (mm)	Length
68.510	Silver	0.35	32'/10M
68.511	Silver	0.40	32'/10M
68.512	Silver	0.45	32'/10M
68.513	Silver	0.60	32'/10M
68.515	Gold	0.35	32'/10M
68.516	Gold	0.40	32'/10M
68.517	Gold	0.45	32'/10M
68.518	Gold	0.60	32'/10M



**19 Strand**

No.	Color	Thickness (mm)	Length
68.520	Silver	0.40	32'/10M
68.521	Silver	0.45	32'/10M
68.522	Silver	0.60	32'/10M
68.525	Gold	0.40	32'/10M
68.526	Gold	0.45	32'/10M
68.527	Gold	0.60	32'/10M



**7 Strand**

No.	Color	Thickness (mm)	Length
68.530	Silver	0.30	32'/10M
68.531	Silver	0.35	32'/10M
68.532	Silver	0.45	32'/10M
68.533	Silver	0.50	32'/10M
68.534	Silver	0.55	32'/10M
68.535	Silver	0.60	32'/10M
68.540	Gold	0.30	32'/10M
68.541	Gold	0.35	32'/10M
68.542	Gold	0.45	32'/10M
68.543	Gold	0.50	32'/10M



## GROBET USA® JEWELERS' WORKBENCHES

- Built to the standards demanded by professional jewelers
- Designed with the features of the repair shop bench
- Sturdy, durable construction
- For jewelers, watchmakers, engravers, hobbyists, technicians



### 1 GROBET USA® HEAVY-DUTY JEWELERS' WORKBENCH

Don't settle for imitations...Buy a genuine, solid wood, heavy-duty bench! Solid all-wood bench; no pressboard and no particle board. Solid wood top with all wood legs and full skirt. Three utility drawers assembled. Pull-out tray with two shelves. Two-arm rests and a lined catch drawer. Economically priced. Dimensions: 39" W x 19½" D x 39" H. New, heavy-duty packaging. UPS Shippable. Shipping weight 80 lbs in 2 boxes  
No. **13.071** Full skirt bench



### 2 GROBET USA® WATCHMAKERS' WORKBENCH

Designed for watchmakers, jewelers, engravers, hobbyists and technicians. Beautifully finished in natural wood on three sides, suitable for storefront use. Safety groove across the front of the hardwood surface and a ledge on three sides prevent parts from rolling. Top surface has three coats of polyurethane. Features eye-level work area, 15 drawers in assorted sizes and a catch-all tray with a heavy canvas covering. Measures 39¼" W x 21½" D x 37½" H. Made in USA. Shipping weight 126 lbs.  
No. **13.047**



### 3 PROFESSIONAL JEWELERS' WORKBENCH

Built to the standards demanded by professional jewelers and designed with all the features for the repair shop bench. Sturdy finger-joint construction for durability. 1¼" high lip surrounds top on three sides to prevent parts from rolling off. Two sturdy, removable arm rests and extra dowel holes for a more comfortable working position. Three 10" wide side drawers with furniture-finish pulls provide storage space for tools, parts or materials. Tool slide rack to store instruments out of the way when not in use. Lined lap tray to recover precious metals. Easy assembly with only ten screws. Overall dimensions are 37⅞" W x 18½" D x 36½" H. Made in USA. Shipping weight 96 lbs.  
No. **13.042**



### 4 GROBET USA® HEAVY DUTY ASSEMBLED JEWELERS' WORKBENCH

Sturdy well-designed bench helps provide comfort and increased productivity. A lip around three sides keeps articles from falling off. Three draws for storage, pull-out tray with two shelves, two arm rests and a plastic laminate lined catch drawer. Full skirt provides privacy. Shipped fully assembled. Solid hardwood top measures 39" W x 19½" D x 39" H. Made in USA. Shipping weight 95 lbs. Must ship by motor freight only.  
No. **13.044**

**NOTE: We recommend shipping work benches via motor freight.**



**5 PREMIUM HARDWOOD JEWELERS' WORKBENCH**

This high quality repair shop bench is built to serve the needs of professional jewelers over time. Sturdy hardwood surface with a recessed metal anvil. 2½" lip surrounding three sides prevents parts from rolling. Adjustable arm rests create comfortable work position. Two side-by-side locking drawers (each 14½" wide) provide secure parts and tool storage. Large metal-lined tool storage draw. Retractable work surface extension between arm rests and thick, metal-lined lap tray secures precious metal recovery. Dimensions: 37½" W x 24¼" D x 39" H. Made from drywood birch. Made in USA. Shipping weight 126 lbs. No. 13.075



**6 GROBET USA® SINGLE STATION WORKBENCH**

Extra storage space and reduced size make this bench perfect for those with limited space. Comes with 3 tool drawers and a metal-lined lap tray. The plastic laminate top is sturdy and easy to clean. The bench measures 28" W x 20" D x 36" H. Made in USA. Shipping weight 110 lbs. No. 13.049



**7 GROBET USA® SINGLE STATION WORKBENCH**

Designed to meet the special needs of the jewelry craftsman. Work surface has a 1½" high lip on three sides. Prevents parts from rolling. Sturdy metal legs, two arm rests, bench pin, spacious tool drawer and metal-lined lap tray are ideal for any professional. Measures 32½" W x 17" D x 34" H. Shipping weight 68 lbs. No. 13.020



**8 GROBET USA® DOUBLE-STATION WORKBENCH**

Similar to No.13.020 but with 2 workstations. Measures 61½" W x 16½" D x 33½" H. Must ship by motor freight. Shipping weight 104 lbs. No. 13.021

**9 WORKBENCH STOOL**

Full-size casters provide great mobility at your workbench. Adjustable, large diameter vinyl seat is well-padded for all day comfort. Height adjustable from 18½" to 25". Shipping weight 13 lbs. No. 13.063



ACCESSORIES



**1 BENCH FILING BLOCK**

Provides a 3/4" extension of the work bench. Consists of rubber block, iron frame and steel anvil. Overall length 5", width 2 1/4".

No. 13.200

No. 13.201 Extra rubber block



**2 BENCH PIN FOR RINGS**

Shaped to hold rings. Easily screws to the top of your bench. Convenient slot has a channel for sawblades. Measures 5 1/2" x 1/2" x 3/8".

No. 13.303



**3 BENCH PIN for RING CLAMP**

With hole to accommodate ring clamp with lip, No. 48.130.

No. 13.0202



**4 WOOD BENCH PINS**

Fits into slot in your work bench. Use as support when filing, sawing, setting, etc.

No.	Size
No. 13.300	5 1/4" x 2 1/8"
No. 13.301	6 1/4" x 2 1/2"
No. 13.302	7" x 2 1/2"



**5 BENCH PIN in METAL HOLDER**

Easily screws to edge of your work bench. Thumb screw locks in wood bench pin No. 13.300 supplied. Measures 4" wide.

No. 13.320



**6 V-SLOT BOARD and CLAMP**

Use as support for filing, sawing, and drilling. Clamp fits any work surface up to 2" thick. Board measures 7 1/2" L x 2 1/2" W.

No. 13.361 Board and clamp

No. 13.362 Extra board



**7 ENAMELED FIBERBOARD BENCH PLATE**

Part-catching groove on all four sides. Will not warp. Measures 9" W x 16" L.

No. 13.0183



**8 COMBINATION BENCH PIN and ANVIL**

Use for support to flatten pieces or lay out work. Flat anvil is smoothly finished. Adjustable clamp enables you to use it on benches up to 2" thick. Anvil accepts bracelet mandrel. (No. 43.052 not included). Wood bench pin measures 1 3/4" W x 4" L.

No. 13.325

No. 13.327 Extra bench pins

## TOOL HOLDERS

### 1 MAGNETIC TOOL HOLDERS

Permanent magnets hold pliers, screwdrivers and many other tools in place. Available in three sizes. Mount on any surface that will support screws and weight of tools.

No. 13.380 12" long

No. 13.381 18" long

No. 13.382 24" long



Tools shown for illustration purposes only.



### 2 RUBBER BENCH BLOCK

Hard rubber is perfect for filing, detail work, and all jobs requiring a firm, but forgiving surface. Will not slide. A handy accessory for any workbench. Measures 4" x 4" x 1".

No. 13.500

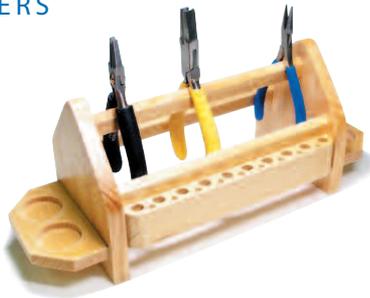


### 3 SCREW CATCHER

Magnetic pad prevents dropped stainless steel or other ferrous screws, nuts, or parts from bouncing and rolling. Will not slip or slide. Does not reflect light. Measures 10" x 12".

No. 61.199

## RACKS FOR PLIERS



Tools shown for illustration purposes only.

### 4 WOODEN PLIERS RACK

This rack features a 7½" bar area for easy accessibility to your favorite pliers. Two "tray extensions", each with two round depressions, for holding small parts or bits of solder. Ten 1" deep openings as wide as a pencil, that hold short solder wires or small jewelers screwdrivers. The additional nine drilled holes hold burs. Measures 12½" L x 4½" H x 4⅝" W.

No. 13.370



### 5 WOODEN PLIERS RACK with DRAWER

Has slots for seven pliers, shelf for miscellaneous small tools and a handy storage drawer. Varnished natural finish. Measures 6" x 5" x 7½".

No. 13.376



### 6 WHITE PLASTIC PLIERS RACK

White plastic with edges specially designed for safety. Keeps pliers organized, accessible, protected and easy to identify. Measures 5" x 5½" x 9".

No. 13.377



### 7 ACRYLIC TOOL HOLDER

Durable, clear acrylic holder is designed to keep all of your tools organized, accessible and protected. Five vertical pockets, a 12-hole shelf, and an angled pliers rack. Stands on bench or hangs from wall. Measures 12" x 5" x 7¼".

No. 13.379

BENCH KNIVES



**1 HEAVY-DUTY BENCH KNIFE**

Blade is firmly set in hardwood handle. Available in two lengths.

No.	Blade Length		Overall Length	
	(in)	(mm)	(in)	(mm)
39.105	1¾"	44	5¾"	146
39.110	2⅝"	67	6⅝"	168



**2 NO. 7 SLOYD BENCH KNIFE**

Hardwood handle. Plaster or compound knife. Overall length 5½", blade length 1¾".

No. 39.112 Carbon steel blade  
No. 39.114 Stainless steel blade



**3 SLOYD BENCH KNIFE**

Heavy-duty bench knife with thick steel blade securely mounted in heavy hardwood handle. Overall length 5½", blade length 1¾".

No. 39.0626



**4 MEDIUM-DUTY BENCH KNIFE**

Has slim 1¾" blade set firmly in hardwood handle. Overall length 5".

No. 39.180



**5 NO. 10 GRITMAN PLASTER KNIFE**

Overall length 7", with 2½" blade and blunt pry on opposite end.

No. 39.190



**6 BENCH KNIFE**

Handy, all-purpose knife with sharp, well-tempered blade firmly mounted in hardwood handle. Overall length 5", blade length 1¾".

No. 39.104

Above blades are exceptionally sharp. Use extreme caution.



#11

#12

### 1 MOLD CUTTING KNIFE HANDLES

Surgically sharp blades fit into comfortable plastic or metal handles. Widely used for cutting rubber molds.

No. 39.256 Stainless steel handle only

No. 39.257 Plastic handle only

#### Replacement Swann-Morton™ Knife Blades:

Carbon steel. Sold by box of 100.

No. 39.261 Straight #11

No. 39.262 Curved #12



#16

#11

### 2 LIGHTWEIGHT KNIFE with THREE BLADES

All-purpose, exceptionally sharp blades excellent for cutting patterns. Includes one #16 and two #11 blades. Packed in plastic display case.

No. 39.250

#### Replacement Knife Blades:

Each style sold by pack of five.

No. 39.253 Style #11

No. 39.254 Style #16



### 3 CRAFTSMEN KNIFE & TOOL SET

28-piece set in handsome wood chest with molded storage trays. Contains lightweight knife, medium-weight knife, heavy-duty knife, awl, miter box, razor saw, sander, screwdriver and 20 assorted blades.

No. 39.268



### 4 CRAFTSMEN KNIFE SET

13-piece set contains three knives plus ten assorted extra blades. Knives are lightweight, medium-weight and heavy-duty. The blades include one each of #'s 16, 19, 24, and 25 and two each of #'s 11, 22, and 23. Packed in plastic display case.

No. 39.267

## GROBET USA® BRUSHES

**1 BENCH DUSTER**

Four rows of soft black bristles set in a wood handle. Suitable for sweeping filings and general purpose work. Overall length 9½", brush length 4", brush height 1¾".  
No. 16.051

**2 DRAFTSMAN'S BENCH DUSTER**

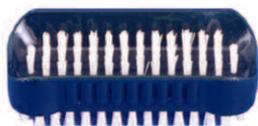
14½" overall length provides easy access to all wide table areas. Brush portion measures 8" long with one row of 2" high soft black bristles.  
No. 16.055

**3 DUSTING BRUSH**

Soft camel hair brush to remove dust from delicate surfaces. Wood handle. Overall length 4¼".  
No. 16.060

**4 PLATER'S BRUSH**

Ideal for removing polishing compositions from large pieces and plated work. Overall length 13", brush length 5¾", brush height 1". Four rows of extra stiff tampico bristles (may vary in shade).  
No. 16.069

**5 HAND and FINGERNAIL SCRUB BRUSH**

Extra stiff white nylon bristles in a 3½" x 1½" block.  
No. 16.076

**6 TWISTED WIRE BRUSHES**

Designed for tube and handpiece cleaning. Overall length 8¾". Extra stiff horsehair bristle is 3" long.  
No. 16.080 Tapered ½" to ¼" diameter  
No. 16.081 Straight ½" diameter

**7 WOOD HANDLE WASHOUT BRUSH**

Four rows of stiff natural bristles 3½" long, ¾" wide. Overall length 8¼".  
No. 16.086

**8 WOOD HANDLE WASHOUT BRUSH**

Four rows of stiff bristles 2½" long, ¾" wide. Overall length 8¼".  
No. 16.087



### 1 SMALL WOOD HANDLE WASHOUT BRUSH

For cleaning inside confined areas. Three rows of extra stiff bristles are 1 $\frac{1}{8}$ " long,  $\frac{3}{8}$ " high. Overall length 6".

No. 16.088



### 2 PALATE CLEANING BRUSH

Specially designed with cutout to reach over periphery to-hard-reach interiors. Brush length tapers from  $\frac{3}{4}$ " to  $\frac{5}{8}$ ". Clear handle.

No. 16.093

### 3 PLASTIC HANDLE WASHOUT BRUSHES

Available with natural or stiff nylon bristles. Bristles measure 3" long and  $\frac{1}{2}$ " wide. Overall length 7 $\frac{1}{2}$ "

No. 16.095 4 rows of natural bristles

No. 16.097 3 rows of natural bristles

No. 16.098 4 rows of nylon bristles



## GENERAL CLEANING BRUSHES



### 4 BENT PLASTIC HANDLE WASHOUT BRUSH

Four rows of nylon bristles 1 $\frac{3}{4}$ " long,  $\frac{1}{2}$ " wide. Angled lucite handle. Overall length 6 $\frac{3}{4}$ ".

No. 16.099



### 5 WOOD HANDLE MULTI PURPOSE BRUSH

Multi-purpose cleaning and dusting brush has 4 rows of medium-hard bristles 4 $\frac{1}{2}$ " in length. Overall length 10 $\frac{1}{2}$ ".

No. 16.0562

### 6 CLOCK and INSTRUMENT CLEANING BRUSHES

Bristles are available in varying degrees of hardness for cleaning and dusting clocks, instruments and parts. Bristles measure 4 $\frac{1}{2}$ " long,  $\frac{5}{8}$ " deep. Overall length 10 $\frac{1}{4}$ ".

No. 16.110 Hard for extra heavy grit

No. 16.111 1/2-hard for general cleaning

No. 16.112 1/2-soft for more delicate parts

No. 16.113 Soft for removing dust



## HAND SCRATCH BRUSHES

**2 STEEL SCRATCH BRUSH in HOLDER**

Wood handle provides comfortable grip for bur cleaning. Has fine steel wire bound in plastic. Overall length 5".

No. 16.340

**4 BRASS SCRATCH BRUSH with PLASTIC HANDLE**

Brush has four rows of .003" wire and is 3¼" L x ¾" H. Overall length 7¼".

No. 16.311

**6 PLATER'S BRASS SCRATCH BRUSH**

Brush has four rows of .004" wire and is 4¾" L x 1" H. Extra long 13" wood handle.

No. 16.313

**8 DOUBLE-SIDED BRASS SCRATCH BRUSH**

For cleaning work before soldering. Brass wire bristles are approximately 1¾" long and bound in metal holder.

No. 16.305

**1 STEEL SCRATCH BRUSH for CLEANING BURS**

These uniquely designed brushes provide fast and easy cleaning of burs. Wire is firmly bound in plastic tubing which serves as a handle and can be cut away to expose more wire. 3" long.

No. 16.339

**3 GLASS BRISTLE SCRATCH BRUSH**

Removes rust and dirt from metal surfaces. Fine glass bristles are bound in cord to unwind as bristles wear down. Length 7", diameter ½".

No. 16.334

**5 BRASS SCRATCH BRUSH with WOOD HANDLE**

Brush has four rows of .003" wire. Brush is 3¼" L x ¾" H. Overall length 8¼".

No. 16.310

**7 STEEL SCRATCH BRUSH with WOOD HANDLE**

Four rows of lightly crimped .003" wire. Brush is 4½" L x ¾" H. Overall length 8¼".

No. 16.350

**9 FIBERGLASS BUR CLEANING/SCRATCH BRUSH**

Removes rust and dirt from metal surfaces and polishes. Fine glass bristles are mounted in a plastic case. Bristles can be screw-fed as they wear down. Bristles measure ½" x ⅜".

No. 16.332

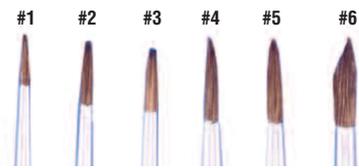
No. 16.333 Set of 2 refills



### 1 FLUX BRUSHES with QUILL HANDLES

Inexpensive, disposable brushes made of camel hair, mounted in hollow quill handles. For applying fluxes and other liquids. Select by item number. Sold by dozen.

No.	Brush #	Length	No.	Brush #	Length
16.219	9	1½"	16.214	4	2½"
16.218	8	1⅝"	16.213	3	3"
16.217	7	1¾"	16.212	2	3½"
16.216	6	2"	16.211	1	3¾"
16.215	5	2¼"			



### 2 FLUX BRUSHES with WOOD HANDLES

Well-constructed camel hair brushes are noted for durability. Select by item number. Sold by dozen.

No.	Brush #	Length
16.231	1	7"
16.232	2	7"
16.233	3	7"
16.234	4	7¼"
16.235	5	7½"
16.236	6	7½"

#3/0 #2/0 #0 #1 #2 #3 #4 #5 #6 #7



### 3 RED SABLE BRUSHES

Pure red sable tips are hand cupped to shape and have needle sharp points. Securely mounted in aluminum seamless ferrules and attached to wood handles. Select by item number. Sold individually.

No.	Brush #	No.	Brush #
16.258	3/0	16.263	3
16.259	2/0	16.264	4
16.260	0	16.265	5
16.261	1	16.266	6
16.262	2	16.267	7



### 5 FLUX BRUSH with TIN FERRULE

Economical, disposable brush for applying fluxes and other liquids. Sold by dozen. No. 16.225



### 7 GROBET USA® Micro brushes

Flexible applicators bend to any angle. Unique synthetic fibers hold material in suspension until applied. Ultra brush non absorbent bristle fibers are great for solvents, adhesives and enamels. Sold in box of 100.

16.100 White – Super Fine  
16.101 Yellow – Fine

16.102 Green – Regular  
16.103 Black – Ultra



### 4 MUCILAGE and ACID BRUSHES

Stock up on these versatile extra stiff black horsehair brushes. Tin handle fosters use with solder and acid. Sold by dozen.

No.	Measurements
16.250	3¼" long x ¼" diameter
16.251	5¼" long x ⅜" diameter
16.252	5¼" long x ½" diameter



### 6 CAMEL HAIR BRUSH

For all-purpose use. 7½" long with wood handle. Sold individually. No. 16.200



### 8 ANGLED and FLAT RED SABLE BRUSHES

Reduce hand fatigue. Rest your hand on your bench while working with these sable brushes with 45° angled tips. Also good for reaching otherwise inaccessible areas. Sold individually.

No.	Brush #
16.280	Angled #3/0
16.281	Angled #2/0
16.284	Flat #4

## GROBET USA® WHEEL BRUSHES

Clean, polish, and produce special finishes. Wood hubs are bored to fit on tapered spindles of polishing motors.

### 1 GROBET USA® WOOD HUB WHEEL BRUSHES

Chungking bristles mounted into hardwood hubs with 1/4" arbor holes for use on the tapered spindles of polishing motors. Sold individually.

- Genuine Chungking bristles insure longer life & superior polishing action piece after piece
- Wood hubs of seasoned, oil-treated hardwood prevent splitting and guarantee long-lasting service
- Bristle tufts are "staple-set" into hubs to remain securely fastened until completely worn down
- A wide assortment for all your applications



Item No.	Style #	U/C/T	Rows	Hub Diameter	Trim Length	Overall Diameter
16.398	1A	U	1	1 1/8"	5/8"	3 1/8"
16.404	1B	U	1	1 1/8"	1/2"	2 7/8"
16.399	1C	U	1	1 1/8"	3/8"	2 5/8"
16.396	2A	C	2	1 1/8"	5/8"	3 1/8"
16.403	2B	C	2	1 1/8"	1/2"	2 7/8"
16.397	2C	C	2	1 1/8"	3/8"	2 5/8"
16.372	5A	U	1	1 1/4"	5/8"	2 1/2"
16.371	5C	U	1	1 1/4"	3/8"	2"
16.383	6A	C,T	2	1 1/4"	5/8"	2 1/2"
16.381	6B	C,T	2	1 1/4"	1/2"	2 1/4"
16.380	6C	C,T	2	1 1/4"	3/8"	2"
16.384	7A	C,T	3	1 3/8"	5/8"	2 5/8"
16.389	7B	C,T	3	1 3/8"	1/2"	2 3/8"
16.387	7C	C,T	3	1 3/8"	3/8"	2 1/8"
16.405	8A	C,T	4	1 1/4"	5/8"	2 1/2"
16.406	8B	C,T	4	1 1/4"	5/8"	2 1/2"
16.407	8C	C,T	4	1 1/4"	3/8"	2"
16.374	—	U	1	1 1/4"	7/8"	3"
16.408	—	U	1	7/8"	1/2"	1 7/8"
16.376	—	C	2	7/8"	7/16"	1 3/4"
16.378	—	C	2	7/8"	1/2"	1 7/8"
16.410	—	C	2	7/8"	9/16"	2"
16.386	—	C	2	1 5/8"	1 1/16"	3"
16.388	—	C	2	2 1/8"	5/8"	3 3/8"
16.412	—	C	3	1 3/8"	1 1/16"	2 3/4"
16.390	—	C	3	1 5/8"	1 1/16"	3"
16.391	—	C	3	1 7/8"	1 3/16"	3 1/2"
16.393	—	C	4	1 1/2"	3/4"	3"
16.394	—	U	4	1 5/8"	1 1/16"	3"
16.395	—	C	4	1 7/8"	1 3/16"	3 1/2"

U = Upright C = Converging T = Tapered Hole



Converging

Upright

Note: The stiffness of each brush is determined by the number of rows (the more, the stiffer), bristle length (the shorter, the stiffer), and style ("converging" will be stiffer than "upright").



### 1 WHITE BRISTLE WHEEL BRUSH on WOOD HUBS

Four rows of soft bristles. Mounted on hardwood hub with  $\frac{1}{4}$ " straight hole. Overall diameter 3".

No. 16.420



### 2 BLACK BRISTLE WHEEL BRUSHES on STEEL HUBS

Medium stiff bristles mounted on steel hub. Center of hub is nylon.

No. 16.400  $1\frac{3}{4}$ " diameter,  $\frac{3}{16}$ " hole

No. 16.401  $2\frac{1}{2}$ " diameter,  $\frac{1}{4}$ " hole



### 3 HEAVY DUTY CRIMPED STEEL WIRE BRUSH

Removes rust, scale, grease, etc. from metal surfaces. .005 wire mounted on steel hub with flanges to provide extra strength. 6" diameter, with  $\frac{1}{2}$ " arbor hole.

No. 16.470



### 4 LIGHTLY CRIMPED STRAIGHT STEEL SATIN FINISH BRUSH

Produces a frosted finish when run at high speeds. One row of .0055" steel wire bristles mounted on wood hub with reinforced metal center. Diameter 5".

No. 16.472

### 5 STEEL BUR and FILE CLEANING BRUSH

Easily removes particles of metal clogged between teeth of files and burs. Also strips insulation from small electric wires. Two rows of lightly crimped .003" steel wire mounted on wood hub. Diameter  $1\frac{1}{8}$ ".

No. 16.475



## WHEEL SCRATCH BRUSHES

Clean and finish a variety of metal surfaces. Wire bristles are mounted on seasoned hardwood hubs. All brushes have a 1/4" arbor hole.

### 1 STRAIGHT BRASS WIRE BRUSHES

Clean and surface-finish brass and other soft metals. Straight wire produces a coarser finish. Strands are .003".

No.	Rows	Diameter
16.425	1	3"
16.426	2	3"
16.427	2	4"
16.429	3	3"
16.430	3	4"
16.431	4	3"
16.432	4	4"
16.433	4	6"



### 2 CRIMPED BRASS WIRE BRUSHES

Surface finish yellow metals. Brush produces a softer, satin or matte finish. Strands are .004".

No.	Rows	Diameter
16.440	2	3"
16.441	2	4"
16.443	3	3"
16.444	3	4"
16.445	4	3"
16.446	4	4"
16.447	4	6"

### 3 LIGHTLY CRIMPED STEEL WIRE BRUSHES

Clean, debur and surface finish silver, aluminum and other white metals. Produces pronounced surface effects. Strands are .003".

No.	Rows	Diameter
16.455	1	3"
16.456	2	3"
16.457	2	4"
16.458	2	6"
16.459	3	3"
16.460	3	4"
16.461	4	3"
16.462	4	4"
16.463	4	6"

## GROBET USA® MINIATURE BRISTLE BRUSHES

Excellent quality precision brushes. Clean and polish in hard-to-reach places.

### 4 MINI BRUSHES on MANDRELS

Available in single section or heavy-duty double section style. Sold by dozen.



Section Type	Brush Diameter	Mandrel Diameter	Extra Soft	Soft	Stiff
Single	3/16"	3/32"	16.601	16.603	16.602
Single	3/4"	3/32"	16.608	16.607	16.609
Double	3/4"	3/32"	16.612	16.611	16.613
Single	1"	3/32"	16.619	16.620	16.621
Double	1"	3/32"	—	16.624	—

**1 END BRUSHES on MANDRELS**

Sold by dozen.

Diameter	Brush Length	Mandrel Diameter	Soft	Stiff
3/16"	1/4"	3/32"	<b>16.700</b>	<b>16.701</b>
3/16"	3/8"	3/32"	<b>16.707</b>	<b>16.708</b>
3/16"	1/2"	3/32"	<b>16.710</b>	<b>16.711</b>

**2 UNMOUNTED 1/8" ARBOR HOLE BRUSHES**

30% additional fill gives more body for the right feel and longer brush life. Metal hubs with thinner profiles are assembled on specially designed production equipment. The result is a perfect brush. Bristles won't split and washers won't spin. Available in 4 grades to perfectly match every production requirement. Sold by dozen or by bulk pack of 144.

Brush									
Diameter	X-Soft Bulk	Extra Soft	Soft Bulk	Soft	Medium Bulk	Medium	Stiff Bulk	Stiff	
3/4"	<b>16.680</b>	<b>16.662</b>	<b>16.690</b>	<b>16.650</b>	<b>16.681</b>	<b>16.663</b>	<b>16.682</b>	<b>16.664</b>	
1"	<b>16.683</b>	<b>16.671</b>	<b>16.691</b>	<b>16.651</b>	<b>16.684</b>	<b>16.672</b>	<b>16.685</b>	<b>16.673</b>	

For use on tapered spindles of polishing motors, use mandrels 47.258 or 47.259.

For use on flexible shafts, use mandrels 43.160 or 43.162.

**3 UNMOUNTED 3/32" ARBOR HOLE BRUSHES**

Use stiff bristles for cleaning and soft bristles for polishing. Mount on mandrels. Sold by dozen.

Brush Diameter	Soft	Stiff
3/4"	<b>16.660</b>	<b>16.661</b>
1"	<b>16.669</b>	<b>16.670</b>

**GROBET USA® MINIATURE WIRE BRUSHES**

Clean, polish and produce special finishes. Use brass on yellow metals such as: copper and brass; use steel on white metals such as: white gold, silver, and platinum. Use straight or lightly crimped wire to produce a more pronounced finish and is used for cleaning, deburring, and surface finishing. Use crimped wire to achieve a softer or matte finish. Precision made, excellent quality.

**4 BRASS BRUSHES on MANDRELS**

Double section type is for heavy-duty use. Sold by dozen.

Section Type	Diameter	Mandrel Diameter	Straight Dia. .0035"	Crimped .005"
Single	3/4"	3/32"	<b>16.805</b>	<b>16.806</b>
Double	3/4"	3/32"	—	<b>16.807</b>
Single	3/4"	1/8"	—	<b>16.810</b>
Single	1"	3/32"	<b>16.813</b>	<b>16.814</b>
Double	1"	1/8"	—	<b>16.819</b>



**1 STEEL BRUSHES on MANDRELS**

Double section type is for heavy duty use. Sold by dozen.



Section Type	Diameter	Mandrel Diameter	Straight Dia. .0035"	Crimped .005"
Single	3/4"	3/32"	<b>16.840</b>	<b>16.841</b>
Double	3/4"	3/32"	—	<b>16.842</b>
Single	3/4"	1/8"	<b>16.844</b>	<b>16.845</b>
Single	1"	3/32"	<b>16.848</b>	<b>16.849</b>
Double	1"	3/32"	—	<b>16.850</b>
Single	1"	1/8"	<b>16.852</b>	<b>16.853</b>

**2 UNMOUNTED 3/32" ARBOR HOLE WIRE BRUSHES**

Available in single section only. Bristles are set in metal hubs for use on mandrels. Sold by dozen.



Metal	Dia.	Straight .0035"	Light Crimped .003"	Crimped .005"
Brass	3/4"	<b>16.880</b>	—	<b>16.881</b>
Brass	1"	<b>16.883</b>	—	<b>16.884</b>
Steel	3/4"	—	<b>16.886</b>	<b>16.887</b>
Steel	1"	—	<b>16.889</b>	<b>16.890</b>

**3 CUP-SHAPE WIRE BRUSHES on MANDRELS**

Sold by dozen.



Metal	Diameter at Flare	Mandrel Diameter.	Light Crimped .003"	Crimped .005"
Brass	5/16"	3/32"	—	<b>16.962</b>
Steel	1/2"	3/32"	<b>16.965</b>	—
Steel	5/16"	3/32"	—	<b>16.967</b>

**4 END-TYPE WIRE BRUSHES on MANDRELS**

Sold by dozen.



Metal	Dia.	Brush Length	Mandrel Dia.	Straight .0035"	Light Crimped .003"	Crimped .005"
Brass	3/16"	1/4"	3/32"	<b>16.926</b>	—	<b>16.927</b>
Brass	3/16"	1/4"	1/8"	—	—	<b>16.930</b>
Steel	3/16"	1/4"	3/32"	—	<b>16.940</b>	<b>16.941</b>
Steel	3/16"	1/4"	1/8"	—	<b>16.943</b>	<b>16.944</b>

## ECONOMY MINIATURE BRUSHES

Fine quality mounted and unmounted brushes in a variety of sizes, textures and materials for any polishing or finishing job. Mounted brushes have  $\frac{3}{4}$ " diameter shanks. Soft bristle for fine polishing. Stiff bristle for cleaning. Brass wire for gold, copper, brass. Steel wire for white metals such as silver, white gold, platinum and aluminum. Straight wire for a stronger cleaning, deburring, and surface finishing. Crimped wire for a softer or matte finish. Sold by dozen

### 1 BRISTLE BRUSHES on MANDRELS

Sold by dozen.

No.	Diameter	Texture
16.0695	$\frac{3}{4}$ "	Stiff
16.0696	$\frac{3}{4}$ "	Medium
16.0697	$\frac{3}{4}$ "	Soft



### 2 STEEL BRUSHES on MANDRELS

Sold by dozen.

No.	Diameter	Texture
16.0687	$\frac{3}{4}$ "	Straight
16.0698	1"	Straight



### 3 BRASS BRUSH on MANDRELS

Sold by dozen.

No.	Diameter	Texture
16.0689	$\frac{3}{4}$ "	Crimped



### 4 BRASS END BRUSH on $\frac{3}{32}$ " MANDREL

Sold by dozen.

No.	Diameter	Texture
16.0927	$\frac{1}{4}$ "	Crimped



### 5 STEEL END BRUSH on $\frac{3}{32}$ " MANDRELS

Sold by dozen.

No.	Diameter	Texture
16.0926	$\frac{1}{4}$ "	Straight



**1 BRISTLE END BRUSHES on  $\frac{3}{32}$ " MANDRELS**

Sold by dozen.

Trim Length	Texture	$\frac{3}{16}$ " Ferrule	$\frac{1}{4}$ " Ferrule
$\frac{1}{4}$ "	Stiff	<b>16.06842</b>	<b>16.06830</b>
$\frac{1}{4}$ "	Soft	<b>16.06843</b>	—
$\frac{3}{8}$ "	Stiff	<b>16.06844</b>	—
$\frac{3}{8}$ "	Soft	<b>16.06845</b>	—
$\frac{1}{2}$ "	Stiff	<b>16.06846</b>	—

**2 BRISTLE BRUSHES UNMOUNTED**

Sold by dozen.

No.	Brush Diameter	Hole Diameter	Texture
<b>16.0808</b>	$\frac{3}{4}$ "	$\frac{1}{8}$ "	Stiff
<b>16.0810</b>	$\frac{3}{4}$ "	$\frac{1}{8}$ "	Medium
<b>16.0813</b>	$\frac{3}{4}$ "	$\frac{1}{8}$ "	Soft
<b>16.0801</b>	1"	$\frac{1}{8}$ "	Stiff
<b>16.0811</b>	1"	$\frac{1}{8}$ "	Medium
<b>16.0814</b>	1"	$\frac{1}{8}$ "	Soft

**3 MANDRELS**

Sold by dozen.

This is just a partial listing. See pages 222-225 for our complete line of mandrels.

No.	Description	Shank Diameter
A. <b>43.120</b>	Tapered screw $\frac{3}{16}$ " screw length	$\frac{3}{32}$ "
B. <b>43.128</b>	Reinforced shoulder	$\frac{3}{32}$ "
C. <b>43.132</b>	Use with wheels $\frac{1}{16}$ " arbor holes	$\frac{3}{32}$ "
D. <b>43.156</b>	Reinforced screw	$\frac{1}{8}$ "

**5 MANDREL FOR GRINDING WHEELS**Use with grinding wheel with  $\frac{1}{8}$ " arbor holes. Shank diameter  $\frac{1}{8}$ ". Sold by dozen.No. **43.160****4 MANDREL FOR 1" WHEELS**Use with wheel sizes up to 1" diameter and up to  $\frac{1}{4}$ " thickness with  $\frac{1}{16}$ " arbor holes. Shank diameter  $\frac{1}{8}$ ".No. **43.158****6 WOOD MANDRELS with METAL THREADED ENDS**

Fit on tapered spindles of polishing motors. Convenient way to mount and change smaller brushes.

No. **47.258** RightNo. **47.259** Left

# GROBET USA® FELT BUFFS

With a reputation established as the finest made, these buffs continue to be produced to exacting specifications. Selection of Grobet USA® assures you of uniformity in thickness, balance, concentricity, and outstanding performance. They remain the standard of quality for professional polishers of metal.

## RING BUFFS



### 1 FELT INSIDE RING BUFFS

Made of the highest grade wool felt, mounted to tapered wood mandrel for use on tapered spindle. Select smallest size for children's rings. See price list for bulk pricing.

Extra Hard	Regular	Regular Bulk	Diameter	Length
17.316	17.315	FEJB	5/16" - 9/16"	3"
17.321	17.320	FER3B	9/16" - 3/4"	3"
17.324	17.323	FER4B	5/8" - 7/8"	4"
17.327	17.326	FER5B	1 1/16" - 1"	5"
—	17.329	FER6B	3/4" - 1 1/16"	6"



### 3 SOLID FELT RING BUFFS

Unmounted solid felt is used directly on tapered spindle. Sold by box of 24 or 100.

Box 24	Box 100	Diameter	Length
17.333	17.332	9/16"	3"
17.336	17.335	5/8"	4"



### 5 MINIATURE POINTED FELT CONES

Ideal for polishing concave surfaces on small objects. Made of solid felt with hard density. Use with tapered mandrel. Sold by box of 24 or 100.

Box 24	Box 100	Diameter	Length
17.266	17.267	1/4"	3/8"
17.271	17.272	1/4"	1/2"

### 2 FELT COMBINATION BUFFS

Polish outside and inside rings without changing buff. Wheel buff and inside ring buff are mounted on wood mandrel, drilled to fit tapered spindle. Sold individually.

No.	Wheel	Wheel Edge	Ring
17.340	2" x 1/2"	Square	3" x 9/16" - 3/4"
17.341	2" x 9/16"	Square	4" x 5/8" - 7/8"
17.342	2"	Knife	3" x 9/16" - 3/4"
17.343	2"	Knife	4" x 5/8" - 7/8"



### 4 LARGE ROUND FELT CONES

Perfect for polishing objects with rounded surfaces. Solid felt with pinhole center. Use with tapered mandrel. Sold individually.

No.	Diameter	Length
17.280	1/2"	1"
17.281	3/4"	1 1/2"
17.282	1"	2"



\* Tapered mandrels  
 3/32" shank - No. 43.120 3/16" screw length &  
 No. 43.122 3/8" screw length.  
 1/8" shank - No. 43.150 7/16" screw length &  
 No. 43.152 3/8" screw length.

### 6 LARGE POINTED FELT CONES

For polishing objects that have concave surfaces. Made of solid felt with pin hole center. Use with tapered mandrels listed above.\* Sold individually.

No.	Diameter	Length
17.276	1/2"	1"
17.277	3/4"	1 1/2"
17.278	1"	2"



**1 MINIATURE KNIFE EDGE SOLID FELT BUFFS**

Hard solid felt, with tapered edges for polishing joints and crevices. Use with mandrels listed below. \*\* Sold by box of 24 or 100.

Box 24	Box 100	Diameter
17.478	17.479	1/2"
17.483	17.484	5/8"
17.476	17.477	3/4"



**2 MINIATURE SQUARE EDGE FELT WHEELS**

Solid felt for use with mandrels listed below.\*\* 1/8" thick except Nos. 17.380 and 17.381 are 1/4" thick. Sold by box of 24 or 100.

Hard Box 24	Hard Box 100	Soft Box 24	Soft Box 100	Diameter
17.351	17.352	17.355	17.356	1/2"
17.359	17.360	17.363	17.364	5/8"
17.365	17.366	17.367	17.368	3/4"
17.371	17.372	17.376	17.377	1"
		17.380	17.381	1"



**3 MINIATURE FELT WHEEL ASSORTMENT**

Solid felt for use with mandrel. Includes 1/2", 5/8", and 3/4" diameter wheels in the soft grade. Sold by box of 24 or 100.

No. 17.345 Box of 24  
No. 17.346 Box of 100



**4 FELT WHEEL and CONE ASSORTMENT**

Includes 6 each Nos. 17.266 and 17.271 cones; plus 4 each Nos. 17.351, 17.359, and 17.365 wheels. Box of 24.

No. 17.347

**\*\* Wheel mandrels**

**3/32" shank**

- 43.130 Steel wheels, 1/16" arbor holes.
- 43.132 NP steel wheels, 1/16" arbor holes.
- 43.134 SS steel wheels, 1/16" arbor holes.
- 43.128 Mandrel with reinforced screw.

**1/8" shank**

- 43.158 NP steel wheels, 1/16" arbor holes.
- 43.162 NP steel wheels, 1/8" arbor holes.
- 43.156 Mandrel with reinforced screw.

## FELT BOBS

100% wool, ideal for precision deburring, polishing and finishing. Can be charged with compounds. Specifically designed for use with flex-shafts and similar tools. The unmounted versions have a pinhole for mandrel mounting. See tapered mandrels listed below.

### 1 CYLINDER SHAPE

Hard	Medium	Type	Diameter	Face	Mandrel
17.220	17.221	MP-1	1/4"	1/4"	1/8"
17.222	17.223	MP-2	1/4"	3/8"	1/8"
17.224	17.225	MP-3	3/8"	3/8"	1/8"
17.226	17.227	MP-4	3/8"	1/2"	1/8"
17.228	17.229	MP-5	1/2"	1/2"	1/8"
—	17.230	MP-6	1/2"	3/4"	1/8"
—	17.231	MP-7	1/2"	1"	1/8"
17.232	17.233	MP-8	3/4"	3/4"	1/8"
—	17.234	MP-9	3/4"	1"	1/8"
—	17.235	MP-11	1"	1"	1/4"



MP/P

\* Tapered mandrels

3/32" shank - No. 43.120 3/16" screw length & No. 43.122 3/8" screw length.  
1/8" shank - No. 43.150 3/16" screw length & No. 43.152 3/8" screw length.

### 2 MISCELLANEOUS SHAPES

Type	Hard	Medium	Diameter	Face
MS-1	—	17.245	3/8"	1/2"
MS-1	—	17.246	1/2"	1"
MS-3	—	17.250	3/8"	1/2"
MS-3	17.251	17.252	1/2"	1"
MS-4	17.253	17.254	1/2"	3/4"
MS-5	—	17.255	3/8"	1/2"
MS-5	—	17.256	1/2"	3/4"
MS-6	—	17.257	1/2"	1/2"



MS-1



MS-3



MS-4



MS-5



MS-6

Mounted on 1/8" mandrel.

### 3 MOUNTED MIDGET FELT BUFFS

All have 3/32" shanks. Sold by dozen.



17.115  
Solid Felt  
1" Dia



17.120  
Cone



17.121  
Cylinder



17.122  
Round



17.123  
Bud



17.124  
Pointed



17.12401  
Inverted  
1 1/15" Dia



17.12402  
Inverted  
1 3/15" Dia



17.12403  
Knife  
1 1/16" Dia



17.12404  
Knife  
1 3/15" Dia



17.12405  
Square  
1 1/16" Dia



17.12406  
Square  
1 3/16" Dia

## FULL-SIZE FELT BUFFS



### 1 DIAMOND HARD FELT LAPS

Exceptionally dense, chemically treated felt. Suitable for forming smooth, flat surfaces with sharp corners.

No.	Diameter	Thickness	Hole
17.291	6"	¼"	¼"
17.292	6"	¼"	½"



### 2 SPANISH FELT WHEEL BUFFS

Suitable for all-purpose polishing and buffing. Pin hole centers.

Ex. Hard	Medium	Diameter	Thickness
17.450	17.452	3"	½"
17.455	17.457	4"	½"
17.460	17.462	5"	½"
17.465	17.467	6"	½"

Hard	Soft	Diameter	Thickness
17.451	17.453	3"	½"
17.456	17.458	4"	½"
17.461	17.463	5"	½"
17.466	17.468	6"	½"
17.470	—	6"	1"



### 3 SOLID FELT WHEEL BUFFS

Tightly compressed wool felt creates a medium wheel for all-purpose polishing and buffing. Pin hole centers.

No.	Diameter	Thickness	No.	Diameter	Thickness
17.410	1"	¼"	17.429	3"	½"
17.412	1¼"	¼"	17.430	3"	¾"
17.415	1½"	¼"	17.431	3"	1"
17.416	1½"	⅜"	17.435	4"	½"
17.417	1½"	½"	17.436	4"	¾"
17.419	2"	¼"	17.437	4"	1"
17.420	2"	⅜"	17.438	5"	2"
17.421	2"	½"	17.439	6"	1"
17.425	2½"	½"			



### 4 KNIFE EDGE FELT WHEELS

Use with mandrel in handpiece or on tapered spindle of bench motor for polishing joints and crevices. Pin hole centers.

Rock Hard	Hard	Diameter
17.491	17.490	1"
17.493	17.492	1½"
17.495	17.494	2"
17.497	17.496	2½"
17.499	17.498	3"
17.500	—	4"

Safety Tip: Always wear proper eye protection when polishing.

## FINEX MUSLIN BUFFS

Superior quality soft-textured buffs perfect for use with rouge to produce a high finish.



### 1 LOOSE TYPE with LEATHER CENTERS

One row of stitching. Sold individually.

No.	Dia.	Ply
17.771	3"	35
17.773	4"	30
17.774	4"	40
17.779	4"	50
17.781	4"	60
17.775	5"	45
17.782	5"	50
17.783	5"	54
17.776	6"	50
17.784	6"	54
17.777	8"	55



### 2 STITCH TYPE with LEATHER CENTERS

Available in 3 or 4 rows of stitching. Sold individually.

No.	Dia.	Ply	Stitching
17.751	3"	35	3 rows
17.75203	3"	30	3 rows
17.75204	3"	40	3 rows
17.753	4"	30	3 rows
17.754	4"	40	3 rows
17.757	4"	50	3 rows
17.758	4"	60	3 rows
17.755	5"	45	3 rows
17.75802	5"	20	3 rows
17.75803	5"	30	3 rows
17.75804	5"	40	3 rows
17.759	5"	50	3 rows
17.75901	5"	60	3 rows
17.760	6"	40	4 rows
17.756	6"	50	4 rows
17.75902	6"	30	4 rows
17.761	6"	60	4 rows



### 3 FINEX MUSLIN BUFFS with SHELLAC CENTERS

With combed edges for use with rouge. Sold individually.

No.	Dia.	Ply	Stitching	No.	Dia.	Ply	Stitching
17.621	2½"	30	2 rows	17.632	5"	50	3 rows
17.622	3"	35	3 rows	17.625	5"	55	5 rows
17.623	4"	30	4 rows	17.633	6"	50	4 rows
17.629	4"	40	3 rows	17.626	6"	60	6 rows
17.624	4"	50	4 rows	17.627	6"	70	6 rows
17.630	4"	60	3 rows	17.628	8"	70	7 rows
17.631	5"	45	3 rows				



### 4 KNIFE EDGE with LEATHER CENTERS

Use for buffing in crevices. Sold individually.

No.	Diameter	Ply	Stitching
17.643	3"	9	3 rows
17.644	4"	12	5 rows
17.645	5"	12	7 rows
17.646	6"	12	9 rows

**Safety Tip:** Always wear proper eye protection when polishing.

## FINEX MUSLIN BUFFS



### 1 FINEX MUSLIN BUFFS with PLASTIC CENTERS

Unstitched and used with rouge to produce a high finish. Sold individually.

No.	Diameter	Ply	No.	Diameter	Ply
17.716	3"	36	17.721	5"	54
17.717	3"	54	17.722	6"	54
17.718	4"	28	17.723	6"	63
17.719	4"	36	17.724	8"	54
17.720	4"	54			



### 2 MINIATURE FINEX MUSLIN BUFFS

Designed for polishing small and difficult to reach areas. Use with mandrels listed below. \*\* Sold by dozen.

No.	Diameter	Ply	Stitching
17.615	7/8"	16	1 rows
17.616	1"	16	1 rows
17.61601	1"	16	2 rows
17.617	1 1/4"	16	3 rows
17.618	1 1/2"	16	3 rows
17.619	2"	16	4 rows



### 3 REGULAR MUSLIN BUFFS with SHELLAC CENTERS

Use with abrasive compounds such as tripoli to remove scratches. Sold individually.

No.	Dia.	Ply	Stitching	No.	Dia.	Ply	Stitching
17.571	2"	30	2 rows	17.580	4"	30	3 rows
17.573	2 1/2"	30	2 rows	17.581	4"	42	3 rows
17.575	3"	24	3 rows	17.583	5"	30	3 rows
17.576	3"	30	3 rows	17.584	5"	45	3 rows
17.577	3"	35	3 rows	17.586	6"	30	4 rows
17.579	4"	24	3 rows	17.589	8"	55	4 rows



### 4 MINI-MUSLIN BUFFS

All have 1" diameter. Mounted buffs have a 3/32" shank. For unmounted buffs use mandrels listed below. \*\* Sold by dozen.

No.	Style	Hole Diameter	Ply
17.910	Unmounted Chemkote	3/32"	8
17.911	Unmounted Muslin	3/32"	12
17.912	Mounted Chemkote	—	8
17.913	Mounted Muslin	—	12

\*\* Wheel mandrels

3/32" shank

- No. 43.130 Steel wheels, 1/16" arbor holes.
- No. 43.132 NP steel wheels, 1/16" arbor holes.
- No. 43.134 SS steel wheels, 1/16" arbor holes.
- No. 43.128 Mandrel with reinforced screw.

1/8" shank

- No. 43.158 NP steel wheels, 1/16" arbor holes.
- No. 43.162 NP steel wheels, 1/8" arbor holes.
- No. 43.156 Mandrel with reinforced screw.

### 5 SPECIAL SHAPE MUSLIN BUFFS

Well suited for polishing interior and broad surfaces. Sold individually.

No.	Shape	Diameter	Length
17.610	Cylinder	2"	1 1/4"
17.831	Goblet	2"	1 1/4"
17.832	Goblet	2 1/2"	1 1/4"
17.833	Goblet	3"	1 1/4"
17.834	Goblet	4"	2"
17.852	Tapered	3/4"-2"	1 1/4"
17.853	Tapered	1"-2 1/2"	2 1/4"



Safety Tip: Always wear proper eye protection when polishing.

## CHEMKOTE BUFFS

More aggressive, treated muslin helps remove surface scratches from work. Excellent for use with tripoli and abrasive compounds. Sold individually.



### 1 CHEMKOTE YELLOW BUFFS with SHELLAC CENTER

No.	Diameter	Ply	Stitching
17.550	1"	16	1 row
17.551	3"	30	3 rows
17.55101	3"	40	3 rows
17.552	4"	30	3 rows
17.553	4"	40	3 rows
17.540	4"	50	3 rows
17.54001	4"	60	3 rows
17.54004	5"	40	3 rows
17.554	5"	45	3 rows
17.541	5"	50	3 rows
17.542	5"	60	3 rows
17.543	6"	30	4 rows
17.544	6"	40	4 rows
17.555	6"	50	4 rows
17.545	6"	60	4 rows

### 2 CHEMKOTE YELLOW BUFFS with LEATHER CENTER

No.	Diameter	Ply	Stitching
17.55201	4"	30	3 rows
17.55301	4"	40	3 rows
17.55401	4"	50	3 rows
17.55402	4"	60	3 rows
17.55404	5"	30	3 rows
17.55405	5"	40	3 rows
17.556	5"	50	4 rows
17.55601	5"	60	4 rows
17.55602	6"	30	4 rows
17.55603	6"	40	4 rows
17.557	6"	50	4 rows
17.558	6"	60	4 rows

### 3 CHEMKOTE KNIFE EDGE BUFFS

No.	Diameter	Ply	Stitching
17.562	3"	9	2 rows
17.560	4"	12	5 rows
17.563	5"	12	7 rows
17.561	6"	12	8 rows



**Safety Tip:** Always wear proper eye protection when polishing.

## SPECIALTY BUFFS



### 1 BERRY BUFFS

Use the best buff available for final polishing of platinum. Stiff, chemically treated muslin with good cutting action and high compound retention. Provides high lustre. Reduce polishing time. Durable and long lasting. Sold individually.

No.	Diameter	Ply	Stitching
17.530	6"	30	4 rows
17.531	4"	40	3 rows
17.53101	5"	40	3 rows
17.53102	6"	50	4 rows
17.566	4" Knife Edge	12	7 rows
17.567	6" Knife Edge	12	10 rows

Hint: Use our uniquely colored Berry Buffs exclusively for your platinum work to avoid cross contamination from other metals.

### 2 ORANGE BUFFS

Durable, treated muslin. Ideal for use with aggressive compounds to remove scratches from gold. Excellent compound retention. Provides robust polishing for a high lustre on all hard metals. Sold individually.

No.	Diameter	Ply	Stitching
17.524	3"	50	3 rows
17.525	4"	40	3 rows
17.526	4"	50	3 rows
17.52601	5"	50	4 rows
17.527	5"	40	3 rows
17.528	5"	60	5 rows
17.529	6"	50	5 rows
17.52901	6"	60	5 rows



### 3 BLUE BUFFS

No.	Diameter	Ply
17.510	4"	50
17.511	5"	50
17.512	6"	50
17.520	6" Knife Edge	12



### 4 DENIM BUFF

No. 17.595 4" x 1/2"  
No. 17.596 6" x 1/2"

Safety Tip: Always wear proper eye protection when polishing.



**1 GREEN BUFF**

No. 17.597 4" x 1/2"  
 No. 17.598 6" x 1/2"



**2 DIXCEL® COTTON FLANNEL BUFFS**

Use with rouge for final polishing. Made of soft cotton flannel, stitched with shellac centers. Sold individually.

No.	Diameter	Ply	Stitching
17.200	2"	25	2 rows
17.201	2½"	25	2 rows
17.203	3"	30	3 rows
17.205	4"	30	3 rows
17.206	5"	30	3 rows
17.207	6"	30	4 rows
17.208	8"	30	4 rows



**3 SUPER BUFFS**

Made of 100% cotton. Patented process removes impurities and makes the cloth finer and nearly lint-free. With ordinary abrasive elements removed, Super Buffs last up to 50% longer with minimal fraying and better compound retention. Achieve a smooth, uniform finish with superior coloring quality every time.

**Shellac Center - Sold individually**

No.	Diameter	Ply	Stitching
17.704	4"	50	4 rows
17.705	5"	55	4 rows
17.706	6"	60	4 rows

**Plastic Center - Sold individually**

No.	Diameter	Ply
17.707	4"	36
17.708	5"	54
17.709	6"	54

**Midget - Sold by the dozen**

No.	Diameter	Ply	Stitching
17.700	7/8"	16	1 row
17.701	1¼"	16	2 rows
17.702	1½"	16	3 rows
17.703	2"	16	4 rows

**Safety Tip:** Always wear proper eye protection when polishing.

## MISCELLANEOUS BUFFS

### 1 CHAMOIS BUFFS

Use with rouge to produce the highest finish on gold. Stitched with leather patch on center for firm grip on tapered spindle. Sold individually.

No.	Diameter	Ply	Stitching
17.135	1"	5	1 row
17.136	2"	12	2 rows
17.137	2½"	12	2 rows
17.138	3"	12	3 rows
17.139	4"	18	3 rows
17.140	5"	18	3 rows
17.141	6"	18	4 rows



### 2 DIXEL® MINIATURE CHAMOIS BUFFS

Get the best possible finish on hard-to-reach places. Three-ply wheels. Use with No. 43.128 mandrel.

No. 17.132 ⅝" diameter. Sold by dozen

No. 17.134 ¾" diameter. Sold by dozen

No. 17.129 Assorted buffs. Box of 25

### 3 BUFFS for VIGOR MULTI-GRINDER (No. 47.0217)

Sold individually.

No. 17.01220 3" Extra fine muslin

No. 17.01221 3" Cotton flannel

No. 17.01222 3" x ½" x ⅜" Felt



### 4 MINIATURE BUFF ASSORTMENT

Contains two ⅜" mandrels (which can be used on flexshafts) and six of our most popular polishing items: 1 chamois buff, 1 muslin wheel, 1 felt cone and 3 felt wheels. Packaged in a handy plastic box. Sold individually.

No. 17.126

### 5 MINIATURE SATIN FINISH BUFFS

Mounted buffs on ⅜" (2.4 mm) mandrels. Great for texturing small pieces. Sold by the dozen.

No.	Grade	Diameter
17.901	Fine	¾"
17.902	Medium	¾"
17.908	Fine	1"
17.909	Medium	1"

Maximum 30,000 RPM recommended.





### 1 ALUMINUM OXIDE FLAP WHEELS

Use these versatile wheels for watch bands or for light de-burring and polishing of non-ferrous metals. They replace hand pads and reduce the need for a finishing operation. Great for satin finishing of steel, and ideal for surface contaminant removal. Sold individually.

- No. **17.861** Fine
- No. **17.862** Coarse
- No. **17.863** Extra Fine
- No. **17.864** Medium



### 2 MATTE FINISH WHEELS

Use to obtain matte finishes on metal, wood and plastic. Nylon fibers impregnated with abrasive granules. 3" diameter, 3/4" thick, 1/4" arbor hole. Sold individually.

- No. **17.870** Fine
- No. **17.871** Medium



### 3 MINIATURE MATTE WHEELS

1" diameter, 1/4" thick, 1/8" arbor hole. Use with No. 43.162 mandrel. Sold individually.

- No. **17.875** Fine
- No. **17.876** Medium



### 4 SATIN FINISH BUFFS

Use dry to produce a satin finish on gold, silver and other metals. Synthetic fiber buffs are 2 or 3 ply. Leather patches in center to provide firm grip on tapered spindle. Sold individually.

No.	Diameter	Ply	Grade
<b>17.899</b>	3"	3	Fine
<b>17.897</b>	3"	3	Medium
<b>17.898</b>	3"	3	Coarse
<b>17.893</b>	4"	2	Fine
<b>17.891</b>	4"	2	Medium
<b>17.892</b>	4"	2	Coarse
<b>17.896</b>	4"	3	Fine
<b>17.894</b>	4"	3	Medium
<b>17.895</b>	4"	3	Coarse

**Safety Tip:** Always wear proper eye protection when polishing.



**1 GROBET USA® HEAVY-DUTY SPLIT LAP MACHINE**

Built for professional use in a variety of tough applications. 3450 RPM, 1/2 HP ball-bearing motor. Features rugged steel base, on/off switch, 3" inlet for connection to dust collector, heavy-duty steel hood, adjustable light socket, and tapered spindle. One-year warranty. Shipping weight 46 lbs.

- No. **17.945** 110V model
- No. **17.945X** 220V model
- No. **17.94501** Spindle for split lap machine



**2 PARAMOUNT™ FELT SPLIT LAPS**

The standard of excellence in split lap performance. Each wheel is balanced, with holes in the precise center to ensure smooth operation. Perfectly concentric slits provide outstanding visibility of the item being polished. 1/2" thick with beveled edges. Each lap is packaged inside plastic to eliminate discoloration and provide resistance to breakage during shipping. Sold individually.

No.	Description	Size
<b>17.956</b>	Medium	6"
<b>17.957</b>	Hard	6"
<b>17.958</b>	Rock Hard	6"
<b>17.959</b>	Flint Hard	6"



**3 MX SPLIT LAP**

Multi-laminated, flexible, cotton split-laps are impregnated with aluminum oxide abrasive grains. The smooth, controlled, cool grinding action produces a consistent finish on most metals. Maximum rating is 6050 RPM. Measures 6" x 1/4", with 3/8" arbor hole. Sold individually.

No. **17.975**

**HAND BUFFS**



**4 FELT HAND BUFFS**

Use for cleaning, polishing and finishing metals and stones. Made of hard felt, mounted on wood handle 11" L x 7/8" W. Sold by dozen.

No. **17.100**



**5 CHAMOIS HAND BUFFS**

Use for cleaning, polishing and finishing metals and stones. Strips of chamois glued to wood sticks 11" L x 7/8" W. Sold by dozen.

No. **17.094**

**Safety Tip: Always wear proper eye protection when polishing.**

## POLISHING CLOTHS



### 1 FABULUSTRE® POLISHING CLOTHS

Keep hands clean when polishing with rouge! Double cloth—one side impregnated with jeweler's rouge and the other side is a final polish cloth. Measures 9" x 11". Individually packed in plastic pouches.

Sold by box of 12.

No. 17.076



### 2 SHINO CLOTHS

Double cloth, impregnated with jeweler's rouge. Measures 12" x 14". Packed individually in plastic pouch.

No. 17.090



### 3 GROBET LINTLESS CLOTH

The Grobet lintless cloth is made from an untreated micro fiber that will not snag or shred. The texture and softness of the light blue colored cloth is perfect for cleaning precious stones and diamonds. Each cloth measures 9" x 10" (230 x 260mm) and is individually packaged.

No. 17.075



### 4 SELVYT™ CLOTHS

High-quality polishing cloth. Soft, velvety, no-lint texture polishes surfaces without scratching. Use on jewelry, silverware, eyeglasses, records, etc. It will retain its softness and suppleness even after repeated washings. Sold individually.

No.	Dimensions	Letter
17.080R	5" x 5"	O
17.081R	10" x 10"	A
17.082R	14" x 14"	B
17.083R	17" x 14"	C

### 5 ULTRA-SOFT CONNOISSEURS® POLISHING CLOTH

A rougeless, dual-cloth buffing system. Ultra-Soft for Jewelry cleans and buffs gold and silver jewelry. Ultra-Soft for silver lifts tarnish from sterling silver, silver plate, flatware and holloware, while leaving a protective, anti-tarnish coating. Measures 11" x 14". Sold individually.

No. 17.0270 For Jewelry

No. 17.0271 For Silver





Panther has earned a reputation for the highest standards in precision tool production in the world. Our burs and tools are manufactured on the most technically advanced computer assisted machinery in existence. Only the finest quality hardened tool steel is used. Each tool is individually hand inspected before leaving the factory. Our highly trained technicians take pride in producing the most exceptional, durable precision burs available anywhere. Once you experience the performance of a Panther bur, you will never accept a substitute.

**1 ROUND #1**



**77.1097** Set of 12

- 005
- 008
- 009
- 010
- 012
- 014
- 015
- 016
- 018
- 021
- 023
- 025

**2 ROUND #1**



**77.1098** Set of 12

- 031
- 033
- 035
- 040
- 045
- 050
- 055
- 060
- 065
- 070
- 075
- 080

**3 ROUND #1**



**77.1099** Set of 24

- 004
- 005
- 006
- 007
- 008
- 009
- 010
- 011
- 012
- 013
- 014
- 015
- 016
- 017
- 018
- 019
- 020
- 021
- 022
- 023
- 025
- 027
- 029
- 031

**4 WHEEL #2**



**77.1740** Set of 12

- 006
- 007
- 008
- 009
- 010
- 012
- 014
- 016
- 018
- 021
- 023
- 025

**5 INVERTED CONE #3**



**77.1840** Set of 12

- 006
- 007
- 007
- 008
- 009
- 010
- 012
- 014
- 016
- 018
- 021
- 023

**6 CONE #5**



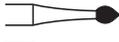
**77.1640** Set of 12

- 009
- 010
- 012
- 014
- 016
- 018
- 021
- 023
- 025
- 027
- 029
- 031

**1 BUD #6**



**77.1560** Set of 12

- 009 
- 010 
- 012 
- 014 
- 016 
- 018 
- 021 
- 023 
- 025 
- 027 
- 029 
- 031 

**2 CYLINDER CROSS CUT #21**



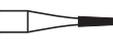
**77.2140** Set of 12

- 006 
- 007 
- 008 
- 009 
- 010 
- 012 
- 014 
- 016 
- 018 
- 021 
- 023 
- 025 

**3 CONE SQ. CROSS CUT #23**



**77.2240** Set of 12

- 006 
- 007 
- 008 
- 009 
- 010 
- 011 
- 012 
- 013 
- 014 
- 016 
- 018 
- 021 

**4 TWIST DRILL #77**



**77.2699** Set of 12

- 005 
- 006 
- 007 
- 008 
- 009 
- 010 
- 011 
- 012 
- 013 
- 014 
- 015 
- 016 

**5 KNIFE EDGE CUT #249**



**77.1398** Set of 12

- 009 
- 010 
- 011 
- 012 
- 013 
- 015 
- 020 
- 030 
- 050 
- 070 
- 090 
- 100 

PANTHER BUR SETS



**1 HART #446**



**77.1299** Set of 12

- 010
- 011
- 012
- 014
- 015
- 016
- 017
- 018
- 019
- 021
- 023
- 029

**2 HART #156C**



**77.1197** Set of 12

- 009
- 010
- 012
- 014
- 016
- 018
- 020
- 021
- 023
- 029
- 031
- 035

**3 HART #156C**



**77.1198** Set of 12

- 027
- 029
- 030
- 031
- 033
- 035
- 037
- 040
- 042
- 045
- 047
- 050

**4 HART #156C**



**77.1199** Set of 24

- 009
- 010
- 011
- 012
- 013
- 014
- 015
- 016



- 017
- 018
- 019
- 020
- 021
- 023
- 025
- 027

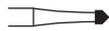


- 029
- 030
- 031
- 033
- 035
- 037
- 040
- 045

**1 STONE SETTING #413**



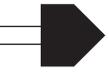
**77.1497** Set of 12

- 010 
- 012 
- 015 
- 016 
- 018 
- 020 
- 021 
- 025 
- 030 
- 033 
- 035 
- 040 

**2 STONE SETTING #413**



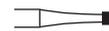
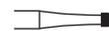
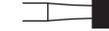
**77.1498** Set of 12

- 030 
- 033 
- 035 
- 037 
- 040 
- 042 
- 045 
- 047 
- 050 
- 060 
- 070 
- 080 

**3 STONE SETTING #413**



**77.1499** Set of 24

- 010 
- 012 
- 013 
- 015 
- 016 
- 017 
- 018 
- 019 
- 020 
- 021 
- 022 
- 023 
- 025 
- 027 
- 030 
- 033 
- 035 
- 037 
- 040 
- 045 
- 047 
- 050 
- 060 

**4 CUP #77B**



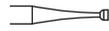
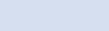
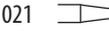
**77.2898** Set of 12

- 010 
- 011 
- 012 
- 014 
- 016 
- 018 
- 019 
- 021 
- 023 
- 025 
- 027 
- 029 

**5 CUP #77B**

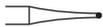


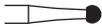
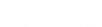
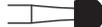
**77.2899** Set of 18

- 008 
- 009 
- 010 
- 011 
- 012 
- 012 
- 013 
- 014 
- 015 
- 016 
- 017 
- 018 
- 019 
- 021 
- 023 
- 025 
- 027 
- 029 

**ROUND - Figure 1**



- 77.1003 003 
- 77.1004 004 
- 77.1005 005 
- 77.1006 006 
- 77.1007 007 
- 77.1008 008 
- 77.1009 009 
- 77.1010 010 
- 77.1011 011 
- 77.1012 012 
- 77.1013 013 
- 77.1014 014 
- 77.1015 015 
- 77.1016 016 
- 77.1017 017 
- 77.1018 018 
- 77.1019 019 
- 77.1020 020 
- 77.1021 021 
- 77.1022 022 

- 77.1023 023 
- 77.1024 024 
- 77.1025 025 
- 77.1026 026 
- 77.1027 027 
- 77.1028 028 
- 77.1029 029 
- 77.1030 030 
- 77.1031 031 
- 77.1033 033 
- 77.1035 035 
- 77.1037 037 
- 77.1040 040 
- 77.1042 042 
- 77.1045 045 
- 77.1047 047 
- 77.1050 050 

- 77.1055 055 
- 77.1060 060 
- 77.1065 065 
- 77.1070 070 
- 77.1075 075 
- 77.1080 080 
- 77.1085 085 
- 77.1090 090 
- 77.1095 095 
- 77.1096 100 

**WHEEL - Figure 2**



- 77.1706 006 
- 77.1707 007 
- 77.1708 008 
- 77.1709 009 
- 77.1710 010 
- 77.1712 012 
- 77.1714 014 

- 77.1716 016 
- 77.1718 018 
- 77.1721 021 
- 77.1723 023 
- 77.1725 025 
- 77.1727 027 
- 77.1728 028 

**INVERTED CONE - Figure 3**



- 77.1806 006 
- 77.1807 007 
- 77.1808 008 
- 77.1809 009 
- 77.1810 010 
- 77.1812 012 
- 77.1814 014 

- 77.1816 016 
- 77.1818 018 
- 77.1821 021 
- 77.1823 023 
- 77.1825 025 
- 77.1827 027 
- 77.1829 029 

**HART 90° - Figure 156C**

					
77.1105 005		77.1117 017		77.1130 030	
77.1106 006		77.1118 018		77.1131 031	
77.1107 007		77.1119 019		77.1133 033	
77.1108 008		77.1120 020		77.1135 035	
77.1109 009		77.1121 021		77.1137 037	
77.1110 010		77.1122 022		77.1140 040	
77.1111 011		77.1123 023		77.1142 042	
77.1112 012		77.1124 024		77.1145 045	
77.1113 013		77.1125 025		77.1147 047	
77.1114 014		77.1127 027		77.1150 050	
77.1115 015		77.1129 029			
77.1116 016					

**HART 70°/ THIN - Figure 446**

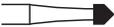
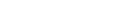
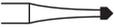
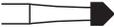
					
77.1209 009		77.1218 018		77.1231 031	
77.1210 010		77.1219 019		77.1233 033	
77.1211 011		77.1220 020		77.1235 035	
77.1212 012		77.1221 021		77.1237 037	
77.1213 013		77.1222 022		77.1247 047	
77.1214 014		77.1223 023			
77.1215 015		77.1225 025			
77.1216 016		77.1227 027			
77.1217 017		77.1229 029			



PANTHER JEWELERS' BURS



**SETTING BUR - Figure 413**

			
77.1409 009 	77.1420 020 	77.1433 033 	77.1450 050 
77.1410 010 	77.1421 021 	77.1435 035 	77.1460 060 
77.1412 012 	77.1422 022 	77.1437 037 	77.1470 070 
77.1413 013 	77.1423 023 	77.1440 040 	77.1480 080 
77.1414 014 	77.1424 024 	77.1442 042 	
77.1415 015 	77.1425 025 	77.1445 045 	
77.1416 016 	77.1427 027 	77.1447 047 	
77.1417 017 	77.1429 029 		
77.1418 018 	77.1430 030 		
77.1419 019 	77.1431 031 		

**BUD - Figure 6**

	
77.1506 006 	77.1527 027 
77.1507 007 	77.1529 029 
77.1508 008 	77.1531 031 
77.1509 009 	77.1533 033 
77.1510 010 	77.1535 035 
77.1512 012 	77.1537 037 
77.1514 014 	77.1540 040 
77.1516 016 	77.1542 042 
77.1518 018 	77.1545 045 
77.1521 100 	77.1547 047 
77.1523 023 	77.1550 050 
77.1525 025 	

**CONE - Figure 5**

	
77.1608 008 	77.1627 027 
77.1609 009 	77.1629 029 
77.1610 010 	77.1630 030 
77.1612 012 	77.1631 031 
77.1614 014 	
77.1616 016 	
77.1618 018 	
77.1620 020 	
77.1621 021 	
77.1622 022 	
77.1623 023 	
77.1625 025 	



**CYLINDER,  
CROSS CUT #21**



- 77.2106 006
- 77.2107 007
- 77.2108 008
- 77.2109 009
- 77.2110 010
- 77.2112 012
- 77.2114 014
- 77.2116 016
- 77.2118 018
- 77.2121 021
- 77.2123 023
- 77.2125 025
- 77.2127 027

**CYLINDER  
SQUARE PLAIN #15**



- 77.3507 007
- 77.3508 008
- 77.3509 009
- 77.3510 010
- 77.3512 012
- 77.3514 014
- 77.3516 016
- 77.3518 018
- 77.3521 021
- 77.3527 027

**CONE SQUARE,  
CROSS CUT #23**



- 77.2206 006
- 77.2207 007
- 77.2208 008
- 77.2209 009
- 77.2210 010
- 77.2211 011
- 77.2212 012
- 77.2213 013
- 77.2214 014
- 77.2215 015
- 77.2216 016
- 77.2218 018
- 77.2221 021
- 77.2223 023
- 77.2225 025

**CYLINDER  
SQUARE PLAIN #17**



- 77.3707 007
- 77.3708 008
- 77.3709 009
- 77.3710 010
- 77.3712 012
- 77.3714 014
- 77.3716 016
- 77.3718 018

**CUP - Figure 256A**



- 77.3108 008
- 77.3109 009
- 77.3110 010
- 77.3111 011
- 77.3112 012
- 77.3113 013
- 77.3114 014
- 77.3115 015
- 77.3116 016
- 77.3117 017
- 77.3118 018
- 77.3121 021
- 77.3123 023

**CUP - Figure 256S**



- 77.3008 008
- 77.3010 010
- 77.3012 012
- 77.3014 014
- 77.3016 016
- 77.3018 018

**CUP - Figure 77B**



- 77.2808 008
- 77.2809 009
- 77.2810 010
- 77.2811 011
- 77.2812 012
- 77.2813 013
- 77.2814 014
- 77.2815 015
- 77.2816 016
- 77.2817 017
- 77.2818 018
- 77.2819 019
- 77.2820 020



- 77.2821 021
- 77.2823 023
- 77.2825 025
- 77.2827 027
- 77.2829 029
- 77.2830 030
- 77.2835 035
- 77.2840 040
- 77.2845 045
- 77.2850 050

PANTHER JEWELERS' BURS



**KNIFE EDGE CUTTER - Figure 249**

77.1309 009	77.1317 017	77.1330 030	77.1370 070
77.1310 010	77.1318 018	77.1331 031	77.1380 080
77.1311 011	77.1319 019	77.1333 033	77.1390 090
77.1312 012	77.1320 020	77.1335 035	77.1396 100
77.1313 013	77.1322 022	77.1337 037	
77.1314 014	77.1323 023	77.1340 040	
77.1315 015	77.1325 025	77.1345 045	
77.1316 016	77.1327 027	77.1350 050	

**BUD - Figure 75**

77.3240 040
77.3250 050
77.3260 060
77.3270 070
77.3280 080

**BUD - Conical - Figure 79**

77.3340 040
77.3350 050

**POINTED - Figure 515**

77.2423 023

**KRAUSE - Figure 256**

77.2310 010
77.2312 012

**CIRCULAR - Figure 231S**

77.2023 023
77.2029 029
77.2035 035
77.2040 040

**WHEEL - Figure 431**

77.1915 015
77.1920 020

**UNMOUNTED SAW - Figure 189**

77.9125 125 0.12 mm
77.9160 160 0.12 mm
77.9190 190 0.12 mm
77.9220 220 0.12 mm



## PANTHER JEWELERS' BURS



### TWIST DRILL - Figure 77

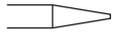
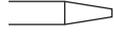
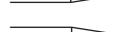
		
77.2605 005 	77.2613 013 	77.2622 022 
77.2606 006 	77.2614 014 	77.2623 023 
77.2607 007 	77.2615 015 	
77.2608 008 	77.2616 016 	
77.2609 009 	77.2617 017 	
77.2610 010 	77.2618 018 	
77.2611 011 	77.2620 020 	
77.2612 012 	77.2621 021 	

### DIAMOND TWIST DRILL - Figure 77D

	77.2508 008 
	77.2509 009 
	77.2510 010 
	77.2512 012 
	77.2514 014 

## PANTHER BEADING TOOLS

### BEADING TOOLS

		
77.2900 025 0 	77.2908 065 8 	77.2916 105 16 
77.2901 030 1 	77.2909 070 9 	77.2917 110 17 
77.2902 035 2 	77.2910 075 10 	77.2918 115 18 
77.2903 040 3 	77.2911 080 11 	77.2919 120 19 
77.2904 045 4 	77.2912 085 12 	77.2920 125 20 
77.2905 050 5 	77.2913 090 13 	77.2921 130 21 
77.2906 055 6 	77.2914 095 14 	77.2922 135 22 
77.2907 060 7 	77.2915 100 15 	

### SET of 12 with HANDLE

77.2930



### SET of 23 with HANDLE

77.2931



### HANDLE

77.2940



PANTHER TUNGSTEN CARBIDE JEWELERS' BURS



**TC ROUND - Figure H71**



- 77.5103 003
- 77.5104 004
- 77.5105 005
- 77.5106 006
- 77.5107 007
- 77.5108 008
- 77.5109 009
- 77.5110 010
- 77.5111 011
- 77.5112 012
- 77.5113 013

- 77.5114 014
- 77.5115 015
- 77.5116 016
- 77.5117 017
- 77.5118 018
- 77.5119 019
- 77.5120 020
- 77.5121 021
- 77.5122 022
- 77.5123 023

**TC WHEEL - Figure H3**



- 77.5212 012
- 77.5214 014
- 77.5216 016

**TC INVERTED CONE - Figure H30**



- 77.6306 006
- 77.6308 008
- 77.6309 009
- 77.6310 010
- 77.6312 012
- 77.6314 014
- 77.6316 016

**TC CONE SQUARE - Figure H23**



- 77.6408 008
- 77.6409 009
- 77.6412 012

**TC CONE ROUND - Figure H23A**



- 77.6810 010
- 77.6812 012
- 77.6816 016

**TC TAPERED ROUND END - Figure H23RS**



- 77.5308 008
- 77.5309 009
- 77.5310 010

**TC CONE ROUND CROSS CUT - Figure H23RSE**



- 77.6909 009
- 77.6910 010

**TC CONE ROUND CROSS CUT FINE - Figure H33**



- 77.5810 010
- 77.5812 012
- 77.5816 016

**TC CONE ROUND CROSS CUT EXTRA FINE - Figure H23L**



- 77.5709 009
- 77.5710 010

**TC CONE SQUARE CROSS CUT - Figure H33L**



- 77.5409 009
- 77.5410 010
- 77.5412 012
- 77.5414 014
- 77.5416 016
- 77.5421 021

**TC CONE SQUARE - Figure H23L**



- 77.5509 009
- 77.5510 010
- 77.5512 012
- 77.5516 016



**TC CONE SQUARE CROSS CUT  
LONG - Figure 33L**



- 77.6509 009
- 77.6510 010
- 77.6512 012
- 77.6516 016
- 77.6521 021

**TC TWIST DRILL - Figure 203**



- 77.6205 005
- 77.6206 010
- 77.6207 012
- 77.6208 016
- 77.6209 021
- 77.6210 010
- 77.6211 011



- 77.6212 012
- 77.6213 013
- 77.6214 014
- 77.6215 015
- 77.6216 016
- 77.6217 017
- 77.6218 018



- 77.6219 019
- 77.6220 020
- 77.6221 021
- 77.6222 022
- 77.6223 023

**TC CYLINDER LONG -  
Figure H21L**



- 77.6709 009
- 77.6710 010
- 77.6712 012
- 77.6714 014

**TC CYLINDER PLAIN -  
Figure H21**



- 77.5908 008
- 77.5909 009
- 77.5910 010
- 77.5912 012
- 77.5914 014
- 77.5916 016
- 77.5918 018

**TC CYLINDER CROSS CUT -  
Figure H31**

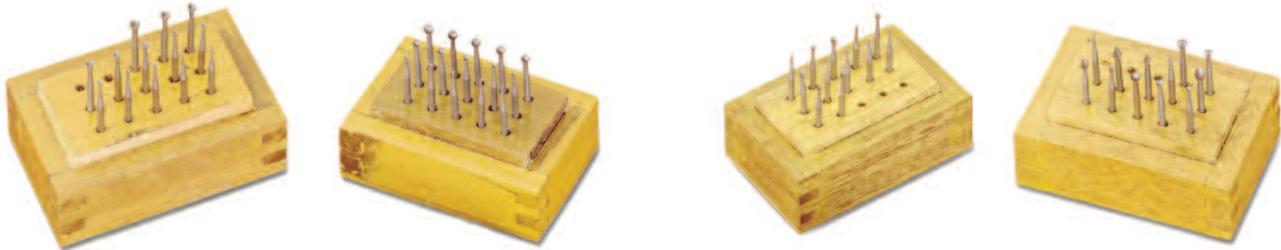


- 77.6108 008
- 77.6109 009
- 77.6110 010
- 77.6112 012
- 77.6114 014
- 77.6116 016
- 77.6118 018



## JEWELERS' BURS

Made of tungsten vanadium steel.  $\frac{3}{32}$ " (2.4 mm) diameter shanks.  $1\frac{3}{4}$ " (44 mm) long. Can be used with flex shaft machines or micromotors.



### 1 SINGLE SHAPE BUR ASSORTMENTS

Sets of single shape burs in assorted sizes. Packaged in a handy, hardwood box.

No.	Qty.	Shape
18.150	15	Ball
18.151	15	Bud
18.153	13	Cup
18.154	15	Hart

### 2 MULTIPLE SHAPE BUR ASSORTMENTS

#### Small Sizes

Set of various shaped burs in wood box. Contains 12 burs; three each: ball, bud, cone and inverted cone, in sizes 1, 5, and 8.

No. 18.157

#### Large Sizes

Set of various shapes in wood stand. Contains 12 burs; three each: ball, bud, cone and hart in sizes 6, 10, and 14.

No. 18.158

## BUSCH® BRAND BURS

Made in Germany with a reputation for consistent and exacting quality. For many years, Busch burs have been the standard for jewelers everywhere.



### 3 BUR SET - 156C

Set of 12 Hart burs - 156C  
No. 18.161



### 4 BUR SET - 156C

Set of 6 Hart burs - 156C  
No. 18.164



### 5 BUR SET - 413

Set of 16 Stone Setting burs - #413  
No. 18.162



### 6 DRILL SET

Set of 12 drills  
No. 18.163



**BALL BURS**



ISO	Fig. #1
0025	18.172
003	18.173
0035	18.174
004	18.175
005	18.176
006	18.177
007	18.178
008	18.179
009	18.180
010	18.182
011	18.183
012	18.184
013	18.185
014	18.186
015	18.188
016	18.190
017	18.191



ISO	Fig. #1
018	18.192
019	18.193
020	18.171
021	18.194
022	18.195
023	18.196
024	18.197
025	18.198
026	18.199
027	18.200
028	18.20001
029	18.201
030	18.20101
031	18.202
033	18.203
035	18.204
037	18.205



ISO	Fig. #1
040	18.206
042	18.207
045	18.208
047	18.209
050	18.210
055	18.212
060	18.214
065	18.216
070	18.218
075	18.220
080	18.222
085	18.224
090	18.22401
095	18.22402
100	18.22403

**WHEEL BURS**



ISO	Fig. #2
006	18.211
007	18.213
008	18.215
009	18.217
010	18.219
012	18.221
014	18.223
016	18.225
018	18.226
021	18.227
023	18.228
025	18.229
027	18.230
029	18.231
040	18.234
045	18.235
050	18.236

**CONE BURS**



ISO	Fig. #5
009	18.290
010	18.291
012	18.292
014	18.293
016	18.295
018	18.296
021	18.297
023	18.298
025	18.299
027	18.300
029	18.301
031	18.302
033	18.303
035	18.304
037	18.305
040	18.306
045	18.308
050	18.310

**CONE SQUARE CROSS CUT BURS**



ISO	Fig. #23
006	18.337
007	18.338
008	18.339
009	18.340
010	18.341
012	18.342
014	18.343
016	18.346
018	18.348
021	18.350
025	18.354
027	18.356
029	18.357
031	18.358

BUSCH BRAND JEWELERS' BURS



**CONE SQUARE PLAIN BURS**



ISO	Fig. #17
007	18.368
008	18.369
009	18.370
010	18.371
012	18.372
014	18.373
016	18.374
018	18.375
021	18.376

**CYLINDER SQUARE PLAIN BURS**



ISO	Fig. #15
007	18.468
008	18.469
009	18.470
010	18.472
012	18.474
014	18.476
016	18.480
018	18.482
021	18.484
023	18.486
031	18.492

**CYLINDER SQUARE CROSS CUT BURS**



ISO	Fig. #21
006	18.427
007	18.428
008	18.429
009	18.430
010	18.431
011	18.43101
012	18.432
013	18.43201
014	18.433
015	18.43301
016	18.437
018	18.439
021	18.441
023	18.443
025	18.444
027	18.445
029	18.446
031	18.449

**HART 90° BURS (Bearing Cutters)**



ISO	Fig. #156C
007	18.498
008	18.499
009	18.500
010	18.501
011	18.522
012	18.502
013	18.523
014	18.503
0145	18.524
015	18.504
0155	18.525
016	18.505



ISO	Fig. #156C
017	18.526
018	18.506
019	18.527
020	18.533
021	18.507
022	18.528
023	18.508
024	18.529
025	18.509
026	18.530
027	18.510
028	18.531



ISO	Fig. #156C
029	18.511
030	18.51101
031	18.512
033	18.513
035	18.514
037	18.515
040	18.516
042	18.517
045	18.518
047	18.519
050	18.520

**HART 70° BURS (Shallow Bearing Cutters)**



ISO	Fig. #446
009	18.599
010	18.600
011	18.60001
012	18.601
013	18.60101
014	18.602
015	18.60201
016	18.603
017	18.60301



ISO	Fig. #446
018	18.604
019	18.60401
020	18.60402
021	18.605
022	18.60501
023	18.606
025	18.607
027	18.608
029	18.609



ISO	Fig. #446
031	18.610
033	18.611
035	18.612
037	18.613
040	18.614
042	18.615
045	18.616
047	18.617
050	18.618



**BUD BURS**



ISO	Fig. #6
006	18.237
007	18.238
008	18.239
009	18.240
010	18.241
012	18.242
014	18.243
015	18.244
016	18.245
018	18.246
021	18.247
023	18.248
025	18.249
027	18.250
029	18.251
031	18.252
033	18.253
035	18.254
037	18.255
040	18.256
045	18.258
050	18.260

**INVERTED CONE BURS**



ISO	Fig. #3
006	18.537
007	18.538
008	18.539
009	18.540
010	18.541
012	18.542
014	18.543
015	18.544
016	18.545
018	18.546
021	18.547
023	18.548
025	18.549
027	18.534
029	18.535
031	18.536

**CUP BURS**



ISO	Fig. #77B
008	18.399
009	18.400
010	18.401
011	18.40101
012	18.402
013	18.40201
014	18.403
015	18.404
016	18.405
017	18.40501
018	18.406
019	18.40601
020	18.40602
021	18.407
022	18.40701
023	18.408
025	18.409
027	18.410
029	18.411
031	18.412
035	18.41201
040	18.41202
045	18.41203

**FAST-CUT CUP BURS**



ISO	Fig. #411C
010	18.413
012	18.414
014	18.415
015	18.416
016	18.417
018	18.418
021	18.419
023	18.420

**CLEAN-CUT CUP BURS**



ISO	Fig. #411CCC
010	18.619
011	18.620
012	18.621
013	18.622
014	18.623
015	18.624
016	18.625
018	18.626
021	18.627
023	18.628

**TWIN CUT BURS**



ISO	Fig. #411T
008	18.751
009	18.752
010	18.753
011	18.754
012	18.755
013	18.756
014	18.757
015	18.758
016	18.759
017	18.760
018	18.761
019	18.762
020	18.763

**ROUND FINISHING BURS**



ISO	Fig. #145
008	18.550
009	18.551
010	18.552
012	18.553
014	18.554
016	18.555
018	18.556
021	18.557
023	18.558
027	18.559
031	18.560
035	18.561
040	18.562
045	18.563
050	18.564

BUSCH BRAND JEWELERS' BURS



**STONE SETTING BURS**

All burs have 3/32" shank (2.4 mm).



ISO	Head Diameter (mm)	Fig. 413
010	1.00	<b>18.701</b>
0125	1.25	<b>18.70101</b>
015	1.50	<b>18.705</b>
0175	1.75	<b>18.70701</b>
020	2.00	<b>18.710</b>
0225	2.25	<b>18.71201</b>
025	2.50	<b>18.715</b>
0275	2.75	<b>18.71601</b>
030	3.00	<b>18.718</b>
0325	3.25	<b>18.719</b>
035	3.50	<b>18.720</b>
0375	3.75	<b>18.72201</b>
040	4.00	<b>18.723</b>
0425	4.25	<b>18.724</b>
045	4.50	<b>18.725</b>
0475	4.75	<b>18.72601</b>
050	5.00	<b>18.727</b>
0525	5.25	<b>18.72703</b>
055	5.50	<b>18.72701</b>
0575	5.75	<b>18.72702</b>
060	6.00	<b>18.728</b>
065	6.50	<b>18.72801</b>
070	7.00	<b>18.729</b>
075	7.50	<b>18.72901</b>
080	8.00	<b>18.730</b>

**TWIST DRILLS**



ISO	Fig. #77
005	<b>28.584</b>
006	<b>25.585</b>
007	<b>28.586</b>
008	<b>28.587</b>
009	<b>28.588</b>
010	<b>28.589</b>
011	<b>28.58901</b>
012	<b>28.590</b>
013	<b>28.59001</b>
014	<b>28.591</b>
015	<b>25.592</b>
016	<b>28.593</b>
017	<b>28.59301</b>
018	<b>28.594</b>
019	<b>28.59401</b>
020	<b>28.59402</b>
021	<b>28.595</b>
022	<b>28.59501</b>
023	<b>28.596</b>

**KRAUSE BURS**

Sold individually.



Fig. #256	Head Diameter (mm)
<b>18.571</b>	1.00
<b>18.572</b>	1.20

**WHEEL BURS with KNIFE EDGE**

Sold individually.



Fig. #161KE	Head Diameter (mm)
<b>18.646</b>	6
<b>18.647</b>	7
<b>18.648</b>	8
<b>18.650</b>	10
<b>18.652</b>	12
<b>18.654</b>	14

**WAX CARVING BURS**

Sold individually.



Fig #260A	Head Diameter (mm)
<b>18.576</b>	1.80
<b>18.578</b>	2.30
<b>18.582</b>	3.10
<b>18.590</b>	5.00

**WHEEL BURS with SAW EDGE**

Sold individually.



Fig. #2315	Head Diameter (mm)
<b>18.676</b>	2.3
<b>18.679</b>	4.0
<b>18.675</b>	5.0
<b>18.677</b>	6.0
<b>18.678</b>	8.0
<b>18.680</b>	10.0

**CARBIDE POLISHERS**

Brilliant polished finish for gold and platinum. Sold individually. Use high speed.



No.	#	Head Diameter	
		(mm)	(in)
<b>18.940</b>	552	2.30	.0906
<b>18.941</b>	550	6.00	.2358
<b>18.942</b>	554	6.00	.2358
<b>18.943</b>	553	2.30	.0906

**FOUR - PIECE CARBIDE POLISHER SET**

Set includes Nos. 18.940, 18.941, 18.942, and 18.943. No. **18.944**

## BUSCH CARBIDE BURS

Carbide burs were especially developed for application on hard alloys, such as white gold, platinum and steel.



### CARBIDE PAVE ROUND BURS



ISO	Fig. 1AU	Price
004	<b>18.315</b>	
005	<b>18.316</b>	
006	<b>18.317</b>	
007	<b>18.318</b>	
008	<b>18.319</b>	
009	<b>18.320</b>	
010	<b>18.321</b>	
011	<b>18.322</b>	
012	<b>18.323</b>	
013	<b>18.324</b>	

ISO	Fig. 1AU
014	<b>18.325</b>
015	<b>18.326</b>
016	<b>18.327</b>
017	<b>18.328</b>
018	<b>18.329</b>
019	<b>18.330</b>
020	<b>18.331</b>
021	<b>18.332</b>
022	<b>18.333</b>
023	<b>18.334</b>

### CARBIDE PAVE SAW EDGE



No.	Fig. 231F
<b>18.630</b>	023 x 002
<b>18.631</b>	023 x 002

### CARBIDE RAM ROLLERS



Fig. RR 426
<b>18.640</b> Medium
<b>18.641</b> Fine

### CARBIDE PAVE DRILLS



ISO	Fig. 42055
007	<b>28.525</b>
008	<b>28.526</b>
009	<b>28.527</b>
010	<b>28.528</b>

### PAVE SET



No.
<b>18.635</b>

### SOLID CARBIDE FLORENTINE BURS

1/8" (3.2 mm) diameter shank, with head sizes as noted. Sold individually.

No.	Shape	Head Diameter (mm)	Head Length	
			(mm)	(in)
<b>18.950</b>	Barrel	4.0	4.0	.1575
<b>18.951</b>	Cylinder	3.2	12.7	.5000
<b>18.952</b>	Pointed	3.2	12.7	.1575



BUSCH DRILLS



**DIAMOND TWIST DRILLS**



ISO	Fig. 8203
008	28.515
009	28.516
010	28.517
011	28.518
012	28.519
013	28.520
014	28.521
015	28.522

**CARBIDE TWIST DRILLS**



ISO	Fig. 4203S
007	28.602
008	28.603
009	28.604
010	28.605
011	28.606
012	28.607
013	28.608
014	28.609
015	28.610
016	28.611

**HSS TWIST DRILLS**



ISO	Fig. 203HSS
005	28.620
006	28.621
007	28.622
008	28.623
009	28.624
010	28.625
011	28.626
012	28.627
013	28.628
014	28.629
015	28.630
016	28.631
Set of 12	28.632



**1 BUSCH PEARL DRILLS**

Cup-shaped cutters on wheels used to dress up a setting, ring mounting, or any piece of jewelry, by forming a decorative bead or fine row of cuts along the edge. Sets contain six sizes plus chuck-holding handle.

**Individual Tools**

Fig. 77A	ISO
53.510	090
53.511	010
53.512	012
53.51201	014
53.513	016
53.514	021
53.515	023
53.516	025

**2 BUSCH CARBIDE PEARL DRILLS**

ISO	Fig. 4203
007	28.635
008	28.636
009	28.637
010	28.638
011	28.639
012	28.640
013	28.641
014	28.642
015	28.643
016	28.644

## HIGH SPEED STEEL BURS

Made in the USA, these hand-cut, high speed steel burs last longer than standard jeweler's burs. They offer exceptional cutting efficiency and are available in a wide variety of shapes and sizes for cutting most metals. All have 3/32" (2.4 mm) shanks and will fit most flexible shaft handpieces.

## BUR ASSORTMENTS & SETS

### BUR ASSORTMENT

Contains 24 various shapes and sizes of the most popular burs for practically every requirement. Wood case included.

No. **19.310**



### BUR SETS

Contain the most popular sizes in specific shapes.

No.	Shape	Bur Nos.	Qty.
<b>19.311</b>	Ball	1 to 15	15
<b>19.312</b>	Ball	1 to 30	29
<b>19.313</b>	Ball	1 to 34	33
<b>19.315</b>	45° Bearing	*2 to 28	14
<b>19.316</b>	45° Bearing	*2 to 34	25
<b>19.318</b>	90° Bearing	*2 to 28	14
<b>19.319</b>	90° Bearing	1 to 34	33
<b>19.321</b>	Bud	*2 to 18	15
<b>19.322</b>	Bud	*2 to 34	23
<b>19.325</b>	Cone	*2 to 34	23
<b>19.333</b>	Stone Setting	1 to 30	29
<b>19.334</b>	Stone Setting	1 to 34	33
<b>19.336</b>	Stone Setting	**1 to 26	25

\* Assorted

\*\* Excluding #21

### EXTRA-FINE BUR SETS

Now available in extra-fine sets.

No.	Shape	Bur Nos.	Qty.
<b>19.314</b>	Ball-XFine	3 to 16	14
<b>19.317</b>	45° Bearing-XFine	3 to 16	14
<b>19.320</b>	90° Bearing-XFine	3 to 16	14
<b>19.323</b>	Bud-XFine	3 to 16	14
<b>19.328</b>	70° Bearing-XFine	1 to 34	33
<b>19.329</b>	70° Bearing-XFine	3 to 16	14

### BALL BUR



Size	Diameter (mm)	No.
1	.90	<b>19.341</b>
2	1.10	<b>19.342</b>
3	1.30	<b>19.343</b>
4	1.50	<b>19.344</b>
5	1.70	<b>19.345</b>
6	1.90	<b>19.346</b>
7	2.10	<b>19.347</b>
8	2.30	<b>19.348</b>
9	2.50	<b>19.349</b>
10	2.70	<b>19.350</b>
11	2.90	<b>19.351</b>
12	3.10	<b>19.352</b>

Size	Diameter (mm)	No.
13	3.30	<b>19.353</b>
14	3.50	<b>19.354</b>
15	3.80	<b>19.355</b>
16	4.00	<b>19.356</b>
17	4.30	<b>19.357</b>
18	4.50	<b>19.358</b>
19	4.70	<b>19.359</b>
20	5.00	<b>19.360</b>
22	5.20	<b>19.362</b>
23	5.40	<b>19.363</b>
24	5.60	<b>19.364</b>
25	5.90	<b>19.365</b>

Size	Diameter (mm)	No.
26	6.30	<b>19.366</b>
27	6.70	<b>19.367</b>
28	7.20	<b>19.368</b>
29	7.60	<b>19.369</b>
30	8.00	<b>19.370</b>
31	8.90	<b>19.371</b>
32	9.60	<b>19.372</b>
33	10.40	<b>19.373</b>
34	11.10	<b>19.374</b>

# HSS JEWELERS' BURS

## BEARING 45° BUR



Size	Diameter (mm)	No.
2	1.10	<b>19.382</b>
3	1.30	<b>19.383</b>
4	1.50	<b>19.384</b>
5	1.70	<b>19.385</b>
6	1.90	<b>19.386</b>
7	2.10	<b>19.387</b>
8	2.30	<b>19.388</b>
9	2.50	<b>19.389</b>
10	2.70	<b>19.390</b>
11	2.90	<b>19.391</b>



Size	Diameter (mm)	No.
12	3.10	<b>19.392</b>
13	3.30	<b>19.393</b>
14	3.50	<b>19.394</b>
15	3.80	<b>19.395</b>
16	4.00	<b>19.396</b>
17	4.30	<b>19.397</b>
18	4.50	<b>19.398</b>
19	4.70	<b>19.399</b>
20	5.00	<b>19.400</b>
22	5.20	<b>19.402</b>



Size	Diameter (mm)	No.
24	5.60	<b>19.404</b>
26	6.30	<b>19.406</b>
28	7.20	<b>19.408</b>
30	8.00	<b>19.410</b>
34	11.10	<b>19.414</b>

## BEARING 70° BUR



Size	Diameter (mm)	No.
1	.90	<b>19.201</b>
2	1.10	<b>19.202</b>
3	1.30	<b>19.203</b>
4	1.50	<b>19.204</b>
5	1.70	<b>19.205</b>
6	1.90	<b>19.206</b>
7	2.10	<b>19.207</b>
8	2.30	<b>19.208</b>
9	2.50	<b>19.209</b>
10	2.70	<b>19.210</b>
11	2.90	<b>19.211</b>



Size	Diameter (mm)	No.
12	3.10	<b>19.212</b>
13	3.30	<b>19.213</b>
14	3.50	<b>19.214</b>
15	3.80	<b>19.215</b>
16	4.00	<b>19.216</b>
17	4.30	<b>19.217</b>
18	4.50	<b>19.218</b>
19	4.70	<b>19.219</b>
20	5.00	<b>19.220</b>
22	5.20	<b>19.222</b>
23	5.40	<b>19.223</b>



Size	Diameter (mm)	No.
24	5.60	<b>19.224</b>
25	5.90	<b>19.225</b>
26	6.30	<b>19.226</b>
27	6.70	<b>19.227</b>
28	7.20	<b>19.228</b>
29	7.60	<b>19.229</b>
30	8.00	<b>19.230</b>
31	8.90	<b>19.231</b>
32	9.60	<b>19.232</b>
33	10.40	<b>19.233</b>
34	11.10	<b>19.234</b>

## BEARING 90° BUR



Size	Diameter (mm)	No.
1	.90	<b>19.421</b>
2	1.10	<b>19.422</b>
3	1.30	<b>19.423</b>
4	1.50	<b>19.424</b>
5	1.70	<b>19.425</b>
6	1.90	<b>19.426</b>
7	2.10	<b>19.427</b>
8	2.30	<b>19.428</b>
9	2.50	<b>19.429</b>
10	2.70	<b>19.430</b>
11	2.90	<b>19.431</b>



Size	Diameter (mm)	No.
12	3.10	<b>19.432</b>
13	3.30	<b>19.433</b>
14	3.50	<b>19.434</b>
15	3.80	<b>19.435</b>
16	4.00	<b>19.436</b>
17	4.30	<b>19.437</b>
18	4.50	<b>19.438</b>
19	4.70	<b>19.439</b>
20	5.00	<b>19.440</b>
22	5.20	<b>19.442</b>
23	5.40	<b>19.443</b>



Size	Diameter (mm)	No.
24	5.60	<b>19.444</b>
25	5.90	<b>19.445</b>
26	6.30	<b>19.446</b>
27	6.70	<b>19.447</b>
28	7.20	<b>19.448</b>
29	7.60	<b>19.449</b>
30	8.00	<b>19.450</b>
31	8.90	<b>19.451</b>
32	9.60	<b>19.452</b>
33	10.40	<b>19.453</b>
34	11.10	<b>19.454</b>

# HSS JEWELERS' BURS

## BUD BUR



Size	Diameter (mm)	No.
2	1.10	<b>19.462</b>
3	1.30	<b>19.463</b>
4	1.50	<b>19.464</b>
5	1.70	<b>19.465</b>
6	1.90	<b>19.466</b>
7	2.10	<b>19.467</b>
8	2.30	<b>19.468</b>
9	2.50	<b>19.469</b>



Size	Diameter (mm)	No.
10	2.70	<b>19.470</b>
11	2.90	<b>19.471</b>
12	3.10	<b>19.472</b>
13	3.30	<b>19.473</b>
14	3.50	<b>19.474</b>
16	4.00	<b>19.476</b>
18	4.50	<b>19.478</b>
20	5.00	<b>19.480</b>



Size	Diameter (mm)	Regular
22	5.20	<b>19.482</b>
24	5.60	<b>19.484</b>
26	6.30	<b>19.486</b>
28	7.20	<b>19.488</b>
30	8.00	<b>19.490</b>
32	9.60	<b>19.492</b>
34	11.10	<b>19.494</b>

## CONE BUR



Size	Diameters (mm)	No.
2	1.10	<b>19.522</b>
3	1.30	<b>19.523</b>
4	1.50	<b>19.524</b>
5	1.70	<b>19.525</b>
6	1.90	<b>19.526</b>
7	2.10	<b>19.527</b>
8	2.30	<b>19.528</b>
9	2.50	<b>19.529</b>



Size	Diameters (mm)	Cone
10	2.70	<b>19.530</b>
11	2.90	<b>19.531</b>
12	3.10	<b>19.532</b>
13	3.30	<b>19.533</b>
14	3.50	<b>19.534</b>
16	4.00	<b>19.536</b>
18	4.50	<b>19.538</b>
20	5.00	<b>19.540</b>



Size	Diameters (mm)	Cone
22	5.20	<b>19.542</b>
24	5.60	<b>19.544</b>
26	6.30	<b>19.546</b>
28	7.20	<b>19.548</b>
30	8.00	<b>19.550</b>
32	9.60	<b>19.552</b>
34	11.10	<b>19.554</b>

## FLAME BUR



Size	Diameters (mm)	No.
2	1.10	<b>19.802</b>
4	1.50	<b>19.804</b>
6	1.90	<b>19.806</b>
8	2.30	<b>19.808</b>
10	2.70	<b>19.810</b>
12	3.10	<b>19.812</b>
14	3.50	<b>19.814</b>
16	4.00	<b>19.816</b>
18	4.50	<b>19.818</b>
20	5.00	<b>19.720</b>



Size	Diameters (mm)	No.
22	5.20	<b>19.722</b>
24	5.60	<b>19.724</b>
26	6.30	<b>19.726</b>
30	8.00	<b>19.730</b>

## CYLINDER BUR



Size	Diameters (mm)	No.
5	1.70	<b>19.565</b>
8	2.30	<b>19.568</b>
13	3.30	<b>19.573</b>
16	4.00	<b>19.576</b>
19	4.70	<b>19.579</b>
26	6.30	<b>19.586</b>
30	8.00	<b>19.590</b>
34	11.10	<b>19.594</b>

# HSS JEWELERS' BURS

## WHEEL BUR



Size	Diameters (mm)	No.
5	1.70	<b>19.745</b>
8	2.30	<b>19.748</b>
13	3.30	<b>19.753</b>
16	4.00	<b>19.756</b>
19	4.70	<b>19.759</b>
26	6.30	<b>19.766</b>
30	8.00	<b>19.770</b>
34	11.10	<b>19.774</b>

## INVERTED CONE BUR



Size	Diameters (mm)	No.
5	1.70	<b>19.635</b>
8	2.30	<b>19.638</b>
13	3.30	<b>19.643</b>
19	4.70	<b>19.649</b>
26	6.30	<b>19.656</b>
30	8.00	<b>19.660</b>

## SLIM REAMER BUR



Size	Diameters (mm)	No.
13	3.30	<b>19.713</b>
19	4.70	<b>19.719</b>

## SETTING BUR



Size	Diameters (mm)	No.
1	.90	<b>19.671</b>
2	1.10	<b>19.672</b>
3	1.30	<b>19.673</b>
4	1.50	<b>19.674</b>
5	1.70	<b>19.675</b>
6	1.90	<b>19.676</b>
7	2.10	<b>19.677</b>
8	2.30	<b>19.678</b>
9	2.50	<b>19.679</b>
10	2.70	<b>19.680</b>
11	2.90	<b>19.681</b>



Size	Diameters (mm)	No.
12	3.10	<b>19.682</b>
13	3.30	<b>19.683</b>
14	3.50	<b>19.684</b>
15	3.80	<b>19.685</b>
16	4.00	<b>19.686</b>
17	4.30	<b>19.687</b>
18	4.50	<b>19.688</b>
19	4.70	<b>19.689</b>
20	5.00	<b>19.690</b>
22	5.20	<b>19.692</b>
23	5.40	<b>19.693</b>



Size	Diameters (mm)	No.
24	5.60	<b>19.694</b>
25	5.90	<b>19.695</b>
26	6.30	<b>19.696</b>
27	6.70	<b>19.697</b>
28	7.20	<b>19.698</b>
29	7.60	<b>19.699</b>
30	8.00	<b>19.700</b>
31	8.90	<b>19.701</b>
32	9.60	<b>19.702</b>
33	10.40	<b>19.703</b>
34	11.10	<b>19.704</b>

## GROBET USA® INSIDE RING BURS

Made of high speed steel. Cylinder shape for multi-purpose applications, especially for inside of rings. Sold individually.

No.	Head Dia.		Length of Cut		Cut	Shank Dia.	
	(in)	(mm)	(in)	(mm)		(in)	(mm)
<b>33.629</b>	1/2"	13	1"	25	Standard	3/32"	2.4
<b>33.630</b>	1/2"	13	1"	25	Fine	3/32"	2.4
<b>33.631</b>	1/2"	13	1 1/2"	38	Standard	3/32"	2.4
<b>33.632</b>	1/2"	13	1 1/2"	38	Fine	3/32"	2.4
<b>33.635</b>	1/2"	13	1"	25	Standard	1/8"	3.2
<b>33.636</b>	1/2"	13	1"	25	Fine	1/8"	3.2
<b>33.637</b>	1/2"	13	1 1/2"	38	Standard	1/8"	3.2



## JEWELERS' SETTING BURS



### 1 BUSER-STYLE STONE SETTING BUR SET

Set of 22 sizes for cutting stone seats. Only tops are cut with side lip regulating the depth of cut. For stones 1/16" to 2 carats. All have 1/8" (3.2 mm) shanks. Packaged in plastic stand with cover.

No. 19.820



### 2 PERFECTION STONE SETTING BUR SET

Set of 30 sizes for cutting stone seats. All have 1/8" (3.2 mm) shanks. Packaged in plastic stand with cover.

No. 19.850

### Individual Perfection Stone Setting Burs

No.	Bur No.	(mm)	No.	Bur No.	(mm)	No.	Bur No.	(mm)
19.851	1	1.0	19.861	11	3.6	19.871	21	6.0
19.852	2	1.4	19.862	12	3.8	19.872	22	6.4
19.853	3	1.6	19.863	13	4.0	19.873	23	6.7
19.854	4	1.8	19.864	14	4.3	19.874	24	7.0
19.855	5	2.0	19.865	15	4.5	19.875	25	7.5
19.856	6	2.3	19.866	16	4.8	19.876	26	8.0
19.857	7	2.5	19.867	17	5.0	19.877	27	8.5
19.858	8	2.8	19.868	18	5.3	19.878	28	9.0
19.859	9	3.0	19.869	19	5.5	19.879	29	9.5
19.860	10	3.4	19.870	20	5.7	19.880	30	10.0

### 3 JEWELRY CARBIDE BURS

Once you try these you'll never use old fashioned steel burs again! Long-lasting carbide combined with a new technique of alternate diamond cutting on most burs provides benefits never before possible. With 3/32" (2.4 mm) shanks. See illustration below for stock numbers.

#### Benefits:

- Fast material removal
- Smooth cutting action
- Reduced vibration
- Minimum heat build-up
- Long tool life
- Minimal clogging
- Maximum tool control



### 4 GROBET USA™ INSIDE RING BURS

Size, shape and cut are designed for fast deburring, smoothing and finishing of inside ring surfaces. Made of carbide steel for extra long life.

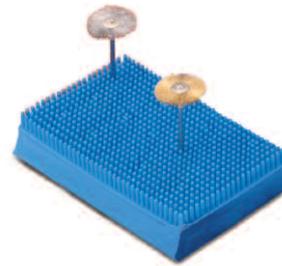
No.	Head Dia. (in)	Head Dia. (mm)	Head Length (in)	Head Length (mm)	Shank Dia. (in)	Shank Dia. (mm)	Finish	No.	Head Dia. (in)	Head Dia. (mm)	Head Length (in)	Head Length (mm)	Shank Dia. (in)	Shank Dia. (mm)	Finish
20.290	1/2"	13	1"	25	1/4"	6	Extra fine	20.01402	1/4"	6	1/2"	13	3/32"	2.4	Extra Fine
20.291	1/2"	13	1"	25	1/4"	6	Fine	20.01403	1/4"	6	1/2"	13	3/32"	2.4	Extra Coarse
20.292	3/8"	10	3/4"	19	1/8"	3.2	Fine	20.01404	3/8"	10	3/4"	19	1/8"	3.2	Fine
20.293	1/4"	6	5/8"	16	1/8"	3.2	Fine	20.01405	3/8"	10	3/4"	19	1/8"	3.2	Extra Fine
20.01401	1/4"	6	1/2"	13	3/32"	2.4	Fine	20.01406	3/8"	10	3/4"	19	1/8"	3.2	Extra Coarse

BUR ACCESSORIES



**1 WOOD BOX BUR HOLDER**

Wood box holds 36 burs with hinged lid and clasped closure.  
No. 15.0375



**2 FLAT BUR STAND**

Handy 5" W x 3" D x 1" H (127 x 76 x 25 mm) plastic bur holder helps keep 3/32" (2.4 mm) shank burs in place, safe from loss or damage.  
No. 19.925



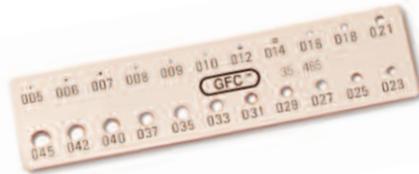
**3 BUR ORGANIZER**

Keeps your work area clean, while protecting your tools. Handy 156 - hole carousel holds burs as well as brushes, drills, etc. Holes measure 3/32" (2.4 mm). Rotates 360°.  
No. 19.927 Standard model  
No. 19.926 Bottom tier has 1/8" holes



**4 WOODEN BUR BOX**

Makes finding the right size bur easy. This box slips into your center bench drawer. Made of hardwood with removable dividers. 8" x 5 7/8" x 1 1/2".  
No. 18.100



**5 GROBET USA® BUR GAUGE**

Precision gauge is made of lightweight metal and measures bur diameters in ISO sizes from 005 to 045. On the reverse side is a handy ruler for measuring up to 50 mm in 1 mm increments.  
No. 35.465



**6 BUR and BLADE LUBRICANT**

Keeps burs, drills, sawblades, gravers plus many other cutting and abrading tools working smoother and longer. Reduces heat build-up and friction to speed the cut. Easy and convenient to use. Leave it right on the bench and just dip or run the tool through the lubricant at regular intervals while working. Handy 2 oz. (56.7 g) push-up container.  
No. 19.928

**7 BUR LUBE**

No. 21.435 0.7oz. tube

## BURNISHERS



### 1 STEEL BURNISHERS

Oval-shaped steel burnishers for smoothing of bezels around stones and smoothing other parts of soft metals. Highly polished blades are firmly set in wood handles.

Curved Blade	Straight Blade	Blade Length
18.050	18.060	1½"
18.052	18.062	2"
18.053	18.063	2½"
18.054	18.064	3"



### 3 TUNGSTEN CARBIDE BURNISHER

These burnishers are super-hard. They shape and smooth all metals, including dense metals (platinum).

No. 18.045 1" tip, tip dia. 5mm, overall length 9"

No. 18.046 1" tip, tip dia. 3mm, overall length 6¾"



### 2 SLIM BLADE BURNISHERS

Especially useful for jewel settings. Blade 1¾" long.

No. 18.058 Curved blade

No. 18.059 Straight blade



### 4 MARGIN ROLLER/BURNISHER

For burnishing scratches from gold, making it possible to salvage many pieces without gold loss. The ⅜" head consists of five steel rollers that act as rotating mallets. ⅜" shank for use with handpiece.

No. 18.080

## SCRAPERS

Scrapers are ideal for cleaning, smoothing and deburring metals and plastics. Use to prepare surfaces for soldering, remove excess solders, open bezels, etc. Sharp from handle to tip and can be resharpened on a bench stone. All are securely mounted in hardwood handles.



### 5 HOLLOW THREE-SQUARE SCRAPERS

High quality, chrome alloy steel.

No. 52.100 2" long

No. 52.103 3" long



### 6 ECONOMY SCRAPER

2½" hollow straight blade.

No. 52.101



### 7 HOLLOW CURVED SCRAPER

2½" blade

No. 52.140



### 8 THREE-SQUARE MACHINIST'S SCRAPER

1¼" long sharpened point. Overall length is 6½" with 4" long blade.

No. 52.180



### 9 SOLID SCRAPER

3" blade.

No. 52.200



### 10 THREE-SQUARE MACHINIST'S SCRAPERS

No.	Overall Length	Blade Length	Thickness
52.170	5½"	2"	⅜"
52.171	6½"	3"	⅜"
52.172	6½"	3¼"	¼"
52.173	8"	4"	⅝"

WAX TOOLS



**1 WAX TOOL No. 1**

Overall length is 6 1/4".  
No. 21.250



**2 WAX TOOL No. 6**

Overall length is 5 1/2".  
No. 21.251



**3 WAX TOOL No. 17**

Overall length is 5 3/4".  
No. 21.252

**WAX TOOLS SET**

Set of three tools consists of 21.250, 21.251 and 21.252  
No. 21.254



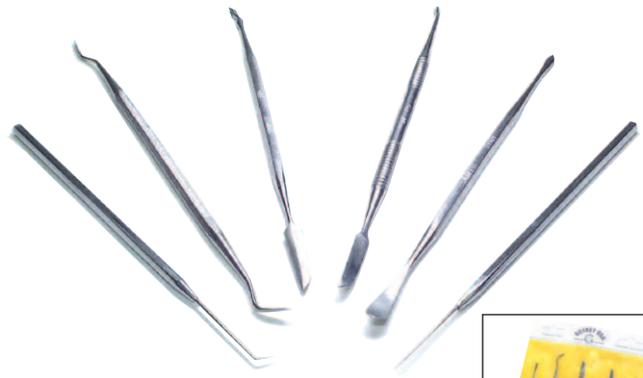
**5 DISPATULAS**

Disposable spatulas. Made of flexible plastic with the feel of metal, yet are less expensive. Box of 100.  
No. 21.185



**7 WAX CARVER SETS**

New designs. Loop ends are sharpened for smooth wax removal. 7" long.  
No. 21.101 With rubber handles



**4 SET of SIX POPULAR CARVERS, SPATULA, and PROBES**

Consists of Nos. 21.114, 21.115, 21.116, 21.141, 21.251 and 21.252.  
No. 21.100



**6 SET of DOUBLE-ENDED WAX CARVERS/SPATULAS**

Seven pieces in a handy wood stand, with built-in sharpening stone. Organizes and protects tools.  
No. 21.0828



**8 DOUBLE ENDED CARVERS**

4 shapes with different sizes on each end. Can be used at room temperature or heated.  
No. 21.105 Set of four

STAINLESS STEEL DOUBLE-ENDED  
CARVERS & SPATULAS



**2 WAX CARVER/SPATULA**

No.	Overall Length
21.0825/7	6 <sup>3</sup> / <sub>4</sub> "



**4 WAX CARVER/SPATULA**

No.	Overall Length
21.0825/18	6 <sup>1</sup> / <sub>2</sub> "



**6 WARD No. 2**

No.	Overall Length
21.111	6 <sup>1</sup> / <sub>2</sub> "



**1 WAX CARVER/SPATULA**

No.	Overall Length
21.0825/4	6 <sup>3</sup> / <sub>4</sub> "



**3 WAX CARVER/SPATULA**

No.	Overall Length
21.0825/16	6 <sup>1</sup> / <sub>2</sub> "



**5 WARD No. 1**

No.	Overall Length
21.110	6 <sup>1</sup> / <sub>2</sub> "



**7 HOLLENBACK No. 1/2**

No.	Overall Length
21.113	6 <sup>1</sup> / <sub>2</sub> "



**8 HOLLENBACK No. 3**

No.	Overall Length
21.114	6 <sup>1</sup> / <sub>2</sub> "

**9 LeCRON No. 5**

No.	Overall Length
21.115	6 <sup>1</sup> / <sub>2</sub> "

STAINLESS STEEL DOUBLE-ENDED  
CARVERS & SPATULAS



**1 ROACH No. 6**

No.	Overall Length
21.116	6½"



**2 NORUSTAIN CEMENT VEHE No. 50**

No.	Overall Length
21.117	6½"



**3 NORUSTAIN WAX No. 7**

No.	Overall Length
21.141	6¾"



**4 NORUSTAIN WAX No. 10**

No.	Overall Length
21.142	6¾"



**5 NORUSTAIN WAX No. 45**

No.	Overall Length
21.143	6¾"

STAINLESS STEEL SPATULAS



**6 NORUSTAIN CEMENT No. 1**

No.	Overall Length
21.150	6½"



**7 NORUSTAIN CEMENT No. 2**

No.	Overall Length
21.151	6½"



**8 NORUSTAIN CEMENT No. 3**

No.	Overall Length
21.152	6½"

## STAINLESS STEEL WOOD-HANDLE SPATULAS



### 1 WAX SPATULA

No.	Overall Length
21.0827/1	7 $\frac{1}{4}$ "



### 2 LONG WAX SPATULA

No.	Overall Length
21.0827/2	8 $\frac{3}{4}$ "



### 3 SPATULA No. 11R

No.	Overall Length
21.175	7 $\frac{5}{8}$ "



### 4 SPATULA with 4" BLADE

No.	Overall Length
21.176	8"

## ASSORTED SPATULAS



### 1 NORUSTAIN WAX No. 31

No.	Overall Length
21.160	7 $\frac{1}{4}$ "



### 2 SPATULA No. 35

No.	Overall Length
21.161	7 $\frac{1}{4}$ "



### 3 SPATULA No. 4

No.	Overall Length
21.162	7"



### 4 NORUSTAIN WAX No. 5

No.	Overall Length
21.163	8"

## THE MATT LINE

This complete collection of unique, high quality waxes and wax-working tools has become a necessity for designers, model makers and manufacturers. Matt products mean consistent quality, continuous innovation, use of the finest materials and advanced technology. The Matt advantages have made the Matt name synonymous with excellence. Made in the USA.

### 1 MATT MINI-LATHE with GAUGE

A versatile hand-held lathe, powered by a flexible shaft motor, designed to turn rods of carving wax. Includes precision gauge for measuring exact dimensions and thickness of work. Easily produce bands, bezels, settings, coin holders, chess pieces, etc. Set includes a cutting tool, 2 extra cutting tool blanks, 3 collets to hold wax, sample wax instruction book, and a 3-pc. stainless steel double-ended blade set. The six different ends create a cut-off tool, a channel cutter, a half-round band hollower, a frame shaper, and a cup former. Blades are .025" thick, 1/4" wide, and 4" long, and can be beveled to increase the number of designs.

No. **21.02803** Complete Lathe Set

No. **21.02801** Replacement 3-pc. Blade Set

Replacement Accessories for Matt Mini-Lathe:

No. **21.02830** Wax-holding collet

No. **21.02885** Rotary file



### Wax Rods for Matt Mini-Lathe

Four pieces of a single diameter and color per box, all 1 1/2" long.

Diameter	Blue	Green	Purple
1 5/16"	<b>21.02810</b>	<b>21.02811</b>	<b>21.02812</b>
1 3/32"	<b>21.02815</b>	<b>21.02816</b>	<b>21.02817</b>
7/8"	<b>21.02820</b>	<b>21.02821</b>	<b>21.02822</b>



### 2 MATT WAX ROD CENTERING TOOL

Allows exact alignment of the Mini-Lathe's wax holding collet in the wax rod. Accommodates and precisely centers all three rod diameters listed in the chart. No. **21.02802**



### 3 MATT SHAPER

Designed for precision filing of large pieces. Made of cast aluminum with a steel support bracket, powered by a flexible shaft. The table provides ideal support when cutting large pieces such as bracelets and adjusts to allow cutting at different angles. The removable fence regulates the depth of cut ensuring precise and safe operation. Includes bracelet template, rotary file, 2 bracelet wax blanks and instructions. Handpiece and cable not included.

No. **21.02895** Shaper set

No. **21.02885** Replacement rotary file only



### 4 MATT TRIMMER

Enables you to precisely file shapes and flat or curved surfaces, at different angles. Powered by a flexible shaft and designed to simplify this procedure while improving uniformity. Ideal for creating channels. Comes with rotary file (No. 21.02885), ring template, 3 different color waxes and instructions. Handpiece and cable not included.

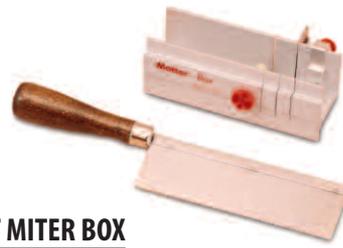
No. **21.02880**



**1 MATT RING TUBE SIZER**

Enlarge the finger size of your wax models quickly and accurately. Hardwood mandrel is specially machined to incorporate a cutting steel blade that extends from the handle to the tip on the tapered section. Slide this tool through the hole of wax ring or ring tube and gently rotate clockwise. As the blade turns it scrapes inner wall, enlarging the ring to the size that is marked along the mandrel, leaving a smooth and even finish on the ring.

No. **21.02890**



**2 MATT MITER BOX**

Slice bars, rods and wax ring tubes into tablets with perfectly straight and parallel walls or tapered sides. The ring tube is held firmly in position inside the box so there is no strain on your hand. With stop/lock feature for cutting several tablets of the same thickness. The fine steel sawblade allows you to cut through the tube with no effort, leaving a smooth finish that does not require any filing. Set includes extruded aluminum 6" x 2" miter box, steel hand saw and stop/lock.

No. **21.02920** Miter box



**3 MATT GUN KIT**

Provides you with a versatile extrusion technique for creating jewelry models. The gun enables you to control the temperature and pressure of the extrusion process, thus creating wire shapes of various characteristics. Three methods of design are possible: on objects, free-form and on water for abstract effects. Kit contains Matt Gun with 2 brass tips, 3 styles of wax and an illustrated 113 page book "Wax Modeling for Jewelry and Sculpture" by Adolfo Mattiello, with complete instructions.

- No. **21.0955** 110 volt kit
- No. **21.0955/220** 220 volt kit
- No. **21.01249** Book
- No. **21.0951/3** Small replacement tip
- No. **21.0951/4** Large replacement tip



**5 MATT SUPPLY BOX**

An important complement to the Matt Gun Kit. Contains 40 each: red, blue, and green wax pellets; a 4 oz. alcohol lamp; wire strips; and a tapered, sanded and polished, rotating hardwood mandrel on a sturdy steel base. (Excellent for designing wax models, especially with the Matt gun kit)

- No. **21.0956** Complete supply box
- No. **21.0897** Replacement wood mandrel only



**4 REPLACEMENT WAX PELLETS for MATT GUN**

Description	Pk of 20 Pellets	Pk of 130 Pellets
Blue-for mandrel work	<b>21.0951/1</b>	<b>21.0951/6</b>
Green-for use on water	<b>21.0951/2</b>	<b>21.0951/7</b>
Red-for weaving	<b>21.0951/5</b>	<b>21.0951/8</b>



**6 STEPPED MOUNTED RING MANDRELS**

These stepped mandrels allow precise sizing of a ring as it is being created. The mounted mandrel can be rotated or removed from its stand and held by hand.

- No. **21.0900** Deluxe mandrel, sizes 4-14, center mount
- No. **21.0890** Regular mandrel, sizes 4-13, end mount

## MATT WAXES

Sold individually, Matt waxes are available in three grades of hardness:

**Green** - Hard with very little flexibility. Ideal for filing and delicate engraving. Softening temperature 230°F (110°C).

**Purple** - Medium hard with medium flexibility. All-purpose wax is ideal for models with extensive piercing, baguettes and air line openings.  
Softening temperature 225°F (107°C).

**Blue** - Softer and highly flexible, this wax will take a 90° bend without breaking. Ideal for models with extensive piercing or thin exposed sections.  
Softening temperature 220°F (104°C).

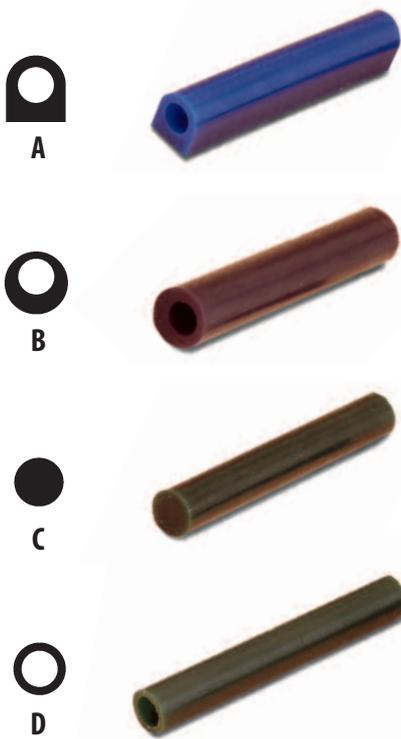
**A.** Flat side with hole

**B.** Round with Off-center hole

**C.** Solid round bar

**D.** Round bar with centered hole

Styles A, B, and D have a hole size of 5/16".



### 1 MATT WAX RING TUBES

Diameter	Width	Height Size	Blue	Purple	Green
<b>A. Flat Side with Hole</b>					
—	1"	1 1/8"	21.02690	21.02691	21.02692
—	1 1/8"	1 1/8"	21.02693	21.02694	21.02695
—	1 1/4"	1 1/4"	21.02696	21.02697	21.02698
<b>B. Round with Off-Center Hole</b>					
1 1/16"	—	—	21.02699	21.02700	21.02701
<b>C. Solid Round Bar</b>					
7/8"	—	—	21.02702	21.02703	21.02704
1 1/16"	—	—	21.02705	21.02706	21.02707
1 5/16"	—	—	21.02708	21.02709	21.02710
<b>D. Round Bar with Centered Hole</b>					
7/8"	—	—	21.02711	21.02712	21.02713
1 1/16"	—	—	21.02714	21.02715	21.02716
1 5/16"	—	—	21.02717	21.02718	21.02719

### 2 MATT BRACELET WAX BLANKS

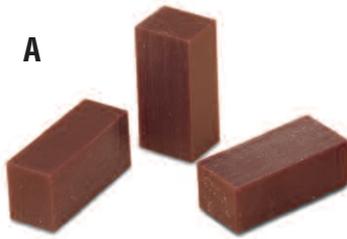
6" long arch-shaped block of carving wax is designed to simplify the construction of bracelets. From one blank style you can create round, oval or square bracelets in a variety of sizes. Simply cut two slices of the desired thickness to form the bracelet, then trim using the Matt Shaper (No. 21.02895 shown on page 104).

No. **21.02897** Green

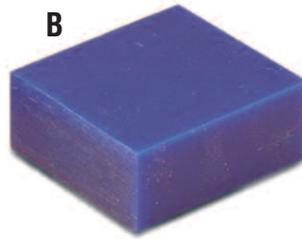
No. **21.02898** Purple

No. **21.02899** Blue

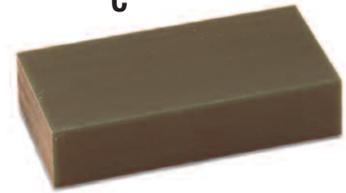




**A**



**B**



**C**

### 1 MATT CARVING WAX BARS

A special wax used in making models to be cast in metal. Can be carved, sawed, filed, machined or turned on a lathe, or melted to build up shapes through layering.

- A.** 1<sup>1</sup>/<sub>16</sub>" x 1<sup>1</sup>/<sub>8</sub>" x 3<sup>3</sup>/<sub>8</sub>", 1/2 lb. bars.  
**21.02751** Green, box of 3 bars  
**21.02752** Purple, box of 3 bars  
**21.02753** Blue, box of 3 bars

- B.** 1<sup>1</sup>/<sub>16</sub>" x 3<sup>3</sup>/<sub>8</sub>" x 3<sup>3</sup>/<sub>8</sub>", 1/2 lb. bars.  
**21.02755** Green  
**21.02756** Purple  
**21.02757** Blue

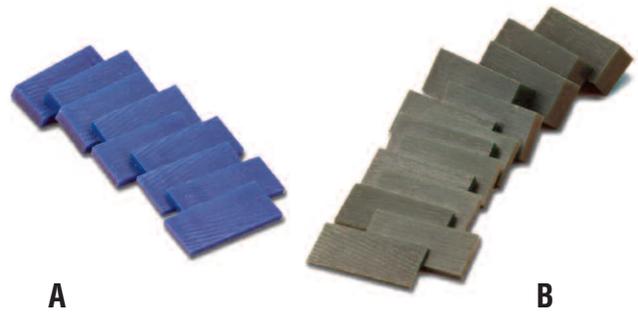
- C.** 1<sup>1</sup>/<sub>16</sub>" x 3<sup>3</sup>/<sub>8</sub>" x 6<sup>1</sup>/<sub>2</sub>", 1 lb. bars.  
**21.02760** Green  
**21.02761** Purple  
**21.02762** Blue



**Set A**

**Set B**

**Set C**



**A**

**B**

### 2 MATT CARVING WAXES

These tablets provide jewelry designers and model makers with a large, 6" x 2<sup>5</sup>/<sub>8</sub>", flat, very smooth surface for designing jewelry directly onto carving wax. Available in four thicknesses, 4.5 mm, 6 mm, 8 mm and 10.5 mm. Set A contains 3 pcs, 4.5 mm, 1pc, 6 mm, 1 pc, 8 mm and 1 pc, 10.5 mm. Set B contains 4 pcs, 4.5 mm and 3 pcs 6 mm. Set C contains 2 pcs, 8 mm and 2 pcs 10.5 mm.

Set A	Set B	Set C
Blue <b>21.02773</b>	Blue <b>21.02776</b>	—
Purple <b>21.02774</b>	Purple <b>21.02777</b>	—
Green <b>21.02775</b>	Green <b>21.02778</b>	Green <b>21.02781</b>

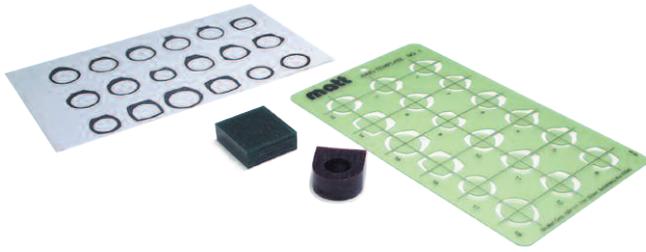
### 3 SLICES

A. 3<sup>3</sup>/<sub>8</sub>" L x 1<sup>1</sup>/<sub>16</sub>" W and assorted thickness from 1/8" to 1". Box of 9.

No.	Color	Weight
<b>21.02765</b>	Green	1/2 lb.
<b>21.02766</b>	Purple	1/2 lb.
<b>21.02767</b>	Blue	1/2 lb.

B. 3<sup>3</sup>/<sub>8</sub>" L x 1<sup>1</sup>/<sub>16</sub>" W and assorted thickness from 1/8" to 1". Box of 12.

No.	Color	Weight
<b>21.02770</b>	Green	1 lb.
<b>21.02771</b>	Purple	1 lb.
<b>21.02772</b>	Blue	1 lb.



**1 MATT RING TEMPLATE**

Eliminates drawing ring outlines with rulers and dividers. Avoids the irregular contour of a shank made free-hand. Has 18 different cut-out ring shapes. Made of durable plastic with precision milled shapes. Includes instructions and two samples of carving wax tablets.

No. 21.02855



**3 MATT GOLD COLLECTOR**

Traps gold and other precious metals for easy retrieval. Protects eyes, skin and clothes from dust, flying particles and wire from brushes while providing a healthier work environment and less clean-up time. Optically clear plexiglass shield to see workpiece without glare and easily removes for cleaning and scrap collection. Side openings provide comfortable hand support for reduced fatigue. Can be attached easily to bench or table. Completely portable. Lightweight, yet strong, made of high impact extruded plastic for long life. Measures 7" x 7" x 9".

No. 21.03200



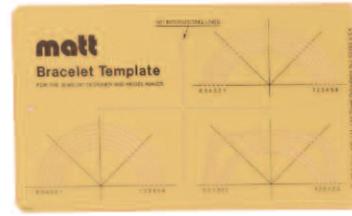
**5 MATT "TECHNIQUES of JEWELRY ILLUSTRATION and COLOR RENDERING" KIT**

Features full instruction on jewelry illustration, with step-by-step guidelines and clear photographs. Hard cover with 152 pages and hundreds of full color photographs and illustrations. Also included in the kit are five 8 1/4" x 5" design templates.

No. 62.495 Complete kit

No. 62.49501 Book only

No. 62.49502 Set of five different templates only



**2 MATT BRACELET TEMPLATE**

Made of durable plastic with precisely milled shapes for tracing round, oval and square bracelets from very small to large sizes. Includes instructions.

No. 21.02896



**4 MATT CREATIVE SETTINGS KIT**

Includes "How To Create Settings In Metal Wire And Wax" by world famous designer Adolfo Mattiello, along with two templates. Shows step-by-step how to make many different settings with drawn metal wire. It also shows how to join settings. The wax working section shows how to make settings with carving wax, prong settings and settings turned on your Matt Mini-Lathe.

No. 21.02852 Complete kit

No. 21.02851 Replacement book

No. 21.02853 Replacement template for round settings

No. 21.02854 Replacement template for oval, pear and marquise settings



**6 SET of JEWELRY DESIGN TEMPLATES**

Set of seven heavy gauge plastic templates for custom jewelry design. Includes round, oval, baguette, emerald, marquise and pear stone shapes, as well as templates for ring and setting designs. Stone templates show metric sizes and carat weights.

No. 35.570

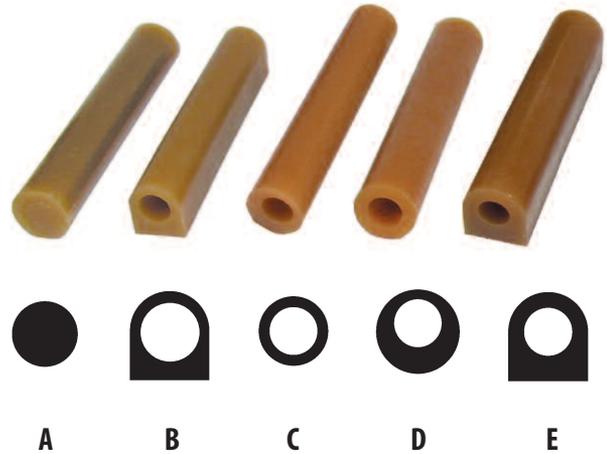
## WOLF™ WAX BY FERRIS®

Inspired by renowned master modelmaker and educator, Kate Wolf, fills a void in wax products. This wax is slightly flexible with medium hardness and can be carved or machined with the finest details. It can also be fully polished and will withstand considerable handling.

### 1 WOLF™ WAX RING TUBES & RODS

New carving wax melts at approximately 2400 F and is available in many sizes. The wax can be carved into fine detail and polished.

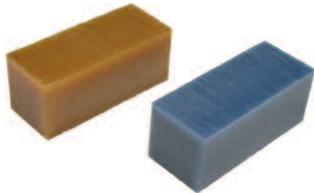
No.	Description	Color	Shape
21.0410	Solid Ring Tube	Gold	A
21.0412	T-100 Flat Side Tube	Gold	B
21.0414	Ring Tube w/Ctr Hole	Gold	C
21.0416	Ring Tube w/Off Ctr Hole	Gold	D
21.0425	Solid Ring Tube, Ex Hd	B1062 Gold	A
21.0427	T-100 Flat Side Tube, Ex Hd	T100 Gold	B
21.0429	Ring Tube w/Ctr Hole, Ex Hd	T1062 Gold	C
21.0431	Ring Tube w/Off Ctr Hole, Ex Hd	T1062E Gold	D
21.0433	T-200 Flat Side Tube, Ex Hd	T200 Gold	E



### 2 WOLF™ WAX SLICE ASSORTMENT

Wolf wax slice assortment contains five slices per box and is assorted from 1/8" to 1" in thickness.

No. 21.0406 Gold



### 4 WOLF™ WAX BUILD-UP and REPAIR WAX

This durable repair wax makes it easy to blend built-up and repaired sections. To ensure thorough bond, melt model where repair wax is to be added. 1 3/16 x 3 3/16".

No. 21.0400 Gold

No. 21.0401 Silver



### 6 WOLF™ TOUCH-UP WAX

Ideal for final touch-up of wax imperfections. Can be easily scraped off for a smooth finish. Flows at 163°, F.

No. 21.0420

### 3 WOLF™ WAX SPACE BLOCKS

Wolf space blocks measure 3 3/16" x 3 3/16" x 2 3/8". 1lb. block.

No. 21.0404 Gold



### 5 WOLF™ WICKED STICKY WAX

Ideal for securing stones. Flows at 173° F. 3/16" square x 5" long. Sold in 3 ounce box.

No. 21.0408 Red



### 7 WOLF™ RELIEF WAX

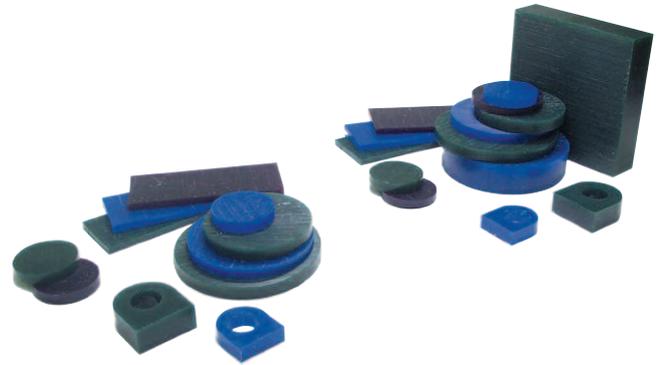
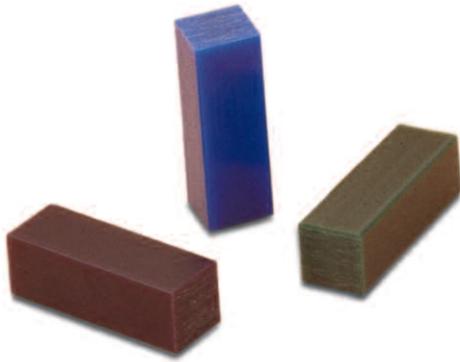
Ideal for creating raised detail on carving waxes. Apply molten relief wax on the surface of the wax model. Sold in 2 ounce tins.

No. 21.0409

## FERRIS™ FILE-A-WAX CARVING WAXES

Used for making models to be reproduced by the lost wax casting process. They can be sawed, filed or carved. Will stand rough handling and will not soften in your hands. Available in three degrees of hardness, designated by color, and in a variety of shapes.

Color	Characteristics	Approx. Melting Point
Green	Cannot be flexed	240°F (116°C)
Purple	Some flexibility	240°F (116°C)
Blue	Will bend 90° in 1/8" thickness	240°F (116°C)



### 1 FILE-A-WAX ASSORTMENT BARS

Introductory kit contains three bars, one of each color/hardness. Bars are 3½" x 1½" x 1¼" and weigh approximately 1/8 lb. each.

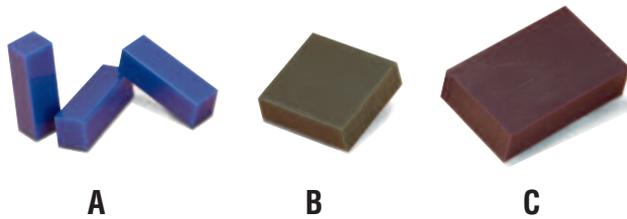
No. 21.290

### 2 FILE-A-WAX ASSORTMENTS

Various shapes and colors for trial use. Also handy for having around in case an odd piece is needed.

No. 21.291 Junior 11 pcs assorted

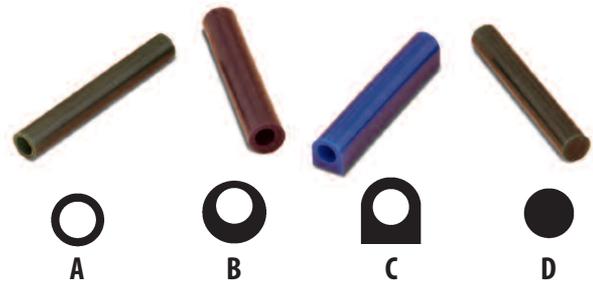
No. 21.292 Professional approx 1lb



A

B

C



### 3 FILE-A-WAX BARS

All three types in three different size bars.

**A.** 3¾" x 1½" x 1¼", 1/8 lb. bars. Sold in packs of 3.

21.300 Blue

21.301 Green

21.302 Purple

**B.** 3½" x 3½" x 1¾", 1/2 lb. bars. Sold individually.

21.305 Blue

21.306 Green

21.307 Purple

**C.** 5¾" x 3½" x 1¾", 1 lb. bars. Sold individually.

21.310 Blue

21.311 Green

21.312 Purple

### 4 FILE-A-WAX RING TUBES

Easy-to-cut ring tubes for designing your own rings. Many rings can be made from each 6" long tube. Pre-drilled holes are 5/8" in diameter.

Shape	MFR Style #	Measurements	Green	Purple	Blue
A	T-875	7/8" OD	21.362	21.358	21.360
A	T-1062	1¼" OD	21.363	21.359	21.361
B	E-1062	1¼" OD	21.366	21.364	21.365
C	T-100	1½" H x 1½" W	21.372	21.374	21.370
C	T-150	1" H x 1" W	21.371	21.392	21.391
C	T-200	1½" H x 1¾" W	21.369	21.367	21.368
C	T-250	1½" H x 1½" W	21.373	21.394	21.393
D	B-875	7/8" OD	21.377	21.379	21.375
D	B-1062	1¼" OD	21.378	21.399	21.376

## DESIGNED SHAPE WAXES

Designer shapes provide a selection of basic shapes that are perfect for large, custom design work. These shapes afford the ability to respond quickly to design assignments or to creative inspirations. Available in blue (regular), green (hard), and purple (medium). Specify color when ordering.



### 1 FILE-A-WAX SLABS

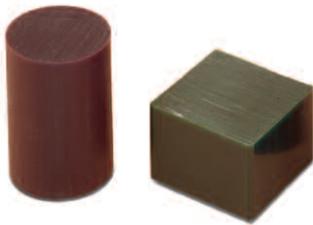
Assortments of five 3<sup>3</sup>/<sub>8</sub>" square slabs in the following thickness; 1<sup>1</sup>/<sub>8</sub>", 11<sup>1</sup>/<sub>16</sub>", 1<sup>3</sup>/<sub>8</sub>" and two 3<sup>1</sup>/<sub>16</sub>". Sold individually.

- 21.380 Blue
- 21.381 Green
- 21.382 Purple

### 2 FILE-A-WAX SLICES

Assortment of slices measuring 3<sup>3</sup>/<sub>8</sub>" x 1<sup>1</sup>/<sub>2</sub>" in varying thicknesses. Half-pound assortment thickness from 3<sup>1</sup>/<sub>32</sub>" to 1<sup>1</sup>/<sub>4</sub>"; 1 pound assortment from 3<sup>1</sup>/<sub>16</sub>" to 1".

Color	1/2 lb. Box	Price	1 lb. Box
Blue	21.384	\$14.80	21.388
Green	21.385	14.80	21.389
Purple	21.386	14.80	21.390



### 3 FILE-A-WAX BARS in ASSORTED SIZES

Saw off a slice to carve coin holders, pendants, earrings, medallions, buckles, bangles and bracelets. Ideal for lathe turning to make carved napkin rings, chessmen, salt and pepper shakers, etc.

Shape	Measurements	Green	Purple	Blue
Square	3 <sup>3</sup> / <sub>16</sub> " x 2 <sup>3</sup> / <sub>8</sub> "	21.0706	21.0707	21.0708
Round	3 <sup>1</sup> / <sub>16</sub> " x 4 <sup>1</sup> / <sub>16</sub> "	21.0710	21.0711	21.0712
Round	2 <sup>3</sup> / <sub>8</sub> " x 5 <sup>1</sup> / <sub>2</sub> "	21.0715	21.0716	21.0717
Round	2 <sup>1</sup> / <sub>4</sub> " x 7 <sup>1</sup> / <sub>2</sub> "	21.0720	21.0721	21.0722
Round	1 <sup>3</sup> / <sub>4</sub> " x 12 <sup>1</sup> / <sub>8</sub> "	21.0725	21.0726	21.0727
Round	1 <sup>1</sup> / <sub>16</sub> " x 11 <sup>1</sup> / <sub>4</sub> "	21.0730	21.0731	21.0732

### 4 OVAL BRACELET BARS

No.	Description	Dimensions
21.320	Blue Bar	3 <sup>1</sup> / <sub>8</sub> " x 2 <sup>5</sup> / <sub>8</sub> " x 4 <sup>5</sup> / <sub>8</sub> "
21.426	Green Bar	3 <sup>1</sup> / <sub>8</sub> " x 2 <sup>5</sup> / <sub>8</sub> " x 4 <sup>5</sup> / <sub>8</sub> "
21.427	Purple Bar	3 <sup>1</sup> / <sub>8</sub> " x 2 <sup>5</sup> / <sub>8</sub> " x 4 <sup>5</sup> / <sub>8</sub> "
21.321	Blue Bar	3 <sup>5</sup> / <sub>8</sub> " x 2 <sup>3</sup> / <sub>4</sub> " x 3 <sup>5</sup> / <sub>8</sub> "
21.429	Green Bar	3 <sup>5</sup> / <sub>8</sub> " x 2 <sup>3</sup> / <sub>4</sub> " x 3 <sup>5</sup> / <sub>8</sub> "
21.430	Purple Bar	3 <sup>5</sup> / <sub>8</sub> " x 2 <sup>3</sup> / <sub>4</sub> " x 3 <sup>5</sup> / <sub>8</sub> "

### 5 SKIP-A-TOOTH SAW BLADES

Designed for wax cutting. Every other tooth is eliminated to provide smooth cutting and non-loading action. One dozen size #1 blades to a package. Sold by dozen.

No. 49.320





**1 GROBET WAX WIRE ASSORTMENT**

Pliable blue wax wires can be twisted or bent to desired patterns. The assortment contains gauges 6, 8, 12, and 14 half-round; gauges 10, 14, and 18 round; and gauge 6 half-pear shapes. All pieces are approximately 4" long.

No. 21.530



**2 GROBET ROUND WAX WIRE ASSORTMENT**

Contains pliable, round, blue wax wire. Assortment consists of gauges 6, 8, 10, 12, 14, 16, 18, and 20.

No. 21.532



**3 GROBET WAX "STARTER" ASSORTMENT**

Contains a variety of green waxes in 12 of the most commonly used shapes and sizes: round, half-round, square, triangle, half-pear. An excellent set for those just starting.

No. 21.0705

**4 WAX WIRE ASSORTMENTS**

Our wire waxes are flexible yet tough, easily twisted or bent into any shape. The assortment packs ensure you have a convenient selection of wire waxes when you need them. Each box contains eight different gauges of Stuller Select wire waxes cut in 4" lengths. Sold in 30z. boxes.

**21.405 No.3 Wire Assortment:**

Rectangle: 2, 4, 6, 8, 10 and 12 gauge; Square: 12 and 14 gauge

**21.406 No.4 Wire Assortment:**

Uncut Bezel: 2, 4, 6, 8 and 10 gauge; Bezel: 6, 8 and 10 gauge

**21.407 No.5 Wire Assortment:**

Round: 8, 12, 14 and 18 gauge; Half-round; 6, 8, 12 and 14 gauge

**21.408 No.6 Wire Assortment:**

Triangle: 8, 10 and 12 gauge; 3-Prong: 14 and 16 gauge; 4-Prong: 16 and 18 gauge; 6-Prong: 16 gauge



**5 GROBET WAX WIRES in BOXES**

Contains pliable, blue wax wire approximately 4" long.

Gauge	Half-Round	Round	Square	Triangle
6	21.540	21.560	—	—
8	21.542	21.562	21.0658/8	21.0656/8
10	21.544	21.564	21.0658/10	—
12	21.546	21.566	21.616	—
14	21.548	21.568	21.618	21.0656/14
16	—	21.570	21.620	—
18	—	21.572	—	—
20	—	21.574	—	—



**6 GROBET WAX WIRE on SPOOLS**

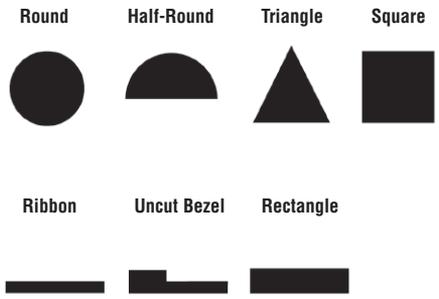
Pliable, blue wax wire wound on spools. Spools have center hole that can be placed on a round dowel and wax is unwound as needed. Round 1/2 lb.

Gauge	No.	Gauge	No.
6	21.590	14	21.594
8	21.591	16	21.595
10	21.592	18	21.596
12	21.593	20	21.597

## 1 BLUE WAX WIRE

Blue wire wax is a time tested high quality, pliable wax that can be used whenever a wire shape is required. Perfect for producing unique jewelry items as well as links, prongs, bezels and sprues. Although extremely flexible, wire wax is strong enough to be twisted or bent to conform to any configuration or angle without cracking or breaking. Sold in approximately 2oz. boxes.

Order No.	Shape	Gauge
21.57401	Round	24
21.57402	Half-Round	3
21.549	Triangle	8
21.550	Triangle	10
21.551	Triangle	12
21.552	Triangle	14
21.553	Square	6
21.554	Square	8
21.555	Square	10
21.556	Square	12
21.575	Ribbon	1
21.576	Ribbon	2
21.577	Ribbon	4
21.578	Ribbon	6
21.579	Ribbon	8
21.580	Uncut Bezel	2
21.581	Uncut Bezel	3
21.582	Uncut Bezel	4
21.583	Uncut Bezel	6
21.584	Uncut Bezel	8
21.598	Rectangular	2
21.599	Rectangular	4
21.600	Rectangular	6
21.601	Rectangular	8
21.602	Rectangular	10

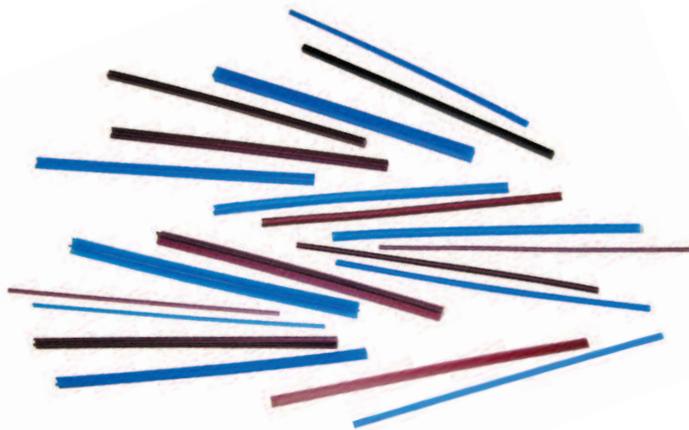


Gauge	(in)	(mm)	Gauge	(in)	(mm)
6	.162"	4.1	20	.032"	0.8
8	.129"	3.3	22	.025"	0.6
10	.102"	2.6	24	.020"	0.5
12	.081"	2.1	26	.016"	0.4
14	.064"	1.6	28	.013"	0.3
16	.051"	1.3	30	.010"	0.3
18	.040"	1.0			

# 1 ferris Cowdery Profiles Waxes

## The Ultimate Jewelry Design-Time Saver

Designer Collection waxes created to make the task of designing and manufacturing fine jewelry better, faster and easier. These precision-formed waxes can be used individually or in combinations. Cowdery Profiles are available in purple or blue wax formulas. They are sold in pre-cut lengths of 5" (127 mm). Six pieces of one size and shape per package.



### Solid Round

Blue	Purple	Size
21.901	21.950	1 mm
21.902	21.951	1.5 mm
21.903	21.952	2 mm
21.904	21.953	2.5 mm
21.900	21.954	3 mm
21.906	21.955	3.5 mm
21.907	21.956	4 mm

### Square Rod

Blue	Purple	Size
21.908	21.957	1 mm
21.909	21.958	1 mm
21.910	21.959	2 mm
21.911	21.960	2.5 mm
21.912	21.961	3 mm
21.913	21.962	3.5 mm
21.914	21.963	4 mm

### Round Tube

Blue	Purple	Size
21.915	21.964	2 mm
21.916	21.965	2.5 mm
21.917	21.966	3 mm
21.918	21.967	3.5 mm
21.919	21.968	4 mm
21.920	21.969	4.5 mm
21.921	21.970	5 mm
21.922	21.971	5.5 mm
21.923	21.972	6 mm

### Square Tube

Blue	Purple	Size
21.924	21.973	2 mm
21.925	21.974	2.5 mm
21.926	21.975	3 mm
21.927	21.976	3.5 mm
21.928	21.977	4 mm
21.929	21.978	4.5 mm
21.930	21.979	5 mm
21.931	21.980	5.5 mm
21.932	21.981	6 mm

### Flat Ribbon

Blue	Purple	Size
21.933	21.982	2 mm
21.934	21.983	3 mm
21.935	21.984	4 mm
21.936	21.985	5 mm

### Prong

Blue	Purple	Prong	Size
21.937	21.986	3	8 mm
21.938	21.987	4	8 mm
21.939	21.988	6	8 mm

### Corner

Blue	Purple	Degree	Size
21.940	21.989	90°	1.5 mm
21.941	21.990	60°	1.5 mm

### Hinge Tube

Blue	Purple	Size
21.942	21.991	2 mm
21.943	21.992	2.5 mm
21.944	21.993	3 mm

### Channel

Blue	Purple	Size
21.945	21.994	1 mm
21.946	21.995	1.5 mm
21.947	21.996	2 mm
21.948	21.997	2.5 mm

### Catch

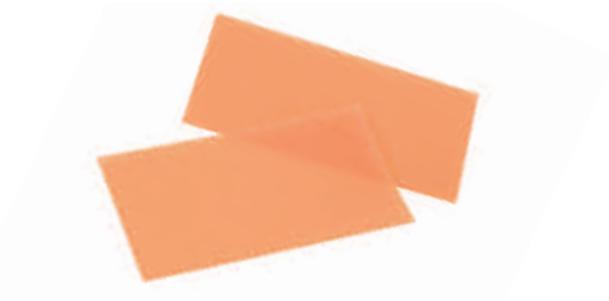
Blue	Purple
21.949	21.998

### Ball & Socket

Blue	Purple
21.94901	21.999

## MODELING WAXES

A selection of waxes used for making models for the lost wax casting process. The waxes can be manipulated easily and worked with a heated spatula. Different wax types can be joined together to build a model. Measurements are by B & S gauge.



### 1 GROBET USA® COOL SETTING WAX

Very pliable when heated. Shapes easily, unusually tough, and will withstand bending without cracking. When cool, it will hold its shape and is easily carved. Sheets measure 6" x 3" x 1/32".

No. 21.450



### 2 GROBET USA® INLAY WAX

A special wax for building up wax patterns. It can be carved without chipping or flaking and can be softened over a flame, in hot water or with a heated tool. Comes in two grades of hardness, in boxes of approximately 24 sticks 4" x 1/4".

No. 21.458 Hard

No. 21.459 Regular



### 3 MOLD-A-WAX

While red is soft at room temperature of 70°F (21°C), the black version can be made more pliable by immersing in warm water. May be used as adhesive for other waxes. Blocks are 3 1/2" x 2 3/8". Especially good for mini sculptures, leaves, figures, etc. Can be rolled, twisted, or injected.

No. 21.462 Red-soft at room temperature

No. 21.463 Black-brittle at room temperature



### 4 BLUE INLAY WAX

A superior build-up wax, carves without Chipping or flaking. Can be softened over a flame, in hot water or with a heated carving tool. Melting temperature 156°F. Sold in boxes of 12 sticks.

No.	Description
21.404	12 Sticks
21.402	1lb. Regular Chunk
21.403	1lb. Hard Chunk

### 5 REPAIR WAXES

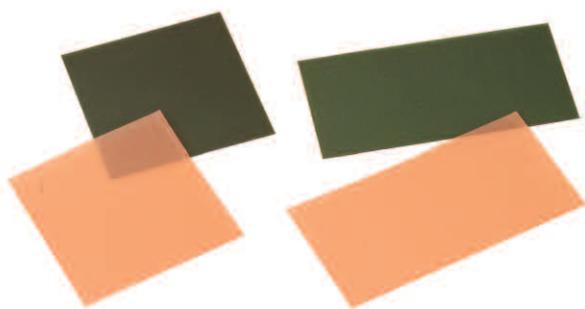
Repair waxes were developed to offer jewelers an easy, reliable means for wax pattern repair and build-up. Repair thin sections, fill pin holes and cover flow lines. Available in two formulations. Sold in 4oz. tins.

**Red (extra soft):** Paste-like wax is ideal for filling small imperfections. Easily applied at room temperature by hand or wax tools.

**Green (soft):** This formulation is typically used for filling larger if imperfections.

Part No.	Description
21.409	Red, 4oz.
21.410	Green, 4oz.





### 1 GROBET USA® SHEET WAX

Wax sheets in varying thickness, either firm or soft. Designs can be traced directly on sheet and cut with scissors or carving tool.

#### 4" Square Sheets

Firm (Green)	Soft (Pink)	Gauge
21.470	21.471	Assorted
21.0625/14	21.0627/14	14
21.480	21.489	16
21.481	21.491	18
21.482	21.493	20
21.483	21.495	22
21.484	21.497	24
21.0625/26	21.0627/26	26

#### 3" x 6" Sheets

Firm (Green)	Soft (Pink)	Gauge
21.0615/16	21.0617/16	16
21.0615/18	21.0617/18	18
21.0615/20	21.0617/20	20
21.0615/22	21.0617/22	22
21.0615/24	21.0617/24	24
21.0615/26	—	26



### 2 CASTING WAX SHEETS

High-grade, translucent, flexible casting wax sheets are used by jewelry designers for a wide variety of applications and are always pliable at room temperature. They can be formed into any shape and are easily cut with a knife or scissors. Drawings or tracings can be made directly on the sheets. Clean burn-outs are guaranteed. Each clear sheet measures 4" square. Available in 32 sheet packs.

Part No.	Description
21.411	14 Gauge (1.6mm)
21.412	16 Gauge (1.3mm)
21.413	18 Gauge (1mm)
21.414	20 Gauge (.8mm)
21.415	22 Gauge (.6mm)
21.416	24 Gauge (.5mm)
21.417	26 Gauge (.4mm)
21.418	28 Gauge (.3mm)
21.419	30 Gauge (.25mm)
21.472	Casting Wax Assortment

#### Casting Wax Assortment

Includes 32 Clear Sheets:

4-14 gauge, 4-18 gauge, 6-20 gauge, 6-22 gauge, 6-24 gauge, 6-26 gauge.



### 3 GROBET USA® WATER-SOLUBLE WAXES

Dissolves and washes away in water, making it perfect for use as cores for beads and other hollow items. Other insoluble waxes are worked over these waxes and when immersed in water, a shell remains. Supplied in irregular chunks of 1 lb.

No. 21.520 Softer white for melting and pouring



### 4 WATER SOLUBLE WAX

Water soluble wax offers jewelry designers an effective cost-efficient means for creating soluble cores in wax patterns. When injected or poured into the core mold, this wax will conform precisely to the core shape. This hard wax is excellent for precision molds and larger parts. Can be injected or hand cast between 150°F (66°-77°C).

No. 21.401 Water Soluble Wax, 1lb. Box



### 1 SPRUE WAX

Combines flexibility and sufficient rigidity for sprueing and mounting wax patterns. Melts at lower temperature (125°F.), burns out clean. Overall length 4". Sold in 20 oz. boxes.

Part No.	Gauge
21.436	6
21.437	8
21.438	10
21.439	12



### 2 GROBET USA® EXTRUDED SPRUE WAX

Supplied in the most popular diameters for jewelry work. Wax burns out cleanly and rapidly, eliminating pressure in the pattern. Red sticks, 24" long. Sold in pound boxes.

No.	Diameter	Weight
21.525	1/2"	1 lb.
21.526	1/4"	2 lbs.
21.527	3/8"	2 lbs.



### 3 GROBET USA® SPRUE WAX

Ample flexibility and sufficient rigidity make this wax particularly suited for making sprues. Melts at lower temperatures, permitting pattern waxes to be more easily eliminated during burn-out. Comes in boxes of 6" sticks.

No. 21.510 Gauge 8  
No. 21.511 Gauge 10



### 4 GROBET USA® UTILITY WAX

Soft, easily shaped red wax adheres to practically any surface. Used for building in and filling in marred surfaces. Often used to fill sprue bases. Available in sticks 5" x 3/16" or sheets 3" x 6" x 1/8".

No. 21.517 Box of sticks  
No. 21.518 Box of sheets



### 5 UTILITY WAX

Easily-shaped waxes that are specially suited for fill-ins and wax repair. Utility waxes can be used to easily correct mistakes or apply sprues to sprue bases. Pliable at room temperature.

Part No.	Description	Dimensions
21.514	1/2 lb. Regular	3/16" x 3" x 6"



### 6 WAX SPRUE RODS

The ideal wax for central sprues. Fully refined to eliminate impurities. The rods burn out quickly without expansion or residue. Perfect for building even the most demanding sprue systems. Sold in 1lb. pks.

**Light Green:** A medium hard spruce rod which is tough and rigid. Perfect for general-purpose casting.

Part No.	Dimensions
21.648	1/4" x 10"
21.646	3/8" x 10"
21.649	3/8" x 10"
21.647	1/2" x 10"
21.650	3/8" x 10" - Sold in 25 lb. pks.
21.651	3/8" x 6" - Sold in 25 lb. pks.



**1 FERRIS INJECTION WAXES**

Excellent flow and high flexibility. This tough wax yields bright surfaces and will not become brittle in storage. Contains a built-in release agent. Turquoise beads, same durability as aqua, but the darker color increases pattern readability. Sold in 1lb. containers.

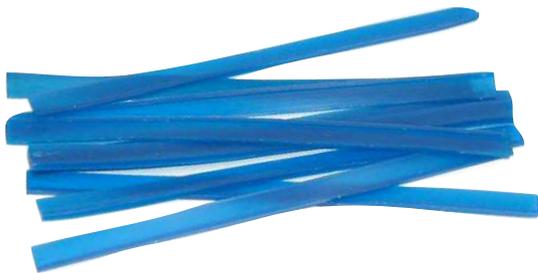
Part No.	Description
21.456F	Pink Magna-Ject Wax Beads
21.454F	Aqua-Ject Wax Beads
21.453F	Turquoise-Ject Wax Beads



**2 INJECTION MOLD WAX BEADS**

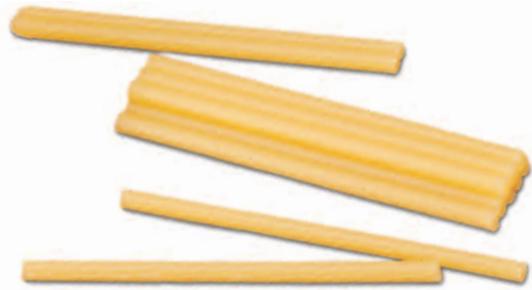
Tough, injection wax designed for metal mold production. Provides fine detail and extra quick dwell time. Injection temperature; 160° – 165°F (71°-74°C). Sold per pound

Part No.	Description
21.452F	High Production Red



**3 BLUE INJECTION WAX**

50 lbs package  
No. 21.460

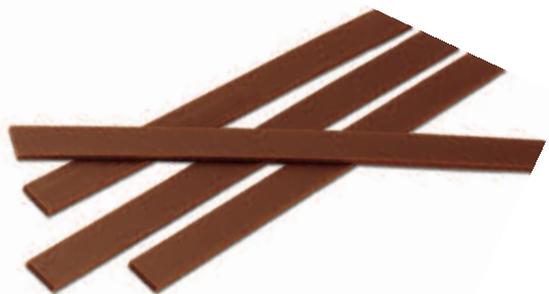


**4 GROBET USA® STICKY WAX and MODEL ADHESIVE**

Used like an adhesive to weld waxes together. Box contains approximately 24 sticks, 3½" in length.  
No. 21.515

**5 GROBET USA® SCULPTURE WAX STRIPS**

Soft, very pliable wax that is easily formed and shaped by hand without the use of heat. Perfect for forming large models. Each strip measures ¼" x 1¼" x 24". Supplied in 2 lb. boxes.  
No. 21.655





### 1 GROBET USA® VULCANIZER

Heavy-duty cast-iron and aluminum construction. Stainless steel heating platens. Large handle and sturdy 1" diameter pressure screw. Two large diameter guide rods keep platens in alignment. Thermostat with dial for accurate temperature control up to 500°F/260°C. Equipped with power and thermostat pilot lights and on/off switch. Predrilled holes in base for easy mounting.

No.	Dimension (W X D X H)	Electrical	Max. Opening	Ship Weight
22.554	14" x 9½" x 19½"	110v, 6a	4"	96 lbs.
22.554X	14" x 9½" x 19½"	220v, 3a	4"	96 lbs.



### 2 MOLD FRAMES

Used to hold uncured rubber and model when vulcanizing. Made of aluminum alloy for best heat conduction.

No.	Thickness	Opening	Style
22.556	¾"	1⅞" x 2⅞"	Single
22.557	1"	1⅞" x 2⅞"	Single
22.559	1"	2½" x 3¾"	Single
22.560	1¼"	3½" x 4¾"	Single
22.564	¾"	1⅞" x 2⅞"	Double
22.565	1"	1⅞" x 2⅞"	Double



### 3 MOLD FRAME PLATES

Rigid, metal plates for placing over mold frame openings when vulcanizing uncured rubber. Provides a more uniformly shaped and solidly packed mold. Set of two pieces.

No.	Size
22.570	5" x 7⅞" x ⅛"
22.571	3½" x 5" x ⅛"



### 5 MOLD CUTTING KNIFE HANDLES and BLADES

Surgically sharp, stainless steel blades fit into comfortable plastic or metal handles. Widely used for cutting rubber molds.

- No. 39.256 Stainless steel handle only
- No. 39.257 Plastic handle only
- No. 39.261 100/pk straight blades
- No. 39.262 100/pk curved blades



### 4 MOLD FRAMES for SEE-THROUGH COMPOUND

Mold frame sets consist of U-shaped frame, two pieces of sheet glass and two clamps.

No.	Thickness	Width	Height
22.625	⅝"	2"	3"
22.626	¾"	2"	3"
22.627	1"	2"	3"
22.628	1¼"	2"	3"
22.629	1½"	2"	3½"
22.630	2"	2"	3½"



### 6 SPRUE FORMER

Attaches to the model in the mold frame to form the opening in the mold through which the wax is injected. Assures a proper fit on the nozzle of the wax injector.

No. 22.580



**1 INVESTMENT SCALE with 20 lb. CAPACITY**

Shipping weight 5 lbs.  
No. 21.775



**2 INVESTMENT**

Formulation contains a de-foamer blended right into the material. Gives you low rise when vacuuming, a wider water usage range for greater yield and flexibility, easier removal of air bubbles on wax pattern surfaces and a more free-flowing mix. Molds will have extra strength. Exacting details can be reproduced and break-out accomplished more easily. Complete technical information and specifications are included.

No. 21.0843/50 50 lb. box



**3 PRO-CRAFT® INVESTMENT SCALE with 10 lb. CAPACITY**

Accurate, yet economical, scale weighs in 2 oz. increments. Easy to read red and black numerals on 4" dial indicate weight, as well as water/investment ratios. Includes scoop.

No. 21.773 Scale  
No. 21.772 Replacement scoop



**4 THERMOMETER**

For testing wax temperature during the melting process. All metal with an 8" long stem and 2" diameter dial. Readings in both Centigrade and Fahrenheit. Capacity 50° to 400°F and 10° to 200°C.

No. 22.01455



**5 INVESTMENT SCOOP**

Plastic scoop for handling dry investment. 4¾" x 8½" x 3".  
No. 21.731

**6 ONE-HOUR TIMER**

Graduated by minutes.

No. 21.791





**1 DISPATULA**

Disposable, flexible plastic spatula has the feel of metal but is much more economical. 7¼" length. Supplied in boxes of 100.

No. 21.185



**2 PLASTIC MEASURING CYLINDERS**

For measuring the correct amount of water to mix with investment and determining the amount of metal to be cast by the displacement method.

No.	Capacity
21.740	250 ml
21.74010	1000 ml
21.74011	3000 ml



**3 RUBBER MIXING BOWLS**

No.	Diameter x Height	Capacity
21.760	2" x 2¼"	¼ pt
21.761	2¾" x 4¼"	¾ pt
21.762	3" x 5"	1 pt
21.763	5¾" x 6¼"	1½ qt
21.764	6½" x 8½"	1 gal



**4 PLASTIC MIXING BOWLS**

No.	Diameter	Height	Capacity
21.756	4"	2¼"	¾ pt

**5 GIFFITH WAXOLVENT**

A quality solvent and polish for wax and plastic models. 4 oz

No. 21.792



**6 PRO-CRAFT® VAC-U-COAT**

Reduces surface tension on model so that investment will adhere. Eliminates bubbles. Flask may be vacuumed. 8 oz. bottle with spray pump.

No. 21.795 Vac-U-Coat



**7 PRO-CRAFT® VIBRATOR**

Three-speed vibrator with greater weight and lower center of gravity prevents unit from dancing at higher speeds. Quieter operation, with greater surface area on platform. Has extra long cord and three-prong grounded plug. 120 volt, 40W, 60 Hz.

No. 21.815



## 1 GROBET USA® PRO-CAST VACUUM MACHINE for INVESTING and CASTING

Three-in-one unit invests under vacuum, casts perforated flasks under vacuum and casts regular flasks under vacuum. The Pro-Cast Vacuum machine measures 23" W x 11" D x 13½" H. Investing is performed on a 10½" square platform which can be vibrated to eliminate air and bubbles. Unit accommodates perforated flasks up to 5" in diameter and 7" high. Pressure created by the powerful vacuum unit pulls molten metal into the most intricate patterns. Vacuum assist casting can also be done on this unit with regular solid wall flasks. Unit comes complete as shown. Shipping weight 69 lbs.

No. **21.800G** 110 volt model

No. **21.800GX** 220 volt model

### Replacement Accessories:

No. **21.705** Perforated flask 3⅜" x 4"

No. **21.706** Perforated flask 4" x 6"

No. **21.803** Adapter plate for 4" flask

No. **21.806** Oil vacuum pump oil-pint

No. **21.808** Vacuum pump oil-quart

No. **21.811** Vacuum pump oil-gallon

No. **21.809** Red silicon pad for 21.805 5½"

No. **21.810** Black rubber pad for investing

No. **21.812** Red silicon pad for 21.800G 7"



No. **21.813** Flask seal for 3⅜" flask

No. **21.814** Flask seal for 4" flask

No. **21.817** Flask seal for 5" flask and adapter plates

No. **21.818** Bell jar 9" diameter x 8" high

No. **22.791** Melting dish with handle

No. **22.793** Melting dish only

No. **57.068** Flask tongs

No. **57.069** Perforated flask tongs with pins



## 2 PERFORATED FLASKS for VACUUM CASTING

Stainless steel heavy-duty flasks, with machined perforations, help assure a perfect cast since metal is being forced into cavities evenly from all directions.

Flask	Diameter	Height
<b>21.705</b>	3⅜"	4"
<b>21.706</b>	4"	5¼"

## 4 SPRUE BASE for PERFORATED FLASK

Used with perforated flasks listed above.

No. **21.882** For No. 21.705

No. **21.829** For No. 21.706

## 5 UNIVERSAL SPRUE BASES

One size fits all 2½", 3", and 3½" flasks.

No. **21.780**

## 3 RUBBER SLEEVES for PERFORATED FLASKS

No more messy masking tape! These latex rubber sleeves are placed over the flask to contain the investment while pouring and also form a collar so that no spilling occurs. Dimensions listed are for the flask that each sleeve will fit. Sleeve must be removed prior to burnout. **Warning: DO NOT USE if you are NRL latex sensitive.**

Flask	Diameter	Height
<b>21.708</b>	3⅜"	4"
<b>21.709</b>	4"	5¼"
<b>21.711</b>	4"	7"



**1 GROBET USA® STANDARD VACUUM-ASSIST MACHINE for INVESTING and CASTING**

When casting, the machine creates a vacuum at one end of the flask, which pulls the air and gases from the mold so that the molten metal flows quickly to every opening. Larger flasks can be cast with vacuum casting than with the centrifugal machine (although it is not possible to specify exact sizes, as the amount of metal to be cast, the shape of the cavity, etc., will all affect the size). This machine is capable of creating a negative mercury pressure equal to 27"-29" at sea level. The vacuum table measures 10½" x 10½" and rests on jiggle springs. Unit comes complete as shown. Shipping weight 50 lbs. Table without pump 18 lbs. Pump (and oil) 29lbs.

- No. **21.805G** 110 volt model
- No. **21.805GX** 220 volt model
- No. **21.806G** Table only without pump



**CASTING FLASKS & SPRUE BASES**

Check chart below to help you match the sprue base type you need with the proper casting flask. All casting flasks are stainless steel and very durable. The matching sprue bases assure a leak-proof seal.

**CASTING FLASKS**



**2**

Flask	Diameter	Height
21.687	1¾"	1¾"
21.68701	2"	2½"
21.689	2½"	2½"
21.690	2½"	3"
21.691	2½"	4"
21.693	3"	2½"
21.694	3"	3"
21.695	3"	4"
21.696	3½"	2½"
21.698	3½"	4"
21.699	3½"	5"
21.69901	4"	4"
21.701	4"	5"

**RECOMMENDED SPRUE BASES**



**Button Sprue Base** - Fill the cup in the center with wax or clay to form the base for the sprue.



**Tree Sprue Base** - Perfect for high production operations.

Button	Tree
21.778	21.825
21.779	21.824
21.781	21.826
21.781	21.826
21.781	21.826
21.782	21.827
21.782	21.827
21.782	21.827
21.782	21.827
21.783	21.828
21.783	21.828
21.783	21.828
21.783	21.828
21.784	21.829



**3 PLATINUM FLASK LINER SHEET**

A handy item to have when doing any type of work with a flame. Asbestos-free and specifically made for lining flasks for firing. Measures 8" x 31" x 1/16".  
No. **21.0860**

**4 CASTING FLASK EXTENDERS**

Slip the rubber extender over the flask prior to filling, to enable you to fill casting flasks to the top with investment. Prevents spilling of investment during vacuuming.



No.	Flask Diameter
21.797	2½"
21.798	3"
21.799	3½"

### 1 "METAL-MELT" FURNACES from GROBET USA®

Specially designed and constructed for melting metals for casting and alloying. Featuring 2,012° F (1120° C) operating range, heavy duty graphite crucible, precise temperature control, LED on/off indicator light, 1kg and 2kg capacity, easy-to-read digital display, 110V-50/60 cycle power.

- No. 22.211 1 kilo digital furnace
- No. 22.211X 1 kilo digital furnace, 220V
- No. 22.213 2 kilo digital furnace
- No. 22.213X 2 kilo digital furnace, 220V
- No. 22.214 Replacement heating element for 1 kilo furnace
- No. 22.214X Replacement heating element for 1 kilo furnace, 220V
- No. 22.215 Replacement heating element for 2 kilo furnace
- No. 22.216 Replacement crucible for 1 kilo furnace
- No. 22.217 Replacement crucible for 2 kilo furnace



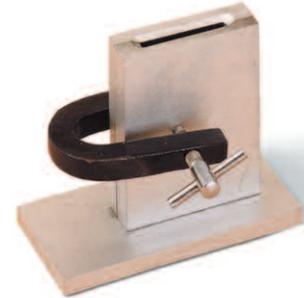
### INGOT MOLDS

Used to convert scrap into suitable shape for rolling. The metal is melted in a crucible and poured into the mold.

#### 2 ADJUSTABLE INGOT MOLDS

Each mold can be made smaller by adjusting the sides in a horizontal direction. The C-clamp holds and releases the plates. The table below shows the maximum capacity.

No.	Depth		Length		Width		Capacity	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(dwt)	(g)
22.851	2 <sup>5</sup> / <sub>8</sub> "	66	1 <sup>5</sup> / <sub>8</sub> "	41	1/8"	3.2	115	178
22.0505	2 <sup>3</sup> / <sub>4</sub> "	70	1 <sup>3</sup> / <sub>4</sub> "	45	3/16"	5	150	233
22.854	3 <sup>15</sup> / <sub>16</sub> "	100	1 <sup>3</sup> / <sub>4</sub> "	45	3/16"	5	200	310
22.0507	5 <sup>1</sup> / <sub>16</sub> "	135	2 <sup>3</sup> / <sub>4</sub> "	70	7/32"	6	500	775



#### 3 REVERSIBLE INGOT MOLD

Gives you two ingot molds in one. Make wire sizes 3, 4, 5, and 6 mm in diameter or 130 dwt. (221 g) capacity flat plates. C-clamp holds and releases the plates.

No. 22.877



#### 4 INGOT MOLDS for WIRE

Each mold can make three sizes of wire.

Regular Sizes:

3/4" x 5/16" x 6<sup>11</sup>/<sub>16</sub>", 3/8" x 3/8" x 6<sup>11</sup>/<sub>16</sub>", 9/32" x 5/16" x 6<sup>11</sup>/<sub>16</sub>"

No. 22.0510

Extra Long Sizes:

5/16" x 1/4" x 9<sup>5</sup>/<sub>8</sub>", 1/4" x 1/4" x 9<sup>5</sup>/<sub>8</sub>", 7/32" x 1/4" x 9<sup>5</sup>/<sub>8</sub>"

No. 22.0501

#### 5 OPEN INGOT MOLDS

Forms ingots or bullion of various sizes as shown below.

No.	Depth (mm)	Length (mm)	Width (mm)	Capacity	
				(dwt)	(g)
22.870	35	90	35	50	78
22.871	30	120	45	80	124
22.872	40	155	65	200	310



## FIBER BURNOUT FURNACES

Insulated with space-age ceramic fiber for fast heating and cooling at low electrical cost. The firing chamber is 13" W x 13" D x 9" H (33 x 33 x 23 cm), large enough for volume jewelry making. These kilns fire to 1700° F (967° C), so you can also use them for low-fire ceramics, enameling on metal, china painting or glass fusing. A heavy steel case protects the firing chamber for long life and the chamber is supported by a double-layer steel bottom. The base lifts the furnace off the work surface. The door peephole and top vent-hole are sealed with metal covers when not in use. The door remains tightly sealed, even at high temperature, with the spring-loaded latch. Reaches 1000° F (538° C) in 30 minutes.



### 1 DIGITAL CONTROL FURNACES

The digital control models use the DTC-800 controller, eliminating the need for a pyrometer. With this feature-packed temperature controller, you can program up to eight ramps (raising or lowering the temperature at the rate you specify) and eight dwells (holding the temperature constant for the length of time you specify). The digital models use a type-K thermocouple, long proven for its reliability. The controller will shut off automatically should the thermocouple fail and the controller stores up to six programs even if the power shuts off. The furnace has a one year warranty. The controller has a two year warranty. Can be shipped UPS. Shipping weight 108 lbs.

No. **22.110** 120 volt furnace and digital controller  
(requires 20 Amp dedicated line)

No. **22.112** 240 volt furnace and digital controller  
(requires 10 Amp dedicated line)

No. **22.113** Replacement heating element for 120 or 240 volt



### 3 ANALOG (NEEDLE) PYROMETERS

Used to measure temperature in burnout ovens. Measure within 98% accuracy, from 0° to 2500° F (0 to 1371° C). Have 5" lead and sheathed 1/8" thermocouple. Can be wall mounted.

No. **22.160**



### 2 MANUAL CONTROL FURNACES

The manual control models use an infinite control switch with pilot light. A pyrometer hole is drilled in the back of the firing chamber. (Pyrometer not included, sold below). The furnace comes with a one-year warranty. A digital controller may be purchased separately and is recommended for burnout in place of the pyrometer. Can be shipped UPS. Shipping weight 108 lbs.

No. **22.114** 120 volt manual control furnace  
(requires 20 Amp dedicated line)

No. **22.116** 240 volt manual control furnace  
(requires 10 Amp dedicated line)

No. **22.113** Replacement heating element for 120 or 240 volt



### 4 GROBET BRICK BURNOUT FURNACES

Features an infinite control switch and maximum operating temperature of 2000° F (1093° C). Includes a pre-drilled hole in the back of the chamber for insertion of a thermocouple. Use with a digital or analog pyrometer or digital controller. Elements are exposed in recessed grooves and the swing-style door opens wide for easy flask handling. Base keeps firing chamber off the work surface, so no stand is needed. A peep hole in the door and vent hole on top have metal covers. Firing chamber dimensions 8½" W x 8¾" H x 9" D. Outside dimensions 17¼" W x 17¾" H x 18" D. Shipping weight 83lbs.

No. **22.07600**

No. **22.07601** Replacement Heating element



**1 ASBESTOS-FREE SAFETY GLOVES and MITTENS**

A must for working with burnout ovens and vulcanizers, and whenever melting gold. Do not use tongs to lift flasks and crucibles into or out of the furnace without protecting your hands. Durable, yet comfortable, these full length gloves cover your wrists. One size fits all. Always use on both hands. Sold by the pair.

No. **22.753** Gloves-pair  
 No. **22.754** Mittens-pair



**2 WAX DRIP TRAYS**

Trays protect the floor of your burnout oven, while providing proper support for your flasks. They increase the life of your heating element, and are a must when using plasticized wax. Stainless steel.

No. **22.119** 12" x 12" x 3/4"  
 No. **22.11901** 7" x 7" x 3/4"



**3 MELTING DISH**

Particular style of these crucibles makes it easier to melt metals with a torch. Made of fused silica with clay bond and suited to high melting temperatures. Handle No. 22.798 can be added to make pouring easier.

No.	Type	Capacity	
		(oz)	(g)
<b>22.793</b>	Straight side	7½	213
<b>22.765</b>	Straight side	18	510
<b>22.795</b>	High back	20	567
<b>22.764</b>	Straight side	40	1134



**4 MORGAN MELTING DISH (WESGO)**

Designed for high temperature melting, including metals such as platinum.

No.	Type	Capacity	
		(oz)	(g)
<b>22.815</b>	Straight side	8	227
<b>22.816</b>	High back	10	283
<b>22.817</b>	High back	20	567

**5 CENTRIFUGAL CASTING MACHINE CRUCIBLES**

Crucibles for use with the centrifugal casting machines. Made of fused silica with a clay bond, which will last through many meltings. Best choice for metal melting up to 2500°F (1371°C).

No.	Troy (oz)	Capacity	
		(g)	(dwt)
<b>22.450</b>	2½	77	50
<b>22.779</b>	2½	77	50
<b>22.452</b>	12	373	240
<b>22.453</b>	20	622	400
<b>22.455</b>	22½	622	400
<b>22.454*</b>	9	279	180

\*With slot to fit Pro-craft® casting machines on page 129.



**Safety Tip: Always wear proper eye protection when melting.**



### 1 MORGAN BRAND CRUCIBLES (WESGO)

Suitable for high temperature melting of platinum, chromium, gold alloys, etc.

No.	Type	Capacity in Platinum	
		(oz)	(g)
22.470	Small A	11	128
22.471	Large A	13	185
22.472	Slotted A for large machines	13	185
22.473	Large D with key*	10	283
22.474	Large D with large orifice	11	312

\*Key or slant side bottom for holding in machine for large melts on non-gold alloys.

### HIGH TEMPERATURE CRUCIBLE (not pictured)

No.	Type	Capacity in Platinum	
		(oz)	(g)
22.47101	Large A	13	185



### 2 FUSED SILICA CRUCIBLES

Made of clay bonded fused silica for melting temperatures up to 2800°F (1538°C). Excellent for melting gold and silver. Available in a variety of sizes or as a set of four.

No.	Diameter	Depth	Capacity	
			(dwt)	(g)
22.780	1 1/4"	5/8"	16	148
22.781	2 1/4"	3/4"	19	196
22.782	3"	1"	25	155
22.783	4"	1 3/8"	35	420

### SET of FUSED SILICA CRUCIBLES

Contains all four sizes listed above.

No. 22.784



### 3 MELTING CRUCIBLES

Made of fused silica with clay bond, for melting temperatures up to 2500°F (1371°C). Best choice for gold, silver, bronze, etc. Outside dimensions below do not include 3/8" pouring spout.

No.	Diameter	Height
22.760	2 3/8"	2 7/8"
22.763	2 1/2"	2 1/2"
22.761	3 1/2"	3 1/2"
22.761	3 1/2"	3 1/2"
22.759	5"	5 1/4"

### 5 BURNO STYLE CRUCIBLES

Their protective heat-holding covers make them efficient for melting with a torch. Handy pouring openings. Made of fused silica with clay bond, for melting temperatures up to 2500° F (1371° C). Best choice for gold, silver, bronze, etc. Use with tong No. 57.060 on next page.

No.	Capacity
22.755	25 dwt.
22.756	50 dwt.
22.757	100 dwt.



### 4 GRAPHITE CRUCIBLES

These heat resistant crucibles, often called black lead, withstand temperatures up to 3000°F (1649°C) and will tolerate thermal shock.

No.	Size	Height	Top O.D.	Bottom O.D.
22.766	4/0	3 1/8"	2 3/8"	1 3/4"
22.767	1	3 5/8"	3 1/2"	2 1/4"
22.768	2	4 9/16"	3 7/8"	2 3/4"
22.769	3	5 1/4"	4 1/4"	3"
22.770	4	5 1/2"	4 3/4"	3 3/8"
22.771	6	6 5/8"	5 3/8"	4"
22.772	8	7"	5 5/8"	4 3/8"
22.773	10	8 1/16"	6 1/16"	4 15/16"





**1 GRAPHITE MELTING CRUCIBLES**

For use with the metal melt furnaces 22.211 & 22.213. Made of quality graphite.

- No. 22.216 1 kilo
- No. 22.217 2 kilo



**2 CARBON STIRRING RODS**

For stirring gold in crucible while melting.

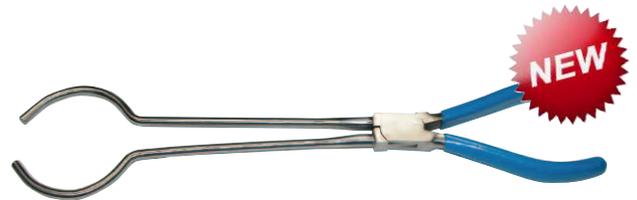
- No. 22.901 9" length with 1/4" diameter
- No. 22.902 12" length with 1/2" diameter



**3 QUARTZ STIRRING RODS**

Superior quality clear quartz rods are annealed and fire polished to eliminate flaking. Ideal for stirring molten metal. Overall length 12" x 3/8" diameter. Melting point 3183° F (1750° C).

- No. 21.905



**4 TONGS FOR CRUCIBLES**

For picking up crucibles.

- No. 22.790

**5 GRIFFITH BORIC ACID POWDER**

Use as an anti-oxidizer during soldering or in making flux.

- No. 54.522 7 oz.
- No. 54.523 16 oz.



**6 PRO-CRAFT® BORAX FLUX**

Controls oxidation during the melting process.

- No. 22.820 8 oz.



**7 GRIFFITH BORAX POWDER**

Used for making soldering and casting fluxes.

- No. 22.821 7 oz.
- No. 22.822 16 oz.



**8 GRIFFITH BORIC ACID GRANULES**

Used as an anti-oxidizer during soldering or in making flux.

- No. 54.520 7 oz.
- No. 54.521 16 oz.



## PRO-CRAFT® CENTRIFUGAL CASTING MACHINES

The heavy-duty spring in the base swings the arm so that the molten metal is forced into the flask. The broken arm construction assures that the metal will flow in a straight line, producing dense castings. NOTE: For safety reasons, casting machine springs must be replaced at the factory.



### 1 LONG ARM CENTRIFUGAL MACHINE

Takes flasks up to 3½" in diameter and 5" high. The long 22¾" arm provides the extra force needed for heavier casts. Comes with balance weights and cradle for 2½" diameter flasks. The recommended crucible is the 9 oz. size, No. 22.454. Shipping weight 20 lbs.

No. 22.365G

### LONG ARM CENTRIFUGAL MACHINE with ACCESSORIES

Set contains No. 22.365G described above, along with the following additional items: 9 oz. crucible, universal sprue base, rubber mixing bowl, spatula, 3½" diameter x 5" long flask (no cradle needed), flask tongs and a 50 lb. box of investment. Shipping weight 29 lbs.

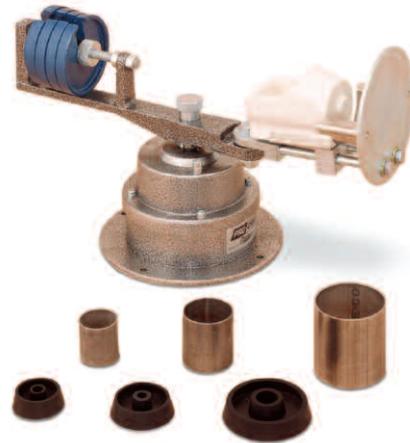
No. 22.366G



### 3 LONG ARM ACCESSORY

Can be used on the short arm machine to convert it to the long arm type. Comes complete with balance weights and cradle for flask.

No. 22.367G



### 2 SHORT ARM CASTING MACHINE SET

Accommodates flasks from 1¼" diameter up to 3½" diameter and 2¾" high. The set includes balance weights, crucible No. 22.454, three steel flasks, three flask cradles, three sprue bases, and flask tongs. Shipping weight 27 lbs.

No. 22.361G



### 4 DRUM for CENTRIFUGAL MACHINES

Helps protect the operator against accidental metal spilling from the whirling crucible. For use with either short or long arm machines. Made of steel with baked enamel finish. Base is drilled for attachment to bench. Base measures 24" x 24", with the drum 23¾"W x 11½"H. Comes with instructions for assembly. Optional cover provides extra protection. (Machine not included.) Shipping weights as follows: drum 16 lb. 6 oz., cover 6 lbs. 8 oz. and drum and cover 23 lbs.

No. 22.390 Drum only

No. 22.391 Cover only

No. 22.392 Complete unit

## WAX WORKING TOOLS &amp; SUPPLIES

**1 3-WELL WAX TRAY with LID**

This easy-to-clean, 3-well wax tray is digitally controlled, with an attached swing-back lid. The larger well measures 3" L x 2" W and is  $\frac{3}{4}$ " deep. The two smaller wells measure  $1\frac{3}{4}$ " L x  $1\frac{3}{8}$ " W x  $\frac{3}{4}$ " D. The entire unit is  $6\frac{3}{8}$ " L x  $4\frac{7}{8}$ " W x 2" H  
No. 21.273

**3 VACUUM PICK-UP TWEEZERS**

Handles delicate miniature objects without scratching, breaking or pinching. Avoids contamination of parts and performs tweezer functions such as sorting, picking up, holding, carrying, etc. This system has received high praise from users in the semi-conductor, micro-electronic, ball bearing, optical and precision instruments industries. A lightweight, portable unit, completely assembled and ready for immediate operation as soon as the proper size tip is selected and installed.  $4\frac{1}{2}$ " high x  $2\frac{3}{4}$ " diameter, has an adjustable vacuum pressure control from 1" HG to 15" HG and an air flow of 125 cubic inches per minute. Unit has an on-off switch and is completely noiseless during operation. Set contains vacuum generator, anodized aluminum cylindrical probe, in-line filter to protect the generator, 4' length of tubing and five stainless steel probe tips.

No. 57.650 115 volt model

No. 57.650X 220 volt model

No. 57.651 Filter replacements

**5 SIMPLICITY BURNERS**

Flame can be adjusted by raising or lowering split sleeve. Faceted bowl measures  $3\frac{3}{16}$ " in diameter and holds 4 oz. of fuel. (Uses Griffith Alcohols, page 252.)

No. 14.285 With  $\frac{1}{2}$ " diameter wick

No. 14.286 With  $\frac{1}{4}$ " diameter wick

No. 14.287 Screw adjusting  $\frac{3}{16}$ " wick

**2 GROBET WAX INJECTORS**

Rugged construction and precision engineering make this wax injector practically maintenance free. Both hands are free for holding mold while injecting wax. Requires 5 to 8 lbs. of pressure which can be supplied by compressor. Made in USA

**Features:**

- Capacity  $2\frac{3}{4}$  qt. or 5 lbs. max of wax (No. 22.747)
- Capacity 4 qt. or 8 lbs. max of wax (No. 22.748)
- Heated nozzle to eliminate wax freezing
- Nozzle has positive seal and drip guard
- Accurate thermostat
- Sensitive air pressure regulator and gauge
- Large wing nuts for easy cover removal and wax loading
- On-off pilot light
- Safety valve for air release-20 lbs.
- Measures 9" diameter x 16" high (No. 22.747)
- Measures 10 $\frac{1}{2}$ " diameter x 21" high (No. 22.748)

No. 22.747  $2\frac{3}{4}$  qt. capacity

No. 22.747X 220V,  $2\frac{3}{4}$  qt. capacity

**4 PRO-CRAFT® WAX POT**

US made, thermostatically controlled electric pot keeps wax at proper temperature for patching and model making. May also be used as wax and resin dip pot for refractory models. Has 1 pint capacity.

No. 21.288

**6 WAX INJECTOR**

Thermostatically controlled, with one pint capacity. Keeps wax at proper temperature. Hand-operated pump injects wax into mold. Made in USA.

No. 22.715 115 volt model





### 1 PRO-CRAFT® SAND CASTING SET

For casting simple metal articles such as jewelry and small sculpture in sand. Preparation of the sand mold is simple and quick and the original pattern or article can be used over and over. The set contains all necessary items (except a melting torch); parting powder, 5 lb. can of sand, crucible, crucible tongs, borax, asbestos-free pad, casting flask (horizontal or vertical fill) measuring 4¾" H x 3" W x 2" D and manganese bronze casting metal. Shipping weight 10 lbs.

- No. 22.949 Sand casting set
- No. 22.952 Replacement casting flask
- No. 22.957 Sand only - 5 lb.



### 3 PLASTELINA MODELING CLAY

Pliable, gray-green in color. Used to fill cups in sprue bases. 1 lb. blocks. No. 21.774

### 5 JEWELRY MAKING SET

Practically everything needed for your jewelry-making projects. All first-quality tools for sawing, drilling, twisting, hammering, filing, polishing, etc.

Set contains:

- V-slot board and bench clamp • Sawframe • Sawblades • Dividers • Rule-combination mm & inch • Center punch & scriber combination • Chinese white • Hand drill • Twist drills-6 assorted • Pin vise • 3 pliers: round nose, flat nose, chain nose • Snips • Ball peen hammer • Mallet • Wood dapping block & punches • Steel ring mandrel • Ring clamp • Setting burnisher • Prong pusher • 6" flat file w/handle • 6" half-round file w/handle • 3 assorted needle files • India stone • Emery paper-4 assorted • Felt hand buff for tripoli • Tripoli compound • Chamois hand buff for rouge • Red rouge • Quick-setting adhesive • Soldering torch • Asbestos-free pad • Charcoal soldering block • Binding wire • Hard soldering flux • Flux brush • Silver solder • Pickling compound • Plain tweezers • Soldering clamp tweezers • Copper tongs for pickle • "The Jeweler's Bench Reference" Manual

All of the above items come in a plastic tool box.

No. 38.550 Set



### 2 PRO-CRAFT® MOLD PARTING POWDER

Provides clean mold separation. 1 lb. can. No. 22.645



### 4 CUTTLEFISH BONE

For casting small objects. Press model directly between two pieces of cuttlefish. The soft shell makes a smooth walled mold. Sprues, gates and vents are cut into the wall with a sharp knife. The two halves are held together with binding wire and the molten metal is poured into the cavity. Package contains six pieces. No. 22.930

## 1 CASTING KIT

Starter sets for the individual or shop. Complete set contains:

- Pro-Cast vacuum caster with accessories • Deluxe burnout oven • Centrifugal casting unit • Pyrometer • Mixing bowl • Timer • Graduated cylinder • Investment scale • Dwt. scale • Non-asbestos gloves • 25 lbs. investment • Four 2½" x 3" flasks • Two 3½" x 4" flasks • Sprue bases • Borax flux • Vac-U-Cast • Casting book • Jewelry cleaner

No. 38.552 Complete set - Shipping weight 222 lbs.



## CASTING METALS

These non-precious alloys resemble gold and silver, and are used as inexpensive casting metals. They can be oxidized or antiqued, as well as plated. The metals are tarnish resistant and will not discolor when heated. They will come out of investment bright and shiny, reducing the need for stripping or pickling. Can be electroplated and soldered with gold or silver solder.



### 2 COLUMBIAN GOLD

Yellow bronze metal is a bit softer in color than rich gold. Melts and flows just like real gold at about 1800° F (982° C). Comes in 1 lb. (454 g) package.

No. 43.01303/1



### 4 PEWTER

Lead-free and melts at about 450° F (232° C). An excellent metal for small sculptures. Comes in 1 lb. (454 g) package.

No. 43.01317



### 3 SILVER MINE

White copper-based alloy is very close to the color of sterling, but has the advantage of being considerably harder. Retains a high polish and melts at about 1550° F (843° C).

No. 43.01307 2 oz. (57 g)

No. 43.01307/1 1 lb. (454 g)



### 5 RE-CAST-IT

Add Re-Cast-It when casting old or scrap gold to achieve a bright yellow, porosity-free casting. Increases the fluidity of old metal, while eliminating reddish surface discoloration. One jar is enough for casting approximately 800 dwt. of gold.

No. 22.607



### 1 POROSITY KILLER

Use with Flexshaft to burnish and fill minor porosity holes in gold, silver, platinum, etc. Eliminates the need for extra filing and filling of holes with solder. With  $\frac{3}{32}$ " shank.

No. 21.05600



### 2 HEAVY-DUTY SPRUE CUTTING PLIERS

The unique linkage design multiplies the pressure exerted to enable you to make a clean cut every time. With hardened steel cutting jaws. Locking system holds pliers closed when not in use to protect cutting edges. Cutting edge is  $\frac{7}{8}$ " long, with jaws opening from  $\frac{5}{32}$ " to  $\frac{9}{32}$ ". Overall length is 10".

No. 64.6496 End cutter

No. 64.6599 Side cutter



### 3 END CUTTER/SPRUE CUTTERS

Multi-leverage with return spring in handles. Cuts up to  $\frac{3}{16}$ " rods. End type cuts close to work. Overall length is 7", cutting edge  $\frac{13}{16}$ ".

No. 46.574



### 4 SIDE CUTTERS/SPRUE CUTTERS

Multi-leverage with return springs in handles. Heavy-duty type cuts up to  $\frac{1}{4}$ " rods. Overall length is 8", cutting edge  $\frac{3}{4}$ ".

No. 46.582



### 5 ALUMINUM HOT PLATE

Heavy aluminum,  $4\frac{1}{2}$ " wide x 5" long.

No. 22.960



### 6 FUSIBLE METAL

Melts in boiling water. Supplied in 2 oz. ingots.

No. 54.812



### 1 MELTING DISH with HANDLE

Melting dish with removable handle makes it easy to melt and pour metals. Wooden handle resists heat and fused silica dish with clay bond is suitable for melting metals with high melting points, including platinum. Overall length is 14".

No. **22.791** Dish with handle

No. **22.793** Dish only

No. **22.798** Handle only



### 2 MELTING LADLE

Made of steel and designed for left or right pouring. Bowl diameter is 3" and handle length is 11½".

No. **22.890**



### 3 MELTING LADLE with WOOD HANDLE

Cast iron bowl, dipped in nickel and fitted with wood handle. Bowl diameter is 2" and handle length is 6".

No. **22.895**



### 4 BENT CRUCIBLE TONGS

For holding crucibles as well as picking up hot objects. 19" (483 mm) length.

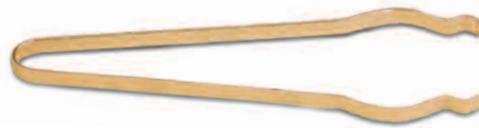
No. **57.066**



### 5 CRUCIBLE and FLASK TONGS

For picking up crucibles and 1½" (38 mm) diameter flasks. 19" (483 mm) length.

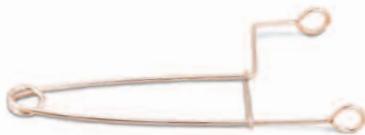
No. **57.080**



### 6 FLASK TONGS

For lifting small and large flasks to and from oven. 15" (381 mm) length.

No. **57.068**



### 7 BURNO CRUCIBLE TONGS

10½" (267 mm) length.

No. **57.060**



### 8 COPPER TONGS with CURVED TIPS

Suitable for pickling and acid solutions. 9" (229 mm) length.

No. **57.052**

## GROBET USA™ CRUCIBLE and FLASK TONGS

All-purpose laboratory and industrial tongs for holding, manipulating and pouring, as well as for picking up hot objects. With serrated tips. 9" (229 mm) length.



### 9 TONG with LONG NECK

Zinc-plated steel with long neck.

No. **57.085**



### 10 PERFORATED FLASK TONGS with PINS

Stainless steel, specifically designed with pins to engage the holes in perforated casting flasks for safe, secure handling. Not for use with non-perforated flasks. Length of 14¾" (378 mm)

No. **57.069**



**1 ELECTRIC WAX PEN**

Has five tips, variable heat control and on-off indicator light.

- No. **21.269** 110 volt model
- No. **21.269X** 220 volt model
- No. **21.268** Replacement pen w/cord
- No. **21.270** Replacement cord and handle
- No. **21.271** Set of 5 tips for 21.269



**2 SPEEDY WAX PEN**

Battery-operated, all-purpose wax pen. Instant heat with fingertip pressure control. Design or repair wax models with specially shaped interchangeable micro-tips. Cover protects tip and power switch. Includes AA-1.5V alkaline battery and one micro-tip.

- No. **21.260** Wax pen
- No. **21.261** Set of 3 differently shaped micro-tips



**3 MICROWAX WAX WELDER**

Electronic waxer and sprue sealer. Precision temperature control has a working heat range up to 428°F (220°C). Special features include an insulated, comfort grip handle, and a built-in handpiece holder to reduce burns. Also includes three specially shaped tips that are perfect for joining, carving and sculpting wax. Illuminated on/off switch.

No. **21.275**



**4 SPRUE BASE HOLDER**

Holds sprue bases from 3" to 5". Heavy base for stability and adjustable top for varied working angles.

No. **21.890**



**5 CERAMIC RING STAND**

Holds rings, leaving both hands free for wax modeling. Mounted on base with swivel to provide the exact position or angle desired. The 6" ceramic rod is easily released for replacement. Base accommodates either ceramic or carbon soldering rod (No. 54.130 shown in soldering section).

- No. **54.131** Ring stand
- No. **54.132** Replacement ceramic rod



**6 WAX KLEEN™**

A preparation that removes scratches, smooths and cleans wax patterns prior to casting. Produces cleaner castings requiring less finishing work. Acid-free, water-soluble and 100% organic. Fast working. Rub on with cloth and let air dry. Ideal for keeping wax injectors clean.

- No. **21.0806** 4 oz.
- No. **21.0807** 8 oz.

## STEAM CLEANERS

**1 GROBET USA® STAINLESS STEEL STEAM CLEANER**

The only ASME-certified steam cleaner with a stainless steel tank. Stainless steel cabinet, tank and fittings for superior performance and long, rust-free life

**Features:**

- All stainless steel (non-ferrous) fittings
- External sight glass and protective cover, with ball check valves
- Stainless steel heating element for reduced sediment in vessel
- Water intake valve with back-up flow protection
- Insulated nozzle assembly
- Quick recovery
- Low water cutoff
- Convenient foot pedal control for steam release
- Easy to plumb to meet local standards
- Easy to clean
- Warranty - 1 year parts and labor (under normal use)

**Specifications:**

- Capacity 2.54 gal
- Compact design - cabinet measures 10½" D x 14½" W x 14" H
- Variable steam pressure up to 70-75 PSI
- 1500 watts
- Ship weight 75 lbs.

No. **24.850P** 110-volt model

No. **24.850PX** 220-volt model

**3 GROBET USA® THE STEAM DRAGON™**

The atmospheric steam cleaning machine

The Steam Dragon is an advanced, state-of-the-art atmospheric cleaning machine. These compact, sturdy machines instantly deliver 125 PSI of dry steam. The Steam Dragon produces continuous steam and is safe to operate in malls, stores and offices.

No. **24.960** 110 volt Deluxe

No. **24.960X** 220 volt Deluxe

No. **24.961** 110 volt with Wand

No. **24.970** 110 volt Silver

No. **24.970X** 220 volt Silver



Note: Steam Dragon cleaners perform best using distilled water.

**2 GROBET USA® STEAM CLEANER**

A new generation of steam cleaning performance, quality and durability offered only by Grobet USA®. Built to full ASME specifications.

**Features:**

- External sight glass and protective cover, with ball check valves
- Water intake valve with back up flow prevention
- Stainless steel heating element for reduced sediment in vessel
- Adjustable thermostat
- Insulated nozzle assembly
- Low water cutoff
- Quick recovery
- Easy to plumb to meet local standards

**Specifications:**

- Capacity 2.3 gallon
- Compact design - cabinet measures 10½" D x 14½" W x 14" H
- Steam pressure @ 70-80 PSI
- 1500 watts
- Warranty - 1 year parts and labor (under normal use)
- Ship weight 75 lbs.

No. **24.900P** 110-volt model

No. **24.900PX** 220-volt model



### 1 STEAM CLEANER DETERGENT

Keeps your steam cleaner operating at peak efficiency. Goes directly into water while filling and cleans while you work to save time.  
No. 23.0877



### 2 GROBET USA® COATED STEAM TWEEZERS

Use to hold item while steam cleaning. Superior tension and grip. Made in USA.  
No. 57.921 8" long  
No. 57.922 10" long



### 3 GROBET USA® ECONOMICAL STEAM TWEEZERS

Use to hold item while steam cleaning.  
No. 57.0956 8" long  
No. 57.0957 12" long  
No. 46.0139/1 Pair of plastic-coated tips.



### 4 GROBET USA® SPRING GRIP STEAM TWEEZERS

Use to hold item while steam cleaning.  
No. 57.01400 9½" long  
No. 57.01401 6" long



### 5 GROBET USA® HEMOSTATS

Used to hold item while steam cleaning.  
No. 46.454 Straight tips  
No. 46.456 Curved tips



### 6 PARTS CLEANING BASKET

Holds small parts during cleaning. Reverse spring action handles prevent accidental loss of contents. Measures 6" x 2" x 2".  
No. 23.620 Small  
No. 23.621 Large

### 7 NO-LINT WATCH and JEWELERS' TISSUE

Lint-free, anti-tarnish tissues for wrapping and cleaning watch parts, jewelry, etc. Box contains 1000 sheets.  
No. 23.555 Grobet brand 4¼" square  
No. 61.0144 Vigor® brand 4" square



## ULTRASONIC CLEANERS

Ultrasonic cleaning occurs when ultra-high frequency sound waves (Hz) are passed through a cleaning solution creating cavitation, microscopic bubbles collapsing into themselves. This creates a high energy, vacuum effect which safely pulls debris, foreign particles and other contaminants from the surfaces being cleaned. With ultrasonic cleaning, both the exterior and the interior surfaces, including crevices, are thoroughly cleaned. Ultrasonic cleaning has been proven to be sixteen times more effective than manual methods.

**NEW**



### 1 FABULUSTRE® ULTRASONIC CLEANER

Fabulustre Ultrasonics feature stainless steel tanks. All units have a heater with a timer which allow you to pre-set the temperature and time for maximum cleaning results. Cleaning frequency on all units is 40khz.

No.	Capacity	Cleaning Power	Volts	Length	Tank Dimensions			Heat	Basket #
					Width	Depth			
23.640	1.5 pint	50w	110V	6"	3½"	2¾"	Yes	23.64001	
23.640X	1.5 pint	50w	220V	6"	3½"	2¾"	Yes	23.64001	
23.641	2 qt.	50w	110V	9¼"	5¼"	2¾"	Yes	23.64101	
23.641X	2 qt.	50w	220V	9¼"	5¼"	2¾"	Yes	23.64101	
23.642	3 qt.	100w	110V	9½"	5½"	4"	Yes	23.64201	
23.642X	3 qt.	100w	220V	9½"	5½"	4"	Yes	23.64201	
23.643	4 qt.	150w	110V	11⅞"	6"	4"	Yes	23.64301	
23.643X	4 qt.	150w	220V	11⅞"	6"	4"	Yes	23.64301	

### 2 GROBET USA® ULTRASONIC CLEANERS

Standard features include a stainless steel tank and cover, automatic tuning and a pilot light. A 30 minute/hold timer enables you to pre-set the cleaning cycle duration or select continuous cleaning. Cleaning power on all units is 35 KHz. The 3½ quart models have a stainless steel, multi-position drain for convenient solution disposal. Each unit is warranted for defects in materials and workmanship for 2½ years. The housing is warranted for 5 years and the tank-to-transducer bonding is covered for 10 years.



No.	Capacity	Volts	Shipping Weight	Tank Dimensions		
				Length	Width	Depth
23.586	2 qt.	117V	8 lbs.	6"	5⅞"	4"
23.587	3½ qt.	117V	10 lbs.	9¼"	5¼"	4"

### ACCESSORIES for GROBET USA® CLEANERS

Basket	Cover	For Use With
23.593	—	23.587 (3½ qt)
—	23.586PC*	23.586 (2 qt)
—	23.587PC*	23.587 (3½ qt)

\* POSITIONING COVERS - These stainless steel covers suspend beakers in solution to create a mini-cleaning tank for specialized ultrasonic cleaning procedures.

All units have earned world wide approvals-CSA, LA, FTZ, GS Mark and conform to CE requirements and meet FCC requirements.



### 1 GROBET USA® ULTRASONIC CLEANER

New & improved one pint stainless steel ultrasonic cleaner.

- Full cleaning power
- One pint
- Stainless Steel
- Bottom protective rack
- Storage cover
- Timer & auto shut off
- 7" x 4¼" x 5" outside diameter
- 110V, 60Hz, 50 watts

No. **23.585**



### 2 GROBET USA® ULTRASONIC MINI CLEANER

A table top model for small to medium volume ultrasonic cleaning. Ideal for retail stores or home use. Efficient solid state circuitry with a three minute auto off timer. Includes plastic basket and cover.

#### SPECIFICATIONS:

Capacity: 2 quarts  
 Power Source: ac110v, ac 220v  
 Output power: 35W

Timer setting: 3 minutes  
 Dimensions: 8" x 5" x 5½"  
 Weight: 1lb. 12oz.

No. **23.598** (110v)

No. **23.598X** (220v)

## SPEED BRITE IONIC CLEANERS

The Speed Brite systems quickly and thoroughly clean gold and silver, as well as soft stones such as emerald, opal, turquoise and pearl, without the vibration of ultrasonic waves or the harshness of ammonia.



### 3 ROUND COUNTER MODEL KIT (200SB)

7" diameter tank with 12 oz. (355 ml) capacity, lid, stainless ring bar, screen. Includes 16 oz. of Gem Sparkle concentrate solution.

No. **23.650** 110-volt model

No. **23.650X** 220-volt model



### 4 RECTANGULAR SHOP MODEL KIT (309SB)

9" x 5" tank with 36 oz. capacity, lid, stainless ring bar, screen. Includes 32 oz. of Gem Sparkle concentrate solution.

No. **23.653** 110-volt model

No. **23.653X** 220-volt model

### 5 IONIC CLEANER ADAPTER

Attaches to any standard ultrasonic cleaner. Combines all the features of ultrasonic cleaning with the special cleaning properties of an ionic cleaner. (Ultrasonic cleaner sold separately. See page 138.)

No. **23.656** 110-volt



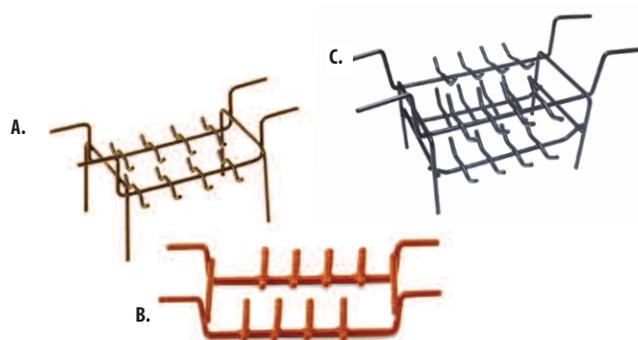
## ACCESSORIES

**1 ULTRASONIC STRAINERS**No. **23.615** 2¼"No. **23.616** 4¼"**2 ULTRASONIC HOOK and BAR RACKS**

Plastic coated, rust-resistant hook and bar racks increase ultrasonic cleaning efficiency and will not mar objects.

No. **23.630** 14¾" long. Capacity - 24 hooksNo. **23.631** 12" long. Capacity - 16 hooksNo. **23.632** Extra hooks. Package of 5**4 CLEANING MACHINE BASKET**

Holds small parts in a cleaning machine. Screw-type basket is ⅝" (16 mm) in diameter and is made of fine mesh to prevent loss of parts while in solution.

No. **23.0500****6 GLASS BEAKERS**No. **45.646** 250 ml**3 CLEANING RACKS**

Plastic coated racks will fit 1, 2, & 3 quart ultrasonic cleaners.

**A.** No. **23.624** Holds 16 rings, Overall length: 4" H x 7" L x 4½" W, Basket floor measures: 4" L x 4½" W

**B.** No. **23.625** Holds 16 rings, Overall length: 1" H x 8¼" L x 5½" W, Basket floor measures: 5½" L x 3½" W

**C.** No. **23.627** Holds 32 rings - 2 tiers, Overall length: 4" H x 8" L x 4½" W, Basket floor measures: 4" L x 4½" W

**5 PYREX BEAKERS**No. **45.640** 600 mlNo. **45.641** 1000 ml**7 BEAKER COVERS**

Protect against spills or contamination of beaker contents. Easy on and off, snug-fit. Covers fit the two popular sized beakers.

No. **45.644** Small for 600 ml beakersNo. **45.645** Large for 1000 ml beakers

**1 GRIFFITH ULTRASONIC CLEANER**

A liquid concentrate for general ultrasonic cleaning.  
No. **23.036** 8 oz.



**2 GRIFFITH INSTA-CLEAN**

A non-toxic dip or wipe-on tarnish remover and cleaner for gold, silver, copper, and brass.  
No. **23.030** 4 oz  
No. **23.031** 8 oz  
No. **23.032** 16 oz  
No. **23.033** 32 oz  
No. **23.034** 1 Gallon



**4 MAGIC LUSTER ULTRASONIC CLEANING SOLUTION CONCENTRATE**

One gallon super concentrate makes 40 gallons of cleaning solution. Ideal for heavy, continuous ultrasonic use.  
No. **22.668**



**6 "DIP ONCE" DEGREASER and CLEANER**

Cleans rapidly, effectively, and safely. Protects as it cleans. Removes grease, oil, lubricants, wax, adhesives, ink, flux and many other contaminants from a wide variety of products, including watches and watch parts. Cleaning action is thorough and gentle. Use as a dip or a spray, wipe or brush on, in an ultrasonic cleaner, or as a soak. Sold by dozen.  
No. **42.0501** ½ pint  
No. **42.0508** 1 pint (per dozen)



**3 ULTRASONIC CLEANING SOLUTION CONCENTRATE**

Formulated to meet OSHA requirements. Non-ionic, multi-purpose solution is safe for all ultrasonic cleaning needs. Contains no acids. When mixed with water, makes up to 10.25 gallons of solution.  
No. **23.2050** One quart of concentrate



**5 MAGIC GREEN ULTRASONIC CLEANING CONCENTRATE**

One ounce of concentrated granules is mixed with one gallon of water to form a fast-acting solution. Biodegradable, with no ammonia. Ideal for gold and silver because it attacks and removes rouge and tripoli instantly. Long-lasting, with no evaporation. Saves on shipping costs.  
No. **22.608** 8 oz. jar makes 8 gallons of solution  
No. **22.616** 16 oz. jar makes 16 gallons of solution  
No. **22.655** 32 oz. jar makes 32 gallons of solution  
No. **22.656** 10 lb. tub makes 160 gallons of solution  
No. **23.034** 64 oz.



**7 GEM SPARKLE® SOLUTION CONCENTRATE**

Concentrated, odorless and environmentally safe, this cleaning solution is an effective, fast-acting degreaser that also removes oxidation and brightens metal to a like-new finish.  
No. **23.660** 16 oz. solution  
No. **23.661** 32 oz. solution  
No. **23.662** 1-gallon solution



## CONNOISSEURS® PROFESSIONAL JEWELRY CARE AT HOME

**1 LA SONIC III**

Twin tank design has three separate cycles: Regular for gold, diamonds, other precious stones and stubborn soil, Delicate for pearls, other semi-precious stones and light soil and Finish/Rinse for like-new sparkle. 110-volt unit includes convenient jewelry tray, touch-up brush, dust cover, jewelry care guide and 4 oz. bottles of both regular and delicate formula cleaning concentrate, enough for one quart of each solution. Two-year warranty.

No. **23.01854**

**2 CONNOISSEURS SONIC JEWELRY BATH**

Cordless, battery operated sonic cleaner for quick cleaning of small pieces (up to 4 rings). This state-of-the-art cleaner combines sonic technology with a contemporary look. It has a clear tank for viewing the cleaning action. Use the carousel for rings and the "S" shaped hook for a larger piece. Batteries (AA) not included.

No. **23.01849**

**3 JEWELRY CLEANER**

Includes handy dipping tray and touch-up brush. 8 oz. jars. Case of 24. Regular formula - for gold, diamonds and other precious stones and stubborn soil

No. **23.01885**

**4 CONNOISSEURS JEWELRY CLEANERS**

A new "Revitalizing" colorless formula with pleasant fragrance adds striking brilliance to diamonds and gold. Improved jar dynamics allows users to dip jewelry without getting fingers wet

No. **23.01887** Striking Brilliance

No. **23.01888** Dazzling Shine

No. **23.01889** Radiant Luster

**5 SILVER JEWELRY CLEANERS**

Removes tarnish and dirt instantly. Silver tone, pleasantly scented, easy application. Dipping tray included with 7 oz. liquid jars. 7 oz. size sold 12 to a case. Gallon size sold 4 to a case.

No. **23.01880** 7 oz. bottles

No. **23.01881** 1-gallon containers

**5 JEWELRY CLEANER CONCENTRATES**

**Delicate formula** - for pearls and other semi-precious stones and light soil.

**Regular formula** - for gold, diamonds and other precious stones and stubborn soil.

Item	Formula	Size	Case Qty
<b>23.01856</b>	Delicate	8 oz.*	12/case
<b>23.01857</b>	Regular	8 oz.*	12/case
<b>23.01910</b>	Regular	1 gal.	4/case

\*8 oz. concentrate makes ½ gallon



**1 CONNOISSEURS ULTRA-SOFT POLISHING CLOTHS**

Ultra-Soft for Jewellery cleans and buffs gold and silver jewellery. Ultra-Soft for Silver lifts tarnish from sterling silver, silver plate, flatware and hollowware, while leaving a protective, anti-tarnish coating. Measures 11" x 14".

No. 17.0270 For jewellery

No. 17.0271 For silver



**2 CONNOISSEURS JEWELRY WIPES**

Easy to use disposable jewelry wipes are safe for fine jewelry. Each dispenser holds 25 pop-up wipes.

No. 23.01850



**3 CONNOISSEURS CLEANING GEL and BRUSH**

The specially formulated gel, combined with a unique brush creates a foaming action that gently, yet thoroughly, cleans diamonds, precious and semi-precious stones, gold and platinum jewelry. Not for use on pearls. .6 fl. oz.

No. 23.01851



**4 CONNOISSEURS JEWELRY SOAP**

The convenient pump dispenser makes this gel non-messy. Safe for jewelry Gentle to the skin. A special jewelry cleaning brush snaps into place on the back of the dispenser.

No. 23.01852

**5 CRYSTAL CLEAR GLASS WIPES**

Clean glass without extra equipment and hassle. Ammonia-free, non-flammable formula cleans dirt and grime from glass surfaces, leaving no residue — just a sparkling shine.

No. 23.0351



**6 HAND SANITIZING WIPES**

Immediately eliminate harmful microorganisms from skin. A single pre-moistened towel kills 99.9% of disease-causing microbes in only a few seconds. No messy, runny gel --- just tear, wipe, and throw away. Plus, the special formula conditions skin as it sanitizes.

No. 23.0352



**7 MULTI-METAL POLISHING WIPES**

Clean brass, silver, copper, and other sensitive metal surfaces and keep them looking brand new. Powerful proprietary formula removes deposits, oxidation and corrosion quickly and easily, yet gentle enough to polish and protect metal surfaces against further damage.

No. 23.0353



**8 STAINLESS STEEL CLEANER WIPES**

Shine and protect stainless steel surfaces in one step. Pre-moistened with a powerful citrus-based solution, these wipes effectively remove heavy soils, grease, grime, residue, fingerprints and smudges, leaving a clear protective coating that shines and preserves surface from unsightly water marks and harmful corrosion.

No. 23.0354



## ZENITH WATCH SOLUTIONS

Long-time favorite of watchmakers, clockmakers and jewelers.

**1 DRIZEBRITE FINAL RINSE**

No. 23.0101 1 gallon

**2 ULTRASONIC CLEANING FLUID****Ammoniated 202**

Ammoniated waterless cleaning fluid No. 202 is designed for watchmakers. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0202 1 gallon

**3 FORMULA 67 WATERLESS CLEANING FLUID****Non-ammoniated 206**

Non-ammoniated waterless cleaning fluid No. 206 is designed for watchmakers and clockmakers. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0206 1 gallon

**4 SUPERSONIC WATCH CLEANER****Ammoniated 210**

Ammoniated waterless cleaning fluid No. 210 is designed for watchmakers and clockmakers. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0210 1 gallon

**5 FOAMLESS WATCH CLEANER****Ammoniated 214**

Ammoniated waterless cleaning fluid No. 214 is designed for watchmakers and clockmakers. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0214 1 gallon

**6 CLOCK and INSTRUMENT CLEANING FLUID****Ammoniated 220**

Ammoniated waterless cleaning fluid No. 220 is designed for clockmakers. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0220 1 gallon

**7 ULTRASONIC RINSING FLUID****Waterless 224**

Ultrasonic rinsing fluid No. 224 is designed for watchmakers. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0224 1 gallon

**8 NO. 3 RINSING SOLUTION****Waterless 231**

No. 3 rinsing solution is designed for clockmakers. It will not dissolve shellac, varnish or lacquer. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0231 1 gallon

**9 CLOCK and INSTRUMENT RINSING SOLUTION****Waterless 235**

Clock and instrument rinsing solutions No. 235 is designed for clockmakers. It can be used in an ultrasonic cleaner or in a mechanical cleaning machine.

No. 23.0235 1 gallon

**10 JEWELRY CLEANER CONCENTRATE****Ammoniated 249**

Can be used in an ultrasonic cleaner or for cleaning by hand.

No. 23.0249G 1 gallon

**11 WATCH & CLOCK CONCENTRATE**

No. 23.0251 Pint

No. 23.0251G Gallon

**12 Z-88 CONCENTRATE****Non-Ammoniated 253**

Can be used in an ultrasonic or to clean by hand. Works well on buffing compounds, waxes, oils, finger prints and any water soluble soil.

No. 23.0253G 1 gallon

**13 DIP-IT****Silver and Coin Cleaner 292**

To remove tarnish, apply Dip-It with a soft brush or cloth. Rinse immediately and dry. Do not use on antique finishes or stainless steel.

No. 23.0292G 1 gallon



### 1 GLASS BEAD BLASTER

Produces a stream of micro-sized glass beads for removing stubborn investment particles, oxidation and heat scale from metal. Leaves article with smooth finish. Made in USA.

#### Features:

- Large viewing window with hinged door for easy clean-out
- Illuminated interior (40-watt bulb maximum)
- Neoprene glove sealed to opening for holding article
- Easily controlled instant action gun
- Gun is attached to 3/4" air line hose with fittings
- Connects to compressor (sold separately), capable of producing 30 to 60 PSI pressure with at least a 5 gallon tank
- Portable-Weighs only 10 lbs. when filled with 5 lbs. of glass bead.
- Supplied with 5 lbs. waterproof micro-sized glass beads
- Compact. Measures only 9" x 9" x 9"

- No. **23.050** 110 volt model  
 No. **23.050X** 220 volt model  
 No. **23.051** Replacement beads 5 lb.  
 No. **23.052** Filter  
 No. **23.053** Gloves



### 3 AIR ERASER KIT/PORTABLE SAND BLASTER

The AEX Air Eraser works like magic to erase defects in jewelry castings, clean fine instrument parts, remove dust, tarnish and other corroded accumulations on a wide variety of delicate objects. Kit is complete with AEC Air Eraser; 4' air hose with moisture trap, dust respirator, 6 oz. jar of aluminum oxide compound and A-34 hanger.

No. **23.060** Kit



### 2 VIGOR® GLASS BEAD BLASTER

#### Features:

- Uses fine glass abrasive beads (23.0180/1)
- Tapered hopper for bead recycling
- Interior lighting with maximum 25 watt tube lamp (not included)
- Thick wall plastic construction with plexiglass lid with mylar shield
- Ceramic tip, .060", with approximate 1/8" spray pattern
- Two attached rubber gloves and built-in parts shelf
- Connects to air source of 1 1/2 CFM at 80-90 PSI (not included)
- Overall dimensions 18" H x 16" W x 12" D
- Inside working height 9"
- Lid opening 12" x 8"

- No. **23.04000** 110 volt model  
 No. **23.01801/1** 5 lb. bag of beads



### 4 DUST CHASER PLUS™

High pressure spray reaches the most inaccessible areas to remove dust instantly without residue. Ideal for watchmakers, jewelers, craftsmen and technicians. Non-corrosive and safe with all materials.

No. **23.0970B** \*8 oz. spray can w/nozzle

*\*Subject to DOT Federal Regulations. Cannot be shipped by air.*



**1 SAWDUST**

Fine quality, guaranteed free from foreign substances. 1 lb. box.  
No. **23.0530**



**2 IMPORTED ORANGWOOD**

Orangewood may be used for cleaning pivot holes and making port polisher points. Approximately 24 sticks per bundle.

No.	Diameter	Stick Length
<b>23.300</b>	.08"	5¾"
<b>23.303</b>	.16"	5¾"

**ALCOHOL CUPS**

For alcohol, benzene or other solutions. Edges of covers and cups are ground to form a tight seal, keeping dust from entering and protecting solutions from evaporation.



**3 PLAIN CUPS**

Crystal clear. No. 23.163 has knob.

No.	Diameter	Height	Capacity
<b>23.159</b>	2¾"	2"	3 oz.
<b>23.161</b>	4"	2¾"	8 oz.
<b>23.163</b>	4¼"	2¾"	12 oz.



**4 CLEAR GLASS with KNOB**

Outside diameter 3¼", height 2¾", capacity 3½ oz.  
No. **23.157**

**5 CUT GLASS**

Outside diameter 2¾", height 1¾", capacity 1½ oz.  
No. **23.155**



**6 PORCELAIN PICKLE PAN**

Made of laboratory quality porcelain. Wood handle 4 oz. capacity.  
No. **45.200**



**7 RUBBER FINGER COTS**

Made of soft molded red rubber to provide comfortable protection from oil, dirt and grime. Sold by dozen.

- No. **23.225** Small
- No. **23.226** Medium
- No. **23.227** Large
- No. **23.228** Extra large

**1 DENIM APRON**

Blue denim apron, 28" x 36" with breast and waist pocket.  
No. 47.306



**2 PURE WHITE COTTON GLOVES**

Protects jewelry and silverware from fingerprints, spotting, and tarnishing. Used extensively in jewelry stores and manufacturing facilities. Sold by dozen.  
No. 17.101 Small Heavyweight style  
No. 17.102 Large Heavyweight style  
No. 17.103 Lightweight style



**3 DISPOSABLE LATEX GLOVES**

Protect your fingers and hands when polishing, finishing, or using solutions. Will fit either hand. Sold by box of 100.  
WARNING: DO NOT USE if you are NRL-latex sensitive.  
No. 17.105 Small size  
No. 17.106 Medium size  
No. 17.107 Large size



**4 PR88 HAND PROTECTION CREME**

PR88 is a water soluble skin protection cream, which is applied before work begins. PR88 provides a non-greasy, non-sticky barrier against alcohol and carbon based substances like gasoline, diesel, oils, hydraulic fluids, creosote, fats, paint thinners, tar, dyes resins, non-polar organic solvents, fiberglass, superglues, ink, graphite., epoxies, etc.  
No. 23.040 3.5 ounce  
No. 23.041 1.5 ounce

DEMAGNETIZER

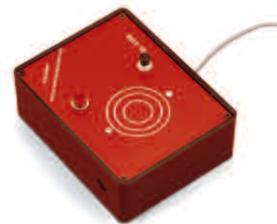
**5 LARGE DEMAGNETIZER**

Demagnetizes or magnetizes parts, tools and meters. To demagnetize, hold object in the center of the opening with button depressed for 3 or 4 seconds. Slowly withdraw object in a straight line and release button. To magnetize, hold the part or tool against the inside of the opening and press the button for 4 or 5 seconds and release. Opening is even large enough to accommodate cassette tapes for quick erasure. Opening measures 3" x 1½".  
No. 26.704



**6 DEMAGNETIZER with DEMAGNETIZING TUNNEL**

Demagnetizing tools such as tweezers, screwdrivers and steel rulers can be instantaneously and completely demagnetized over the entire length by simply placing them in the ¾" diameter tunnel and pressing the button Stronger than conventional demagnetizers. Current can be left on continuously with no damaging effects. Has no moving parts to wear out and will not overheat or burn out.  
No. 26.0415A



**7 COMPASS**

Extremely sensitive, 20 mm diameter, compass used for detecting the presence of magnetic fields in watches, instruments, and other components. Sold by dozen.  
No. 26.720





**1 PEGWOOD STICKS**

These round sticks are used for making Port polisher points. 18-24 sticks per bundle, depending on diameter.

No.	Diameter		Stick Length	
	(in)	(mm)	(in)	(mm)
23.300	.08"	2.0	5 <sup>3</sup> / <sub>4</sub> "	146
23.303	.16"	4.0	5 <sup>3</sup> / <sub>4</sub> "	146
23.304	.24"	6.0	7"	178



**2 COTTONWOOD STICKS**

These square sticks are used for fastening crowns on teeth. 1/2" (13 mm) square x 8" (203 mm) long. Box of 12 sticks.

No. 23.308



**3 CHIP SYRINGE**

Chrome plated point with red bulb.

No. 23.556

No. 23.557 Replaceable chrome point

No. 23.563 Replaceable red bulb



**4 DAPPEN DISHES**

Available in four colors.

No. 27.200 Amber

No. 27.201 Blue

No. 27.202 Clear

No. 27.203 Green



**5 GLASS SLABS**

Polished surfaces and beveled edges. Individually boxed.

No. 27.220 6" x 3" x 1/2" (152 x 76 x 13 mm)

No. 27.221 6" x 3" x 3/4" (152 x 76 x 19 mm)

**6 GLASS MIXING SLABS**

Ground on one side, polished on the other. Edges are rounded. 12 oz. (340 g).

No. 27.230 4" x 2 1/2" x 1/4" (102 x 64 x 6 mm)



**7 PORCELAIN MIXING TABLET**

4" x 2 1/2". Shipping weight 8 oz. (227 g).

No. 27.240 3 compartments, 2 1/2" x 4 1/4" (64 x 158 mm)

No. 27.242 6 compartments, 4" x 2 1/4" (102 x 57 mm)

**1 DENTURE PALATE RELIEF METAL**

B & S gauge #24. Supplied in 3" (76 mm) wide sheets. 1 lb. (454 g) rolls.  
No. 43.484



DENTAL PLIERS



**2 THREE-PRONG CLASP PLIERS, NO. 200**

Stainless steel pliers. Overall length is 4½" (114 mm).  
No. 46.658



**3 COLLAR PLIERS, NO. 118**

Chrome plated bandshaper for laterals and molars.  
Overall length is 5" (127 mm).  
No. 46.660

SCRAPERS & CHISELS



**4 PEARSON TYPE VUL-CRYLIC CHISELS**

Expertly crafted blades are properly hardened and tempered to retain a keen edge for long periods of use. Can be resharpened. Seasoned hardwood handles.

No.	Style	Length	
		(in)	(mm)
52.213	13-straight	6"	152
52.214	14-right	6"	152
52.215	15-left	6"	152
52.216	16-left	4"	102
52.217	17-right	4"	102



**5 KINGSLEY TYPE VUL-CRYLIC SCAPERS**

High grade steel drill rod is used in the production of these superbly crafted instruments. Set in seasoned hardwood handles. Can be resharpened.

No.	Style	Length	
		(in)	(mm)
52.241	1	6"	152
52.242	2	6"	152
52.243	3	6"	152
52.244	4	6"	152

## ENGLISH PATTERN BROACHES

Cutting, cleaning and finishing broaches made of high quality steel and uniformly tempered for long life. The lengths vary from approximately 1 3/4" to over 7", with diameters gauged slightly below largest portion of the cutting edges.

### 1 FIVE-SIDED CUTTING BROACHES

No.	Stubs	Diameter
15.301	1	.227"
15.305	5	.204"
15.310	10	.194"
15.315	15	.180"
15.320	20	.161"
15.325	25	.148"
15.330	30	.127"
15.335	35	.108"
15.340	40	.097"
15.345	45	.081"
15.348	48	.075"
15.350	50	.069"
15.351	51	.067"



No.	Stubs	Diameter
15.352	52	.063"
15.354	54	.055"
15.355	55	.050"
15.358	58	.042"
15.360	60	.039"
15.362	62	.038"
15.365	65	.033"
15.368	68	.031"
15.370	70	.027"
15.372	72	.024"
15.375	75	.020"
15.380	80	.013"



### 2 ASSORTMENTS of CUTTING BROACHES

For general purpose work. Each contains 12 of the most used sizes within the stub range indicated. Packed in convenient tubes.

No.	Style	Stub Range
15.500	Cutting	15-70
15.501	Cutting	30-70



### 3 ASSORTMENTS of CUTTING BROACHES with BROACH HOLDER

For general purpose work. Each contains 12 of the most used sizes within the stub range indicated. Packed in tubes with broach holder.

No.	Style	Stub Range
15.505	Cutting	15-70
15.506	Cutting	30-70



### 4 ASSORTMENTS of ROUND BROACHES

For general purpose work. Each contains 12 of the most used sizes within the stub range indicated. Packed in convenient tubes.

No.	Style	Stub Range
15.513	Round	15-70
15.514	Round	30-70
15.0506*	Round	55-80

\* Contains a broach holder.

### 5 SET of CUTTING BROACHES with KNURLED HANDLES

Contains six assorted sizes between stubs 43 to 72.

No. 15.510

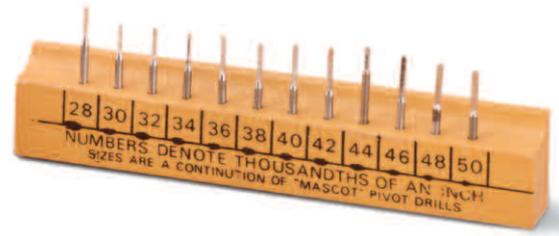




### 1 MASCOT PIVOT BROACHES

Superior quality, perfectly tapered and true to size for precision work. All have round handles and are 1 $\frac{3}{4}$ " long. Sold by the dozen.

	No.	Style	Diameters
A.	15.520	Cutting	.003" to .013"
	15.521	Cutting	.005" to .015"
	15.522	Cutting	.008" to .018"
	No.	Style	Diameters
B.	15.525	Round	.003" to .013"
	15.526	Round	.005" to .015"



### 2 MASCOT® FLAT PIVOT DRILLS

Carbon steel for drilling brass, mild steel, aluminum, etc. Right hand with rake angle of zero degrees. Shank diameter for sizes .004" to .026" is 1 mm, and for sizes .028" to .050" shank is 1.5 mm. Individual sizes, sold by the dozen.

No.	Size	No.	Size
28.364	.004"	28.388	.028"
28.366	.006"	28.390	.030"
28.368	.008"	28.392	.032"
28.370	.010"	28.394	.034"
28.372	.012"	28.396	.036"
28.374	.014"	28.398	.038"
28.376	.016"	28.400	.040"
28.378	.018"	28.402	.042"
28.380	.020"	28.404	.044"
28.382	.022"	28.406	.046"
28.384	.024"	28.408	.048"
28.386	.026"	28.410	.050"

### MASCOT® FLAT PIVOT DRILL ASSORTMENTS

Contains one dozen carbon steel drills in even numbers only. Includes wood block, marked with sizes, with clear plastic protective cover. (not shown).

No. 28.350 Sizes .004" to .010" (three of each)

No. 28.351 Sizes .004" to .026" (one of each)

No. 28.352 Sizes .028" to .050" (one of each)



### 3 HAND DRILLS

Smooth operating drill with adjustable chuck. Sturdy tool for all-around use.

No.	Length	Capacity
28.233	11"	$\frac{3}{16}$ "



### 5 SPIRAL DRILL

Push center chuck to rotate drill. Capacity 0 to  $\frac{1}{32}$ ". Length 4".  
No. 28.230



### 4 SPIRAL DRILL

Pushing down on handle rotates drill. Capacity  $\frac{1}{16}$ ". Length 7 $\frac{3}{4}$ ".  
No. 28.231



### 6 ADAPTOR CHUCKS

Handy for holding small drills in larger chucks or flexshaft handpieces. With  $\frac{3}{32}$ " shanks.

No.	Capacity	Collets
28.215	0" to .045"	1
28.216	0" to .097"	2



### 1 PEARL DRILL SET

Set of 12 drills in wood stand with cover. For drilling the holes for setting seed pearls and other round or half-round stones. Sizes 1.05 mm to 3.00 mm (.041" to .12"), with 1/8" (3.00 mm) shank. There are two of the 3.00mm.

No. 53.120

#### Individual Drills

No.	Diameter	
	(in)	(mm)
53.121	.041"	1.05
53.122	.047"	1.20
53.124	.057"	1.45
53.125	.065"	1.65
53.126	.073"	1.85
53.127	.081"	2.05
53.128	.089"	2.26
53.129	.094"	2.40
53.130	.104"	2.65
53.131	.111"	2.83
53.132	.118"	3.00



### 2 BUSCH PEARL DRILLS

Cup-shaped cutters on wheels used to dress up a setting, ring mounting, or any piece of jewelry, by forming a decorative bead or fine row of cuts along the edge. Sets contain six sizes plus chuck-holding handle.

#### Individual Drills

No.	Size #	No.	Size #
53.510	0.9	53.513	1.6
53.511	1.0	53.514	2.1
53.512	1.2	53.515	2.3
53.51201	1.4	53.516	2.5



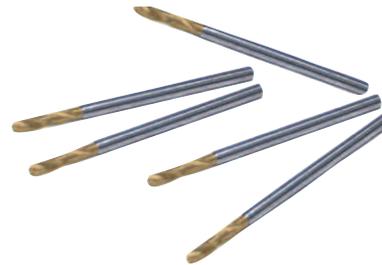
### 3 BUSCH CARBIDE PEARL DRILLS

ISO	Carbide	ISO	Carbide
007	28.635	012	28.640
008	28.636	013	28.641
009	28.637	014	28.642
010	28.638	015	28.643
011	28.639	016	28.644

## PREMIUM GOLD COBALT TWIST DRILLS

Grobet is proud to present this line of cobalt steel twist drills. Ideal for platinum, stainless, silicon-chrome and chrome-nickel. These drills will last 30 times longer than standard drills. Sold by pack of 10. It's highly recommended that you use water or coolant when working with these drills. Also, try our Pro-Cut lubricant - No. 19.928.

No.	Drill Size	Size
28.950	50	.0700"
28.951	51	.0670"
28.952	52	.0635"
28.953	53	.0595"
28.954	54	.0550"
28.955	55	.0520"
28.956	56	.0465"
28.957	57	.0430"
28.958	58	.0420"
28.959	59	.0410"
28.960	60	.0400"
28.961	61	.0390"
28.962	62	.0380"
28.963	63	.0370"
28.964	64	.0360"



No.	Drill Size	Size
28.965	65	.0350"
28.966	66	.0330"
28.967	67	.0320"
28.968	68	.0310"
28.969	69	.0292"
28.970	70	.0280"

## CARBIDE & VANADIUM STEEL TWIST DRILLS

Sold individually with a minimum order of six pieces per size. Shank size  $\frac{3}{32}$ ".



### 1 PANTHER TUNGSTEN VANADIUM STEEL TWIST DRILLS

ISO No.	Size	Panther	ISO No.	Size	Panther
005	.0197"	<b>77.2605</b>	014	.0512"	<b>77.2614</b>
006	.0236"	<b>77.2606</b>	015	.0591"	<b>77.2615</b>
007	.0276"	<b>77.2607</b>	016	.0630"	<b>77.2616</b>
008	.0315"	<b>77.2608</b>	017	.0689"	<b>77.2617</b>
009	.0354"	<b>77.2609</b>	018	.0709"	<b>77.2618</b>
010	.0393"	<b>77.2610</b>	020	.0787"	<b>77.2620</b>
011	.0441"	<b>77.2611</b>	021	.0827"	<b>77.2621</b>
012	.0472"	<b>77.2612</b>	022	.0866"	<b>77.2622</b>
013	.0500"	<b>77.2613</b>	023	.0906"	<b>77.2623</b>



### 2 PANTHER CARBIDE TWIST DRILLS

ISO No.	Size	Panther	ISO No.	Size	Panther
005	.0197"	<b>77.6205</b>	015	.0591"	<b>77.6215</b>
006	.0236"	<b>77.6206</b>	016	.0630"	<b>77.6216</b>
007	.0276"	<b>77.6207</b>	017	.0689"	<b>77.6217</b>
008	.0315"	<b>77.6208</b>	018	.0709"	<b>77.6218</b>
009	.0354"	<b>77.6209</b>	019	.0748"	<b>77.6219</b>
010	.0393"	<b>77.6210</b>	020	.0787"	<b>77.6220</b>
011	.0441"	<b>77.6211</b>	021	.0827"	<b>77.6221</b>
012	.0472"	<b>77.6212</b>	022	.0866"	<b>77.6222</b>
013	.0500"	<b>77.6213</b>	023	.0906"	<b>77.6223</b>
014	.0512"	<b>77.6214</b>			



### 3 BUSCH TUNGSTEN VANADIUM STEEL TWIST DRILLS

ISO No.	Size	Busch	ISO No.	Size	Busch
005	.0197"	<b>28.584</b>	014	.0512"	<b>28.591</b>
006	.0236"	<b>28.585</b>	015	.0591"	<b>28.592</b>
007	.0276"	<b>28.586</b>	016	.0630"	<b>28.593</b>
008	.0315"	<b>28.587</b>	018	.0709"	<b>28.594</b>
009	.0354"	<b>28.588</b>	019	.0748"	<b>28.59401</b>
010	.0393"	<b>28.589</b>	021	.0827"	<b>28.595</b>
011	.0441"	<b>28.58901</b>	023	.0906"	<b>28.596</b>
012	.0472"	<b>28.590</b>			



### 4 BUSCH CARBIDE TWIST DRILLS

ISO No.	Size	Busch	ISO No.	Size	Busch
005	.0197"	<b>28.602</b>	010	.0393"	<b>28.607</b>
006	.0236"	<b>28.603</b>	012	.0472"	<b>28.608</b>
007	.0276"	<b>28.604</b>	014	.0512"	<b>28.609</b>
008	.0315"	<b>28.605</b>	015	.0591"	<b>28.610</b>
009	.0354"	<b>28.606</b>	016	.0630"	<b>28.611</b>

**Safety Tip: Always wear proper eye protection when drilling.**

## 1 HIGH SPEED STEEL TWIST DRILLS

Individual sizes, sold by pack of 10.



No.	Drill Size	Size
28.468	50	.0700"
28.469	51	.0670"
28.470	52	.0635"
28.471	53	.0595"
28.472	54	.0550"
28.473	55	.0520"
28.474	56	.0465"
28.475	57	.0430"
28.476	58	.0420"
28.477	59	.0410"
28.478	60	.0400"
28.479	61	.0390"
28.480	62	.0380"
28.481	63	.0370"
28.482	64	.0360"
28.483	65	.0350"

No.	Drill Size	Size
28.484	66	.0330"
28.485	67	.0320"
28.486	68	.0310"
28.487	69	.0293"
28.488	70	.0280"
28.489	71	.0260"
28.490	72	.0250"
28.491	73	.0240"
28.492	74	.0225"
28.493	75	.0210"
28.494	76	.0200"
28.495	77	.0180"
28.496	78	.0160"
28.497	79	.0145"
28.498	80	.0135"

## 2 MASCOT® HIGH SPEED STEEL TWIST DRILLS

Individual sizes, sold by pack of 10.



No.	Drill Size	Size
28.530/10	30	.1285"
28.533/10	33	.1130"
28.534/10	34	.1110"
28.536/10	36	.1065"
28.538/10	38	.1015"
28.540/10	40	.0980"
28.541/10	41	.0960"
28.542/10	42	.0935"
28.543/10	43	.0890"
28.544/10	44	.0860"
28.545/10	45	.0820"
28.546/10	46	.0810"
28.547/10	47	.0785"
28.548/10	48	.0760"
28.550/10	50	.0700"
28.551/10	51	.0670"
28.552/10	52	.0635"
28.553/10	53	.0595"
28.554/10	54	.0550"
28.555/10	55	.0520"
28.556/10	56	.0465"
28.557/10	57	.0430"
28.558/10	58	.0420"

No.	Drill Size	Size
28.559/10	59	.0410"
28.560/10	60	.0400"
28.561/10	61	.0390"
28.562/10	62	.0380"
28.563/10	63	.0370"
28.564/10	64	.0360"
28.565/10	65	.0350"
28.566/10	66	.0330"
28.567/10	67	.0320"
28.568/10	68	.0310"
28.569/10	69	.0292"
28.570/10	70	.0280"
28.571/10	71	.0260"
28.572/10	72	.0250"
28.573/10	73	.0240"
28.574/10	74	.0225"
28.575/10	75	.0210"
28.576/10	76	.0200"
28.577/10	77	.0180"
28.578/10	78	.0160"
28.579/10	79	.0145"
28.580/10	80	.0135"

### 1 DORMER HIGH SPEED TWIST DRILLS

Made of the highest quality steel, carefully tempered and accurately ground to size. All drills have straight shanks and are perfectly finished to assure quick, smooth and clean drilling. Individual sizes, Sold in packs of 10.



No.	Size
28.0536/50	.0700"
28.0536/51	.0670"
28.0536/52	.0635"
28.0536/54	.0550"
28.0536/55	.0520"
28.0536/57	.0430"
28.0536/58	.0420"
28.0536/59	.0410"
28.0536/60	.0400"
28.0536/61	.0390"
28.0536/62	.0380"
28.0536/63	.0370"
28.0536/64	.0360"
28.0536/65	.0350"
28.0536/66	.0330"

No.	Size
28.0536/67	.0320"
28.0536/68	.0310"
28.0536/69	.0293"
28.0536/70	.0280"
28.0536/71	.0260"
28.0536/72	.0250"
28.0536/73	.0240"
28.0536/74	.0225"
28.0536/75	.0210"
28.0536/76	.0200"
28.0536/77	.0180"
28.0536/78	.0160"
28.0536/79	.0145"
28.0536/80	.0135"

#### SET of 20

Contains sizes 61 to 80. Comes in a selector case with slide cover, to access only the size you need. Sizes are noted right on the case. Drills can be easily replaced, so the set is always in order and protected.

No. 28.0540



### 2 DORMER HIGH SPEED TWIST DRILL ASSORTMENTS

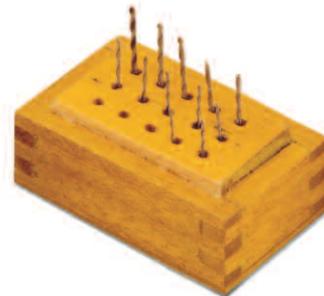
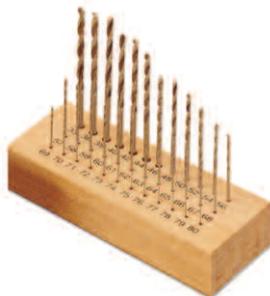
Set of 6 contains sizes 55, 56, 59, 60, 64, and 67 in a handy plastic tube. Excellent for sample jewelry making and general workshop use.

No. 28.0545

### 3 MASCOT® HIGH SPEED STEEL TWIST DRILL ASSORTMENTS

Set of 6 assorted sizes between 30 to 52 in a plastic tube.

No. 28.500



### 4 SET of 36 HIGH SPEED TWIST DRILLS

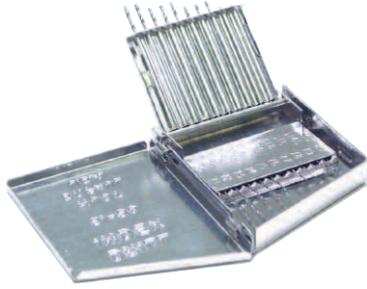
Contains sizes 33 to 80 in wood stand with cardboard cover.

No. 28.504

### 5 SET of 12 HIGH SPEED TWIST DRILLS

Contains sizes 50 to 61 in rectangular wood block.

No. 28.503



**1 SET of 20 HIGH SPEED TWIST DRILLS in METAL CASE**

Contains sizes 61 to 80.  
No. 28.501



**2 SET of 20 HIGH SPEED TWIST DRILLS in PLASTIC STAND**

Contains sizes 61 to 80 in plastic stand.  
No. 28.502

**3 LUBRICANT for DRILLS**

Keep your drills working smoother and longer, while reducing heat buildup and friction to speed the cut. Easy and convenient to use. Leave it on the bench and just dip the drill in the lubricant at regular intervals while working. Handy push-up 2 oz. container.

No. 19.928 Pro-Cut Lubricant



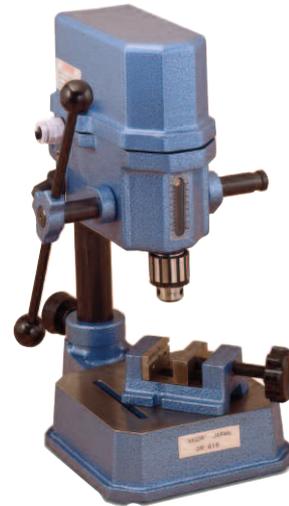
**4 PRECISION DRILL PRESS**

A precision machine with a high power motor, yet compact in size. Includes 6.5 mm drill chuck and wrenches B-5 and B-2. Measures 7 1/4" W x 9" L x 12 3/4" H

Specifications:

- Spindle tolerance to .02 mm
- 6.0 mm-steel, 6.5 mm non-ferrous metal drilling capacity
- 260 mm swing
- 35 mm maximum vertical spindle stroke
- 170 mm maximum distance from table to spindle
- Handle lever can be fixed on right or left side at any angle
- Work table measures 5.5 mm square
- Jacobs #1 main spindle taper
- Motor is 115 volt AC, 50/60 Hz
- Four spindle speeds of 2800 rpm, 4500 rpm, 7100 rpm and 11400 rpm

No. 28.615



Depth gauge indicates the exact depth of the spindle in the timber. Required depth can be fixed by the stopper on the handle spindle.



Four spindle speeds are available by belting on different pulleys.



Height of main spindle head can be adjusted.

**Safety Tip: Always wear proper eye protection when drilling.**



### 1 VICTOR ENGRAVING BLOCK by GROBET USA®

Recognized as the finest block among engravers throughout the world. Turntable revolves on precision bearing, eliminating side shake, yet is responsive to the slightest touch. Deep-throated jaws close and open on smooth operating center screw. Block is 5" (127 mm) diameter and is supplied with a plastic base.

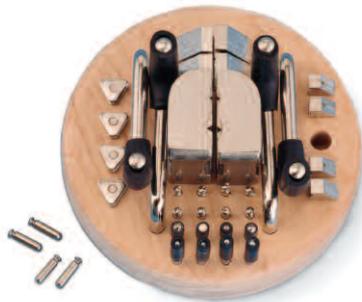
No. **26.202** Engraving block w/base

No. **26.200** Engraving block w/base and attachments

No. **26.20201** Replacement key

No. **26.20202** Replacement jaws

No. **26.20203** Plastic base pad



### SET OF ATTACHMENTS

Complete set of accessories for Victor engraving block, mounted on wood base.

No. **26.215** Complete set

### 5 RING PADS

Leather covered pad used as a base for engraving bowls or as a base for an engraving block.

No. **26.365** Leather Solid, Diameter 6" (152 mm)

No. **26.366** Diameter 5" (127 mm)



### 2 WALLER SCRIBER

Carbide tipped scriber with reversible ends. Covered point may be covered while being carried.

No. **52.950**



### 3 CARBIDE TIPPED SCRIBER

Can be used on hard metals, glass, jewels, etc. Slim line design is comfortable to use. Hexagonal aluminum handle prevents rolling on bench. Length 5¼" (133 mm).

No. **52.952**



### 4 DIAMOND TIPPED SCRIBER

Can be used on hard jewels, metals, etc. Hexagonal aluminum handle prevents rolling on bench. Length 5¼" (133 mm).

No. **52.954**





**1 LIGHT ENGRAVING CEMENT**

Items not easily placed in engraving blocks can be attached to boxwood slips with this cement. Ideal for holding semi-precious stones while polishing or cutting. Melts easily. Pack contains two ½ lb. (227 g) bars.  
No. **12.203**



**2 CHINESE WHITE**

Dabbed or brushed onto surface when melted so that a pencil mark may leave an impression.  
No. **26.160** Small cake



**HAZARDOUS**

**3 ASPHALTUM VARNISH**

Slow drying varnish for etching resistance on large surfaces. 1 pint (473 ml) can.  
No. **26.600**



**4 SYNTHETIC BEESWAX**

Leaves a surface film on which design can be marked. Can also be used as a lubricant for sawblades, burs, and drills.  
No. **26.100** 1 oz. (28 g) tube  
No. **26.103** 1 lb. cake



**5 PEG CLAMP**

Holds small odd-shaped articles for engraving and other delicate work. Round jaws, 2" (51 mm) diameter, open and close on twin guides by turning the threaded screw. The eight pegs supplied can be positioned in any of the holes in the jaws to secure many different shapes of work. Detachable handle to allow the jaw section to be mounted in vise. Overall length 5 7/8" (137 mm).  
No. **26.500** Peg clamp w/wood handle



**6 PRACTICE MATERIAL for ENGRAVING**

**Copper Rings**

Pack of 25.  
No. **26.540**

**Brass Sheets**

Pack of 12.  
No. **36.01556** Measures 2 7/8" x 3/16" (73 x 14 mm)

## 1 FLAT ENGRAVING MACHINE

### Features:

- Includes type
- Adjustable type slide accommodates both small 1¼" and large 2¾" type.
- 15 different pantograph ratios from 2½" : 1 to 6 : 1.
- Height adjustment for objects up to 2½".
- "Quick Slide" female vise accommodates jewelry, discs up to 4" diameter, or 3½" wide rectangular objects.
- Overall size: 11" H x 14" W x 14½" D.
- Diamond stylus for engraving.
- Vise rotates full 360°

No. 26.815

### Accessories for Flat Engraving Machine:

No. 26.380 Replacement jewelry and nameplate jig



## 2 NEW HERMES BASIC ENGRAVOGRAPH

Will engrave on flat-work up to 3½" (89 mm) high. Supplied with a fixed vise with a 3" (76 mm) opening and an 18" (457 mm) double-grooved copy holding slide.

### Specifications:

- 25 engraving ratios from 2:1 to 7:1
- Pivoting pantograph arm
- Approximate dimensions 16" x 22" x 15" (406 x 559 x 381 mm)
- Ship weight 25 lbs. (11 kg)

No. 26.368 Basic Engraving Graph



## 3 DELUXE ENGRAVOGRAPH with DIAMOND ASSEMBLY

Engrave plates up to 5½" (140 mm) high or odd shaped objects up to 1¾" (44 mm) thick. Complete with a 360° rotating work vise with a maximum vise opening 5¾" (146 mm) and a 26" (660 mm) double grooved copy slide holder.

No. 26.370 Deluxe Engraving Graph

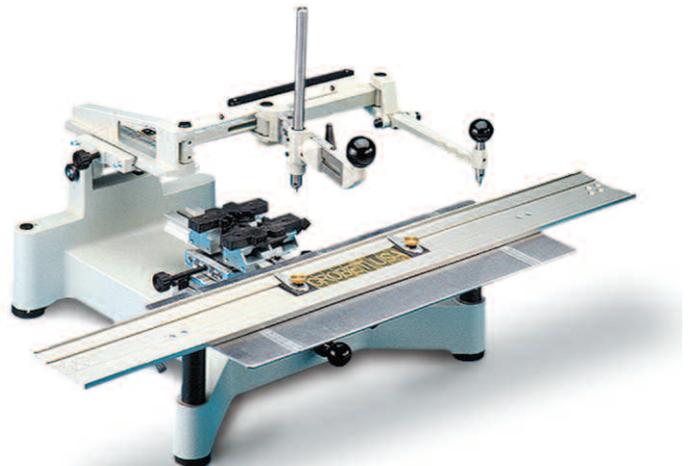
No. 26.371 Motor and rotating spindle attachment

No. 26.373

### Accessories for Deluxe Engraving Graph:

No. 26.385 ⅛" (3.2 mm) diamond insert

No. 26.386 ⅛" (3.2 mm) diamond insert for wide engraving





## 1 INSIDE RING ENGRAVER

The Inside Ring Engraving Machine is manufactured to the highest standard, is compact and user-friendly. Includes a type dial, a diamond tip and 5 brass sample rings.

### Features:

- Easy type installation
- One single dial produces letters with heights of 1 mm and 2mm
- Wide ring-holding capacity of ring sizes from 19 to 30mm
- Adjustable letter spacing

No. 26.850



## 2 NEW HERMES INSIDE RING ENGRAVER

Automatically centers ring in clamping jigs. Engraving and spacing is synchronized and easy. The diamond insert produces a hand engraved effect. Includes extended gothic and tilted block copy dial. Ship weight 15 lbs. (6.8 kg).

No. 26.390 Inside ring engraver

No. 26.391 Connecting script dial

No. 26.389 Diamond insert for No. 26.390

### Accessories for Engravographs:

No. 26.378 Slide converter 26" (660 mm) long

No. 26.379 Double grooved copy slide 26" (660 mm) long

No. 26.380 Replacement jewelry and nameplate jig

No. 26.381 Watch and lighter jig

No. 26.382 Signet ring jig

No. 26.383 Pen jig

No. 26.384 Plaque jig for No. 26.373

No. 26.385 1/8" (3.2 mm) diamond insert

No. 26.386 1/8" (3.2 mm) diamond insert for wide engraving

No. 26.387 Insert for wide pen engraving

No. 26.388 Insert for narrow pen engraving

**1 BRASS TYPE**

A free type box is included with each font. Changing type from any part of the composition is quick and easy. Individual letters are available separately.



**SINGLE LINE BLOCK**

5/8" (16 mm) on 1 1/4" (32 mm) blanks. 97 capitals. 20 Numerals. Special characters and spacers. Total 160 pieces.

**MASTERCOPY**

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
0123456789

No. 26.1001

**SINGLE LINE SCRIPT**

1" (25 mm) letters on 1 1/4" (32 mm) blanks. 46 capitals, 51 lowers, 20 numerals, special characters and spacers. Total 157 pieces.

*Mastercopy*

*A B C D E F G H I J K L M N O P Q R S T U  
V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9*

No. 26.1002

**DOUBLE LINE SCRIPT**

3/4" (19 mm) letters on 1 1/4" (32 mm) blanks. 46 capitals, 51 lowers, 20 numerals, special characters and spacers. Total 157 pieces.

*Mastercopy*

*A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9*

No. 26.1003

**MINI SINGLE LINE SCRIPT**

3/8" (10 mm) letters on 1 1/4" (32 mm) blanks. 46 capitals, 51 lowers, 20 numerals and special characters and spacers. Total 157 pieces.

*Mastercopy*

*A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9*

No. 26.1007

**SINGLE LINE BLOCK CONDENSED**

5/8" (16 mm) letters on 1 1/4" (32 mm) blanks. 46 capitals, 51 lowers, 20 numerals, special characters and spacers. Total 157 pieces.

**Mastercopy**

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz 0123456789

No. 26.1009

**INTERLOCKING MONOGRAM**

2 1/2" (64 mm) letters on 2 3/4" (70 mm) blanks. 26 left, 26 center, 26 right and 2 center periods.

G ♦ S ♦ E

AA BB CC DD EE FF GG HH II JJ KK LL MM  
NN OO PP QQ RR SS TT UU VV WW XX YY ZZ

No. 26.2010

## FILE DESCRIPTION

**AURIFORM FILE** A die sinkers' file having a cross section that combines 1/2 of a pippin file with 1/2 of a crossing file.

**BACK** In a half round, barrette, cant or files of similar cross section this is the convex side.

**BARRETTE FILE** Cut on wide flat face and safe on sides and back. Tapered in width and thickness.

**BLANK** A steel forging from which a file is made. The basic shape of a file before teeth are cut or etched.

**CANT FILE** Triangular in cross section with one side wider than the other two. Cut on three sides and tapered.

**CHECKERING FILE** Rectangular in cross section and parallel in width and thickness. Teeth cut at 90° angle with edge. Safe on edges.

**CHISEL CUT** A method of cutting teeth into the surface of an annealed file blank by striking it with a series of repeated blows as the blank is moved beneath a chisel at a uniform speed. In the cutting operation, the chisel is placed obliquely to the length and is inclined to the surface of the file. This is done either by hand or machine. Generally used to produce files of No. 2 cut and coarser.

**CROCHET FILE** Rectangular in cross section with rounded edges. Cut on both faces and edges. Tapered in length and slightly tapered in thickness.

**CROSSING FILE** Oval cross section with same radius as half round files on one side and other side curved to a larger radius. Cut on both sides. Tapered in width and thickness.

**CUT** The number of teeth per inch, the degree of coarseness of a file's teeth, from No. 00 to No. 8 in Swiss precision files. Also used to describe the type of file such as single cut or double cut, etc.

**DIE MAKERS' RIFFLERS** Various cross sectional shapes. Teeth cut on a small area of each end leaving a long middle portion as a handle. The cut ends are of various designs. Length is overall. Originally designed and hand forged by die makers for their specific purposes now a generic term for this particular group of rifflers.

**DIE SINKERS' FILES** A group of files of various cross sections designed for use by die sinkers, tool makers and locksmiths. Tapered in width.

**DIE SINKERS' RIFFLERS** See Die Makers' Rifflers. This group of rifflers has smaller cross sectional shapes.

**DOUBLE CUT** The arrangement of file teeth formed by two series of cuts. The first is the overcut which is followed by the upcut at an angle to the overcut.

**EDGE** The narrow cross section or side of a file.

**EQUALLING FILE** Thin rectangular cross section, parallel in width and thickness and cut on both faces and edges.

**ESCAPEMENT FILE** Also called Square Handled Files. A group of files of various cross sectioned shapes with a length of cut varying from 3/4 to 2-1/2" and long square handles. Widely used by jewelers, watch makers, die makers, and fine mechanics.

**ETCHED CUT** A method of cutting teeth into the surface of a file blank by drawing an etching tool, under sustained pressure, obliquely across an annealed file blank in a series of cuts. This may be done either by hand or machine. This method of cutting is used where it is necessary to retain the true cross section of a file. Generally used to manufacture files finer than a No. 2 cut.

**FACE** The working surface of a file upon which teeth are cut.

**FILING BLOCK** A block of wood, soft metal or other material used to protect the material being filed from damage from the jaws of a vise or other holding device. It may contain a series of grooves to hold work securely.

**FLAT FILE** Also called a Warding File. A form of escapement or square handled needle file. Parallel in thickness. Cut on four sides, tapered in width.

**HANDLE** A wood or plastic piece that is placed over that tang of a file to protect the hand of the user.

**HALF ROUND FILE** A cross section that is flat on one side and has a radius (not half circle) on the other side. Cut on both sides. Width and thickness taper.

**HALF ROUND SLIM FILE** Also called Ring Files. Same as half round except thinner in width.

**HEEL** The end of the file at a location where the body ends and the taper leading into the tang begins. Also called the shoulder.

**JOINT FILE, ROUND EDGE** Rectangular cross section with rounded edges. Cut on edges only. Parallel in width and thickness.

**JOINT FILE, SQUARE EDGE** Rectangular cross section. Cut on edges only. Parallel in thickness and width.

**KNIFE FILE** Knife shaped, cross section that is tapered in width and thickness. Edge has same thickness from point to shoulder.

**LENGTH OF CUT** The length of a file measured between the shoulder or heel and the point.

**LOZENGE FILE** Diamond shaped cross section parallel in width and thickness.

**NEEDLE FILE, SQUARE HANDLED** Also called an Escapement File. A group of files of various cross sectional shapes with a length of cut varying between 3/4 and 2-1/2" and long square handle.

**NEEDLE FILE, ROUND HANDLED** A group of files of various cross sections with a knurled round handle. Knurling gives the file a positive, non-slip grip for precision filing.

**OVAL FILE** An oval cross section tapering in width and thickness.

**OVERCUT** The first of a series of cuts in a double cut file. Its function is to act as a chip breaker. The second or upcut is made over this cut.

**PARALLEL ROUND FILE** A round cross section parallel in width.

**PILLAR FILE** A rectangular cross section with thickness greater relative to width, than in other types. Cut on face or flat sides only. Parallel in width, tapered in thickness. Also demi-narrow, narrow and extra narrow widths.

**PIN OR PINNING** The tendency of small particles of materials to file or clog the gullets between the teeth of a file. When the teeth become clogged the file causes scratches on the work. When this occurs, the file is pinned.

**PIPPIN FILE** A section that combines the cross section of a round file with that of an equalling file. Tapered in thickness and width.

**POINT** The front end of a file as contrasted with the tang end.

**POINTED BACK BARRETTE FILE** A triangular cross section with one side wider than the other two sides but on wide or face side only tapered in width and length.

**RASP CUT** A cut used on wood rifflers that is made by a punch raising a series of individual cutting teeth.

**RIFFLERS** From the German riefeln, to channel, chauffer, flute or groove. Originally used and hand forged by die sinkers, die makers, silversmiths and other skilled artisans in shapes and cross sections appropriate to their work. Teeth are cut on small areas on each end that can be shaped like everything from trowels to button hooks. A long middle portion serves as a handle.

**RING FILE** Also called a Half Round Slim File.

**ROUND FILE** Round in cross section tapered in width.

**ROUNDING OFF FILE** An escapement or square handle needle file half round in cross section. Cut on flat side. Parallel in width.

**SAFE** The side or edge of a file that has no teeth cut in it so as not to mar a work surface that does not require filing.

**SCREW HEAD FILE** A narrow diamond shaped section with short bevels to form sharp edges. Cut on beveled edges, safe on flat sides. Parallel in width and thickness.

**SECTION** The cross section or end view of a file if it were cut squarely at the place of greatest width and thickness from the tang.

**SILVERSMITH'S RIFFLERS** A group of various cross sectioned shapes originally designed for use by silversmiths. Teeth are cut on small areas of each and leaving a long middle portion as a handle. The cut ends are of varied designs.

**SINGLE CUT** The tooth formed on a file by a single series of cuts.

**SLITTING FILE** A flat diamond shaped cross section. Cut on all sides. Parallel in width and thickness.

**SQUARE FILE** Square in cross section. Cut on all sides. Tapered.

**SWISS PATTERN FILES** Files made to the same shape and cut as the files originated by F. L. Grobet in Switzerland over 150 years ago. Made in cuts from No. 00 to No. 6.

**SWISS PRECISION FILES** The original Grobet-Swiss files made in hundreds of sizes and shapes and in cuts from No. 00 to No. 8. Made to more exacting measurements and much finer cuts than American Pattern files.

**TANG** The part of the file that tapers from the shoulder that is intended to be fitted with a handle.

**THREE SQUARE FILES** Equilaterally triangular in cross section. Cut on all sides with sharp corners. Tapered.

**TOOL MAKERS' RIFFLERS** Various cross sectional shapes with teeth cut on a small area at each end leaving a long middle portion as a handle. The cut ends are of various designs to meet the needs of tool makers.

**UPCUT** The second series of teeth cut in double cut files made over the first series of cuts called the overcut. This cut is made of an angle to the overcut.

**WARDING FILE** A rectangular cross section with teeth cut on all sides up to 4" in length and on 3 sides with one safe edge on files 6" and longer. Tapered width, parallel in thickness.

## GROBET SWISS PRECISION FILES

*The world's standard for quality and performance!*

**Grobet Swiss Precision Files** are manufactured to precise production standards, using a combination of machine cutting and hand craftsmanship to produce the most accurate, best cutting and longest-lasting files in the world. They are made of the finest heat-tempered, chrome alloy steel and have the "right" feel, action and balance desired by all true craftsmen. Grobet Swiss Precision Files deliver superior performance on all metals. Simply the best you can buy. **Grobet Swiss Precision Files** are measured in length from the point where the teeth begin to the end of the file. The handle section (tang) is not considered in the file length.

## GUIDE TO SELECTING SWISS PRECISION FILES

As shown in the File Finder chart, each configuration calls for a different type of file. There is more to file selection than shape alone. The cut selected is equally important. Determination of cut depends on the type and form of material to be worked, amount of material to be removed and the finish desired. For example, rapid removal of stock often indicates a No. 00 cut, while working on narrow surfaces would suggest a No. 2 cut and final finishing operations might take a fine cut such as No. 4. In the final analysis, file selection cannot be reduced to a formula or table but will be based to a great degree on experience and common sense. Whatever type, shape, size or cut may be required, one thing is certain: there is a Grobet Swiss precision file that meets the specifications. And the accuracy and finish delivered by these files will clearly show why craftsmen have made Grobet Swiss the leader in precision files for so many years.

## FILE FINDER

Basic Application	Type of File Recommended
Corners-holes-edges	Three-Square
Corners-holes	Square
Corners-slots	Equalling
Corners-slots	Slitting
Curved surfaces-corners-holes	Half-Round
Curved surfaces-junctures of curved and flat surfaces-corners-holes	Crossing
Edges, joints	Joint
Flat surfaces	Hand
Flat surfaces-corners-keyways dovetail ways-gear teeth-deburring	Barrette
Flat surfaces-slots	Pillar
Roughening surfaces for hand grips	Checkering
Rounded corners-slots-flat surfaces-junctures between curved and flat surfaces	Crochet
Rounded corners-holes-"V" slots	Pippin
Rounded inside corners-holes	Round
Slots	Screwhead
Slots	Warding
Slots-wedge-shaped openings	Knife

## SCALE OF CUTS

The scale of cuts for Swiss precision files as well as the basic shapes were developed by Grobet, dating back to the founding of Grobet Freres in 1812. Additions and refinements have been made to meet the changing requirements of modern technologies. Here is the scale of cuts for Grobet Swiss precision files.

Teeth per inch (upcut)	30	41	51	64	79	97	117	142	173	213	295
Files 10" and over in length	00	0	1	2	3	4	-	6	-	-	-
Files 4" to 8" in length	-	00	0	1	2	3	4	-	6	-	-
Files 3" in length	-	-	00	0	1	2	3	4	-	6	8
Escapement Files	-	-	0	-	2	3	4	-	6	-	-
Needle Files 4" to 7-3/4"	-	-	0	-	2	3	4	-	6	-	-
Regular Riffers	-	-	0	-	2	3	4	-	6	-	-

## TYPES OF FILES

There are four types of files detailed in the following pages:

**Swiss Precision Files** - The original Grobet-Swiss files made in hundreds of shapes and sizes.

**Swiss Needle Files** - A group of files of various cross-sections with a knurled, round handle. Knurling gives the file a positive, non-Slip grip for precision filing.

**Escapement Files** - Also called Square Handled Needle Files. A group of files of various cross-sectioned shapes with a length of cut varying from 3/4" to 2-1/2", and long, square handles.

**Riffers** - Originally used and hand forged by die sinkers, die makers, silversmiths, etc., in shapes and cross-sections appropriate to their work. Teeth are cut on small areas on each end and can have a variety of shapes. A long middle portion serves as the handle.



### BARRETTE

Tapered in width and thickness, coming to a point. Only flat side is cut, providing safe edge and top. Double cut.

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)					
3"	75	$\frac{23}{64}$ "	9.1	$\frac{3}{32}$ "	2.4	—	<b>31.021</b>	—	—	—
4"	100	$\frac{1}{2}$ "	12.7	$\frac{1}{8}$ "	3.2	<b>31.022</b>	<b>31.023</b>	<b>31.024</b>	<b>31.025</b>	<b>31.026</b>
6"	150	$\frac{23}{32}$ "	18.3	$\frac{5}{32}$ "	4.0	<b>31.027</b>	<b>31.028</b>	<b>31.029</b>	<b>31.030</b>	<b>31.031</b>
8"	200	$\frac{7}{8}$ "	22.2	$\frac{13}{64}$ "	5.2	—	<b>31.032</b>	—	<b>31.033</b>	—



### BARRETTE-HOT DIE

Same as regular Barrette files except with ground backs, widely used in making and repairing extrusion dies. **Double cut.**

Length		Width		Thickness		Cut 00
(in)	(mm)	(in)	(mm)	(in)	(mm)	
3"	75	$\frac{3}{8}$ "	9.5	$\frac{3}{32}$ "	2.4	<b>31.017</b>
4"	100	$\frac{1}{2}$ "	12.7	$\frac{1}{8}$ "	3.2	<b>31.018</b>

### CHECKERING

Parallel in width and gently tapered in thickness. Overcut is parallel to file edges and upcut is 90° to overcut. Useful for putting serrations on knife edges and to obtain a checkered design similar to a gun hand grip. **Double cut top and bottom – Both edges are safe.**



### HAND CHECKERING

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2
(in)	(mm)	(in)	(mm)	(in)	(mm)				
6"	150	$\frac{3}{4}$ "	19.1	$\frac{3}{16}$ "	5.2	<b>31.035</b>	<b>31.036</b>	<b>31.037</b>	<b>31.038</b>
Lines per inch/cm						20/8	30/12	40/16	50/20



### PILLAR CHECKERING

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)					
6"	150	$\frac{1}{2}$ "	12.7	$\frac{11}{64}$ "	4.4	<b>31.040</b>	<b>31.041</b>	<b>31.042</b>	<b>31.043</b>	<b>31.045</b>
Lines per inch/cm						20/8	30/12	40/16	50/20	75/30

*Note: See pages 185-186 for our complete file handle line, including charts on plastic file handles.*



## CROCHET

Tapered in width and gradually tapered in thickness. Used in filing junctions between a flat and curved surface. Useful in developing slots with rounded edges.

**Double cut top and bottom – Both edges are single cut.**

Length		Width		Thickness		Cut 00	Cut 0	Cut 2
(in)	(mm)	(in)	(mm)	(in)	(mm)			
4"	100	$\frac{5}{16}$ "	7.9	$\frac{3}{32}$ "	2.4	—	<b>31.047</b>	<b>31.048</b>
6"	150	$\frac{13}{32}$ "	10.3	$\frac{9}{64}$ "	3.6	<b>31.049</b>	<b>31.050</b>	<b>31.051</b>
8"	200	$\frac{15}{32}$ "	11.9	$\frac{11}{64}$ "	4.4	<b>31.052</b>	<b>31.053</b>	<b>31.054</b>



## CROSSING

Half-round on two sides, with one side having a larger radius than the other. Tapered in width and thickness. Cut and usable to the point. Used primarily for filing interior curved surfaces. The double radius makes possible the filing at the junction of two curved surfaces or a straight and a curved surface. **Double cut on both sides.**

Length		Width		Thickness		Cut 0	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)			
4"	100	$\frac{15}{32}$ "	11.9	$\frac{9}{64}$ "	3.6	<b>31.056</b>	<b>31.057</b>	<b>31.058</b>
6"	150	$\frac{19}{32}$ "	15.1	$\frac{3}{16}$ "	4.5	<b>31.059</b>	<b>31.060</b>	<b>31.061</b>
8"	200	$\frac{13}{16}$ "	20.6	$\frac{15}{64}$ "	6.0	<b>31.062</b>	<b>31.063</b>	—



## EQUALLING

Parallel in width and thickness. Used primarily for filing slots and corners. Double cut top and bottom – **Both edges are single cut.**

Length		Width		Thickness		Cut 00	Cut 0	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)				
4"	100	$\frac{13}{32}$ "	10.3	$\frac{5}{64}$ "	2.0	—	<b>31.065</b>	<b>31.066</b>	<b>31.067</b>
6"	150	$\frac{1}{2}$ "	12.7	$\frac{7}{64}$ "	2.8	<b>31.068</b>	<b>31.069</b>	<b>31.070</b>	<b>31.071</b>
8"	200	$\frac{21}{32}$ "	16.7	$\frac{1}{8}$ "	3.2	<b>31.072</b>	<b>31.073</b>	<b>31.074</b>	—

## EQUALLING-SPECIAL THICKNESS

Length		Width		Approx. Thickness		Stubs Iron Wire Gauge No.	Cut 0	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)				
4"	100	$\frac{13}{32}$ "	10.3	.047"	1.25	18	<b>31.076</b>	<b>31.077</b>	—
4"	100	$\frac{13}{32}$ "	10.3	.035"	0.91	20	—	<b>31.080</b>	<b>31.081</b>
4"	100	$\frac{13}{32}$ "	10.3	.031"	0.81	21	<b>31.082</b>	<b>31.083</b>	—
4"	100	$\frac{13}{32}$ "	10.3	.028"	0.71	22	—	<b>31.084</b>	<b>31.085</b>
4"	100	$\frac{13}{32}$ "	10.3	.022"	0.56	24	—	<b>31.086</b>	<b>31.087</b>
4"	100	$\frac{13}{32}$ "	10.3	.018"	0.46	26	—	<b>31.088</b>	—
4"	100	$\frac{13}{32}$ "	10.3	.014"	0.38	28	—	<b>31.090</b>	<b>31.091</b>
6"	150	$\frac{1}{2}$ "	12.7	.083"	2.05	14	<b>31.092</b>	<b>31.093</b>	—
6"	150	$\frac{1}{2}$ "	12.7	.065"	1.65	16	<b>31.094</b>	<b>31.095</b>	—
6"	150	$\frac{1}{2}$ "	12.7	.047"	1.25	18	<b>31.096</b>	<b>31.097</b>	—



## HALF-ROUND

Tapered in width and thickness, coming to a point. Double cut on both sides.

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
(in)	(mm)	(in)	(mm)	(in)	(mm)							
3"	75	$\frac{5}{16}$ "	7.9	$\frac{3}{32}$ "	2.5	—	—	—	<b>31.100</b>	—	—	—
4"	100	$\frac{15}{32}$ "	11.9	$\frac{9}{64}$ "	3.6	<b>31.102</b>	<b>31.103</b>	—	<b>31.104</b>	<b>31.106</b>	<b>31.107</b>	—
5"	125	$\frac{33}{64}$ "	13.1	$\frac{5}{32}$ "	4.0	—	—	—	<b>31.108</b>	—	—	—
6"	150	$\frac{19}{32}$ "	15.1	$\frac{3}{16}$ "	4.8	<b>31.111</b>	<b>31.112</b>	<b>31.113</b>	<b>31.114</b>	<b>31.115</b>	<b>31.116</b>	<b>31.117</b>
8"	200	$\frac{13}{16}$ "	20.6	$\frac{15}{64}$ "	6.0	<b>31.118</b>	<b>31.119</b>	<b>31.120</b>	<b>31.121</b>	—	<b>31.122</b>	—
10"	250	1"	25.4	$\frac{19}{64}$ "	7.5	<b>31.123</b>	<b>31.124</b>	—	<b>31.125</b>	—	—	—

*Note: See pages 185-186 for our complete file handle line, including charts on plastic file handles.*



### HALF-ROUND RING

Tapered in width and thickness, coming to a point. Narrower than regular half-round and, therefore, useful for filing inside of rings.

**Double cut on both sides.**

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)						
6"	150	15/32"	11.9	3/64"	3.6	<b>31.127</b>	<b>31.128</b>	<b>31.129</b>	<b>31.130</b>	<b>31.131</b>	<b>31.132</b>



### ECONOMY HALF-ROUND RING

Made with a built in handle.

Length		Width		Thickness		Cut 0
(in)	(mm)	(in)	(mm)	(in)	(mm)	
6"	150	7/16"	11.1	1/8"	3.2	<b>33.814</b>



### HAND

Parallel in width and tapered in thickness. **Double cut top and bottom – One edge single cut – One edge is safe.**

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
(in)	(mm)	(in)	(mm)	(in)	(mm)							
4"	100	17/32"	13.5	1/8"	3.2	—	<b>31.140</b>	—	<b>31.141</b>	—	<b>31.142</b>	—
6"	150	3/4"	19.1	5/32"	4.0	<b>31.143</b>	<b>31.144</b>	<b>31.145</b>	<b>31.146</b>	<b>31.147</b>	<b>31.148</b>	<b>31.149</b>
8"	200	29/32"	22.0	3/16"	4.8	<b>31.150</b>	<b>31.151</b>	<b>31.152</b>	<b>31.153</b>	—	<b>31.154</b>	—
10"	250	1"	25.4	1/4"	6.4	<b>31.155</b>	<b>31.156</b>	—	<b>31.157</b>	—	—	—
12"	300	1 3/16"	30.0	5/16"	7.9	<b>31.158</b>	<b>31.159</b>	—	—	—	—	—



### JOINT ROUND EDGE

Parallel in width and thickness, with rounded edges, these files are cut on the edges only. Length is 4" (100 mm). **Cut is number 2 – Single Cut.**

No.	31.161	31.162	31.163	31.164	31.165	31.166	31.167	31.168	31.169
Approx. thickness-inch	.059"	.047"	.039"	.035"	.031"	.028"	.024"	.020"	.016"
Approx. thickness-mm	1.5"	1.2"	1.0"	.9"	.8"	.7"	.6"	.5"	.4"
Stubs iron wire gauge	17"	18"	19"	20"	21"	22"	23"	25"	27"

*(This file is too thin to use with plastic handles.)*



### KNIFE

Tapered in width and thickness, with the knife edge having the same thickness from point to shoulder. The included angle of the sharp edge is approximately 10°. Generally used to file in a slot or wedge shaped opening. Curved knife edge allows for easily filing in restricted areas.

**Double cut on both sides – Top edge is safe – Knife edge is single cut.**

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)					
4"	100	15/32"	11.9	1/8"	3.2	<b>31.174</b>	<b>31.175</b>	<b>31.176</b>	<b>31.177</b>	<b>31.178</b>
6"	150	23/32"	18.3	5/32"	4.0	<b>31.179</b>	<b>31.180</b>	<b>31.181</b>	<b>31.182</b>	<b>31.183</b>
8"	200	7/8"	22.2	13/64"	5.2	<b>31.184</b>	<b>31.185</b>	<b>31.186</b>	<b>31.187</b>	—

*Note: See pages 185-186 for our complete file handle line, including charts on plastic file handles.*

## PILLAR FILES

These files are parallel in width and tapered in thickness to make possible perfectly flat filing. **Double cut top and bottom – Both edges are safe.**



### EXTRA NARROW PILLAR

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 4	Cut 6
(in)	(mm)	(in)	(mm)	(in)	(mm)						
13"	175	$\frac{1}{8}$ "	3.2	$\frac{5}{64}$ "	2.0	—	—	—	<b>31.200</b>	—	—
14"	100	$\frac{5}{32}$ "	4.0	$\frac{5}{64}$ "	2.0	<b>31.201</b>	<b>31.202</b>	—	<b>31.204</b>	<b>31.205</b>	—
16"	150	$\frac{13}{64}$ "	5.2	$\frac{1}{8}$ "	3.2	<b>31.206</b>	<b>31.207</b>	<b>31.208</b>	<b>31.209</b>	<b>31.210</b>	<b>31.211</b>
18"	200	$\frac{9}{32}$ "	7.1	$\frac{9}{64}$ "	3.6	<b>31.212</b>	<b>31.213</b>	<b>31.214</b>	<b>31.215</b>	<b>31.216</b>	—
10"	250	$\frac{11}{32}$ "	8.7	$\frac{11}{64}$ "	4.4	<b>31.217</b>	—	—	—	—	—



### NARROW PILLAR

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 4	Cut 6
(in)	(mm)	(in)	(mm)	(in)	(mm)						
14"	100	$\frac{3}{16}$ "	4.8	$\frac{3}{32}$ "	2.5	<b>31.219</b>	<b>31.220</b>	<b>31.221</b>	<b>31.222</b>	<b>31.223</b>	—
16"	150	$\frac{1}{4}$ "	6.4	$\frac{9}{64}$ "	3.6	<b>31.224</b>	<b>31.225</b>	<b>31.226</b>	<b>31.227</b>	<b>31.228</b>	<b>31.229</b>
18"	200	$\frac{11}{32}$ "	8.7	$\frac{11}{64}$ "	4.4	<b>31.230</b>	<b>31.231</b>	<b>31.232</b>	<b>31.233</b>	—	—
10"	250	$\frac{25}{64}$ "	9.9	$\frac{3}{16}$ "	4.8	<b>31.234</b>	<b>31.235</b>	—	—	—	—



### DEMI-NARROW PILLAR

Length		Width		Thickness		Cut 0	Cut 1	Cut 2
(in)	(mm)	(in)	(mm)	(in)	(mm)			
6"	150	$\frac{3}{8}$ "	9.5	$\frac{5}{32}$ "	4.0	<b>31.192</b>	<b>31.193</b>	<b>31.194</b>



### REGULAR PILLAR

Length		Width		Thickness		Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
(in)	(mm)	(in)	(mm)	(in)	(mm)							
14"	100	$\frac{3}{8}$ "	9.5	$\frac{1}{8}$ "	3.2	<b>31.237</b>	<b>31.238</b>	<b>31.239</b>	<b>31.240</b>	—	<b>31.241</b>	—
16"	150	$\frac{1}{2}$ "	12.7	$\frac{11}{64}$ "	4.4	<b>31.243</b>	<b>31.244</b>	<b>31.245</b>	<b>31.246</b>	<b>31.247</b>	<b>31.248</b>	<b>31.249</b>
18"	200	$\frac{19}{32}$ "	15.1	$\frac{13}{64}$ "	5.2	<b>31.251</b>	<b>31.252</b>	<b>31.253</b>	<b>31.254</b>	<b>31.255</b>	<b>31.256</b>	—
10"	250	$\frac{23}{32}$ "	18.3	$\frac{15}{64}$ "	6.0	<b>31.257</b>	<b>31.258</b>	—	<b>31.259</b>	—	—	—
12"	300	$\frac{25}{32}$ "	19.8	$\frac{9}{32}$ "	7.1	<b>31.260</b>	<b>31.261</b>	—	—	—	—	—



### PIPPIN

Tapered in width and thickness. Combines the cross-sections of the round file, with the crossing file, along with the edge of a knife file. For finishing the junction of two different curved surfaces and for opening slots when a "V" shape is required.

**Double cut on both sides – Top and bottom edge are single cut.**

Length		Width		Thickness		Cut 0	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)			
6"	150	$\frac{25}{64}$ "	9.9	$\frac{9}{64}$ "	3.6	<b>31.267</b>	<b>31.268</b>	<b>31.269</b>
8"	200	$\frac{15}{32}$ "	11.9	$\frac{11}{64}$ "	4.4	<b>31.271</b>	<b>31.272</b>	—

*Note: See pages 185-186 for our complete file handle line, including charts on plastic file handles.*



## ROUND

Gradually tapered and cut and workable to the point. Used where it is necessary to enlarge a hole or round off a radius. **Double cut.**

Length		Diameter		Cut 00	Price	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
(in)	(mm)	(in)	(mm)								
3"	175	$\frac{3}{32}$ "	2.4	—	—	*31.275	31.276	31.277	—	—	—
14"	100	$\frac{5}{32}$ "	4.0	*31.279	\$13.15	*31.280	31.281	31.282	—	31.283	—
15"	125	$\frac{13}{64}$ "	5.2	—	—	—	—	31.286	—	—	—
16"	150	$\frac{1}{4}$ "	6.4	*31.287	15.40	*31.288	31.289	31.290	31.291	31.292	31.293
18"	200	$\frac{5}{16}$ "	7.9	*31.294	21.30	*31.295	31.296	31.297	—	31.298	—
10"	250	$\frac{13}{32}$ "	10.3	*31.299	28.20	*31.300	—	31.302	—	—	—

\*Indicates blunt end



## ROUND PARALLEL

Cut over the entire surface (does not taper to point). **Double cut.**

Length		Diameter		Cut 00	Cut 0	Cut 2
(in)	(mm)	(in)	(mm)			
4"	100	$\frac{1}{16}$ "	1.6	—	31.304	31.305
4"	100	$\frac{1}{8}$ "	3.2	—	31.307	—
6"	150	$\frac{3}{32}$ "	2.4	—	31.311	31.312
6"	150	$\frac{1}{8}$ "	3.2	—	31.315	31.316
6"	150	$\frac{5}{32}$ "	4.0	31.318	31.319	31.320
6"	150	$\frac{3}{16}$ "	4.8	31.321	31.322	31.323
6"	150	$\frac{1}{4}$ "	6.4	—	—	31.326



## SCREWHEAD with TANG

Used for filing slots in small screws. Available in thicknesses ranging from No. 1 (thickest) to No. 8 (thinnest). Single cut on both edges – **Both sides are safe.**

Length		Width		Thickness					
(in)	(mm)	(in)	(mm)	1 (.032") (.80 mm)	2 (.028") (.70 mm)	3 (.024") (.60 mm)	4 (.022") (.55 mm)	6 (.018") (.45 mm)	8 (.014") (.35 mm)
3"	75	$\frac{25}{64}$ "	9.9	—	31.332	31.333	31.334	31.335	31.336
4"	100	$\frac{15}{32}$ "	11.9	31.337	31.338	—	31.339	—	—



## SLITTING

Parallel in width with identical contour on top and bottom. Thinner than knife files and used for filing slots. **Double cut top and bottom – Both edges are single cut.**

Length		Width		Thickness		Cut 0	Cut 2
(in)	(mm)	(in)	(mm)	(in)	(mm)		
6"	150	$\frac{19}{32}$ "	15.1	$\frac{1}{8}$ "	3.2	31.342	31.343



## UNIVERSAL PIVOT FILE/BURNISHER

These regular burnishers are polished and have slightly rounded corners.  $\frac{7}{8}$ " (18 cm) length.

No. 31.01710	Right		\$59.90
No. 31.01720	Left		59.90

*Note: See pages 185-186 for our complete file handle line, including charts on plastic file handles.*



## SQUARE

A general purpose file, cut and usable to the point. Gradually tapered. **Double cut on all four sides.**

Length		Diameter		Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)					
14"	100	$\frac{5}{32}$ "	4.0	*31.345	*31.346	—	31.348	—
16"	150	$\frac{15}{64}$ "	6.0	*31.349	*31.350	31.351	31.352	31.353
18"	200	$\frac{5}{16}$ "	7.9	*31.354	*31.355	—	31.356	—
10"	250	$\frac{13}{32}$ "	10.3	*31.357	—	—	—	—

\*Indicates blunt end



## THREE-SQUARE

Gradually tapered, cut and workable to the point. **Double cut on all three sides.**

Length		Diameter		Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)					
4"	100	$\frac{9}{32}$ "	17.1	31.366	31.367	31.368	31.369	31.370
6"	150	$\frac{3}{8}$ "	9.5	31.371	31.372	31.373	31.374	31.375
8"	200	$\frac{1}{2}$ "	12.7	31.376	31.377	31.378	31.379	—



## THREE-SQUARE SLIM

Same as three-square, except thinner, for working in smaller areas. **Double cut on all three sides.**

Length		Width		Cut 0	Cut 2
(in)	(mm)	(in)	(mm)		
6"	150	$\frac{5}{16}$ "	7.9	31.381	31.382

Use plastic file handles; size 4.



## VUL-CRYLIC

Double-end vulcanite file with open, coarse teeth for filing plastics, waxes and soft materials. One end is coarser than the other.

Double cut on both sides.

Length		Width		No.
(in)	(mm)	(in)	(mm)	
7"	175	$\frac{1}{2}$ "	12.7	31.385
8"	200	$\frac{35}{64}$ "	14	31.384



## WARDING

Parallel in thickness and tapered in width. Useful for removal of burrs. **Double cut top and bottom – Both edges are single cut.**

Length		Width		Thickness		Cut 00	Cut 0	Cut 2	Cut 4
(in)	(mm)	(in)	(mm)	(in)	(mm)				
3"	175	$\frac{23}{64}$ "	19.1	$\frac{1}{32}$ "	0.8	—	31.387	31.388	—
4"	100	$\frac{1}{2}$ "	12.7	$\frac{3}{64}$ "	1.2	31.389	31.390	31.391	31.392
6"	150	$\frac{5}{8}$ "	15.9	$\frac{5}{64}$ "	2.0	31.393	31.394	31.395	31.396
8"	200	$\frac{7}{8}$ "	22.2	$\frac{7}{64}$ "	2.8	31.397	31.398	31.399	—

## WARDING-SPECIAL THICKNESS

No.	Length		Width		Approx. Thickness		Stubs Iron Wire Gauge	Cut No.
	(in)	(mm)	(in)	(mm)	(in)	(mm)		
31.401	3"	175	$\frac{23}{64}$ "	19.1	.025"	0.61	23	0
31.402	4"	100	$\frac{1}{2}$ "	12.7	.031"	0.81	21	0
31.403	6"	150	$\frac{5}{8}$ "	15.9	.065"	1.65	16	0
31.405	6"	150	$\frac{5}{8}$ "	15.9	.047"	1.25	18	2
31.406	6"	150	$\frac{5}{8}$ "	15.9	.042"	1.02	19	0
31.407	6"	150	$\frac{5}{8}$ "	15.9	.042"	1.02	19	2

(This file is too thin to use with plastic handles.)

Note: See pages 185-186 for our complete file handle line, including charts on plastic file handles.

## DIE SINKERS' FILES

Overall length: 5¼" (133 mm). Length of cut: 3½" (89 mm).

### CROCHET

Cut 0	Cut 2
31.422	31.423



### FLAT

Cut 0	Cut 2
31.424	31.425



### HALF-ROUND

Cut 0	Cut 2
31.426	31.427



### OVAL

Cut 0	Cut 2
31.432	31.433



### PIPPIN

Cut 0	Cut 2
31.434	31.435



### ROUND

Cut 0	Cut 2
31.436	31.437



### THREE-SQUARE

Cut 0	Cut 2
31.440	31.441



### WARDING

Cut 0	Cut 2
31.442	31.443



### ASSORTED SET OF 12 DIE SINKERS' FILES

Cut 0	Cut 2
31.445	31.446



## GROBET SWISS NEEDLE FILES

Precision files, for exacting work, especially under magnification. Made of the highest quality steel, machined and finished for precision shape, accuracy and balance.

With round, knurled handles or plastic handles as noted.

- Length 4" (10 cm) has cut portion of 1¾" (44 mm)
- Length 5½" (14 cm) has cut portion of 2½" (64 mm)
- Length 6¼" (16 cm) has cut portion of 3" (76 mm)
- Length 7¾" (20 cm) has cut portion of 4⅝" (105 mm)



### BARRETTE

Overall Length		KNURLED HANDLES				
(in)	(cm)	Cut 00	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	—	<b>31.450</b>	<b>31.451</b>	<b>31.452</b>	—
5½"	14	—	<b>31.453</b>	<b>31.454</b>	<b>31.456</b>	—
6¼"	16	<b>31.458</b>	<b>31.459</b>	<b>31.461</b>	<b>31.463</b>	<b>31.464</b>
7¾"	20	—	<b>31.466</b>	<b>31.468</b>	<b>31.470</b>	<b>31.471</b>



### BARRETTE, GROUND BACK

Widely used in making and repairing extrusion dies.

Overall Length		KNURLED HANDLES	
(in)	(cm)	Cut 0	Cut 0
5½"	14	—	<b>31.693</b>
6¼"	16	—	<b>31.694</b>



### CROCHET

Overall Length		KNURLED HANDLES		
(in)	(cm)	Cut 0	Cut 2	Cut 4
4"	10	<b>31.474</b>	<b>31.475</b>	—
5½"	14	<b>31.477</b>	<b>31.478</b>	<b>31.479</b>
6¼"	16	<b>31.480</b>	<b>31.481</b>	<b>31.482</b>



### CROSSING

Overall Length		KNURLED HANDLES			
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	<b>31.484</b>	<b>31.485</b>	—	—
5½"	14	<b>31.487</b>	<b>31.488</b>	<b>31.489</b>	—
6¼"	16	<b>31.490</b>	<b>31.491</b>	<b>31.492</b>	<b>31.493</b>
7¾"	20	<b>31.494</b>	<b>31.495</b>	<b>31.496</b>	—



### EQUALLING

Overall Length		KNURLED HANDLES				
(in)	(cm)	Cut 00	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	—	<b>31.498</b>	<b>31.499</b>	<b>31.500</b>	—
5½"	14	—	<b>31.501</b>	<b>31.502</b>	<b>31.503</b>	—
6¼"	16	<b>31.505</b>	<b>31.506</b>	<b>31.508</b>	<b>31.510</b>	<b>31.511</b>
7¾"	20	—	<b>31.512</b>	<b>31.513</b>	<b>31.514</b>	—





### HALF-ROUND



Overall Length		KNURLED HANDLES				
(in)	(cm)	Cut 00	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	—	31.516	31.517	—	—
5½"	14	—	31.519	31.520	31.522	—
6¼"	16	31.524	31.525	31.527	31.529	31.530
7¾"	20	31.53101	31.531	31.533	31.535	—



### JOINT ROUND EDGE



Overall Length		KNURLED HANDLES			
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	31.537	31.538	31.539	—
5½"	14	31.540	31.541	31.542	—
6¼"	16	31.543	31.544	31.545	31.546



### PILLAR ROUND EDGE



Overall Length		KNURLED HANDLES		
(in)	(cm)	Cut 0	Cut 2	Cut 4
6¼"	16	31.547	31.548	31.549



### KNIFE



Overall Length		KNURLED HANDLES			
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	31.551	31.552	—	—
5½"	14	31.554	31.555	31.556	—
6¼"	16	31.558	31.559	31.561	31.562
7¾"	20	31.563	31.564	31.565	—



### MARKING



Overall Length		KNURLED HANDLES			
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	31.567	31.568	31.569	—
5½"	14	31.570	31.571	31.572	—
6¼"	16	31.573	31.574	31.575	31.576



### OVAL



Overall Length		KNURLED HANDLES		
(in)	(cm)	Cut 0	Cut 2	Cut 4
6¼"	16	31.578	31.579	31.580



### ROUND



Overall Length		KNURLED HANDLES			
(in)	(cm)	Cut 00	Cut 0	Cut 4	Cut 6
4"	10	—	31.582	31.583	31.584
5½"	14	—	31.585	31.586	31.588
6¼"	16	31.590	31.591	31.593	31.595
7¾"	20	31.59701	31.597	31.598	31.599



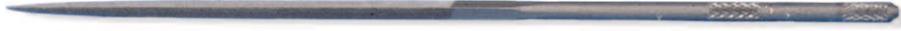
## SLITTING

Overall Length		KNURLED HANDLES			
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	31.601	31.602	—	—
5½"	14	31.604	31.605	31.606	—
6¾"	16	31.607	31.608	31.609	31.610



## SQUARE

Overall Length		KNURLED HANDLES				
(in)	(cm)	Cut 00	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	—	31.612	31.613	—	—
5½"	14	—	31.615	31.616	31.617	—
6¾"	16	31.619	31.620	31.622	31.624	31.625
7¾"	20	—	31.626	31.627	31.628	—



## THREE SQUARE

Overall Length		KNURLED HANDLES				
(in)	(cm)	Cut 00	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	—	31.630	31.631	—	—
5½"	14	—	31.633	31.634	31.636	—
6¾"	16	31.637	31.638	31.640	31.642	31.643
7¾"	20	31.644	31.645	31.647	31.649	31.650



## WARDING

Overall Length		KNURLED HANDLES			
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	31.656	31.657	31.658	—
5½"	14	31.659	31.660	31.661	—
6¾"	16	31.663	31.664	31.666	31.667
7¾"	20	31.668	31.669	31.670	—



### 1 SETS of 12 ASSORTED GROBET NEEDLE FILES

The 4" (10 cm), 5½" (14 cm) and 6¾" (16 cm) sets consist of one each barrette, crossing, equalling, half-round, joint round edge, knife, marking, round, slitting, square, three-square, and warding. The 7¾" (20 cm) sets consist of two each half-round, round and three-square and one each barrette, crossing, equalling, knife, square and warding.

Overall Length			KNURLED HANDLES		
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
4"	10	31.672	31.673	—	—
5½"	14	31.675	31.676	31.677	—
6¾"	16	31.679	31.680	31.681	31.682
7¾"	20	31.683	31.684	—	—

### SET of 6 in pouch

Overall Length			KNURLED HANDLES		
(in)	(cm)	Cut 0	Cut 2	Cut 4	Cut 6
5½"	14	31.671	31.67101	—	—
6¾"	16	—	—	31.678	—



## VALTITAN NEEDLE FILES

*"The File with the Yellow Tang"*

For platinum, stainless steel, exotic plastics, and other hard to file materials. The hardest surface known – Rockwell hardness 72HRc. Better performance on hard-to-file surfaces. Little or no clogging; a simple knock is enough to remove the chips. Highly resistant to corrosion. Longer life than standard files.

### VALTITAN NEEDLE FILES

Overall length is 7" (18 cm), length of cut of 3¼" (80 mm).

				
<b>BARRETTE</b>	Cut 00 <b>30.100V</b>	Cut 0 <b>30.101V</b>	Cut 2 <b>30.102V</b>	
				
<b>EQUALLING</b>	Cut 00 <b>30.103V</b>	Cut 0 <b>30.104V</b>	Cut 2 <b>30.105V</b>	
				
<b>HALF-ROUND</b>	Cut 00 <b>30.106V</b>	Cut 0 <b>30.107V</b>	Cut 2 <b>30.108V</b>	
				
<b>ROUND</b>	Cut 00 <b>30.118V</b>	Cut 0 <b>30.119V</b>	Cut 2 <b>30.120V</b>	
				
<b>SQUARE</b>	Cut 00 <b>30.115V</b>	Cut 0 <b>30.116V</b>	Cut 2 <b>30.117V</b>	
				
<b>THREE-SQUARE</b>	Cut 00 <b>30.112V</b>	Cut 0 <b>30.113V</b>	Cut 2 <b>30.114V</b>	
				
<b>WARDING</b>	Cut 00 <b>30.109V</b>	Cut 0 <b>30.110V</b>	Cut 2 <b>30.111V</b>	
<b>SET of SIX "YELLOW TANG" FILES (ALL BUT WARDING)</b>				
	Cut 00 <b>30.121V</b>	Cut 0 <b>30.122V</b>	Cut 2 <b>30.123V</b>	

# VALTITAN PRECISION FILES

		Length		Cut 0	Cut 2
<b>BARRETTE</b>	(in) (mm)	6"	150	<b>30.201V</b>	<b>30.202V</b>
		Length		Cut 0	Cut 2
<b>HALF ROUND</b>	(in) (mm)	6"	150	<b>30.231V</b>	<b>30.232V</b>
		8"	200	—	<b>30.235V</b>
		Length		Cut 0	Cut 2
<b>HALF ROUND SLIM</b>	(in) (mm)	6"	150	<b>30.241V</b>	<b>30.242V</b>
		Length		Cut 00	Cut 2
<b>HAND</b>	(in) (mm)	6"	150	<b>30.210V</b>	<b>30.212V</b>
		8"	200	<b>30.213V</b>	<b>30.215V</b>
		Length		Cut 0	Cut 2
<b>PILLAR</b>	(in) (mm)	6"	150	<b>30.221V</b>	<b>30.222V</b>
		Length		Cut 0	Cut 2
<b>ROUND</b>	(in) (mm)	6"	150	<b>*30.251V</b>	<b>30.252V</b>
		8"	200	<b>*30.254V</b>	<b>30.255V</b>
<i>*Indicates blunt cut</i>					
		Length		Cut 0	Cut 2
<b>SQUARE</b>	(in) (mm)	6"	150	<b>*30.271V</b>	<b>30.272V</b>
<i>*Indicates blunt cut</i>					
		Length		Cut 0	Cut 2
<b>THREE-SQUARE</b>	(in) (mm)	6"	150	<b>30.261V</b>	<b>30.262V</b>
		8"	200	<b>30.264V</b>	<b>30.265V</b>

## GROBET ESCAPEMENT FILES

Also known as square handled needle files, these precision files are available in most of the needle file shapes. Overall length is 5½" (14 cm), length of cut is 1⅞" to 2⅞" (40 to 65 mm) depending upon shape.



BARRETTE	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.700	31.701	31.703	31.704	31.705



BARRETTE PARALLEL	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.708	31.709	31.710	—



CROSSING	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.714	31.715	31.716	—



EQUALLING	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.720	31.721	31.722	—



HALF-ROUND	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.724	31.725	31.727	31.728	31.729



KNIFE	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.731	31.732	31.733	—



PILLAR	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.737	31.738	31.739	—

**ROUND**

	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.742	31.743	31.745	31.746	31.747

**ROUNDING OFF**

	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.750	31.751	31.752	—

**SQUARE**

	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.754	31.755	31.756	31.757	31.758

**THREE-SQUARE**

	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.760	31.761	31.762	31.763	31.764

**THREE-SQUARE  
SLIM AND SHORT**

	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.766	31.767	31.768	—

**SETS of 12 ASSORTED GROBET ESCAPEMENT FILES**

Contains 12 assorted files in plastic carrying case .  
Pillar shape not included in sets.

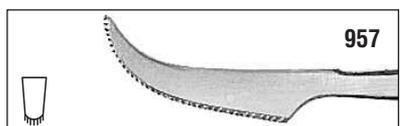
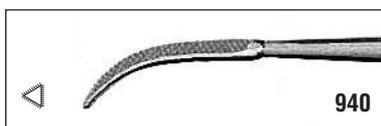
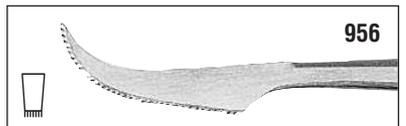
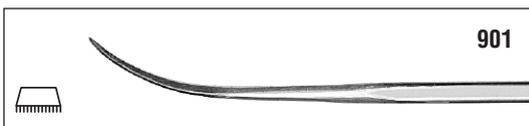
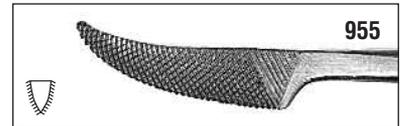
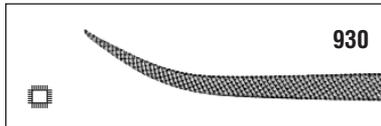
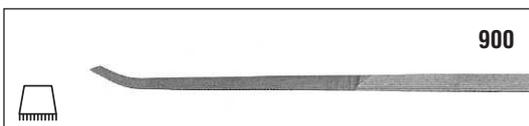
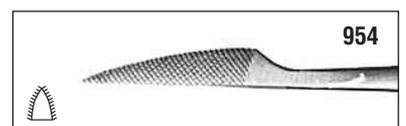
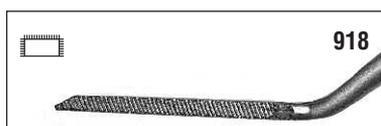
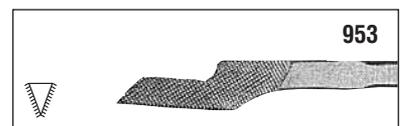
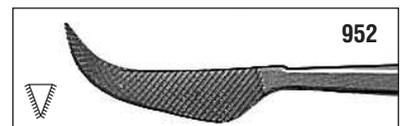
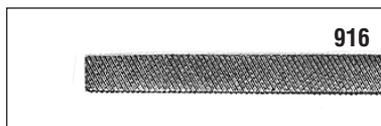
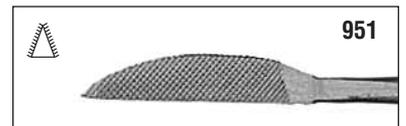
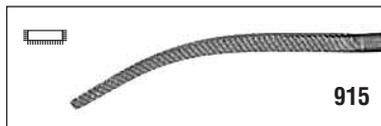
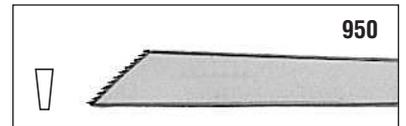
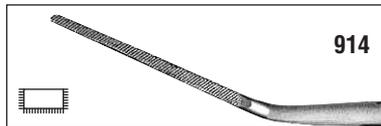
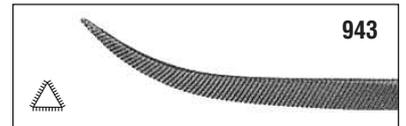
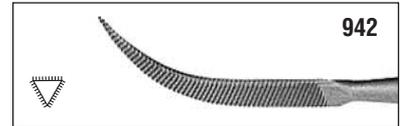
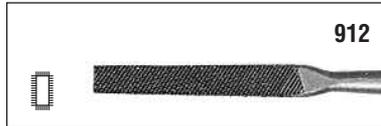
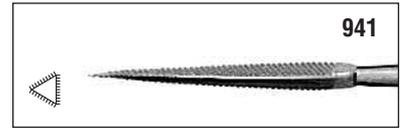
Cut	No.
2	31.770
4	31.771
6	31.772



## GROBET DIE SINKERS' RIFFLERS

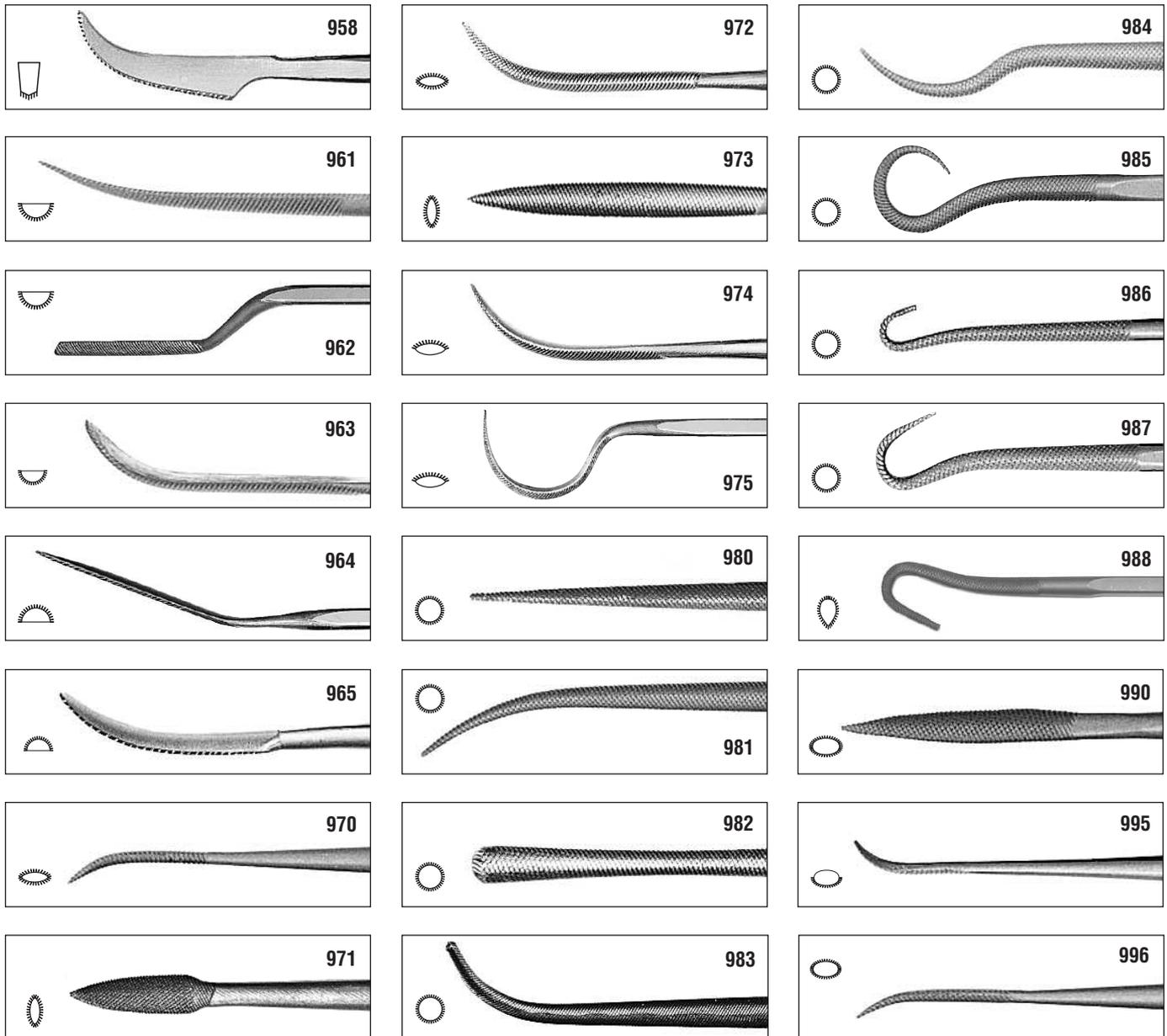
A comprehensive selection of precision rifflers. All are double-ended and 6" (152 mm) long.

Style No.	Cut 0	Cut 2	Cut 4
900	31.835	31.836	31.837
901	31.838	31.839	31.840
905	31.846	31.847	31.848
911	31.850	31.851	31.852
912	31.854	31.855	31.856
913	31.858	31.859	31.860
914	31.862	31.863	31.864
915	31.865	31.866	31.867
916	32.017	32.018	--
917	31.869	31.870	--
918	31.872	31.873	--
930	31.882	31.883	--
931	31.885	31.886	31.887
940	31.888	31.889	31.890
941	31.892	31.893	31.894
942	31.896	31.897	31.898
943	32.033	32.034	--
950	31.900	--	--
951	31.903	31.904	31.905
952	31.906	31.907	31.908
953	31.910	31.911	--
954	31.914	31.915	31.916
955	31.917	31.918	31.919
956	31.921	31.922	31.923
957	31.925	31.926	31.927



Style No.	Cut 0	Cut 2	Cut 4
958	31.929	31.930	31.931
961	31.932	31.933	31.934
962	31.936	31.937	---
963	31.939	31.940	31.941
964	31.943	31.944	31.945
965	31.946	31.947	31.948
970	31.950	31.951	31.952
971	31.954	31.955	31.956
972	31.957	31.958	31.959
973	31.961	31.962	31.963
974	31.965	31.966	31.967
975	31.969	31.970	31.971

Style No.	Cut 0	Cut 2	Cut 4
980	32.019	32.027	32.02702
981	31.972	31.973	31.974
982	31.976	31.977	31.978
983	31.979	31.980	31.981
984	31.983	31.984	31.985
985	31.986	31.987	31.988
986	31.990	31.991	31.992
987	31.994	31.995	31.996
988	31.997	31.998	31.999
990	---	32.002	---
995	32.007	32.008	---
996	32.010	32.011	32.012



**SETS OF DIE SINKERS' RIFFLERS**

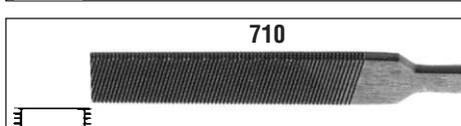
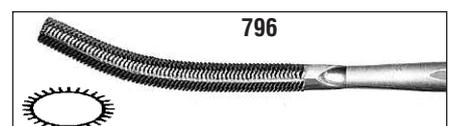
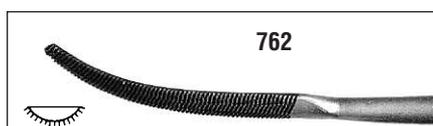
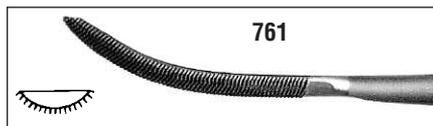
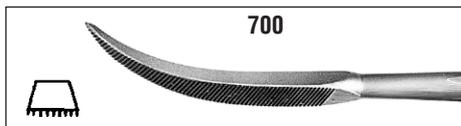
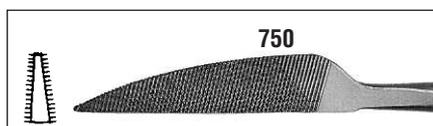
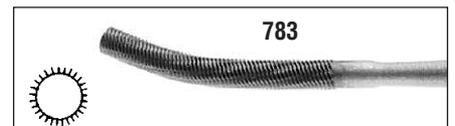
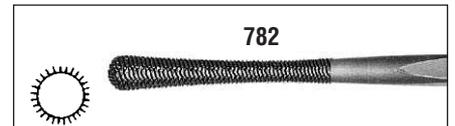
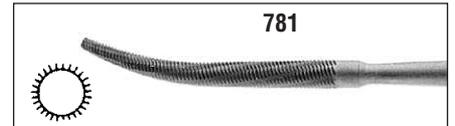
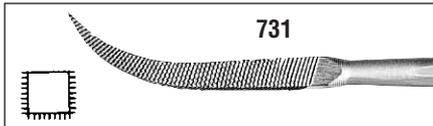
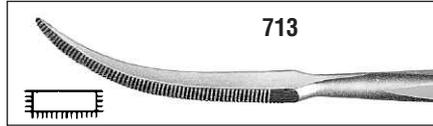
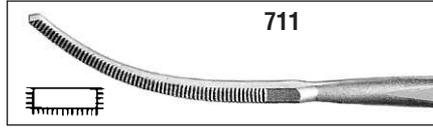
Contain the most widely used shapes from above.

Pieces In Set	Cut 0	Cut 2	Cut 4
12	32.020	32.021	32.022
18	---	32.025	32.026
24	---	32.029	---

## GROBET SILVERSMITHS' RIFFLERS

For removing metal and smoothing in tight places. All are double-ended and 7" (17.8 cm) overall.

Style Nos.	Cut 0	Cut 2
700	31.790	31.791
701	31.792	---
710	31.830	31.834
711	31.794	31.795
712	31.796	31.797
713	31.798	31.799
731	31.800	31.801
732	31.802	31.803
741	31.804	31.805
750	31.806	31.807
761	31.808	31.809
762	31.810	31.811
763	31.812	31.813
764	31.814	31.815
771	31.816	31.817
781	31.818	31.819
782	31.820	31.821
783	31.822	31.823
790	31.824	31.825
795	31.826	31.827
796	31.828	31.829



### SETS of 12 ASSORTED SILVERSMITHS' RIFFLERS

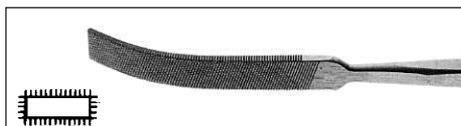
Contain 12 popular riffler shapes from above, in the cut indicated.

No. **31.831** Cut 0

No. **31.832** Cut 2

## GROBET TOOL MAKERS' RIFFLERS

This group of 12" (305 mm) tool makers' rifflers rounds out the most complete line of Swiss precision rifflers available to industry anywhere. They are made of chrome-alloy steel for long, efficient life and corrosion resistance. They are contoured to make difficult-to-reach areas readily accessible and are well balanced to facilitate delicate finishing work. All supplied in cut 0. Sold individually.



32.075



32.077



32.091

ASSORTED SET of 10 RIFFLERS No. **32.097**



### 1 MASCOT® NEEDLE FILES

Swiss-made, single-cut files do not clog as easily as double-cut. Overall length 5½" (14 cm). Smooth cut only. Sold individually.

No.	Shape
33.860	Equalling
33.861	Flat
33.862	Half-Round
33.863	Round
33.864	Square
33.865	Three-Square

#### SET of MASCOT® NEEDLE FILES

Set of six contains equalling, flat, half-round, round, square, and three-square styles in a plastic pouch.

No. 33.867



### 2 SWISS NEEDLE FILES

Well-made, yet economical, Swiss needle files are made of chrome alloy steel. Overall length is 5½" (14 cm), with the cut portion 3" (7.6 cm).

Sold by the dozen.

Shape	Medium	Fine
Barrette	33.880	33.881
Crossing	33.882	33.883
Equalling	33.884	33.885
Half-Round	33.886	33.887
Knife	33.890	33.891
Round	33.894	33.895
Square	33.898	—
Three-Square	33.900	33.901
Warding	33.902	33.903

#### SETS of SWISS NEEDLE FILES

Assorted shapes in a plastic pouch.

Cut	Set of 6	Set of 12
Medium	33.906	33.908
Fine	33.907	33.909



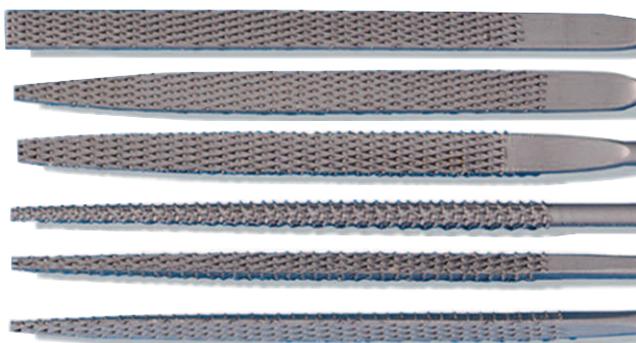
3

### 3 SWISS SINGLE CUT FILES SET

Top quality, miniature files get plenty of use smoothing, deburring and shaping work in metal, wood or plastic. Files are hard chrome steel, fine cut, 5½" (14cm) long, and have handles shaped for firm gripping. The single cut means less clogging and easier cleaning. Six files in carrying case.

	- POINTED FLAT		- SQUARE
	- HALF-ROUND		- EQUALLING
	- ROUND		- THREE-SQUARE

No. 31.674H



### 1 SWISS WAX FILES

Excellent for shaping waxes and other materials, such as wood and plastic. Wide-tooth style does not clog as easily as conventional file. Overall length 5½" (14 cm).

No.	Shape	No.	Shape
33.915	Equalling	33.918	Round
33.916	Flat	33.919	Square
33.917	Half-Round	33.920	Three-Square

#### SET of SWISS WAX FILES

All six shapes listed above in a plastic pouch.

No. 33.922



### 3 HABILIS™ FILES

Habilis files offer the craftsman something different; precision files designed for those "in-between" jobs, too big for needle files and requiring finer control than a larger, heavier file can deliver. The distinctive design includes a built-in handle, so there's no separate handle to buy and they're shaped for easy handling and balanced for efficient cutting. These strong, durable files are ideal for a variety of uses. Length of cut is 4" (10 cm) and the overall length is 8½" (22 cm). Sold individually or in sets as listed.

Shape	Width		Thickness		Cut 00	Cut 1
	(in)	(mm)	(in)	(mm)		
Hand	¾"	9.5	⅛"	3.2	33.820	33.821
Half-Round	1½"	11.9	⅞"	3.6	33.822	33.823
Round	¼"	6.4	—	—	33.824	33.825
Square	¼"	6.4	—	—	33.826	33.827
Three-Square	¾"	9.5	—	—	33.828	33.829

#### SET of HABILIS™ FILES

Five files, one of each shape, in sturdy vinyl pouch.

No. 33.831 Cut 00

No. 33.832 Cut 1



### 2 MASCOT® 6 PC UTILITY FILE SET

This handy utility set consists of six American Pattern file shapes: square, half-round, three-square, round, flat, and warding. File cut lengths are approximately 4" (10 cm) with an overall length of 7" (17 cm). Each file has a smooth wooden handle and the set includes in a hanging pouch.

No. 32.510



### 4 HABILIS™ RASPS

For cutting wood, fiberglass, plastics or soft metals. The comfortable-to-use, conveniently-sized Habilis style is now available in five shapes. The built-in handle and balanced feel will help you work faster, with better control. Offered individually in the most popular shapes or as a set of all five in vinyl pouch.

No. 33.834 Hand

No. 33.835 Half-Round

No. 33.836 Round

No. 33.837 Square

No. 33.838 Three-Square

#### SET of FIVE HABILIS™ RASPS

No. 33.840

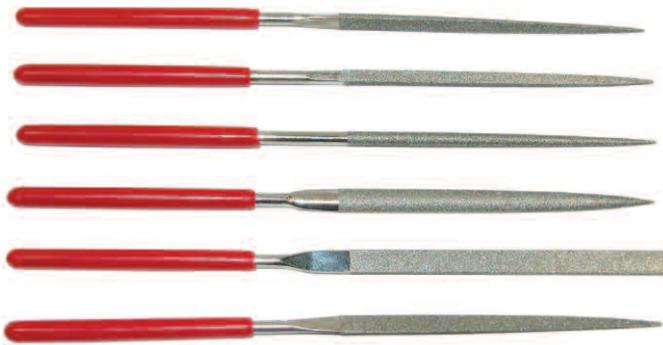


**1 HABILIS™ RIFFLERS**

Ideal for filing unusually-shaped or hard-to-reach areas. The built-in handles can be used as is, or the specially designed plastic handle (No. 33.848) can be used when a heavier grip is required. Supplied in six individual shapes, five curved and one straight, or as a set of all six plus the plastic handle.

No. **33.842** Hand  
 No. **33.843** Half-Round  
 No. **33.844** Round  
 No. **33.845** Square  
 No. **33.846** Three-Square  
 No. **33.847** Knife

**SET of SIX with HANDLE**  
 No. **33.850**

**2 Econo DIAMOND NEEDLE FILES**

Engineered to deliver performance unequaled by any other file. For use on ultra-hard materials, metals, ceramics, and glass. Excellent material removal. Unique process which bonds the 2½" long diamond surface at an affordable price. Available in medium grit (120/140) Overall length is 5½" (14 cm). Sold individually or in sets as listed.

No. **34.011** Barrette  
 No. **34.012** Equalling  
 No. **34.013** Half-Round  
 No. **34.014** Round  
 No. **34.015** Square  
 No. **34.016** Three-Square

**SET of Five in Vinyl Pouch**  
 Contains 5 assorted files from the list above.  
 No. **34.020**

**3 DIAMOND NEEDLE FILES**

Engineered to deliver performance unequaled by any other file, for use on ultra-hard materials. Carbide, hardened steel, exotic metals, ceramics, and glass are no match for these precision files. Excellent material removal is the result of a unique process which bonds the 2½" (64 mm) long diamond surface. Available in fine grit, medium grit and coarse grit. Overall length is 5½" (14 cm). Sold individually or in sets as listed.

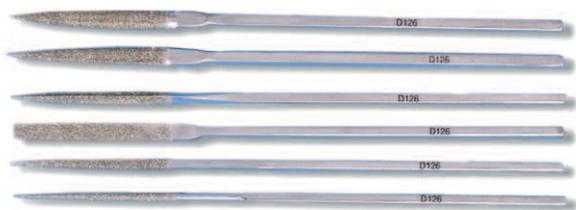
	Fine Grit (170/220)	Medium Grit (120/140)	Coarse Grit (80/100)
Barrette	<b>33.958</b>	<b>33.980</b>	<b>34.004</b>
Crossing	<b>33.959</b>	<b>33.984</b>	—
Equalling	<b>33.961</b>	<b>33.971</b>	<b>34.005</b>
Half-Round	<b>33.962</b>	<b>33.972</b>	<b>34.006</b>
Round	<b>33.963</b>	<b>33.973</b>	<b>34.007</b>
Square	<b>33.964</b>	<b>33.974</b>	<b>34.008</b>
Three-Square	<b>33.965</b>	<b>33.975</b>	<b>34.009</b>
Crochet	<b>33.966</b>	<b>33.976</b>	—
Warding	<b>33.967</b>	<b>33.977</b>	—
Knife	<b>33.968</b>	<b>33.978</b>	—
Pippin	<b>33.969</b>	—	—

**SET of FIVE in VINYL POUCH**

Contains one each of equalling, half-round, round, square and three-square.  
 No. **33.960** Fine grit  
 No. **33.970** Medium grit

**SET of TEN in VINYL POUCH**

Contains 10 assorted files listed above.  
 No. **33.950** Fine grit



### 1 DIAMOND ESCAPEMENT FILES

These square handle files have an overall length of 5-1/2" (14 cm). Their diamond surface is 1-9/16" to 2-9/16" (40 to 65 mm), according to shape. Used in fine watchmaking, in finishing fine castings, and other delicate work. 126 grit. Sold individually.

No. **33.951** Half-Round  
 No. **33.952** Crossing  
 No. **33.953** Three-Square  
 No. **33.954** Equalling  
 No. **33.955** Square  
 No. **33.956** Round

#### SET of SIX in VINYL POUCH

Contains one of each 6 files listed above.  
 No. **33.957**



### 3 DIAMOND RIFFLERS

For easy access to hard-to-reach places. Double-ended with diamond coating on both ends. Overall length is 6" (15 cm). 126 grit. Sold individually.

No. **33.991** Style 15  
 No. **33.992** Style 18  
 No. **33.993** Style 20  
 No. **33.994** Style 22  
 No. **33.995** Style 16

#### SET of FIVE in VINYL POUCH

Contains one of each 5 files listed above.  
 No. **33.996**



### 2 HABILIS™ DIAMOND FILES

Excellent for filing large areas of different materials as well as hard plastics, fiberglass, graphite, and epoxy. Can also be used for marble shaping applications. In spite of the heavy-duty applications, these diamond files have a very high resistance to wear. Overall length is 8-1/2" (22 cm) and diamond surface is 4" (10 cm). 126 grit. Sold individually.

No. **33.873** Three-Square  
 No. **33.874** Square  
 No. **33.875** Round  
 No. **33.876** Half-Round  
 No. **33.877** Hand

#### SET of FIVE in VINYL POUCH

Contains one of each 5 files listed above.  
 No. **33.852**



### 4 GROBET USA® DIAMOND HAND/MACHINE FILES

These tapered files are used in filing inside slots and grooves, where access with parallel files is impossible. They can be used by hand or in any reciprocating machine. Specially designed for the aluminum extruders industry as well as the plastic mold industry. The diamond coating is 5/8" (15.9 mm). The shank is 1/8". Grits and overall length as shown.

No.	Grit	Head Width		Taper		Overall Length	
		(in)	(mm)	(in)	(mm)	(in)	(mm)
<b>33.929</b>	325	1/8"	3.2	1/16"	1.6	2-1/4"	57
<b>33.930</b>	200	1/8"	3.2	1/16"	1.6	2-1/4"	57
<b>33.931</b>	600	1/8"	3.2	1/16"	1.6	2-7/8"	73
<b>33.932</b>	325	1/8"	3.2	1/16"	1.6	2-7/8"	73
<b>33.933</b>	200	1/8"	3.2	1/16"	1.6	2-7/8"	73
<b>33.934</b>	600	1/4"	6.2	3/64"	1.2	2-1/4"	57
<b>33.935</b>	325	1/4"	6.2	3/64"	1.2	2-1/4"	57
<b>33.936</b>	600	1/4"	6.2	3/64"	1.2	2-7/8"	73
<b>33.937</b>	325	1/4"	6.2	3/64"	1.2	2-7/8"	73
<b>33.938</b>	200	1/4"	6.2	3/64"	1.2	2-7/8"	73

#### SET of TEN

Contains one of each 10 files listed above.  
 No. **33.939**

## FILE HANDLE SIZE RECOMMENDED

### SWISS PRECISION FILES

File Length	4"	6"	8"	10"	12"	14"
<b>Type/Shape</b>						
Barrette	3	4	5	–	–	–
Checkering	–	4	–	–	–	–
Crochet	3	4	5	–	–	–
Crossing	2	4	5	–	–	–
Equalling	2	3	4	–	–	–
Half-Round	3	4	5	6	–	–
Hand	3	4	5	6	7	–
Knife	3	4	5	6	7	7
Pillar	3	4	4	6	6	–
Pippin	3	4	5	–	–	–
Round	1	3	4	5	–	–
Round Parallel: 3/16" (4.8 mm)	–	2	3	–	–	–
Round Parallel: 1/4" (6.4 mm)	–	2	3	–	–	–
Round Parallel: 1/8" (3.2 mm)	1	1	–	–	–	–
Round Parallel: 5/32" (4.0 mm)	1	1	–	–	–	–
Round Parallel: 3/8" (9.5 mm)	–	–	4	–	–	–
Slitting	2	4	–	–	–	–
Square	2	3	4	5	6	–
Three-Square	2	4	4	5	6	–
Warding	2	4	5	6	7	–

## FILE HANDLES



### 1 BLUE PLASTIC FILE HANDLES/METAL GRIPPING INSERT

Unbreakable plastic, with textured surface for a non-slip grip. Specially shaped to fit the hand for working comfort even over long periods. Hole at top permits convenient hang-up storage. Tang-gripping insert is tempered metal, with two threaded sections of different diameters. This assures proper alignment and positive hold for files, and also allows handle to be reused. Simply unscrew the file in use and insert a new one. .

No.	File Handle Size	No.	File Handle Size
37.781	1	37.785	5
37.782	2	37.786	6
37.783	3	37.787	7
37.784	4	37.788	8



### 2 BLUE PLASTIC FILE HANDLES/PLASTIC GRIPPING INSERT

Unbreakable plastic, with textured surface for non-slip grip and specially shaped to fit the hand for working comfort even over long periods. Hole at top permits convenient hang-up storage near work bench. Has plastic gripping insert.

No.	ID (mm)
37.815	4 mm
37.816	6 mm
37.817	8 mm
37.818	10 mm



### 1 PLASTIC FILE HANDLES for GROBET SWISS AMERICAN PATTERN FILES

Unbreakable plastic, bright handles with textured surface for a non-slip grip. Ergonomically designed to fit the hand for comfort.

No.	File Length		File Size	
	(in)	(mm)	(in)	(mm)
<b>37.810S</b>	3-1/2"	90	4"	100
<b>37.811S</b>	3-1/2"	90	4"-6"	100-150
<b>37.812S</b>	4-1/4"	110	6"-12"	150-300
<b>37.813S</b>	4-1/4"	110	12"-14"	300-350



### 2 WOOD FILE HANDLES

With natural finish. Wound wire ferrule provides extra strength to prevent splitting. Select handle to fit files 2" to 20" (5.1 to 51 cm).

- No. **37.791** 2"-4" (5-10 cm)
- No. **37.792** 4"-6" (10-15 cm)
- No. **37.793** 6"-10" (15-25 cm)
- No. **37.794** 10"-14" (25-35 cm)
- No. **37.795** 14"-16" (35-40 cm)
- No. **37.796** 16"-20" (40-50 cm)



### 3 LUTZ WOOD FILE HANDLES

Sturdy, force-fit type of handle.

- No. **37.801** 3"-6" (7.5-15 cm)
- No. **37.802** 6"-8" (15-20 cm)
- No. **37.803** 8"-12" (20-30 cm)
- No. **37.804** 14"-16" (35-40 cm)



### 4 SKROO-ZON WOOD FILE HANDLE

Steel die inside wood handle cuts its own thread on file tang.

- No. **37.820** For 6" (152 mm) files only.



### 5 NEEDLE FILE HANDLE

Precision chuck in smooth wooden handle holds 5-1/2" (14 cm) and 6-1/4" (16 cm) needle files securely.

- No. **37.830**



### 6 WOOD FILE HANDLES

Hardwood handles with metal ferrules suitable for small files, gravers, etc. Sold individually

No.	Length		Diameter	
	(in)	(mm)	(in)	(mm)
<b>37.832</b>	3"	76	7/16"	11
<b>37.833</b>	4"	102	3/8"	10

## RIFFLER HANDLE

### **1 HANDLE for HABILIS RIFFLERS**

No. 33.848



## FILE CLEANERS

### **2 FILE CLEANER with BRUSH**

Steel wire bristles mounted on wood handle with handy brush on reverse side. Overall length 10" (25 cm).

No. 33.979



### **3 FILE CLEANER**

Steel wire bristles mounted on wood handle, for removing particles clogging teeth of file. Overall length 10" (25 cm).

No. 33.981



## FILE STAND



### **4 NEEDLE FILE STAND**

Attractive metal stand conveniently holds and displays up to 12 needle files in 4" (10 cm), 5-1/2" (14 cm), or 6-1/4" (16 cm) lengths. Free-standing on workbench, hanging on a peg, or snapped closed for carrying, this stand keeps your frequently used files visible and handy at all times. (Files not included.)

No. 31.685

## GROBET USA® FLEXIBLE SHAFTS

### GROBET USA® FLEXIBLE SHAFT MOTOR

Introducing breakthrough technology in a flexible shaft. Economical workhorse, ideal for precision work. Ball-bearing motor runs smoothly, requires no lubrication. Available in both 110V and 220V models. Full 1-year warranty.

#### Kit Includes:

- Motor
- Foot pedal
- No. 30 Type Handpiece
- Shaft and Sheath



#### 1 C-300

No. 34.300 110V, 1/10 hp, 18,000 rpm  
No. 34.300X 220V, 1/10 hp, 18,000 rpm



#### 2 C-300

No. 34.300XEURO 220V, 1/10 hp, 18,000 rpm  
w/ No. 30 Handpiece 34.36701 with European Connection

#### Kit Includes:

- Motor
- Foot pedal
- No. 30 Type Handpiece
- Shaft and Sheath



#### 3 S-300

No. 34.600 110V, 1/8 hp, 20,000 rpm  
No. 34.600X 220V, 1/8 hp, 20,000 rpm



#### 4 C-300

No. 34.301XEURO 220V, 1/10 hp, 18,000 rpm  
w/ No. 34.26201 Quick Change Handpiece with European Connection

#### Replacement Inner Shaft for Flexshaft Motor (see page 190)

For 34.300/600 Grobet flexshaft motors.  
No. 34.365

#### Replacement Outer Sheath for Flexshaft Motor (see page 190)

For 34.300/600 Grobet flexshaft motors.  
No. 34.366

## HANDPIECES



### 1 GROBET USA® JEWELERS HANDPIECE

A popular handpiece for all-around use. Adjustable chuck accommodates shank sizes from 0 to  $\frac{5}{16}$ ". Includes chuck key.

No. 34.367

No. 34.36701 European Connection



### 2 HANDPIECES Y4

Opens up to  $\frac{1}{4}$ " to accommodate accessories. Popular with wood working tools and other popular handheld motors.

No. 34.235



### 3 SLIM HANDPIECE

Thin body with a protective guard sleeve that slides back for changing tools easily. Supplied with  $\frac{3}{32}$ " (2.4 mm) collet and collet wrench.

No. 34.233

No. 34.234 With duplex spring connection



### 4 COLLET HANDPIECE

Collet version of our general purpose handpiece. Supplied with  $\frac{3}{32}$ " (2.4 mm) collet. Collet wrench included.

No. 34.243

No. 34.24307 Handpiece for heavy duty use.  $\frac{1}{8}$ " &  $\frac{1}{4}$ " collets included. (not shown)



### 5 QUICK CHANGE HANDPIECE

No. 34.263

No. 34.26301 Euro Connection



### 6 QUICK CHANGE HANDPIECE

Ergonomic design provides improved control and extra comfort. Quick change collet-release lever for use with  $\frac{3}{32}$ " (2.4 mm) shanks.

No. 34.246

No. 34.247 With duplex spring connection



### 7 QUICK CHANGE HANDPIECE

No. 34.262 (Black)

No. 34.26201 Euro



### 8 QUICK CHANGE HANDPIECE

Ergonomic design provides improved control and extra comfort. Quick change collet-release lever for use with  $\frac{3}{32}$ " (2.4 mm) shanks.

No. 34.260

No. 34.261 With duplex spring connection

No. 34.24601 Collet only for 34.246, 2.35 MM



### 9 FARO QUICK RELEASE HANDPIECE

Quick release lever allows rapid changing of all burs & accessories with  $\frac{3}{32}$ " (2.4 mm) shanks. Slim body for precise control. Highest quality Italian construction.

No. 34.0252

No. 34.0251 With duplex spring connection



### 10 HAMMER HANDPIECE

Specially designed to hit hard, under control, without excessive heat build-up. Adjustable striking force. Hammer tip (1.5 mm round) included. Other hammer tips also available.

No. 34.241

No. 34.245 With duplex spring connection



**NEW**

**1 REPLACEMENT INNER SHAFT for FLEXSHAFT MOTOR**

For 34.300/600 Grobet flexshaft motors.  
No. **34.365**



**NEW**

**2 REPLACEMENT OUTER SHEATH for FLEXSHAFT MOTOR**

For 34.300/600 Grobet flexshaft motors.  
No. **34.366**

**GROBET USA® SPEED CONTROLS**

For use on all Grobet USA® and other standard flexible shaft motors.



**3 ELECTRONIC FOOT/BENCH SPEED CONTROL**

Solid state control. Use as a foot pedal or use the flip-up lever for manual bench control. Unit can be set for maximum speed. Plastic housing.  
No. **34.330** 110 volt model



**4 ELECTRONIC FOOT PEDAL**

Solid state control. Plastic housing.  
No. **34.368** 110 volt model  
No. **34.369** 220 volt model

**MICROMOTORS**



**5 GROBET USA® MICROMOTOR DUAL VOLT 110/220**

With on/off foot pedal. Speed controlled by dial on control box.  
Control box actual size: 5" L x 3" H x 4" W (127 x 76 x 102 mm).

- No. **34.555**
- No. **34.55501** Replacement control box
- No. **34.5552** Replacement handpiece

- No. **34.556** Micromotor with variable foot pedal
- No. **34.5561** Replacement control box



**1 ADJUSTABLE FLEX SHAFT HOLDER**

Attaches to bench and adjusts from 26" to 41" (63 to 104 cm). Swivels for easy flex shaft use.  
No. 34.611



**2 DOUBLE HOOK FLEX MOTOR HANGER**

Hang two of Grobet's Flex Motors to your bench or work space. Easily attaches to work bench. Swivels for easy flex shaft use. Adjustable from 27 1/2" to 41".  
No. 34.613



**3 GROBET USA™ JIFFY JIG**

A convenient way to hold jewelers handpieces in place while performing cutting, grinding or polishing operations. The holder is placed in a vise and the handpiece is pulled through. The vise is then tightened and you're ready to go, leaving both hands free. Tools on the handpiece can be changed easily. Holds jewelers handpieces similar to No. 34.236.  
No. 34.290



**4 CHUCK KEY IN HANDLE**

The plastic handle is easy to spot and won't roll around the bench. You get a better grip, so changing tools is quicker and easier. The capped hollow handle provides a handy storage space for drills, burs, etc.  
No. 28.212  
No. 28.211 Replacement key



**FLEX SHAFT ACCESSORY KITS**

Mounted accessories are on 3/32" (2.4 mm) arbors.

**5** No. 34.590 13 piece starter set

**6** No. 34.602 26 piece assortment



**7 MAINTENANCE KIT**

Includes tube of flexible shaft lubricant (grease) and a set of replacement motor brushes.  
No. 34.344



**8 HANDPIECE OIL**

Recommended for all our flexible shaft hand pieces.  
No. 34.345



**1 DEGREE GAUGES**

Lightweight, sensitive gauges made of polished steel with easy-to-read brass indexes.

No.	Adjustable	Graduations	Capacity
35.012	No	1/10 mm	150 mm
35.018	Yes	1/10 mm	150 mm



**2 COMBINATION DEGREE GAUGE**

Adjustable point for close tolerance work. 3/4" (19 mm) jaw. Graduations in 1/12 lines and 1/10 mm. Capacity 72 lines and 120 mm.

No. 35.014



**3 DIVIDERS**

For measuring distances between points and scribing circles or arcs. Spring action.

No.	Max. Opening		Legs	
	(in)	(mm)	(in)	(mm)
35.080	3 1/4"	183	3"	176
35.086	3 3/8"	186	4"	102
35.092	6 3/4"	171	6"	152
35.0525			4"	102
35.0526			6"	152



**4 DIVIDER with ROUND LEGS**

For measuring and scribing. Special, high-quality construction and finishing. With solid nut. 3" (76 mm) legs.

No. 35.084



**5 OPAQUE WHITE PLASTIC RULE**

Graduated in millimeters across the top and 1/16" increments across the lower half.

No. 35.500 Length 6" (150 mm), width 1/2" (12.7 mm)

No. 35.502 Length 7" (180 mm), width 5/16" (14.3 mm)



**6 STAINLESS STEEL FLEXIBLE RULE**

Graduated in millimeters across the top and 1/32" increments across the lower half. All graduations are deeply etched.

No. 35.510 Length 6" (150 mm), width 1/2" (12.7 mm)

**7 FLEXIBLE STAINLESS INCH RULE**

Chromed, non-glare finish. Capacity 6", graduated by 1/10ths and 1/100ths on one side and 1/32nds and 1/64ths on the other side.

No. 35.512



## SLIDING GAUGES

**1 BRASS SLIDING GAUGE**

Combination inch and millimeter gauge. Capacity 4" (100 mm).  
No. **35.0204A**

**2 BRASS POCKET SLIDING GAUGE**

Combination inch and millimeter gauge. Capacity 2 1/4" (60 mm). Graduations by 1/4 ths and 1.0 mm.  
No. **35.152**

**3 POCKET SLIDING GAUGES**

Combination inch and millimeter gauges. Capacity 3" (80 mm). Graduations by 1/16ths and 1.0 mm.

No. **35.154** Brass and aluminum

No. **35.156** Brass



## DIAL GAUGES

**4 PRESIDUM DIGITAL GEMSTONE GAUGE**

Electronic digital gemstone gauge. Uses EBAT357. Range 000.00 mm to 025.00 mm. Zero reset button. Auto shut off when placed in case slipper measuring platform wedge-shaped points fixed rod.

No. **56.726**

**5 PRESIDUM DIAL GAUGE**

The Presidium dial gauge incorporates the latest technology. Measurements are precise from 0.0 to 23.0 mm with 0.1 mm accuracy. Direct carat-weight reading on dial. Accuracy maintained with wear-resistant, hardened anvils. Reduces hand fatigue. Comes with polishing cloth, weight estimation table, instructions and accessory booklet.

No. **56.727**



### 1 BOLEY STYLE SLIDING GAUGES with LOCKING LEVER

Millimeter gauges with capacity of 100 mm and vernier reading to 0.1 mm. Cut out jaws for measuring different shapes.

No. 35.170 Stainless steel

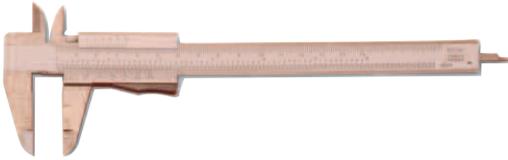
No. 35.171 Nickel silver



### 2 COLUMBUS STYLE VERNIER CALIPER

Economical quality gauge measures in metric and inch. Capacity 5" (125 mm). Vernier reads to  $\frac{1}{128}$ " and  $\frac{1}{10}$  mm. Has thumb roller and locking screw. Jaws measure inside and outside and there is a depth gauge in the end.

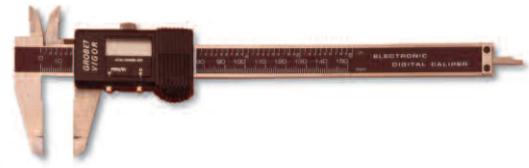
No. 35.174



### 3 STAINLESS VERNIER CALIPER

Well-made, precision gauge measures in metric and inch. Capacity  $6\frac{1}{4}$ " (155 mm). Vernier reads to  $\frac{1}{128}$ " ( $\frac{1}{20}$  mm). Thumb release locks in measurement. Glass-hard inside and outside jaws, with depth gauge in the end. Handy pouch included.

No. 35.178



### 4 INSTANT READOUT PRECISION DIGITAL CALIPER

Made of stainless steel. Measures inside and outside in inches and millimeters. Capacity 0-6 inches with .001" resolution, or 0-150 mm with 0.01 mm resolution. Includes zero set button and depth measuring rod. Protective carrying case and battery included.

No. 35.180



### 5 DIAL CALIPER

Made of stainless steel. Measures 0-6.5 inches. Dial adds .001" to accuracy.

No. 35.181



### 6 HIGH-IMPACT PLASTIC DIAL CALIPERS

Easy to read graduations from large  $1\frac{1}{2}$ " (38 mm) diameter dial. Jaws measure inside and outside and there is a depth gauge in the end. Available in metric or inch models. Economical and lightweight.

No. 35.182 6" capacity x 0.010"

No. 35.184 152 mm capacity x 0.1 mm

## FINGER GAUGES

Graduated in half sizes by US standards. Bright nickel-plated with easy-to-read numerals.



**1** No. **35.260** Regular width, flat, economy model w/matte finish, sizes 1-15  
Use with ringstick 35.0193.



**2** No. **35.0187** Wide width, flat, sizes 1-15.



**3** No. **35.263** Wedding band size, sizes 1 to 15.



**4** No. **35.264** Wide band size, 6 mm, sizes 1 to 15.



### **5** METAL FINGER GAUGES

Graduated in half sizes by US standards. Bright nickel-plated with easy-to-read numerals.

No. **35.0186** 3mm Half Round Ring Sizes 1-15

No. **35.0186T** 3mm Half Round Ring Sizes 5-13



### **6** COMFORT-FIT RING SIZER

Bright nickel-plated with colored numbers. Inside of rings is beveled to slip on easily. Sizes 1-15.

No. **35.265**



### 1 GROBET USA™ BANGLE SIZER

Bangle bracelet gauge to enhance sales of bracelets and bangles. Made of heavy gauge base steel, nickel coated. Sizes: 1-27, 1.55" to 3.15"  
No. 35.270



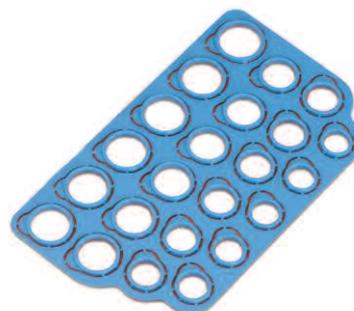
### 2 DELUXE RING SIZING SET

Creates an enjoyable ring sizing experience for your customers. Includes 25 individual finger gauges and a metal ring stick in an impressive gold finish. Finger gauges and ring stick are perfectly matched in graduated full and half sizes (U.S. standard sizes 1-13) to ensure an accurate and comfortable fit every time. Each ring has the finger size clearly marked on it and the ring stick features a knurled handle for an easy and comfortable grip. Presentation case included.  
No. 35.301



### 3 PLASTIC FINGER GAUGE

An ideal "give-away" for potential customers to take home to determine the correct finger size of recipient who cannot be present to be measured. A sure way to clinch the sale. Sold by the dozen.  
No. 35.255



### 4 PLASTIC FINGER GAUGE FORM

An inexpensive way for the jeweler to get correct ring sizes. Remove "size" from the form for an exact template to send to the manufacturer. Eliminates re-sizing problems caused by inaccurate ring sticks. Contains 23 sizes, from 2 1/2 to 14, graduated in half sizes by US standards. Sold by the dozen.  
No. 35.0895

### 5 MARK-A-SIZE

Enables you to accurately scribe cutting lines when reducing ring sizes. The 12 sizes are graduated in quarter ring sizes from 1/4 to 3. Mark and cut the correct size every time. Hardened steel with sharp edges. Fan folds when not in use to protect edges.  
No. 35.0705





### 1 HOLLOW METAL STICKS

For measuring rings 1 to 15 in quarter sizes by US standards. Has gauge to show length of material needed to make specific sizes of rings. Nickel-plated with wood handles. These lightweight, well-made sticks are available plain or with grooves for stone set rings.  
No. **35.284** Grooved style  
No. **35.286** Plain style



### 2 ALUMINUM RING STICKS

Made of solid aluminum, graduated in quarter sizes from 0 to 13 by US standards.  
No. **35.0192** With groove  
No. **35.0193** Without groove



### 3 WOODEN RING STICK

Hardwood with easy-to-read sizes. Sizes 3 to 15 in half sizes by US standards.  
No. **35.291**



### 4 UNIVERSAL ALUMINUM RING STICK

Measures by US and European ring sizes and shows diameter and circumference in millimeters. US sizes 2 to 15, graduated in quarter sizes. 10" (254 mm) long, without groove.  
No. **35.0174**



### 5 DELUXE PLASTIC RING STICK

For measuring rings 1 to 15 in quarter sizes by US standards. Has gauge to show length of material needed to make specific sizes of rings. High quality and grooved to accept stone set rings.  
No. **35.290**



### 6 PLASTIC RING STICK

Graduated in quarter sizes from 0 to 15 by US standards. Economical, rigid plastic with groove for stone set rings.  
No. **35.0194A**



### 7 JO-DI DIAMOND WEIGHT GAUGE

Computes weight of diamond without removing stone from mounting. Width and depth are measured with caliper and compared with measurements in table. For round and fancy shapes.  
No. **35.551**



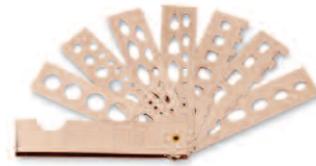
### 8 STONE and MOUNTING GAUGE

The holes in the gauge are used to measure stones, while the extensions are used to measure mountings. One side shows millimeters, the other side shows the corresponding carat measurements.  
No. **35.558**



**1 ACCURATE DIAMOND GAUGE**

Folds to the size of a half-dollar. Measures round and baguette stones from 1/100 to 2 carats. Made of aluminum for long, durable service.  
No. 35.560



**2 UNIVERSAL DIAMOND GAUGE**

Contains 7 blades for measuring the most popular diamond shapes: round, baguette, square, pear and marquise stones. Stainless steel, high-quality finished blades fold together within protective stainless steel case.  
No. 35.561



**3 K & B DIAMOND and STONE GAUGE**

Aluminum pocket gauge for measuring loose stones and settings ranging from .03 to 4 carats. A birthstone chart is embossed on the reverse side.  
No. 35.562



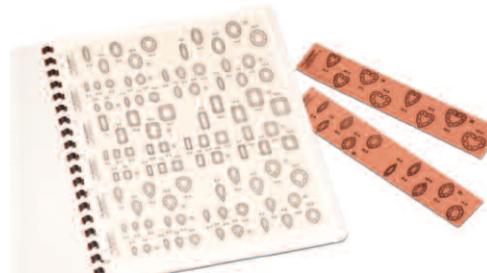
**4 SHANK SIZE and BRACELET GAUGE**

All-purpose gauge for measuring flat stock for proper size ring and bracelet shanks. Ring sizes from 1 to 14; bracelets from baby's to large men's sizes. Wire gauge from size 6 to 26 in all shapes.  
No. 35.0425



**5 MELEEMEETER™ LARGE STONE PROFILER**

Unsurpassed in helping the designer determine the most pleasing stone shape and size ratio, as well as for adjusting wax models before casting or ordering stones. Contains 168 shapes, sizes and length-to-width ratios for all the popular cuts: oval, pear, marquise, emerald, round, square and heart-shaped. Features bold outlines and gemologically correct facets for maximum visualization. The set consists of 12 rules in protective, easy access, white sleeves within a sturdy, vinyl binder.  
No. 35.0455



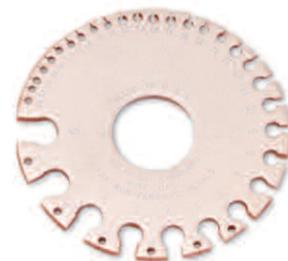
**6 MELEEMEETER™ MICROGAUGE SYSTEM**

Essential for gauging inaccessible mounted diamond melee. Eliminates measuring and computing of melee weights. Consists of 10 business card sized gauges, for use with magnification, with over 590 melee shapes and sizes placed around the edges for maximum accessibility. Contains gauge for Trillion diamonds, including weight formula. Comes in handsome solid brass card case.  
No. 35.0450



**7 BUR GAUGE**

Swiss-made precision gauge of lightweight metal measures bur diameters in ISO sizes 005 to 045. Ruler on reverse side measures up to 50 mm, in 1 mm increments.  
No. 35.465



**8 B & S GAUGE WIRE and DRILL GAUGE**

American standard for ordering wire and sheet sizes from 0 to 36. Decimal equivalents on the back. Imported, economical quality.  
No. 35.568

# GROBET HIGH SPEED YELLOW TANG & CARBON STEEL GRAVERS

Suitable for use with all types of metals, wood, bone, ivory, onyx. Used by engravers, stone setters, die sinkers, jewelers, and watchmakers. Many of the gravers are stamped with both the graver # and the Swiss #. In those cases, both numbers are noted in the charts below.

Note: High-speed steel gravers have yellow tangs.



High-Speed Steel



Carbon Steel

## 1 ONGLETTE



GRAVER #	5/0	4/0	3/0	2/0	0	1	2	3	4	5	6	7	8
THICKNESS MM	1.16	1.24	1.35	1.45	1.58	1.78	1.94	2.16	2.54	2.74	2.94	3.14	3.36
CARBON STEEL	<b>36.113</b>	<b>36.114</b>	<b>36.115</b>	<b>36.116</b>	<b>36.117</b>	<b>36.118</b>	<b>36.119</b>	<b>36.120</b>	<b>36.121</b>	<b>36.122</b>	<b>36.123</b>	<b>36.124</b>	<b>36.126</b>
HIGH-SPEED STEEL	<b>36.259</b>	<b>36.261</b>	<b>36.263</b>	<b>36.265</b>	<b>36.267</b>	<b>36.269</b>	<b>36.270</b>	<b>36.271</b>	<b>36.272</b>	<b>36.273</b>	<b>36.274</b>	<b>36.275</b>	<b>36.276</b>

## 2 FLAT



GRAVER #	36	37	38	39	40	41	42	43	45
SWISS #	2	4	6	10	12	14	18	20	24
THICKNESS MM	.2	.4	.6	1.0	1.2	1.4	1.8	2.0	2.4
CARBON STEEL	<b>36.136</b>	<b>36.137</b>	<b>36.138</b>	<b>36.139</b>	<b>36.140</b>	<b>36.141</b>	<b>36.142</b>	<b>36.143</b>	<b>36.145</b>
HIGH-SPEED STEEL	<b>36.277</b>	<b>36.278</b>	<b>36.279</b>	<b>36.280</b>	<b>36.281</b>	<b>36.282</b>	<b>36.283</b>	<b>36.284</b>	<b>36.285</b>

## 3 KNIFE



GRAVER #	1	2	3					
SWISS #	22	26	28					
THICKNESS MM	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
CARBON STEEL		<b>36.151</b>	<b>36.152</b>	<b>36.153</b>				
HIGH-SPEED STEEL	<b>36.300</b>	<b>36.301</b>	<b>36.302</b>	<b>36.303</b>	<b>36.304</b>	<b>36.305</b>	<b>36.306</b>	<b>36.307</b>

## 4 ROUND



GRAVER #	50	51	52	53	54	55	56		
SWISS #	2	4	6	10	12	14	16	18	20
THICKNESS MM	.2	.4	.6	1.0	1.2	1.4	1.6	1.8	2.0
CARBON STEEL	<b>36.180</b>	<b>36.181</b>	<b>36.182</b>	<b>36.183</b>	<b>36.184</b>	<b>36.185</b>	-	<b>36.186</b>	-
HIGH-SPEED STEEL	<b>36.289</b>	<b>36.290</b>	<b>36.291</b>	<b>36.292</b>	<b>36.293</b>	-	<b>36.294</b>	-	<b>36.295</b>

## 5 LOZENGE



GRAVER #	3	4	6
THICKNESS MM	1.75	2.00	2.50
CARBON STEEL	<b>36.163</b>	<b>36.164</b>	<b>36.166</b>

## 6 SQUARE



GRAVER #	4	6	8	10
THICKNESS MM	2.00	2.50	2.75	3.25
CARBON STEEL	<b>36.194</b>	<b>36.196</b>	<b>36.198</b>	<b>36.200</b>

## 7 OVAL



GRAVER #	62	63	64	65
SWISS #	17	19	21	23
THICKNESS MM	1.7	1.9	2.1	2.3
CARBON STEEL	<b>36.172</b>	<b>36.173</b>	<b>36.174</b>	<b>36.175</b>

## 1 GROBET SWISS STEEL STRAIGHT LINING GRAVERS

Used for making parallel lines in backgrounds or for florentine finish. Defined by width of cutting edges and number of lines graver will cut at one stroke. The "Width Ref. #" is the factory reference corresponding to the size of the lines and space between them. To determine the size of the liner, find the size of the distance between the lines and multiply by the number of lines. Made in Switzerland. Sold individually.



No.	Width Ref. #	Number of Lines	Rows per cm	Distance Between Lines
36.240	10	6	80	.125 mm
36.242	10	8	80	.125 mm
36.245	12	6	67	.149 mm
36.246	12	8	67	.150 mm
36.248	12	10	67	.150 mm
36.249	14	6	57	.175 mm
36.24901	14	8	57	.175 mm
36.24902	14	10	57	.175 mm
36.250	14	14	67	.149 mm
36.251	16	6	50	.200 mm

No.	Width Ref. #	Number of Lines	Rows per cm	Distance Between Lines
36.252	16	8	50	.200 mm
36.254	16	10	50	.200 mm
36.25401	16	14	57	.175 mm
36.25402	18	6	44	.227 mm
36.255	18	8	44	.227 mm
36.256	18	10	44	.227 mm
36.257	20	6	40	.250 mm
36.258	20	8	40	.250 mm
36.260	20	10	40	.250 mm

## 2 GRAVER HANDLES

No.	Style	Diameter x Length	
		(in)	(mm)
<b>A</b> 37.856	Gourd	1 $\frac{5}{16}$ " x 2 $\frac{1}{2}$ "	33.3 x 63.5
<b>B</b> 37.857	Half Head	1 $\frac{3}{8}$ " x 2"	34.9 x 50.8
<b>B</b> 37.858 (Not shown)	Half Head	1 $\frac{3}{8}$ " x 1 $\frac{3}{8}$ "	34.9 x 34.9
<b>C</b> 37.859	Half Head	1 $\frac{3}{8}$ " x 1 $\frac{3}{4}$ "	34.9 x 44.5
<b>D</b> 37.860	Half Head	1 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ "	31.8 x 57.2
<b>E</b> 37.865	Mushroom	1 $\frac{1}{4}$ " x 2"	31.8 x 50.8
<b>F</b> 37.867	Mushroom	1 $\frac{1}{4}$ " x 1 $\frac{3}{4}$ "	31.8 x 44.5
<b>G</b> 37.868	Mushroom	1 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ "	31.8 x 57.2
<b>H</b> 37.870	Oval	1 $\frac{5}{16}$ " x 1"	33.3 x 25.4
<b>I</b> 37.872	Pear	1 $\frac{3}{8}$ " x 1 $\frac{3}{8}$ "	41.3 x 47.6
<b>J</b> 37.874	Round	1 $\frac{3}{8}$ " x 1 $\frac{3}{8}$ "	34.9 x 41.3
<b>K</b> 37.877	Vase	1 $\frac{3}{8}$ " x 3"	34.9 x 76.2



## PRE-SHAPED GRAVERS

Genuine Grobet Swiss yellow tang Pre-Shaped GRAVERS! The World's Standard:



### 1 FLAT EDGE

GRAVER #	36	37	38	—	39	40	41	—	42	43	45
SWISS #	2	4	6	8	10	12	14	16	18	20	24
THICKNESS MM	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.40
GROBET #	<b>36.308</b>	<b>36.309</b>	<b>36.310</b>	<b>36.311</b>	<b>36.312</b>	<b>36.313</b>	<b>36.314</b>	<b>36.315</b>	<b>36.316</b>	<b>36.317</b>	<b>36.318</b>



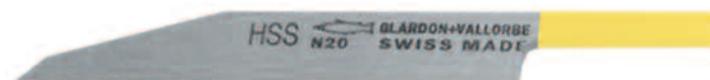
### 2 ROUND EDGE

GRAVER #	50	51	52	—	53	54	—	20
SWISS #	2	4	6	8	10	12	16	20
THICKNESS MM	0.20	0.40	0.60	0.80	1.00	1.20	1.60	2.00
GROBET #	<b>36.319</b>	<b>36.320</b>	<b>36.321</b>	<b>36.322</b>	<b>36.323</b>	<b>36.324</b>	<b>36.325</b>	<b>36.326</b>



### 3 ONGLETTE

GRAVER #	5/0	4/0	3/0	2/0	0	1	2	3	4	5	6	7	8
THICKNESS MM	1.16	1.24	1.35	1.45	1.58	1.78	1.94	2.16	2.54	2.74	2.94	3.14	3.36
GROBET #	<b>36.327</b>	<b>36.328</b>	<b>36.329</b>	<b>36.330</b>	<b>36.331</b>	<b>36.332</b>	<b>36.333</b>	<b>36.334</b>	<b>36.335</b>	<b>36.336</b>	<b>36.337</b>	<b>36.338</b>	<b>36.339</b>



### 4 KNIFE

GRAVER #	—	—	1	—	2	3	—	—
SWISS #	18	20	22	24	26	28	30	32
THICKNESS MM	1.80	2.00	2.20	2.40	2.60	2.80	3.00	3.20
GROBET #	<b>36.340</b>	<b>36.341</b>	<b>36.342</b>	<b>36.343</b>	<b>36.34301</b>	<b>36.34302</b>	<b>36.34303</b>	<b>36.34304</b>



### 1 SET of E.F.B. GRAVERS

Set of six shapes, with handles, in hardwood case. Made of the best tool steel, sharpened and ready for use. Famous for their pattern and special shape, designed to fit into E.F.B. handles. Overall lengths are 3<sup>7</sup>/<sub>8</sub>" (98mm). Made in USA.  
No. **36.100**



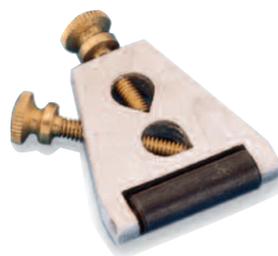
### 2 SET of TURNING GRAVERS

For turning or pivoting items on small lathes. Available in set of ten or set of six different shapes, fitted with wood handles. Made of tool steel with finished ground points.  
No. **36.804** Set of 6



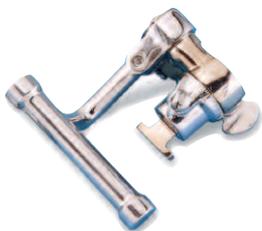
### 3 VIBRO-GRAVER

This rugged industrial quality engraving tool makes permanent markings on the hardest steel, glass, plastic, stone, wood, or almost any surface. Used extensively by jewelers to make background effects on jewelry. Features a durable, tungsten carbide engraving tip, positive on-off switch, and spark-free motor that vibrates at 7200 strokes per minute. The adjustment dial changes length of stroke and depth of mark.  
No. **36.861** 110 volt model



### 4 GRAVER SHARPENER

Graver is placed in either of two angled openings and rolled over flat oilstone to sharpen (oilstone not supplied). Measures 2<sup>1</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>8</sub>" (54 x 35 mm).  
No. **36.884**



### 5 CROCKER PATTERN GRAVER SHARPENER

Graver can be set to any angle and sharpened by setting index. Holds graver edge in position while honing on oilstone (not supplied).  
No. **36.880**



### 6 E.F.B. GRAVER HANDLES

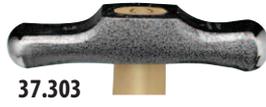
Made of finely finished hardwood. Graver slips into groove of handle and is held securely by metal sleeve. Especially for E.F.B. style gravers.  
No. **37.850** For double end gravers  
No. **37.851** For single end gravers

## SILVERSMITHS, PLANISHING, EMBOSING & RAISING HAMMERS

Precision ground and hardened, each hand-forged steel head has highly polished tips and is mounted on a hickory handle. Each hammer is well balanced and offers efficiency and precision. The finest hammers available!



37.301



37.303



37.302



37.304



37.336



37.350

### 1 SILVERSMITHS' HAMMERS

Premium quality hammers are ideal for all types of metal work. Suitable for a wide range of applications.

No.	Weight (oz) (g)		Length	Small End	Large End
37.301	7	199	4 1/2"	9/16"	1 1/16"
37.302	10	284	5"	13/16"	7/8"
37.303	14	397	4 7/8"	1 1/4" X 5/8"	1 1/4" X 7/8"
37.304	17	482	5 3/4"	13/16"	1"

### 2 EMBOSING HAMMERS

Elevates position of the surfaces when driven against the inner walls of raised work. Can also be used for planishing.

No.	Weight (oz) (g)		Length	Small End	Large End
37.336	14	397	5 3/4"	13/16"	1"
37.350	7	199	3"	15/16"	1"



37.329



37.333



37.330



37.334



37.331



37.335



37.332



37.417



37.421



37.418



37.422



37.419



37.423



37.420

### 3 PLANISHING HAMMERS

Ideal for flattening, shaping, smoothing or finishing surfaces. Can also be used for forming faceted and glittered effects on metal.

No.	Weight (oz) (g)		Length	Small End	Large End
37.329	13	369	4 3/4"	1 1/8"	1 1/4" X 5/16"
37.330	14	397	4	1"	1 1/8"
37.331	14	397	3 3/4"	7/8"	15/16"
37.332	12	341	4 1/8"	1"	1 1/16"
37.333	7	199	3"	15/16"	1"
37.334	13	369	5 1/2"	7/8" X 3/4"	1" X 7/8"

No.	Weight (oz) (g)		Length	Square	Round
37.335	13	369	4 5/8"	1" X 1"	1" Dia

### 4 RAISING HAMMERS

Used for forming the basic shapes of items in the early stages.

No.	Weight (oz) (g)		Length	Small End	Large End
37.417	8	227	4 3/4"	3/4" X 3/16"	7/8" X 1/4"

No.	Weight (oz) (g)		Length	Both Ends
37.418	18	511	4 3/4"	1 1/16" X 1/4"

No.	Weight (oz) (g)		Length	Small End	Large End
37.419	8	227	4 3/8"	13/16" X 3/8"	7/8" X 3/8"
37.420	8	227	4 3/8"	1 1/8" X 1/4"	1 1/4" X 3/8"
37.421	8	227	4 1/2"	1 3/16" X 3/16"	1 1/4" X 1/4"
37.422	7	199	3 5/8"	3/4" X 3/4"	7/8" X 7/8"
37.423	9	255	5 5/8"	9/16" X 3/16"	7/8" X 9/16"



**1 ECONOMICAL QUALITY BALL PEIN HAMMERS**

Hammers with one flat end and one round end are used for flattening, shaping or removing dents. Hardwood handles are comfortable for extended use. Overall length 10".

No.	Head Length		Head Weight	
	(in)	(mm)	(oz)	(g)
37.110	1 7/8"	48	1	28
37.112	2"	51	2	57
37.114	2 5/8"	67	4	113
37.118	3 1/4"	83	8	227



**2 MASTER QUALITY BALL PEIN HAMMERS**

High quality carbon steel, ball pein hammer provides extra strength for driving chisels and punches. Overall length 10".

No.	Head Length		Head Weight	
	(in)	(mm)	(oz)	(g)
37.122	2"	51	2	57
37.124	2 3/4"	70	4	113



**3 MASTER QUALITY CHASER'S HAMMERS**

Master quality hammers have one large smooth face for striking chasing tools or planishing metal, and one round end for riveting or peining. Forged steel heads are mounted on round or pistol-type hardwood handles.

Face Diameter (in)	Round Handles		Pistol Handles
	(mm)		
1"	25	37.174	37.184
1 1/8"	29	37.176	37.186
1 1/4"	32	37.178	37.188



**4 HANDLES FOR MASTER QUALITY CHASER'S HAMMERS**

Hardwood handles are lightweight and comfortable. No. 37.891 Pistol for 1"-1 1/4" face diameter. No. 37.892 Round for 1"-1 1/4" face diameter.



**5 CHASER'S HAMMERS**

Economical quality hammers designed for silversmiths and ideal for craftsmen. Flat head is used to flatten, shape and form objects, or strike chasing tools. Round end is for forming decorative patterns and designs. Complete with hardwood handles.

- No. 37.0365 1" (25 mm)
- No. 37.0366 1 1/8" (29 mm)
- No. 37.0367 1 1/4" (32 mm)



**6 HANDLES for CHASER'S HAMMERS**

Choose from a variety of handles to fit your comfort level. No. 37.0410 Pistol No. 37.0411 Round No. 37.0412 Oval



**1 RIVETING HAMMER**

Riveting hammer, with a flat end and chisel end for forming and riveting. Drop forged, polished head is mounted on select hardwood handle.

No.	Face Diameter		Head Stamped	Head Length		Head Weight	
	(in)	(mm)		(in)	(mm)	(oz)	(g)
37.212*	5/16"	8	-	3"	76	2	57
37.216	1/2"	13	0	3 5/8"	92	4	113
37.218	1/2"	13	1	4"	102	5	142
37.220	5/8"	16	2	4 1/4"	108	7	199

\*Economical quality



**2 RIVETING HAMMER**

General utility hammer with chisel formed end for spreading rivet heads. Supplied with a metal handle. Overall length 9", head length 2 13/16".

No. 37.0362



**3 GOLDSMITHS' HAMMER**

Sturdy hardwood-handle hammers feature a round flat end and chisel-shaped end. Perfect for riveting and shaping.

No.	Face Diameter		Head Length		Head Weight	
	(in)	(mm)	(in)	(mm)	(oz)	(g)
37.0409	5/8"	16	3 1/2"	89	4	113



**4 WATCH-MAKING HAMMERS**

Hardwood hammers with steel heads have a chisel shaped end for riveting and a flat end for light duty work.

No.	Head Length	
	(in)	(mm)
37.240	2 1/4"	57
37.242	2 1/2"	64
37.244	2 3/4"	70
37.246	3"	76



**5 BRASS HEAD MALLET**

Well balanced handle is lightweight for just the right amount of spring.

No.	Face Diameter		Head Length		Head Weight	
	(in)	(mm)	(in)	(mm)	(oz)	(g)
37.530	1/2"	13	2"	51	2	57



**6 BRASS and FIBER MALLET**

Mallet is supplied with one flat brass head and one fiber head.

No.	Head Length	
	(in)	(mm)
37.0181	2"	51



### 1 MALLETS with DETACHABLE FACES

Versatile hammer with interchangeable faces to provide any combination desired. Supplied with two different faces and wrench to tighten or remove collars.

No.	Faces	Face Diameter		Head Length		Head Weight	
		(in)	(mm)	(in)	(mm)	(oz)	(g)
37.534	Brass/Fiber	9/16"	14	2"	51	2 1/2"	71
37.536	Brass/Nylon	9/16"	14	2"	51	2 1/2"	71
37.582	Brass/Fiber	5/8"	16	2 3/8"	67	5	142
37.584	Brass/Nylon	5/8"	16	2 5/8"	67	5	142

#### Replacement Faces

Type	For 2-1/2 oz. (71 g) Head	For 5 oz. (142 g) Head
Brass	37.550	37.590
Fiber	37.551	37.591
Nylon	37.552	37.592



### 3 PLASTIC Mallet

Great for those delicate jobs. Will not scratch or mar and reduces shock on impact. The plastic head can be refaced by filing and sanding. Great value!

No.	Head Size
37.730	1" x 2"
37.731	1 1/4" x 3"
37.732	1 1/2" x 3 1/2"



### 5 BOXWOOD Mallet

Made of the finest quality boxwood, one of the hardest woods available. These mallets are excellent for removing dents and straightening and flattening metals. Mounted on seasoned wood handle.

No.	Face Diameter		Head Length		Head Weight	
	(in)	(mm)	(in)	(mm)	(oz)	(g)
37.0183	1"	25	2 3/4"	70	—	—



### 2 PLASTIC Mallet

These durable non-porous mallets are great for those delicate jobs - will not scratch or mar and reduces shock on impact. The plastic head can be refaced by filing and sanding.

No.	Face Diameter		Head Length		Head Weight	
	(in)	(mm)	(in)	(mm)	(oz)	(g)
37.646	1 3/8"	35	3 1/2"	89	—	—
37.707	1 1/4"	32	3"	76	4	113
37.708	1 1/2"	38	3 1/2"	89	6	170



### 4 RAWHIDE MALLETS

Heads are made of the finest quality rawhide embedded in shellac for added durability. Mounted on hardwood handle. Will not mar or scratch. Great value!

No.	Head Size
37.720	1" x 2"
37.721	1 1/4" x 2 1/2"
37.722	1 1/2" x 3"
37.725	1 3/4" x 3 3/4"
37.726	2" x 3 1/2"
37.727	2 1/2" x 4"



### 6 RAWHIDE MALLETS

Heads are made of the finest quality rawhide embedded in shellac for added durability. Mounted on hardwood handle. Will not mar or scratch.

No.	Style No.	Face Diameter		Length		Head Weight	
		(in)	(mm)	(in)	(mm)	(oz)	(g)
37.700	0	1"	25	2 1/8"	54	2	57
37.701	1	1 1/4"	32	2 3/4"	70	4	113
37.702	2	1 1/2"	38	3"	76	6	170
37.703	3	1 3/4"	44	3 1/8"	79	9	255
37.704	4	2"	51	3 1/4"	83	11	312

## LAMPS

Suitable for workshop or desktop use. Fluorescent lighting provides ample “daylight” illumination. The “floating arm” design requires only a slight touch to raise, lower or tilt, directing the light source quickly and efficiently onto your work. The lamps are all metal construction and have a universal base for horizontal or vertical mounting.



### 1 BENCH LAMP

Suitable for workshop or desktop use.

Three Fluorescent bulbs provide ample illumination. The innovative design allows the user to raise, lower or tilt, directing the light source quickly and efficiently onto your work.

No. **13.110** (110v).

No. **13.110X** (220v)

No. **13.111** Replacement Bulb



### 2 GROBET USA® INSPECTION LAMP

- Illuminated magnifier provides hands-free viewing
- Magnification 1.75x
- Adjustable arm provides light source quickly and efficiently to work area
- Convenient clamp is suitable for workbench or desktop
- Metal construction
- Color: White
- Supplied with a 22-watt circline fluorescent bulb (13.140)

No. **13.125**

No. **13.140** Replacement Bulb



### 3 GROBET USA® Bench Lamp

- Adjustable arm provides light source quickly and efficiently to work area
- Convenient clamp is suitable for workbench or desktop
- Metal construction
- Supplied with two 15-watt fluorescent bulbs

No. **13.105**



### 4 ECONOMY BENCH LAMP

Supplied with two 15-watt fluorescent bulbs. Clamps easily onto a bench or desk. The arm has a 45" (114 cm). Convenience outlet in base.

No. **13.170** White

No. **13.144** 15 watt replacement bulb

**1 GROBET USA® GEMOLOGICAL MICROSCOPE**

- Great value at an affordable price
- View set and unset stones
- Versatile stone holder
- Features built-in light and darkfield illumination

- No. **29.875**  
20X/40X
- No. **29.875X**  
20X/40X, 220v
- No. **29.876**  
10X/30X
- No. **29.876X**  
10X/30X, 220v



**2 DIAMOND VIEW WITH LIGHT**

Portable darkfield is used to identify the characteristics of diamond freely. Features a mini-darkfield 10X Magnification. Sold with leatherette pouch. No. **29.619**



**3 PRECISION LOUPES**

These are high-quality chrome with rubber grips, Hastings 10X, Triplet Loupes. The unmatched clarity of our triplet loupes is further enhanced by black, outer lens edges which eliminates color distortion.

**Oval Triplet (10X) with Rubber Grips**

- 29.601** 18 mm White Pearl
- 29.602** 18 mm Blue Lapis
- 29.603** 18 mm Black Marble

**Hexagon Triplet (10X) with Rubber Grips**

- 29.604** 21 mm White Pearl
- 29.605** 21 mm Blue Lapis
- 29.606** 21 mm Black Marble



**4 DIAMOND CUT LOUPE**

High-quality diamond cut loupes provide clarity and eliminate distortion. Sold individually. All loupes come in a leather case.

- No. **29.585** 18mm Black Loupe
- No. **29.586** 18mm Silver Loupe
- No. **29.587** 18mm Gold Loupe
- No. **29.588** 21.5mm Black Loupe
- No. **29.589** 21.5mm Silver Loupe
- No. **29.590** 21.5mm Gold Loupe



**5 PEER® 10X TRIPLET MAGNIFIERS**

A triplet lens system for correcting spherical and chromatic aberrations. Eliminates color degradation and puts every part of the wide field of view in sharp focus. One of the most highly corrected magnifiers available.

- No. **29.670** Black satin
- No. **29.672** Gold
- No. **29.674** Chrome

**6 GROBET USA® 10X LOUPES**

Though only a single lens magnifier, the special construction with a grooved diaphragm around its circumference, gives a good, distortion-free definition of the object being viewed.

- No. **29.665** Chrome
- No. **29.666** Black Satin
- No. **29.667** Gold



**1 GROBET USA® 10X ILLUMINATED JEWELERS' LOUPE**

This innovative jewelers' loupe is ideal for inspecting diamonds, gemstones and watches.

- Built-in band of six LED lights
- Emits a cool bright light
- Direct illumination eliminates shadows
- Leather storage case included

No. **29.610** with LED light



**2 GROBET USA® 10X ILLUMINATED JEWELERS' LOUPE WITH LED AND UV LIGHT**

This innovative jewelers' loupe is ideal for inspecting diamonds, gemstones and watches.

- Built-in band of six LED lights
- Emits a cool bright light
- Direct illumination eliminates shadows
- Leather storage case included
- Ultraviolet light
- Essential for identifying fluorescent

No. **29.615** with light and UV



**3 UV and LED ALL-IN-ONE LOUPE**

Featuring 10X, 14X and 20X for maximum magnification. Supplied with leather carrying case.

No. **29.618**

**4 PEER® 20.5MM-10X TRIPLET LOUPE**

With extra large field of view. Optically corrected for distortion-free viewing from edge to edge. Lens is color corrected. Black frame reduces glare. Supplied with leather carrying case.

No. **29.677**



**5 VIGOR® EXTRA LARGE DIAMOND LOUPE**

10X triplet with 20.5 mm lenses provides sharp, clear images with greatly expanded viewing field. Color corrected, aplanatic and achromatic. Chrome with edges of lens and housing blackened to eliminate glare.

No. **29.0960**



**6 B & L POCKET CODDINGTONS**

Though only a single lens magnifier, it's special construction, with a grooved diaphragm around its circumference, gives a good, distortion-free definition of the object being viewed.

No.	Working Distance	Power
<b>29.242</b>	1"	10X
<b>29.243</b>	3/4"	14X
<b>29.244</b>	1/2"	20X



**7 B & L POCKET HASTINGS**

A triplet lens system for correcting spherical and chromatic aberrations. Eliminates color degradation and puts every part of the wide field of view in sharp focus. One of the most highly corrected magnifiers available.

No.	Working Distance	Power
<b>29.260</b>	1 1/2"	7X
<b>29.261</b>	1"	10X
<b>29.262</b>	3/4"	14X
<b>29.263</b>	1/2"	20X



**1 B & L DOUBLE LENS LOUPES**

Provides two magnifications in a single loupe. Front end screws off when not needed.

No.	Working Distance	Power
29.080	2½" & 1¼"	4X, 8X
29.081	1¼" & ½"	8X, 18X



**2 B & L SINGLE LENS LOUPES**

Feather-light frames with soft black interior surfaces. Lenses are carefully ground and polished from the best optical glass.

No.	Working Distance	Power
29.130	1"	10X
29.131	1½"	7X
29.132	2"	5X
29.133	2½"	4X



**3 PEER® DOUBLE LENS LOUPE**

Provides two magnifications. Front lens screws off when not needed. Power 5X and 12X.

No. 29.580



**4 PEER® SINGLE LENS LOUPES**

Economical, imported loupes with ground and polished lenses set in lightweight black plastic frames.

No.	Working Distance	Power
29.620	1½"	7X
29.621	2"	5X
29.622	2½"	4X
29.623	3"	3½X
29.624	3½"	3X
29.625	4"	2½X



**5 B & L TRIPLE APLANATIC**

Lens has received the best possible optical correction to make viewing free of distortion and color blurring. Recommended for critical inspection. Working distance 1", power 10X.

No. 29.075



**6 B & L ENGRAVERS' MAGNIFIER**

With a distortion-free, flat field view necessary for tool and die making, engraving, biological work, etc. Semi-achromatic lens is mounted in plastic frame. Lens diameter 1½", working distance 3", power 3½X.

No. 29.205

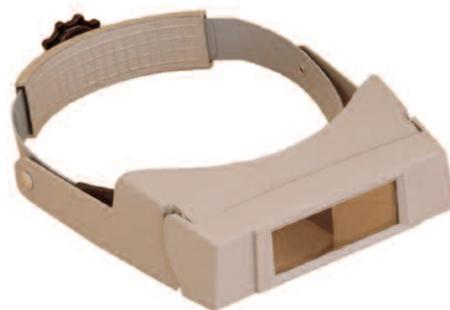


### 1 OPTIVISORS

Features a dial adjustment headband to fit any head size. Well-made magnifier is lightweight and durable, and fits over eyeglasses. Adjustable pivot assembly on visor can be set to desired tension, so it will stay in place when tilted.

Optivisor Complete	Lens Price	Plate Only	Style	Working Distance	Power
29.470		29.485	DA2	20"	1½X
29.471		29.486	DA3	14"	1½X
29.472		29.487	DA4	10"	2X
29.473		29.488	DA5	8"	2½X
29.474		29.489	DA7	6"	2¾X
29.475		29.490	DA10	4"	3½X

No. 29.491 Without lens plate



### 2 MAGNI-FOCUSER®

High quality magnifier has single lens design without annoying center post. Interchangeable lens plates snap in and out for quick change of magnification. With optical quality acrylic lenses, and adjustable headband with self-locking dial. Lightweight, washable, and fits over regular or safety glasses.

Magnifier	Price	with light	Working Distance	Power
29.400		29.781	14"	1½X
29.401		29.783	8"	2½X
29.402		29.784	6"	2¾X
29.755		29.785	4"	3½X

### MAGNI-FOCUSER® with AUXILIARY LENS

Magnifier	Working Distance	Power
29.766	4" & 14"	4¼X & 1½X
29.767	3" & 8"	4¼X, 2½X
29.768	2" & 6"	5¼X, 2¾X

### 3 OPTILOUPE for OPTIVISORS

Adds 2½X to the magnification. Easily attaches to either eye of optivisor. Swings away when not in use.

No. 29.480



No. 29.495 4" cord

No. 29.497 Replacement bulb

### 4 ADD-ON LIGHT for OPTIVISORS

Uses two AA Batteries (not included).

### 5 AUXILIARY LENS for MAGNI-FOCUSER®

Fits on either side and adds 3¼X to the magnification. Swings away when not in use.

No. 29.430



### 6 BAUSCH & LOMB MAGNA VISOR

Now supplied with 3 different focal length lenses – 12" (305 mm), 8" (203 mm) and 6" (152 mm). The lenses are precision made and easy to change. Great for hands-free viewing. Soft, padded band allows for comfortable fit. Excellent for precision detail work, crafts and hobbies.

No. 29.523 Visor with 3 lenses

No. 29.525 Replacement lens 12" (305 mm), 1.9X

No. 29.526 Replacement lens 8" (203 mm), 2.5X

No. 29.527 Replacement lens and 6" (152 mm), 2.75X



### 7 PEER® BINOCULAR MAGNIFIERS

Its lighter-than-air construction makes this comfortable magnifier perfect for lengthy wear. Band adjusts to fit most head sizes. Wide, clear lens plates permit a large amount of light to reach the eyes. Tilts out of the way when not in use, and can be worn over eyeglasses.

Magnifier	Working Distance	Power
29.541	14"	1½X
29.542	8"	2½X
29.543	6"	2¾X



**1 HEADBAND MAGNIFIER WITH LIGHT**

Lighted head band magnifier offers four magnifications ranging from 1.2X, 1.8X, 2.5X 3.8X. Two lenses may be used simultaneously for optimum magnification.  
No. 29.565



**2 HEADBAND MAGNIFIER WITH LED LIGHT**

Four magnification LED light head band magnifier. Supplied with four lenses 1.2X, 1.8X, 2.5X 3.5X in a protective storage case. Three LED lights in the lamp provide efficient lighting. Two lenses may be used simultaneously to achieve desired magnification.  
No. 29.566

**3 HEADBAND MAGNIFIER WITH LED LIGHT**

Four magnification LED light head band magnifier. Adjustable LED light with 3-step brightness control. Supplied with four lenses 1.2X, 1.8X, 2.5X 3.5X in a protective storage case. Two lenses may be used simultaneously to achieve desired magnification.  
No. 29.567



**4 EDROY BINOCULAR LOUPE**

Deluxe quality loupe with individual lenses provides the ultimate in comfortable magnified viewing. Can be worn over eyeglasses, and each lens can be adjusted individually. Contoured headband with foam padding is lightweight and easily adjusted. Magnification is 2½X at a working distance of 14", and the field of view is 2".  
No. 29.390



5



6

**MULTIPLE MAGNIFICATION HEADBAND MAGNIFIERS**

Four magnifications built in. No additional lenses to buy. Glare proof design. With the use of a flip down inner lens and the auxiliary loupe, a range of magnifications from 1½X to 4¾X is possible, 10" to 3" working distance.

**5** No. 29.561 With lights on both sides. Each side light requires 2 AAA batteries (not included)

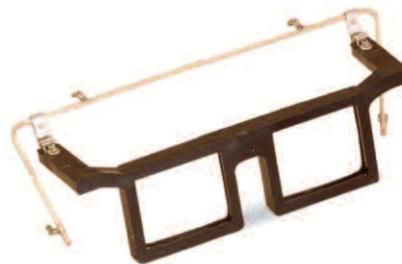
**6** No. 29.560 Standard model



### 1 HALF FRAME TELESIGHT MAGNIFIERS

For those who do not wear glasses. High quality prismatic lenses in lightweight frames attached to half-eyeglass frames. Front lenses flip up when not in use.

No.	Style	Working Distance	Power
29.760	43	14"	1½X
29.761	44	11"	2X
29.762	45	9"	2½X
29.763	46	7"	2½X
29.764	48	5"	3X



### 2 CLIP-ON TELESIGHT MAGNIFIERS

High quality prismatic lenses in lightweight frames that attach to most eyeglasses. Flip up when not in use.

No.	Style	Working Distance	Power
29.740	23	14"	1½X
29.741	24	11"	2X
29.742	25	9"	2½X
29.743	26	7"	2½X
29.744	28	5"	3X



### 3 CLIP-ON OPTICAID MAGNIFIERS

Clips on to most eyeglass frame to leave hands free. Optically designed plastic lenses enable you to see tiny details, without distortion, using both eyes. Lightweight, comfortable and adjustable. Comes with carrying pouch.

No.	Working Distance	Power
29.774	20"	1½X
29.770	14"	1½X
29.77001	10"	2X
29.771	8"	2½X
29.772	6"	2½X
29.773	4"	3½X



### 4 SPRING CLIP OPTICAID

New clip-on design will fit most metal and plastic eyeglass frames. Ophthalmic quality, hard-coated magnifying loupe. Comes with carrying pouch.

No.	Working Distance	Power
29.790	20"	1½X
29.791	14"	1½X
29.792	8"	2½X
29.793	6"	3½X
29.794	4"	3½X



### 5 PEER® MAGNIFIERS for EYEGLASS WEARERS

Clip-on lens attaches to metal or plastic frames. Scratch-proof lens folds up or down easily.

No.	Working Distance	Power
29.730	10"	2X
29.731	7"	2½X
29.732	6"	3X



### 6 MAGNI-SPECS

For those who do not wear glasses. Same high quality lenses as the Opticaid, but mounted on a comfortable, lightweight frame. Supplied with a durable hard carrying case.

No.	Working Distance	Power
29.797	8"	2½X
29.798	6"	3½X
29.799	4"	3½X



**1 DOUBLE LENS SPECTACLE LOUPES**

Metal clamp slips on and off without removing glasses. Fits all wire and plastic eyeglass frames. The two lenses can be used individually or in combination.

No.	Working Distance	Power
29.751G	1½" & 1"	7X, 10X
29.310G	2" & 1"	5X, 10X
29.739G	2½" & 1"	4X, 10X
29.311G	2½" & 1½"	4X, 7X
29.749G	2½" & 2"	4X, 5X
29.312G	3" & 2"	3½X, 5X
29.313G	3½" & 2"	3X, 5X



**2 SINGLE LENS SPECTACLE LOUPES**

Single lens with clamp fits all wire and plastic eyeglass frames and swings up when not in use.

No.	Working Distance	Power
29.738G	1"	10X
29.320G	1½"	7X
29.321G	2"	5X
29.322G	2½"	4X
29.323G	3"	3½X
29.324G	3½"	3X
29.325G	4"	2½X
29.326G	5"	2X



**3 B & L CLASSIC METAL SPECTACLE SINGLE LOUPE**

Made with precision optical glass. Available in single lens configurations. Side shield adapter kit provided for use with safety eyewear and shields. Improved mounting system for more secure attachment. High quality case provided to protect your investment.

No.	Working Distance	Power
29.164	1½"	7X
29.165	2"	5X
29.166	2½"	4X
29.167	3½"	3X



**4 B & L CLASSIC METAL SPECTACLE DOUBLE LOUPE**

Made with precision optical glass. Available in double lens configurations. Side shield adapter kit provided for use with safety eyewear and shields. Improved mounting system for more secure attachment. High quality case provided to protect your investment.

No.	Working Distance	Power
29.168	2½" & 1½"	3X, 5X
29.169	3½" & 2"	4X, 7X



**1 PEER® DOUBLE LENS LOUPE**

Economical spaced doublet lenses that provide distortion-free viewing. One lens has a 1" working distance and 10X power, while other has a ¾" working distance and 15X power.  
No. 29.662



**2 PEER® DOUBLET LOUPE**

Economical spaced doublet lenses that provide distortion-free viewing. Comes in leather case. Working distance 1", power 10X.  
No. 29.660



**3 B & L ILLUMINATED POCKET CODDINGTON**

A standard Coddington mounted on a handle which houses two penlite batteries (not included). Light shines through lens to illuminate object being viewed. 1" working distance, 10X magnification.  
No. 29.268



**4 STAINLESS STEEL INSPECTION MIRRORS with CHROME-PLATED HANDLE**

High quality, well-finished magnifying mirrors with 7" long chrome-plated handles.  
No. 29.385 Diameter ¾"  
No. 29.386 Diameter ½"



**5 PENLIGHT**

Rugged, clear-coat, aluminum-shelled flashlight is designed for years of dependable service. Comes with two AAA batteries and a storage tube.  
No. 13.166



**6 ASPHERIC MAGNIFIER**

Made of lightweight ABS plastic. 5x, aspheric lens is distortion-free with a working distance of 2". Magnifier is designed so that when it is placed on a surface, the surface is perfectly in focus. The body of the magnifier has special light gathering qualities for easier viewing.  
Can also be hand held.  
No. 29.573



**1 PEER® MEASURING MAGNIFIER with FLASH LIGHT**

Spaced doublet lens gives good definition of object being viewed. Removable inch and millimeter scales are viewed through lens for making accurate measurements. Light shines through lens to illuminate object. Operates on standard C-cell batteries (not included). Lens diameter 1 1/4", working distance 1 1/2" and power 7X. Overall length 6 3/4".

No. 29.650



**2 B & L LENSCOPE**

A hand-held tool for virtually any type of precise measurement or examination, featuring a choice of two interchangeable Hastings triplet lenses, 7X or 10X, distortion-free image, two illumination lamps, 45° or 90° from the viewing angle (batteries not included) and hinged-top storage case.

No.	Description	Power
29.203	Magnifier	7X
29.204	Magnifier	10X



**3 B & L MEASURING MAGNIFIER**

A must for technical craftsmen who require precise measurements. Has 7X Hastings lens that can be adjusted for exact focusing. Maximum available light is admitted through the clear plastic body. Magnifier is supplied with durable storage case.

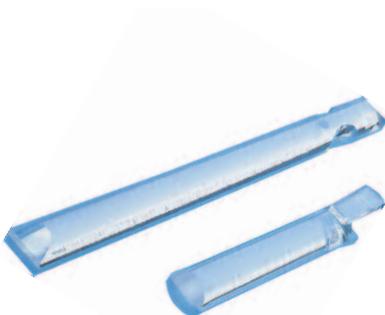
No. 29.208



**4 PEER® LINEN TESTER**

Although deriving its name from the textile industry, it can be used anywhere. 10X magnification, 1" (25 mm) working distance, 3/16" (14 mm) lens diameter and 1/2" (13 mm) square field. Folds flat when not in use.

No. 29.570



**5 B & L MAGNA-BAR™ and MAGNA – RULE® MAGNIFIERS**

These bar magnifiers double the height of letters, lie directly on the page and require no focusing. Magnifies two lines of type at a time. 2x power. Blister packed.

Part Number	Description	Length
29.365	Magna-Rule	12"
29.366	Magna-Bar	5.25"



**6 B & L LINEN TESTER**

Fixed focus 5X pocket glass is an all purpose magnifier. Derives its name from its use by textile experts to count threads in fabric.

No. 29.571



**1 B & L RECTANGULAR READER**

Scientifically designed, lightweight, 2X aspheric lens assures edge-to edge clarity. The 2" x 4" lens is mounted in the ergonomically designed handle which conforms to the shape of the hand. Acrylic lens.

No. 29.300



**2 B & L FOLDING ILLUMINATED MAGNIFIER**

With built-in light powered by two AAA batteries (included). Unique handle swings open for use. 2" x 4", 2X power aspheric lens for clarity.

No. 29.301



**3 B & L MINI-LITE MAGNIFIER**

Handy 3 1/2"X magnifier with thumb-switch illumination for low-light subjects. Viewing area is 1 1/4" x 1 1/4". Durable black case measures 4 3/4" x 1 1/2". Acrylic lens.

No. 29.307



**4 B & L PACKETTE MAGNIFIER**

The hard plastic cover snaps open, clicks shut and acts as the handle. Just slightly larger than a pack of matches. 2", 5X power aspheric lens for clarity.

No. 29.360



**5 B & L ASPHERIC ROUND READERS**

Molded black plastic handle. 2x power lenses have 8 diopters and a 5" focus. Assures edge to edge clarity.

No.29.341 3.25"

No.29.343 5"



**6 ASPHERIC MAGNIFIER**

2" round hand held magnifier. Aspheric lens assures edge to edge clarity. Lens features a protective case. Excellent inspection tool. Ship wt. 6 oz

Part Number	Focal Distance	Power	Diopters
29.347	2"	5x	20



**1 MAGNIFYING GLASS on STAND**

Heavy base prevents movement and multi-position swivel clamp permits adjustment for best viewing, leaving both hands free for more effective working. No. **29.71010** Magnifying glass on stand



**2 FLEX-A-MAG**

Handy and flexible; ideal for workbench, desktop, or table. With a 5X power magnifying lens on a flexible-neck sturdy plastic base for hands-free viewing of work. Great for inspection, assembly or repairs. No. **29.712**



**3 PEER® DOUBLE LENS FOLDING POCKET MAGNIFIERS**

Two lenses are mounted in plastic frames which fold into attached case. Lenses can be used individually or in combination to obtain different magnifications. Working distances from 1½" to 3", depending on magnification. No. **29.681** 3X, 3X (6X)



**4 PEER® POCKET MAGNIFIER with ATTACHED LEATHER CASE**

Economically priced magnifier. 3X power, diameter 1¾", working distance 3½". No. **29.684**

**BAUSCH & LOMB MAGNIFIERS**



**5 B & L POCKET MAGNIFIER with ATTACHED LEATHER CASE**

Lens is 2" diameter, 2X power, with working distance of 5" for reading and inspecting. No. **29.282**



**6 B & L POCKET MAGNIFIERS in PLASTIC CASE**

Two or three lenses can be used singly or in combination. Lenses are mounted in durable lightweight black plastic frames which fold into attached case. Working distances from ½" to 3½", depending on magnification.

No.	Lenses	Power
<b>29.280</b>	2	3X, 4X (7X)
<b>29.281</b>	3	5X, 7X, 9X (20X)
<b>29.283</b>	2	5X, 7X (12X)
<b>29.284</b>	1	4X
<b>29.286</b>	2	4X, 5X (9X)



**NEW**

**1 MAGNIFIER WITH LED LIGHT PULL TYPE**

This pocket size magnifier features a 21mm lens offering 20X magnification with single LED light that automatically comes on when pulled open and shuts off when closed. Measures 2" x 1½" closed, 3¼" x 1½" open. 3 LR113 batteries included  
No. 29.911

**2 MAGNIFIER WITH LED AND UV LIGHT PULL TYPE**

This pocket size magnifier features 2 lenses, a main 21mm lens offering 30X magnification and secondary 12mm lens with 60X magnification. Also features an LED light as well as a UV light for currency detection or fluorescents in stones. LED light comes on automatically when open. Measures 2½" x 1½" closed, 4" x 1½" open. 3 LR113 batteries included  
No. 29.915

**3 MAGNIFIER WITH LED AND UV LIGHT**

This magnifier measures only 4" long and features a 30mm 30X magnification lens. It also features a toggle switch to go between LED and UV light, and an on/off switch for illuminating. 2 CR2016 batteries included. Comes with small protective pouch.  
No. 29.910



**4 B & L COMPACT LIGHTED MAGNIFIER**

Illuminated 2X power magnification in a convenient size, perfect for pocket, briefcase, purse. Take it anywhere. Stores in its own protective case. Push the button once to release the large 2" lens, then push it again to turn on the lamp. Includes two AAA batteries.  
No. 29.362



**5 B & L MAGNA-THIN® AND MAGNA-PAGE™ MAGNIFIERS**

Specially designed fresnel lenses are molded into acrylic to provide optimum image quality.

Part Number	Description	Len Size	Power
29.358	Magna-Page™	8.25" x 10.75"	2x
29.2200	Vision Card	2" x 3"	2x



**6 B & L ILLUMINATED STAND MAGNIFIER**

The 2X lens measures 4" x 2" (102 x 51 mm) and incorporates a 6X bifocal inset. It can be tilted for working on or inspecting small objects. The 7-watt bulb operates on 110 volt.  
No. 29.306



**7 B & L MAGNI-VIEWER™**

Hands free magnifier with large lens for full page viewing. Optical grade acrylic plastic. Adjustable support cord.  
Ship wt. 1 lb.

Part Number	Power	Diopters	Size
29.308	2x	8	4" x 5"

SAFETY GLASSES & PRODUCTS



**1 ASPEN-STYLE**

With clear glass. Will fit over most standard frames.  
No. **29.009**



**2 CLEAR SAFETY GLASSES**

Lightweight nylon black frame with soft PVC nosepiece. Molded-in side protection offers increased coverage for side impact. Adjustable temples lock into place. Impact resistant polycarbonate lenses provide 99.9% UV protection. Meets ANSI Z97.1 specifications.  
No. **29.011**



**3 MAG-SAFE™ BIFOCAL and FULL LENS GLASSES**

Avoid the high cost of prescription safety glasses. Save money over prescription safety glasses. Safety glasses and corrective lenses combined into one, for close-up work. Both Bifocal and Full Lens are available in diopters 1.00 through 3.00 in .25 increments. These glasses compare to drug store "readers" while conforming to ANSI Z87.1 2003 specifications for high impact protection. Check with your Eye Doctor for the best diopter model for you.

Bifocal Part Number	Diopter	Full Lens Part Number	Diopter
<b>29.801</b>	1.00	<b>29.810</b>	1.00
<b>29.804</b>	1.75	<b>29.813</b>	1.75
<b>29.805</b>	2.00	<b>29.814</b>	2.00
<b>29.807</b>	2.50	<b>29.816</b>	2.50
<b>29.809</b>	3.00	<b>29.818</b>	3.00



**4 CLEAR ULTRASPEC 2000 SAFETY GLASSES**

Made with 100% polycarbonate 4-C coating on both sides of lenses, providing anti-fog, anti-static, anti-scratch properties and anti-UV up to 385 nm. Clear lenses. OSHA approved and meets CSA Z 94.3 standards.  
No. **29.367**



**5 SAFETY GLASSES**

Help protect eyes while buffing, grinding or doing other jobs with potential eye hazards. There are two versions of these glasses; one with ventilated frame and the other, a solid frame with four specialized ventilation "ports" to protect against the intrusion of liquids from splashes.  
No. **29.371**  
No. **29.372** With ports



**6 FACE SHIELD**

Lightweight plastic provides full face coverage. Pin and hole adjustment bands with cushioned vinyl sweat band.  
No. **29.376** Face shield complete



**1 INFRA-DURA 9162 WELDING GLASSES**

Made of propionate material. Fits over virtually all prescription and plano safety glasses. Adjustable fit through inclination mechanism on temple. Shade is 5.0 green. No. 29.369



**2 CRICKET 9180 WELDING GLASSES**

Adjustable ratchet hinge frame with green lenses. Frame uses Infra-Dura 3.0 lenses with universal nose bridge. Meets ANSI Z 87.1 and CSA Z 94.3 standards. No. 29.368



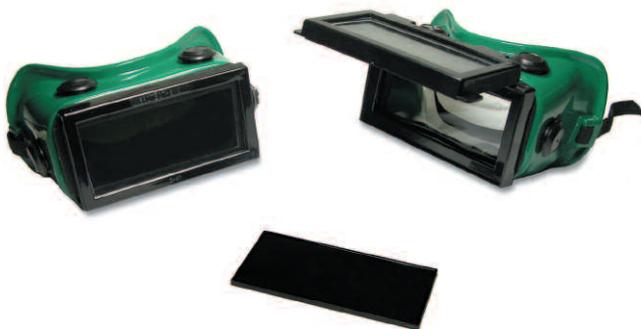
**3 SAFETY WELDING GOGGLES**

Helps protect eyes when melting, soldering or brazing. With 50 mm green filter lenses and clear cover lenses. Sturdy nylon lens adapter holds lenses and permits simple lens replacement. Has soft opaqu frame and plastic ventilators to keep out harmful light. Fits over eyeglasses. Shade 5.0. No. 29.375



**4 WELDING and IMPACT GOGGLES**

With green polycarbonate lens and adjustable perforated venting holes. Shade is 3.0. Meets ANSI Z 87.1 and CSA Z 94.3 standards. No. 29.373



**5 WIDE VISION SAFETY WELDING GOGGLES**

Available with stationary front or flip-up lenses. Comes with soft vinyl frame, complete with 2" x 4 1/4" shade # 5 lens. Optional shade #10 lens for platinum is available. Six ventilation ports provide maximum ventilation. Standard with elastic adjustable headband. Meets ANSI Z87.1 specifications. No. 29.387 Stationary front  
No. 29.388 Flip-up front



**6 B & L SIGHT SAVERS CLEANING TISSUES**

Anti-fog, anti-static, individually-packaged tissues clean all glass and plastic lenses. Also excellent for computer screens and more. Treated with special surfactants to clean the most soiled lenses. One hundred 5" x 8" folded pre-moistened tissues in each dispenser. Easy and convenient to use. Perfect for light industrial, office or lab settings. No. 29.062 Dispenser with 100 tissues

## MINIATURE MANDRELS

Designed for use with flexible shaft units. Small felt cones, felt cylinders, rubberized abrasives and grinding wheels are but a few of the many types of accessories that can be mounted on these mandrels. All are nickel-plated steel unless noted. Mandrels and mounted accessories used improperly are dangerous. Comply with American National Standards Institute Safety Code B7.1 and Occupational Safety and Health Act covering: speed, safety guards, flanges, mounting procedures, general operating rules, handling, storage and inspection. The correct usage speed depends on the accessory being used.

### MANDRELS with 3/32" SHANKS

Sold by dozen.



### 1 MANDRELS for WHEELS

For use with wheels having 1/16" arbor holes. Sold by dozen.

No.	Washer	Material
43.130	No	Steel
43.132	Yes	Nickel-plated steel
43.134	Yes	Stainless steel

### 2 MANDREL with REINFORCED SCREW

Sold by dozen.

No. 43.128



### 3 SANDING DISK MANDREL

For use with brass center abrasive disks. Sold individually.

No. 10.740

### 4 BLACK THREADED MANDREL

With brass collar. Used with rubber points. Sold by dozen.

No. 43.126



### 5 THREADED MANDREL

Popular for use with rubberized abrasives. Sold by dozen.

No. 43.124

### 6 TAPERED THREAD MANDREL

Sold by dozen.

No. 43.120 3/16" screw length

No. 43.122 3/8" screw length

**MANDRELS with 1/8" SHANKS**



**1 MANDRELS for GRINDING WHEELS**

1/8" shank with washers. Sold by dozen.  
 No. **43.160** For 1/8" arbor holes, ideal for use with rubberized abrasives  
 No. **43.164** For 1/4" arbor holes



**2 MANDRELS for WHEELS**

Will fit wheel sizes up to those listed. No. **43.158** is ideal for use with rubberized abrasives. Sold by dozen.

No.	Wheel Diameter	Wheel Thickness	Hole Size
<b>43.158</b>	1"	1/4"	1/16"
<b>43.162</b>	1"	1/4"	1/8"



**3 MANDREL with REINFORCED SCREW**

Fits 1/16" hole. Sold by dozen.  
 No. **43.156**



**4 THREADED MANDREL**

Popular for use with Cratex rubberized abrasives. Sold by dozen.  
 No. **43.154**



**5 TAPERED THREAD MANDRELS**

3/8" screw length. Sold by dozen.  
 No. **43.152**

**MANDRELS with 1/4" SHANKS**

Sold individually.



**6 MANDREL for GRINDING WHEELS**

Fits wheels with 1/4" hole size, up to 3" in diameter and 1/2" thick. Popular for use with rubberized abrasives.  
 No. **43.168**

**MANDRELS**



**7 OVAL BRACELET MANDREL with TANG**

For shaping, stretching and forming bracelets and other oval items. Tang fits into anvil Nos. **13.325** and **12.0130**. Made of cast steel, polished to a smooth finish. Measures 6" long plus 3" tang.

No.	Shape	Small End	Large End
<b>43.052</b>	Oval	1 1/2" x 1 1/4"	2 3/8" x 2 1/4"



**8 TAPERED BRACELET MANDRELS**

For shaping, stretching and forming bracelets and other items. Case hardened. Measures 12".

No.	Shape	Small End	Large End
<b>43.050</b>	Oval	1 3/8" x 1 1/8"	3" x 3 1/2"
<b>43.054</b>	Round	1 3/4"	3 1/2"



**1 BEZEL MANDRELS**

Primarily used to form bezels, these mandrels are also used to shape decorative ornaments, make chain links, etc. Made of hardened and tempered steel. Both are 11" overall length with the mandrel portion 8" long.

No.	Shape	Small End	Large End
43.034	Oval	5/32" x 1/8"	5/8" x 1/2"
43.036	Round	1/8"	3/8"

**3 RING SIZER** *Nickel Plated, Chrome Finished*



Nickel Plated, Chrome Finished stick with wood handle. Measures rings 1 to 15 in quarter sizes by US standards.  
No. 35.286



Nickel Plated, Chrome Finished stick with groove and wood handle. Measures rings 1 to 15 in quarter sizes by US standards.  
No. 35.284

**5 RING MANDRELS** *Hardened Steel*

Used for shaping, straightening and enlarging rings. Also for gauging and holding rings while stone setting. Made of hardened tool steel.



No. 43.080 Plain



No. 43.077 Grooved for stone set rings and graduated w/ring sizes from 1 to 15



**2 NECKLACE BUST**

An essential tool for shaping necklaces easily and accurately. Beautifully constructed of polished cast iron. Use to work metals or to form wax. Guarantees that your necklaces will be of the proper length and fit every time. The bust can be used in a bench vise for support. Bust measure 8 1/2" x 7 3/4" x 7".  
No. 43.055 Standard bust

**4 RING SIZER** *Solid Aluminum*



Solid aluminum stick Measures rings 1 to 15 in quarter sizes by US standards.  
No. 35.0193



Solid aluminum stick with groove. Measures rings 1 to 15 in quarter sizes by US standards.  
No. 35.0192



No. 43.076 Graduated with ring sizes from 1 to 15



### 1 MANDREL REST

Holding a ring mandrel while working is no longer a problem. This rest provides the solution by giving support at both ends. Made of cast iron. Also used to hold bracelet mandrels that do not have tangs. Can be secured to bench top.  
No. 43.070



### 2 MANDREL and ANVIL SET

Set contains anvil with bench clamp (No. 12.0130), oval bracelet mandrel (No. 43.052), bench pin (No. 13.300), grooved ring mandrel with sizes 1 to 7 (No. 43.0252) and grooved ring mandrel with sizes 7 to 15 (No. 43.0254).

- No. 43.0250 Mandrel and anvil set complete
- No. 12.0130 Replacement anvil w/bench clamp
- No. 43.052 Replacement oval bracelet mandrel w/tang
- No. 13.300 Replacement small bench pin

## DAPPING BLOCKS, DIES, PUNCHES & CUTTERS

Dapping tools are used to shape soft metals and waxes. The punches and blocks are matched so that perfect hemispheres and domes can be formed in specified sizes.



### 3 DAPPING BLOCK

27 depressions on one side. Sizes increases as follows:  $\frac{5}{64}$ "  $\frac{3}{32}$ "  $\frac{7}{64}$ "  $\frac{1}{8}$ "  $\frac{9}{64}$ "  $\frac{5}{32}$ "  $\frac{3}{16}$ "  $\frac{7}{32}$ "  $\frac{1}{4}$ "  $\frac{9}{32}$ "  $\frac{5}{16}$ "  $\frac{11}{32}$ "  $\frac{3}{8}$ "  $\frac{13}{32}$ "  $\frac{5}{8}$ "  $\frac{11}{16}$ "  $\frac{3}{4}$ "  $\frac{13}{16}$ "  $\frac{7}{8}$ "  $\frac{15}{16}$ " and 1". The block measures  $5\frac{1}{8}$ " L x  $2\frac{1}{2}$ " W x  $\frac{3}{4}$ " D.  
No. 25.055



### 4 LEAD DAPPING BLOCK

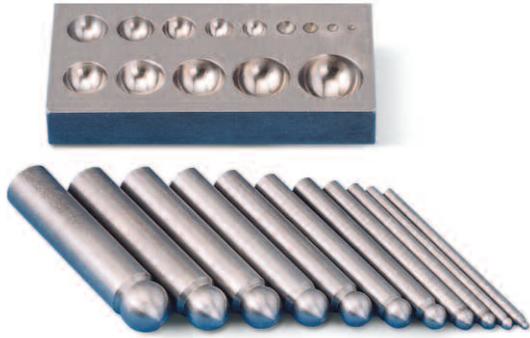
Used as base when chasing, cutting, and stamping. Measures  $3\frac{3}{4}$ " x  $3\frac{3}{4}$ " x 1".  
No. 25.061



### 5 DAPPING DIE and DESIGN BLOCK

Has 14 hemispherical depressions from  $\frac{1}{8}$ " to  $\frac{7}{8}$ " by  $\frac{1}{8}$ ", plus 1". Depressions match punches and have a satin smooth finish. The edges of this high grade steel hardened block have various sized semi-circles for shaping rings, stone settings, bezels, etc. Measures  $3\frac{3}{4}$ " x  $2\frac{1}{2}$ " x  $\frac{1}{8}$ ".  
No. 25.064

5



**1 FLAT DAPPING BLOCK SET**

Set includes high-grade, hardened steel block with 14 hemi spherical depressions in two rows, graded by 1/16", from 1/8" to 7/8", plus 1" along with 11 matching punches. Block measures 5 1/8" x 2 1/2" x 3/4".

No. **25.106** Set

No. **25.050** Replacement dapping block

No. **25.089** Replacement set of all 11 punches



**2 DAPPING PUNCHES and CUTTERS**

A variety of sets for general use. The cutters are used to make circles in wax and other soft materials. The punches are very finely finished for forming shells, balls, etc.

No.	Description
<b>25.113</b>	12 punches and 12 cutters
<b>25.115</b>	18 punches and 18 cutters



**3 DAPPING DIE**

Has 17 hemispherical depressions from 1/8" to 7/8" by 1/16", plus 1", 1 1/8", 1 1/4" and 1 3/8". Depressions match punches and have a satin smooth finish. Die is made of high-grade, properly hardened steel. Measures 2" square.

No. **25.067**



**4 DAPPING DIE**

Six working surfaces with 17 various sized depressions up to 1 3/4" for shaping and working metal. Hardened steel, 2 1/2" square.

No. **25.072**



**5 DAPPING DIE**

Use with punches to make hemispheres. Six working surfaces with 21 various sized depressions up to 1 3/4". Made of hardened steel. Measures 2 1/2" square.

No. **25.073**



**6 FORMING BLOCK**

Versatile block with a variety of curved and "V" shaped grooves for forming, creasing, grooving and shaping. Case hardened steel. Size 2 1/2" x 2 1/2" x 2".

Made in Italy.

No. **25.074**



**7**

**7 WOOD DAPPING BLOCK and PUNCHES**

Hardwood block and two punches for shaping lockets, cases, and removing dents. Block measures 2 1/4" on all sides, with shallow depressions of different sizes on each face.

No. **25.135**

DISC CUTTING SETS



**1 SET of 20 CHASING TOOLS**

(See illustration and list of individual punches.)  
No. 25.261

**2 INDIVIDUAL PUNCHES**

Included in set 25.261.

No. 25.0261/1A		\$12.00	No. 25.0261/11L		\$9.30
No. 25.0261/2B		9.30	No. 25.0261/12M		9.30
No. 25.0261/3C		9.30	No. 25.0261/13N		9.30
No. 25.0261/4D		9.30	No. 25.0261/14O		9.30
No. 25.0261/5E		13.50	No. 25.0261/15P		9.30
No. 25.0261/6F		13.50	No. 25.0261/16Q		9.30
No. 25.0261/7G		12.10	No. 25.0261/17R		9.30
No. 25.0261/8H		9.30	No. 25.0261/18S		9.30
No. 25.0261/9I		9.30	No. 25.0261/19T		9.30
No. 25.0261/10K		10.10	No. 25.0261/20U		9.30



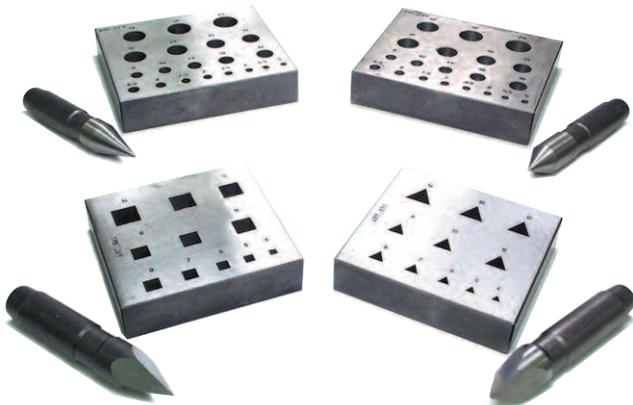
**3 JEWELERS' CHASING SET**

Set of 12 small chasing tools selected for fine jewelry work.  
No. 25.180



**4 SET of FOURTEEN-LARGE and SMALL SIZES**

Contains sizes 3, 4.5, 5, 6, 7, 7.5, 8, 8.5, 10, 11, 12, 13, 14 and 16 mm.  
No. 25.143



**5 BEZEL BLOCKS and PUNCHES**

Polished, hardened steel punch is used to punch and form bezels from flat stock. A single punch fits all depressions. The block is case hardened and has highly polished, tapered holes.

No.	Shape		Description
25.151	Round, 17	●	20 Holes, 5-20mm
25.152	Round, 28	●	20 Holes, 5-20mm
25.153	Square	■	11 Holes, 4-14mm
25.154	Triangular	▲	11 Holes, 4-14mm



**1 BLACK PITCH**

Softens readily when heated. Embedded objects are held firmly when the pitch cools. Useful for chasing and engraving.

- No. 25.390 8 oz.
- No. 25.392 32 oz.



**2 SHALLOW PITCH BOWL SET**

Suitable for most work. Can be tipped at an angle. Complete set consists of pitch, bowl and rubber pads.

- No. 25.470 Set
- No. 25.400 Replacement pitch bowl
- No. 25.455 Replacement rubber pad



**3 DEEP PITCH BOWL SET 5" DIAMETER**

Can be tipped to an extreme angle. Complete set consists of pitch, bowl and rubber pads.

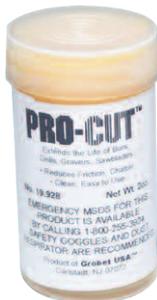
- No. 25.471 Set
- No. 25.401 Replacement pitch bowl
- No. 25.456 Replacement rubber pad



**4 DEEP PITCH BOWL SET 8" DIAMETER**

For all-purpose work. Can be tipped to an extreme angle. Complete set consists of pitch, bowl and rubber pads.

- No. 25.473 Set
- No. 25.403 Replacement pitch bowl
- No. 25.457 Replacement rubber pad



**5 LUBRICANT for DRAWING**

Apply a small amount of lubricant to the wire and the opening. The reduced friction makes drawing much easier and faster.

- Push-up 2 oz. container.
- No. 19.928 Pro-Cut Lubricant



**6 SAND BAG**

Sturdy canvas bag, loosely filled with sand so that it will conform to the contour or shape of article being engraved, formed or stamped.

- Measures 10½" L x 6½" W x 2½" D.
- No. 25.480



### 1 TOOL TUNGSTEN CARBIDE DRAW PLATES

Reduce and shape thickness of brass, copper, gold, silver, platinum or soft steel wire. Made of tungsten carbide steel. The holes are progressively smaller, in proper increments, so that wire drawn from a preceding hole will go through the next hole easily. Occasional annealing will keep wire soft, and bees wax can be used as a lubricant.

No.	No. of Holes	Round		Smallest Hole	
		Largest Hole (in)	(mm)	(in)	(mm)
28.0425	24	.040"	1.0	.010"	.26
28.0426	24	.250"	6.0	.091"	2.3
28.0427	39	.110"	2.8	.010"	.26



### 3 DRAW TONGS

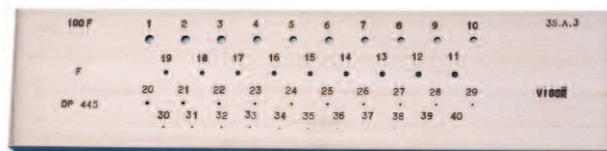
For pulling wire through draw plates. Jaws are serrated for strong grip on wire. One handle is formed to aid in pulling. Made of forged steel.

No.	Overall Length	Jaws
57.056	8"	1" x 3/4"
57.058	10"	1 1/4" x 7/8"



### 4 COMBINATION CENTERING and RIVETING PUNCH

Delivers quick automatic stroke. Adjustable for light, medium or heavy impression. Includes centering cup and flat points for riveting, burnishing, etc. No. 47.802



### 2 TOOL STEEL DRAW PLATES

Reduce and shape thickness of brass, copper, gold, silver, platinum or soft steel wire. Made of thick, high-grade tool steel, carefully stamped with style identifying letter and hole sizes. The holes are progressively smaller, in proper increments, so that wire drawn from a preceding hole will go through the next hole easily. Occasional annealing will keep wire soft, and bees wax can be used as a lubricant.

No.	Plate Letter	No. of Holes	Largest Hole		Smallest Hole	
Round						
			(in)	(mm)	(in)	(mm)
28.0440	D	30	.116"	2.9	.022"	.56
28.0445	F	40	.136"	3.5	.018"	.46
28.0450	J	60	.250"	6	.022"	.56

Half-Round						
No.	Plate Letter	No. of Holes	Largest Hole		Smallest Hole	
			(in)	(mm)	(in)	(mm)
28.0460	K	30	3/16" x 3/32"		3/64" x 1/64"	
			4.8 x 2.4 mm		1.2 x .40 mm	

Square						
No.	Plate Letter	No. of Holes	Largest Hole		Smallest Hole	
			(in)	(mm)	(in)	(mm)
28.0469	OX	20	1/8"	3.2	1/64"	.40
28.0472	QQ	20	5/32"	4.0	Filigree	
28.0473	R	30	3/16"	4.8	3/32"	2.4



### 5 AUTOMATIC CENTER PUNCH

Knurled screw cap can be adjusted for either light or heavy strokes. Pushing down on body releases striking mechanism. The punch is pointed. No. 47.850



### 1 AUTOMATIC CENTER PUNCH

Slim design for better visibility. Pushing down on body releases striking mechanism, which can be adjusted for light or heavy strokes. Removable centering point can be interchanged with cup-shaped riveting point. Pocket clip included.

No. **47.860** Tool with centering point only

No. **47.866** Replacement centering point



### 2 CENTER PUNCH

Used to make small dent as starting point for drill. Punch is tapped with small hammer. Made of steel with knurled handle for firm gripping surface. Slim design, can also be used as a scriber.

No. **47.900**



### 3 SET of 20 PIN PUNCHES

Set contains two each of 10 different size hardened steel punches. Flat tips range from .020" to .050" in diameter and are easily ground to make other sizes. Punches are 1 1/8" long, with a 3/8" shank. Used to drive out pins, broken screws, riveting, etc. Adjustable brass holder 3 1/4" long, prevents damage from hammer.

No. **47.890**



### 4 DIAMOND TIPPED SCRIBER

Can be used on hardest jewels, metals, etc. Hexagonal aluminum handle prevents rolling on bench. Length 5 1/4".

No. **52.954**



### 5 WALLER SCRIBER

With carbide tip. End is reversible so that point is protected while carrying.

No. **52.950** Waller scriber

No. **52.951** Replacement tip



### 6 CARBIDE TIPPED SCRIBER

Can be used on hardest metals, glass, jewels, etc. Slim-line design and comfortable to use. Hexagonal aluminum handle prevents rolling on bench. Length 5 1/4".

No. **52.952**



### 7 COMBINATION SCRIBER and BURNISHER

Made of steel with one sharp point for scribing and a curved, rounded end for burnishing. Length 7".

No. **52.956**



### 1 SCRIBER with KNURLED CHUCK

Knurled chuck holds the point in either the scribing position or reversed within the steel body so that it can be carried safely in a pocket. Hexagonal head prevents rolling on bench and knurled body provides secure gripping. Nickel-plated. No. 52.958 is an economy version of No. 52.959.

No.	Handle Diameter	Blade Length
52.958	1/4"	2 3/8"
52.959	1/4"	2 3/8"
52.960	3/8"	2 7/8"



### 3 ETCHING and SCRIBING NEEDLE

High grade steel, double-ended needle is inserted through a sturdy cork handle. Overall length 7".

No. 52.970



### 5 STAINLESS STEEL JEWELRY MARKING PLIERS

Can be used on curved or flat surfaces to stamp inside rings as small as size 4. Requires no set-up or hammering. Little pressure is needed to stamp precious metals including white gold. Made of durable stainless steel with adjustable screw to lock stamp in place. Overall length 5 1/2". Punches not included, see below.

No. 46.02405

Punches for No. 46.02405

No. 55.02401/1 10K

No. 55.02401/2 14K

No. 55.02401/3 18K

No. 55.02401/7 Ster. (Sterling Silver)



### 2 DOUBLE-ENDED STEEL TRACER

No. 52.964 knurled center, Length 4 1/2"

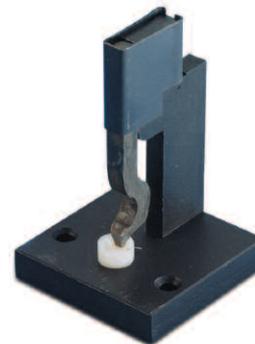
No. 52.966 twisted center, Length 6 1/2"



### 4 JEWELRY MARKING MACHINE

For perfect impressions and identification markings on rings, charms, discs or any flat pieces. Set consists of spring-action lever machine (automatically returns to upright position), six punches (three bent and three straight in 10K, 14K and 18K) and three nylon anvils to prevent scratch marks. Anvils can be shaped to support specific pieces. Wood base provides storage space for parts.

No. 55.0280



### 6 RING STAMPING DEVICE

Accommodates standard stamps with approximately 5/16" square bodies. Eliminates the need to hold ring and stamp in one hand. Simply position ring over mar-proof plastic anvil (55.201) and tap stamp with mallet. Easy and accurate time-saver. Eliminates slipping of ring. Also ideal for flat stamping. The sleeve can be reversed or the stamp body can be touched up with a file if stamp is not 5/16" square. Stamps must be ordered separately (see hand stamps on next page).

No. 55.200

No. 55.201 Plastic Anvil

## HAND STAMPS

Made of hand-cut steel to stamp impressions on metal surfaces.  
The sizes noted are for the height of the impression.



### 1 PRECIOUS METAL STAMPS

MARK	BENT			STRAIGHT		
	Size #1 1/24"	Size #2 1/32"	Size #3 1/45"	Size #1 1/24"	Size #2 1/32"	Size #3 1/45"
10K	55.251	55.252	55.253	55.282	—	—
14K	55.261	55.262	55.263	—	55.292	55.293
18K	55.271	55.272	55.273	—	—	—
STER	—	55.302	55.303	—	55.312	55.313
PLAT	—	—	55.323	—	—	—

### 2 STRAIGHT and BENT PUNCHES

No. 55.0306 925 - bent  
No. 55.0307 925 - straight



### 3 SET of STEEL STAMPS

Packed in hardwood case with cover.

#### Letter Stamps

Set of 27 contains each letter of the alphabet and a period.

- No. 55.404 1/16" high. Made in USA
- No. 55.405 1/16" high. Import quality
- No. 55.408 1/8" high. Made in USA
- No. 55.409 1/8" high. Import quality

#### Numeral Stamps

Set of nine numeral stamps 0 through 8, with the 6 being used upside down to make the 9. Makes impressions 1/16" high. Packed in hardwood case with cover.

- No. 55.400 Made in USA
- No. 55.401 Import quality

*Customized stamps are available. 4 to 6 weeks delivery.  
To ensure accuracy all orders must be faxed or mailed, call for price.*

## CASTING METALS

These non-precious alloys resemble gold and silver and are used as inexpensive casting metals. They can be oxidized or antiqued, as well as plated. The metals are tarnish resistant and will not discolor when heated. They will come out of investment bright and shiny, reducing the need for stripping or pickling. Can be electroplated and soldered with gold or silver solder.



### 1 SILVER MINE

White copper-based alloy is very close to the color of sterling, but has the advantage of being considerably harder. Retains a high polish and melts at about 1550°F (843°C).

No. **43.01307** 2 oz. package

No. **43.01307/1** 1 lb. package



### 2 COLUMBIAN GOLD

Yellow bronze metal is a bit softer in color than rich gold. Melts and flows just like real gold at about 1800°F (982°C).

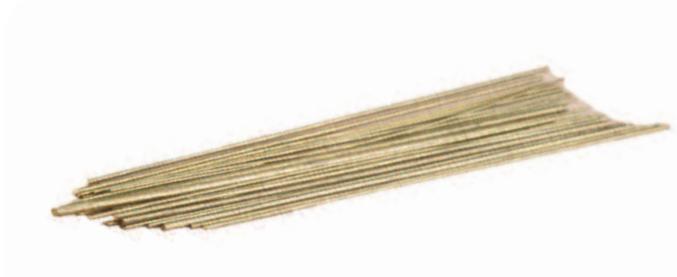
No. **43.01303/1** 1 lb. package



### 3 PEWTER

Lead-free and melts at about 450° F (232° C). An excellent metal for small sculptures.

No. **43.01317** 1 lb. package



### 4 ASSORTED BRASS WIRE

6" lengths in assorted sizes from 20 to 70 by drill gauge.

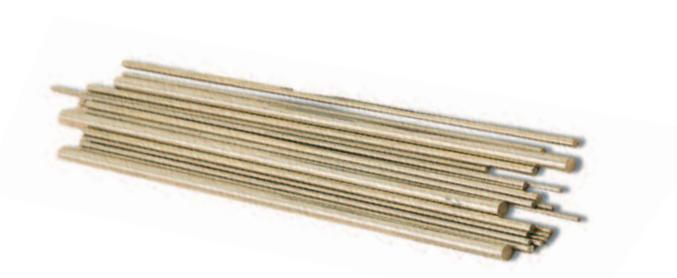
No. **43.500** Packed in plastic tubes.



### 5 BRASS RIVET WIRE

6" lengths in assorted sizes from 14 to 21 by B & S gauge. Used to make pins, rivets, hinges, etc.

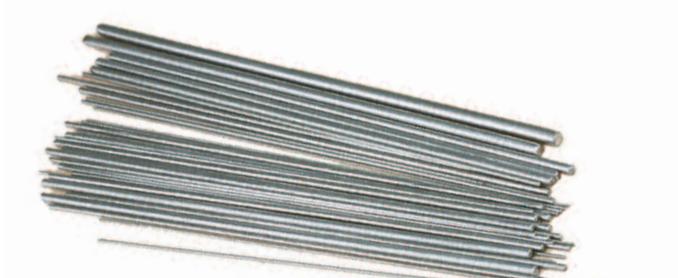
No. **43.501** 1 oz. package



### 6 ALL-PURPOSE WIRE MIXTURE

6" lengths in assorted sizes from 20 to 70 by drill gauge.

No. **43.0609** Nickel silver



### 7 ASSORTED STEEL WIRES

6" lengths in assorted sizes from 20 to 70 by drill gauge.

No. **43.700** Packed in plastic tubes.



**1 SOFT COPPER BINDING WIRE**

4 oz. spools.

No.	B & S Gauge	Roll Length (approx)
43.559	14	20'
43.560	16	32.5'
43.561	18	51'
43.562	20	80'



**2 IRON BINDING WIRE**

8 oz. spools.

No.	B & S Gauge
43.638	24
43.639	25
43.640	26
43.641	27
43.643	29



**3 BINDING WIRE**

Supplied in spools.

No.		B & S Gauge	Amount
43.509	Brass	14	4 oz.
43.510	Brass	16	4 oz.
43.511	Brass	18	4 oz.
43.512	Brass	20	4 oz.
43.523	Brass	22	1 oz.
43.524	Brass	24	1 oz.
43.527	Brass	30	1 oz.
43.563	Copper	21	1 oz.



**4 BRASS SPRING WIRE**

1 oz. spools.

No.	B & S Gauge
43.543	22
43.544	24
43.545	26



**1 COPPER FOIL**

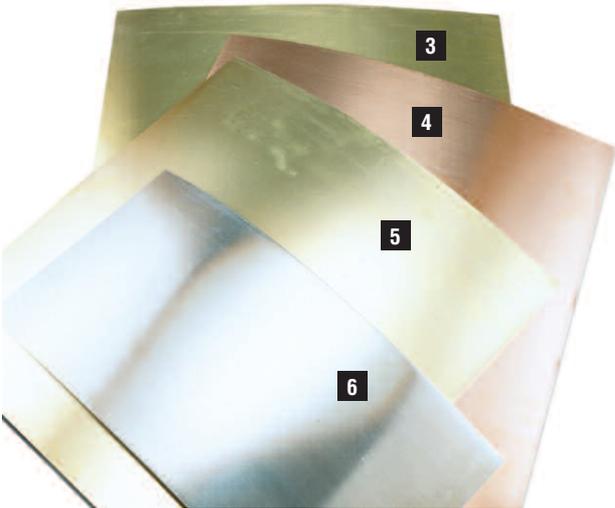
Very popular for craft use. B & S gauge #36. Easily tooled or embossed. Sold by rolls, 12" x 10".  
No. **43.320**



**2 SUSPENSION STEEL**

Sheets 6" x 1½".

No.	Thickness (in)
CM 78602	.002"
CM 78603	.003"
CM 78604	.004"
CM 78605	.005"
CM 78606	.006"



**SOFT METAL in SQUARES**

All are 12" x 12" except nickel silver, which is 6" x 12". Dixgold is popular because it resembles gold in color, and copper in workability.

B & S Gauge	16	18	20	22	24	26
<b>3</b> Brass	43.400	43.401	43.402	43.403	—	—
<b>4</b> Copper	43.420	43.421	43.422	43.423	43.424	43.425
<b>5</b> Dixgold	—	43.441	43.442	—	—	—
<b>6</b> Nickel Silver	43.460	43.461	43.462	—	—	—

Rolls of metal are available by special order.



**7 PEERLESS ROUND SPRING STEEL WIRE**

For making watch parts, loupe springs and many other items requiring spring steel. Tempered and ready for use. Comes in 36" coils, in B & S gauge sizes as noted.

No.	B & S Gauge	No.	B & S Gauge
43.715	15	43.725	25
43.716	16	43.726	26
43.717	17	43.727	27
43.718	18	43.728	28
43.719	19	43.729	29
43.720	20	43.730	30
43.721	21	43.731	31
43.722	22	43.723	23
43.724	24		

**1 SWISS-STYLE DIP OILERS**

Flat steel tips pick up oil and re-deposit on contact. Metal handles are non-rolling and color coded for quick identification. Dust caps keep tips clean.

No.	Color	Size	Watch Type
OL 42250	Black	Extra fine	Baguette
OL 42252	Gold	Extra fine	Baguette
OL 42254	Blue	Fine	Bracelet
OL 42256	Green	Medium	Bracelet
OL 42258	Red	Large	Pocket

**Oiler Sets**

No. **OL 42260** Black, blue, green and red oilers

No. **OL 42262** Black, blue, green and red oilers plus inserter

**2 OIL INSERTERS**

Used to force oil into balance jewel assemblies.

No. **OL 42280** Yellow with one tip

No. **OL 42282** Gold with four extra tips in handle

No. **OL 42284** Replacement tip. Pkg. of 12

**3 PRECISION APPLICATOR**

Economical, hypodermic-type applicator can be used for applying lubricants, adhesives and other liquids. Round needle is not sharp and will not cut into materials. Hole diameter is .023", length 4¼", capacity 2 cc.

No. **OL 42111** Applicator with tube of silicon lubricant

**MOEBIUS OILS & GREASES**

Moebius Watch and Clock Oil has been acknowledged and acclaimed as the finest for generations. All Moebius products are developed, manufactured and tested in Switzerland. The large variety enables you to choose just the right oil or grease for your particular application. Natural Watch Oils, a mixture of neatsfoot and mineral oils, are satisfactory except that, after a period of time in contact with metals, they change chemically and form a gummy substance. Synthetic Oils have the same lubricating properties as natural oils, but will not change over a period of time, so they will not gum up, cause corrosion, become acidic, creep, or spread.

**NATURAL****4 CLOCK OIL #3 - 8030**

For clocks, alarm clocks and meters not directly exposed to low winter temperatures. 20 ml bottle.

No. **OL 42360**

**5 CLOCK OIL #3A - 8031**

Same as No. OL 42360 but formulated for units exposed to very low temperatures. 20 ml bottle.

No. **OL 420203A**

**6 LARGE MOVEMENT CLOCK OIL #4 - 8040**

For large clocks, tower clocks and small machines. Has a high viscosity and can be used in low temperatures to minus 68° F (-20° C). 20 ml bottle.

No. **OL 42362**

**7 WATCH OIL - 8000**

General purpose for chronometers and watches, all calibers up to 18L. Outstanding lubrication with minimal spreading and a low freezing point.

8 ml bottle.  
No. **OL 42364**

## NATURAL OIL

**1 REGULAR OIL**

A general purpose mainspring lubricant. Can be used in watches from 93/4 Ligne to 19 Ligne, as well as in alarm clocks, pendulum clocks and wall clocks.

No. **OL 420206A** - 8200 20 ml bottle

No. **OL 420206** - 8200 50 ml bottle

**2 REGULAR OIL for CLOCKS - 8300**

A general purpose grease. Well suited to the winding and setting parts of watches. Also for uncoiled mainsprings, as well as for clocks and clock springs. 20 ml bottle.  
No. **OL 42512**

**3 QUARTZ OIL - 9000**

Especially designed for quartz analog watches, particularly the rotor bearing, click wheel and the gear train. Non-toxic, non-spreading, long-lasting with good viscosity. 2 ml bottle.

No. **OL 42365**

## SYNTHETIC OIL

**4 SYNT-A-LUBE - 9010**

A general purpose synthetic watch oil, unequalled for pallet jewels, escapements and balance staffs. It can be used in place of all regular oils, and for small clocks and instruments exposed to low temperatures to minus 68° F (-20° C).

No. **OL 42500** 2 ml bottle

No. **OL 420215** Economy size 10 ml bottle w/applicator

**5 SYNTA-VISCO-LUBE - 9020**

Specially designed for slower moving units and larger watch movements. Ideal for lubricating the pivots of staffs, oscillating weights and other parts of automatic watches. Excellent to minus 68° F (-20° C). 2 ml bottle.

No. **OL 420219**



**1 OIL for ESCAPEMENTS - 941**

Specially manufactured for use on pallets. Has a higher degree of oiliness than the standard synthetic oils. Ideal for lubricating the pivots of staffs, oscillating weights and other parts of automatic watches. Excellent to minus 68° F (-20° C). 2 ml bottle.

No. **OL 420233**



**2 ALL-PURPOSE SYNTHETIC GREASE - 9415**

For watches and clocks. 2 ml bottle.

No. **OL 420227**

**NYE OILS & LUBRICANTS**



**3 FULCRUM OILS**

Though light enough to flow easily, fulcrum oils stay where applied, giving positive pivot point protection. They won't evaporate, gum, or become stringy. Give effective, long-lasting lubrication.

No.	Type	Size
<b>OL 42302</b>	Clock	1 oz.
<b>OL 42304</b>	Clock	4 oz.
<b>OL 42320</b>	Watch	1/4 oz.



**4 CLOCK OILS**

No.	Type	Size
<b>OL 42400</b>	Clock	1/4 oz.
<b>OL 42402</b>	Clock	1 oz.
<b>OL 42404</b>	Clock	2 oz.
<b>OL 42406</b>	Clock	4 oz.
<b>OL 42408</b>	Clock	8 oz.
<b>OL 42410</b>	Clock	Pint
<b>OL 42412</b>	Clock	Quart



**5 NYOIL**

Used as a cleaner, polisher, lubricant, and rust preventer. General purpose oil for clocks. Also effective lubricant for tools and light machinery. 4 oz. bottle.

No. **OL 42460**

**NYE PML OIL and GREASE**

PML Oil 80 Clock. Made to exacting standards for clocks. 3 1/2" cc bottle

No. **OL 42470**



**6 WATCH OILS and GREASE**

No.	Type	Size
<b>OL 42440</b>	Watch	1/4 oz.
<b>OL 42442</b>	Watch	1 oz.
<b>OL 42444</b>	Watch	2 oz.
<b>OL 42446</b>	Watch	4 oz.



**1 SILICON 7 WATERPROOF CASE SEALER**

High vacuum pressure waterproof watch case sealant prevents leakage of moisture into the case due to worn gaskets. Will not evaporate, vaporize, harden, or break down, and will not affect watch oils. Unaffected by temperatures from minus 280° F to 435° F (138° C to 224° C) or by moisture, salts, acids, fungi, alkali, or sweat. Contains 8 grams.  
No. **OL 420340A**



**2 ZENITH VACU SEAL**

Available in 1 oz. bottles.  
No. **OL 420262**



**3 PIKE GENERAL PURPOSE OIL by NORTON**

Recommended for sharpening operations, and lubricating hinged or moving parts. 4½ oz. can.  
No. **42.480**



**4 VIGOR® SILICONE LUBRICATOR**

Ideal for lubricating gaskets and O-rings for easier replacement. Simply place gasket between foam pads and twist.  
No. **OL 420348**



**5 SILICONE LUBRICATOR**

Case has 2 sponges saturated with silicone lubricant. Place "O" ring between sponges, close the case and rotate to coat.  
No **OL 42041** Silicone lubricator  
No **OL 42042** 10 grams silicone lubricant  
No **OL 42043** 40 grams silicone lubricant

**6 QUICKEN® NANOLUBE**

*Specifically formulated for horologists.*

NanoLube contains NanoDiamonds. The NanoDiamonds act as ball bearings, eliminating friction and wear. NanoDiamonds are .1 to 4 nanometer synthetic diamond ball bearings that never wear out. On average, it takes 80,000 NanoLube particles to span the width of a human hair - and all particles are spherical, synthetic diamond.

- No. **OL 420100** 2ml for Clock
- No. **OL 420101** 1.5ml for Watch
- No. **OL 420102** 1.5ml for Multi-Purpose Watch



### 1 BERGEON AUTOMATIC OILERS

For oiling cap jewels, shock-absorbing devices without removal and for general oiling in small movements. Needle measures .1475 mm.

No. 2718

For oiling pallet stones, chronographs, calendar movements, pin lever escapements and for use whenever a given quantity of oil is required. Needle measures .16 mm.

No. 2719

The end part of the oiler is specially designed to fit exactly the space between the pivot and the rim of the jewel oil cup. With special hard needle measuring .145 mm

No. 2720

For use on clocks and alarm clocks. The same as No. OL 2719 above but needle and oil cup have larger capacity. Needle measures .55 mm.

No. 4743/12

For oiling main arbor, pallet-staff pivots and cup bearings. The needle is designed to fit exactly the space between the pivot and the rim of the jewel oil cup. Needle measures .45 mm.

No. 4744/15



### 2 BERGEON AUTOMATIC OIL CUP

With agate container, oiler with bakelite handle and pith block. Lid raises automatically when the oiler is removed and closes when replaced.

Set includes A, B, C, D, E (replacement cups do not include oiler).

No. 2329

No.	Use	Color	Size (mm)
2329A	Escapement	Red	6
2329B	Wrist Watches	Blue	8
2329C	Pocket Watches	Green	9
2329D	Alarm Clocks, Clocks	Yellow	10
2329E	Grease	White	16

### REPLACEMENT PARTS for OILERS

Replacement needle	Plex well with tip
2718P	2718DR
2719P	2719DR
2720P	2720DR
4743/P	4743/DR
4744/P	



### 3 BERGEON OIL CUP STANDS

Oil cup stand in polished brass includes 4 containers with agate. Sinks: 6.0, 8.0, 9.0, 10.0 mm.

No. 30180



### 4 BERGEON AUTOMATIC OILER STAND

Stand with three holders is specially designed for the automatic oilers. (Oilers shown are for illustration purposes only.)

No. 2847 Three-holder oiler stand

No. 3039 Single-holder oiler stand for No. 2718 only



### 1 ROUND METAL BOXES

Made of tin. Perfect for storing small stones and findings. Sold in pack of 72.

No.	Diameter	Height	Pack
15.119	2"	3/4"	72



### 2 ALUMINUM SMALL PARTS TRAY

Helps you organize small parts, accessories, stones and findings. Ideal for separating jobs to avoid confusion. Sturdy 3" triangular trays are self-nesting for easy storage. Sold by the dozen.

No. 38.0167



### 3 SMALL PLASTIC BOXES

Great, inexpensive way to store parts safely.

No.	Dimensions
15.128	1 7/8" x 1 7/8" x 3/4"
15.129	1 1/8" x 1 1/8" x 3/4"
15.130	1" x 1" x 3/4"
15.131	1" x 2" x 3/4"
15.132	2" x 2" x 3/4"



### 4 PLASTIC BOXES with COMPARTMENTS

For storing abrasives, small parts and mandrels.

No.	Dimensions	Compartments
15.135	1/2" x 2 11/16" x 1"	4
15.136	4 3/8" x 2 3/8" x 1"	6
15.137	8 1/4" x 4 1/4" x 1 1/4"	12
15.138	8 7/16" x 4 1/4" x 1 3/16"	12
15.139	10 3/4" x 6 3/8" x 1 3/4"	18
15.140	8 1/4" x 4 1/8" x 1 1/4"	18



### 5 PLASTIC BOXES with SLIDE TOP

For storing abrasives, small parts and mandrels.

No.	Dimensions	Compartments
15.201	7 5/8" x 5" x 7/8"	18
15.202	10 1/2" x 6 3/4" x 1 3/4"	24



### 6 STACKABLE ROUND TRAY SET

Trays have threaded bottoms that securely screw to the tray below allowing access to any tray at any level. Translucent plastic. Each tray measures 1" in height and 2" in diameter. Set of 6.

No. 15.148



### 7 SMALL PARTS TRAYS with COMPARTMENTS

Sliding top opens one compartment at a time so parts will not spill or mix.

No. 15.610 20 comp. w/a 7 1/2" diameter

No. 15.611 12 comp. w/a 3 1/2" diameter



**1 SHOP TRAYS**

An easy way to organize your work. Self-nesting for uniform stacking. Includes removable partition. Measures 6" x 9" x 1 1/2". Sold in case of 24.

- |                       |                    |
|-----------------------|--------------------|
| No. <b>15Purple</b>   | No. <b>15Blue</b>  |
| No. <b>15Burgundy</b> | No. <b>15Grey</b>  |
| No. <b>15Yellow</b>   | No. <b>15Black</b> |
| No. <b>15Ivory</b>    | No. <b>15White</b> |
| No. <b>15Red</b>      | No. <b>15Brown</b> |
| No. <b>15Green</b>    |                    |

No. **15.609** Tray tags (pk/100) with pen



**2 64-DRAWER STORAGE CABINET**

64 equal compartments, 2 1/8" w x 1 1/2" h x 5 1/4" d each, total storage cabinet size, 20" w x 15 3/4" h x 6 3/8" d

No. **15.002**



**3 ACID BOTTLE**

Clear glass with glass stopper/applicator. Holds 1/2 oz.  
No. **15.100**



**4 ROUND ACID BOTTLE**

Frosted edges of this 1 1/2 oz. bottle match the cover, making it suitable for storage, as well as application.  
No. **15.102**



**5 GROBET USA® FLUID DISPENSER PUMP**

Compact, convenient 4 oz. capacity polyethylene bottle with stainless steel pump-action lid. Dispenses just the right amount of flux or other liquid. Just pump the lid with a brush and the fluid is dispensed in the well of the lid. The one-way pump holds the fluid in the well, preventing contamination of the unused fluid in the bottle.  
No. **54.415**



**6 PLASTIC BOTTLES with PLASTIC TOPS**

Perfect for storing parts. Sold by the dozen.  
No. **15.112** Measures 1 5/32" x 1 1/32"  
No. **15.113** Measures 5/8" x 1 1/2"



**7 GLASS BOTTLES with SCREW TOP**

Ideal for storing small parts. Measures 1 9/32" x 1 13/16". Sold by the dozen.  
No. **15.108**



**1 WOOD BOX**

Protects burs and keeps them handy at all times.  
No. 15.0375



**2 TOOL BOX**

A lightweight plastic tool box with Removable top tool tray. Colors vary.  
Measures 16"L x 7"D x 6"H.  
No. 38.551

**3 BASIC BLACK TRAYS and CASES**

The high contrast and sophistication of black gets results in sales in this popular line. The vibrant black velvet of the trays and cases proves that impressive and effective displays need not be expensive. The eight items in this popular line include trays and cases for 12, 24, 36, and 72 rings. Cases are wood, covered in textured black vinyl, with simply designed metal latches. Slotted black foam under the velvet inserts holds rings firmly in place. Covers are lined in black satin. Trays have decorative gold tooling around the edges.

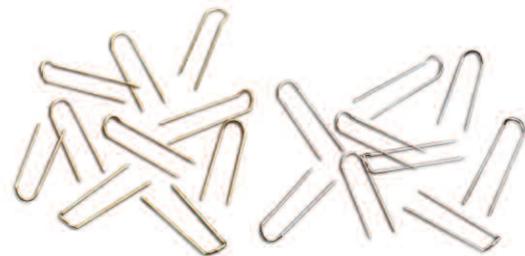
No. 61.502 12-Ring tray  
No. 61.504 24-Ring tray  
No. 61.506 36-Ring tray  
No. 61.508 72-Ring tray

No. 61.512 12-Ring case  
No. 61.514 24-Ring case  
No. 61.516 36-Ring case  
No. 61.518 72-Ring case



**4 JEWELRY DISPLAY TRAY**

Bring out the best in your merchandise. These solid trays are black, and velvet pads are available. Tray measures 14<sup>3</sup>/<sub>4</sub>" x 8<sup>1</sup>/<sub>4</sub>" x 1".  
No. 61.537 Tray only - no pad  
No. 61.538 Black velvet pad  
No. 61.539 Gray velvet pad

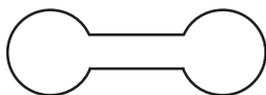


**5 JEWELRY PINS**

White or yellow jewelry pins have long sharp points for pinning all types of jewelry to pads, trays, easels, etc. Sold by boxes of 100 or 1000.  
No. 61.560 Box of 1000 white  
No. 61.561 Box of 100 white  
No. 61.563 Box of 1000 yellow  
No. 61.564 Box of 100 yellow

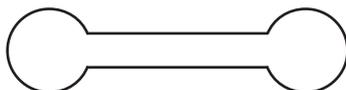
**SHARK-SKIN® JEWELRY REPAIR and IDENTIFICATION TAGS**  
**The Original Shark Skin Tag. Accept no substitutes!**

- Self-stick, needs no moistening
- Retains shape and color in ultrasonics, ionic cleaners or under steam pressure
- Adhesive free center bar
- Rings can be tried on without removing tag
- Free marking pen included (No. 60.700)



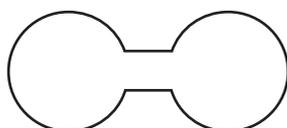
**1 Package of 1,000**

No.	Color
60.701	White
60.702	Blue
60.703	Yellow
60.704	Silver
60.708	Gold



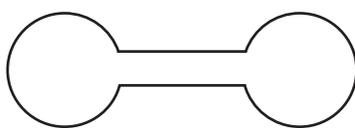
**2 Package of 500**

No.	Color
60.705	White
60.707	Yellow



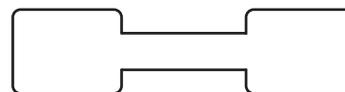
**3 Package of 1,000**

No.	Color
60.710	White
60.712	Yellow



**4 Package of 500**

No.	Color
60.715	White
60.716	Blue
60.717	Yellow



**5 Package of 500**

No.	Color
60.720	White
60.722	Yellow
60.700	Special marking pen

**TAGS FOR COMPUTER USE**



**6 SHARK-SKIN™ TAGS for DOT MATRIX PRINTERS**

Mounted three across on flat, pin-feed, fan-folded sheets. Waterproof and safe for ultrasonics, with adhesive-free center section. Free marking pen (No. 60.700) in each package.

Color	Package of 1,000	Package of 10,000
White	61.720	61.725
Gold	61.750	61.755
Silver	61.760	61.765
No. 60.700 Special marking pen		



**7 MYLAR TAGS**

Stronger and smoother for a clean print. Mounted three across on flat, pin-feed, fan-folded sheets. Waterproof and safe for ultrasonics.

Color	Package of 1,000	Package of 10,000
White	61.820	61.825
Silver	61.860	61.865
No. 60.718 Special marking pen		

## JEWELRY TAGS

A staple item of any jewelry business. All of these tags are durable and can be written upon without smearing or smudging. Strung with quality cord.



### 1 JEWELRY STRING TAGS

Made of strong white cardboard with red strings, no imprinting available. Sold by box of 1000.

#### Premium

No.	Length	Width
60.060D	5/8"	1/4"
60.065D	9/16"	3/8"
60.075D	5/8"	1/2"

#### Economy

No.	Length	Width
60.060	5/8"	1/4"
60.065	9/16"	5/16"
60.075	3/8"	5/8"



### 2 PRINTED TAGS

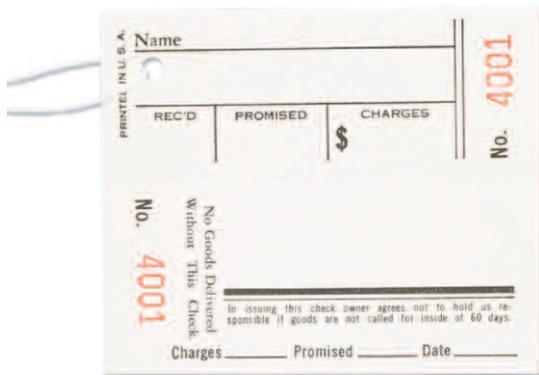
Available in white only, no imprinting available. Measures 2 3/4" x 1". Sold by box of 1000.  
No. 61.300



### 3 PLAIN WHITE TAGS

Available with round corners, no imprinting available. Sold by box of 1000.

No.	Size	Corners
61.193	2 3/4" x 7/8"	Round



### 1 PRINTED TAGS WITH CLAIM CHECKS

Tear-off claim checks, which can be imprinted with your name and address. Both parts are numbered clearly. Sold by box of 1000. Call for imprinting charges. Minimum imprint quantity is 5000. Allow 4 to 6 weeks for delivery.

Size: 2<sup>7</sup>/<sub>8</sub>" x 2<sup>3</sup>/<sub>8</sub>"

No.	Claim No.
61.251	1 to 1000
61.252	1001 to 2000
61.253	2001 to 3000
61.254	3001 to 4000
61.255	4001 to 5000
61.256	5001 to 6000
61.257	6001 to 7000
61.258	7001 to 8000
61.259	8001 to 9000
61.260	9001 to 10000



### 2 PVC STRING TAGS

Available in white paper and white, gold and silver PVC. PVC tags are ultrasonic-proof when used with a permanent marker.

Sold by box of 1,000.

Description	Size	White Paper	White PVC	Gold PVC	Silver PVC
String Tag	5 <sup>5</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>2</sub> "	60.500	60.501	60.502	60.503
String Tag	5 <sup>5</sup> / <sub>16</sub> " x 5 <sup>5</sup> / <sub>16</sub> "	60.510	60.511	60.512	60.513
String Tag	3 <sup>3</sup> / <sub>8</sub> " x 3 <sup>3</sup> / <sub>4</sub> "	60.520	60.521	60.522	60.523
String Tag	1 <sup>1</sup> / <sub>2</sub> " x 3 <sup>3</sup> / <sub>4</sub> "	60.530	60.531	60.532	60.533
String Tag	5 <sup>5</sup> / <sub>16</sub> " x 7 <sup>7</sup> / <sub>16</sub> "	60.540	60.541		



### 3 RING TAGS

Available in white, gold and silver PVC. PVC tags are ultrasonic-proof when used with a permanent marker. Tags can be secured by hand.

Sold by box of 1,000.

Description	Size	White PVC	Gold PVC	Silver PVC
Large Round Tag	5 <sup>5</sup> / <sub>8</sub> "	60.570	60.571	60.572

For tags on this page, use pen No. 60.718 (sold separately).

Stick On,  
Peel-Off!



### 4 KUM KLEEN LABELS

Ideal for price marking or labeling. Kum Kleen labels will stick to most surfaces metal, wood, plastic, etc. Easily peel off without damaging merchandise. Square and rectangular labels have rounded corners. Use with pen No. 60.718 (waterproof) or No. 60.700 marking pen.

No.	Style	Qty.	Size
61.412	S-508	1000	5 <sup>5</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>2</sub> "
61.414	S-610	1000	3 <sup>3</sup> / <sub>8</sub> " x 5 <sup>5</sup> / <sub>16</sub> "
61.418	S-812	1000	1 <sup>1</sup> / <sub>2</sub> " x 3 <sup>3</sup> / <sub>4</sub> "

## RECTIFIERS BY GROBET USA®

Precision-built in the USA, continuous-duty, solid-state electronic units with a range of power to handle all plating needs. Works by means of the powerstat control, to produce desired voltage. All units have pilot lights and both DC ampmeter and voltmeter for measuring current under load. All units come with a set of lead wires with alligator clamps and terminal lugs. 25 and 60 amp units can be used for electro-stripping. 3 amp, 10 amp, and 25 amp rectifiers are available with an accessory kit which includes: a pair of 600 ml beakers, copper plating wire, electro-cleaning compound and a stainless steel anode.

### 1 10 AMP RECTIFIER

**Specifications:**

- 0 to 10 amps output, continuous duty
- 0 to 10 volts DC output
- Runs plating baths up to 1 gallon except for rhodium which is a 2 quarts maximum.
- Steel cabinet measures 13" W x 8" H x 8½" D.
- ship weight of rectifier 17 lbs. (25 lbs. with accessories).

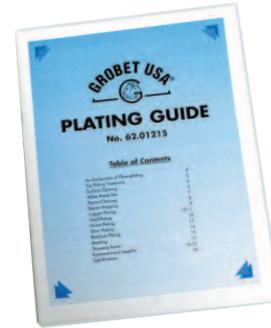
- No. **45.504** 110 volt rectifier with accessories
- No. **45.506G** 110 volt rectifier only
- No. **45.506GX** 220 volt rectifier only
- No. **45.406** Red Lead
- No. **45.407** Black Lead



Accessory kit not shown

### 2 GROBET USA® PLATING GUIDE

A complete booklet on the subject of plating precious metals. Soft cover, 12 pages.  
No. **62.01215**



## PLATING SYSTEMS



### 3 GROBET RHODIUM PEN PLATING SYSTEM

Precision voltage gives high quality and production. 3 different color-coded cups give plenty of space for all solutions. Cabinet holds 3 cups and 4 pens. Fiber tips may be shaped for different patterns and designs. Machine comes standard in 120 volt. 220 volt UL approved to meet or exceed all safety requirements.

- No. **45.404** Deluxe
- No. **45.404X** 220



### 4 GROBET SINGLE PEN PLATING SYSTEM

Precision voltage adjusting gives high quality and production. 1 color-coded cup gives plenty of space for all solutions. Cabinet holds 1 cup and 1 pen. Fiber tips may be shaped for different patterns and designs. Machine comes standard in 120 volt and 220 volt. UL approved to meet or exceed all safety requirements.

- No. **45.439** Deluxe
- No. **45.439X** 220

### 5 TIPS for PEN PLATER

No. **45.405**



PLATING SOLUTIONS



**1 GROBET USA® CLEAN EARTH™ DECORATIVE GOLD PEN PLATING SOLUTION**

Clean Earth™ is a resilient gold plating solution which deposits a flash plate of gold over nickel, sterling silver, gold, rhodium, and most other similar metals. Cyanide Free! 1 fluid oz.

- No. 45.250 14K
- No. 45.251 18K
- No. 45.252 24K
- No. 45.253 24K Rose Gold

**2 GROBET RHODIUM SOLUTIONS**

Specially formulated, state-of-the-art pen plating solutions designed to provide quality results. One oz. (29.6 ml) nalgene jar.  
No. 45.415 Black rhodium, 12.5ml (.42oz)

VIGOR® PLATING SOLUTIONS



**3 VIGOR® RHODIUM**

Acid base containing no cyanide. Use with platinum anode or platinized titanium anode. Pint contains one gram of rhodium.  
No. 45.0301

**4 VIGOR® NICKEL**

Acid base containing no cyanide. Use with nickel anode. One quart.  
No. 45.0311

**1 VIGOR® ELECTRO-CLEANER**

Removes film and invisible oils from the metal to be plated to improve bond. Use with stainless steel anode. One quart.  
No. 45.0312



PLATING ACCESSORIES



**2 VIGOR® ANODES**

- No. 45.0315 Copper 1" x 6"
- No. 45.0316 Stainless steel 1" x 6"
- No. 45.0318 Nickel 1" x 6"
- No. 45.606 Fine silver 999 6" x 1"



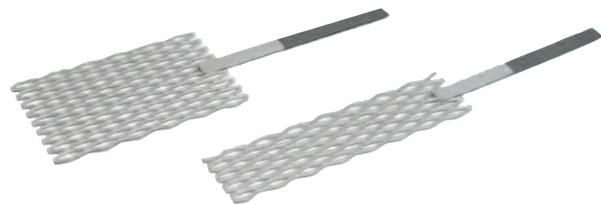
**3 PRO-CRAFT® ANODES**

- The base metal portion of these anodes measures 1/2" W x 6" L in varying thicknesses.
- No. 45.592 Copper
  - No. 45.597 24K gold
  - No. 45.598 Nickel
  - No. 45.602 Silver
  - No. 45.604 Stainless steel



**4 VIGOR® PLATINIZED TITANIUM**

Insoluble for rhodium.  
No. 45.0320 10 1/4" x 1 1/4"



**5 PLATINIZED TITANIUM MESH**

- No. 45.601 2" x 3"
- No. 45.601A 1" x 4"

## PLATING ACCESSORIES



### 1 PYREX BEAKERS

- No. **45.640** For 600 ml/pint baths
- No. **45.646** For 250 ml
- No. **45.641** For 1000 ml/quart baths



### 2 BEAKER COVERS

- Easy-on, easy-off, snug-fit covers protect against spills or contamination of beaker contents.
- No. **45.644** Fits 600 ml beakers
  - No. **45.645** Fits 1000 ml beakers



### 3 STAINLESS STEEL BEAKERS

- Can be used as the anode needed for electro-stripping and gold plating. Just attach your lead wire to the lip of the beaker.
- No. **45.642** 600 ml
  - No. **45.643** 1200 ml



### 4 PRO-CRAFT® IMMERSION THERMOMETER

- For determining solution temperature. Temperature range 0-230 F.
- No. **45.696**



### 5 ELECTRIC HOT PLATES

- Three ring burners, tubular elements and infinite control switches. With chrome top and white trim. 120 volt AC, 50/60 Hz, with three-prong grounded cord. UL listed.

No.	Burner	Size	Amps	Watts	Ship Weight
<b>45.710</b>	single	8½" x 8½" x 3¼"	6	700	4 lbs.
<b>45.712</b>	double	17" x 8½" x 3¼"	13	1400	6 lbs.

PLATING ACCESSORIES



**HAZARDOUS**



**HAZARDOUS**

**1 BACKGROUND ANTIQUE for JEWELRY**

For highlighting or subtle dark background effects. Gives a dark, dull antique finish to class rings, or any other jewelry. Adheres to any metal, dries in minutes. The solution is resistant to wear and needs no lacquer. 2 oz. Hazardous shipping.

**Solution**

No. 45.0130 Black ORM D  
No. 45.0132 Brown ORM D

**AUL Solvent**

Removes background color from high spot surfaces.  
No. 45.0135 2 oz. ORM D

**Solution with AUL Solvent**

No. 45.0230 Black ORM D

**2 VIGOR® OXIDIZER**

Use on both gold and silver to produce all shades from French gray to black. Hazardous Oxidizer.  
No. 45.0329 4 oz.  
No. 45.0331 8 oz.



**HAZARDOUS**



**HAZARDOUS**

**3 PRO-CRAFT® LACQUER**

A high-grade lacquer that can be brushed on articles to provide a tough, smooth, even surface to protect them from tarnish and to eliminate metal deposits from plating solutions. One pint bottle. Hazardous – Flammable Liquid UN 1263.  
No. 45.650  
No. 45.0550 ORM B

**4 PRO-CRAFT® LACQUER STRIPPER**

Used for removing and thinning lacquer. One pint (473 ml) bottle. Hazardous – Flammable Liquid UN 1263.  
No. 45.651



**HAZARDOUS**



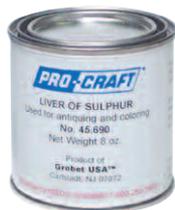
**HAZARDOUS**

**5 GRIFFITH ACETONE**

A quick drying solvent for dissolving most lacquers and cements. Hazardous – Flammable Liquid UN 1090.  
No. 23.212 8 oz

**6 GROBET BLACK GROUND**

Produces black oxide background in one minute on brass or copper base metals. Can be immersed or painted with brush or swab. 4 oz. bottle. Hazardous shipping.  
No. 45.0550 ORM B



**1 PRO-CRAFT® LIVER of SULPHUR**

Contains 8 oz. (227 g) in lump form. When dissolved in hot water, can be used to oxidize most metals.

No. 45.690



**2 GRIFFITH LIVER of SULPHUR**

Use dissolved in hot water as an oxidizer for most metals.

No. 45.688 1 oz. (29.5 ml)

No. 45.689 4 oz. (118 ml)

No. 45.69001 8 oz. (237 ml)

No. 45.69101 32 oz. (917 ml)



**3 GRIFFITH SILVER BLACK**

An acid based oxidizer which produces an instantaneous deep black patina on silver, gold, copper or bronze. Corrosive UN 1789.

No. 45.040 1 oz

No. 45.041 4 oz

No. 45.043 16 oz

**HAZARDOUS**



**4 PRO-CRAFT® SILVER OXIDIZER**

Non-corrosive solution can be used to blacken silver or copper when used at full strength. When diluted with water, the action is slowed down so that color can be controlled for all shades of gray. No heating is required, since it works at room temperature. Biodegradable. Corrosive UN 1760.

No. 45.681 8 oz.

No. 45.682 16 oz.

**HAZARDOUS**



**5 LIVER OF SULPHUR XL GEL**

- Liver of Sulphur XL Gel is formulated for extended shelf life, versatility & convenience
- XL Gel is used to patina metals such as silver, copper, bronze
- XL Gel's shelf life is many times that of dry liver of sulphur
- XL Gel is non-flammable
- Newly designed squeeze bottle for easy dispensing
- Shake XL Gel before use for consistent results.

May be microwaved for no longer than 15 seconds.

**(WARNING: CONTENTS WILL BE HOT!)**

No. 45.686 2 fl oz

No. 45.687 4 fl oz



**6 GRIFFITH DENATURED ALCOHOL**

For use in alcohol lamps, making anti-oxidizers, and as a quick-drying dip to prevent spotting of plated pieces.

Hazardous – Flammable Liquid UN 1987.

No. 23.201 8 oz

No. 23.202 16 oz

No. 23.203 32 oz

No. 23.204 Gallon

**HAZARDOUS**

## JAX® MASTER METAL FINISHING SOLUTIONS

All JAX metal finishing and polishing solutions are easy to use, produce authentic, consistent results, require no heat or electricity, are water based, contain no sulfur, are non-flammable and react within seconds. Larger sizes of any JAX solution are also available. shipweight for all JAX solutions: one pint - 1 lb., one quart - 2 lbs. and one gallon - 8 lbs.



## JAX® BLACKENERS

### JAX® SILVER BLACKENER

Produces a dark, black antique finish on silver and gold.

No. 45.906 Pint  
No. 45.946 Gallon

### JAX® PEWTER BLACKENER

Produces a dark, black antique finish on pewter, lead, brass, bronze, copper, nickel, tin-lead alloys and solders.

No. 45.907 Pint  
No. 45.947 Gallon

### JAX® IRON, STEEL and NICKEL BLACKENER

Produces an antique, metallic black finish in seconds on iron, steel, cast iron and nickel.

No. 45.908 Pint  
No. 45.966 Gallon

### JAX® ALUMINUM BLACKENER

Produces an antique black finish on aluminum.

No. 45.967 Pint  
No. 45.968 Gallon

## JAX® COLORANTS

### JAX® GREEN PATINA

Produces a permanent, authentic, antique green finish on copper, brass and bronze.

No. 45.900 Pint  
No. 45.920 Quart  
No. 45.940 Gallon

### JAX® GOLD FINISH

Produces a simulated 24 K Hamilton finish on brass.

No. 45.901 Pint  
No. 45.941 Gallon

### JAX® ANTIQUE RUST

Produces an antique rust finish on iron and steel.

No. 45.960 Pint  
No. 45.961 Quart  
No. 45.962 Gallon

## JAX® DARKENERS

### JAX® BROWN

Produces an antique brown finish on brass, bronze and copper.

No. 45.902 Pint  
No. 45.942 Gallon

### JAX® BROWN/BLACK

Produces an antique brown/black finish on brass, bronze and copper.

No. 45.903 Pint  
No. 45.963 Gallon

### JAX® BLACK

Produces an antique black finish on brass, bronze and copper.

No. 45.904 Pint  
No. 45.944 Gallon

### JAX® GRAY/BLACK

Produces an antique Flemish, gray-black finish on brass, bronze and copper.

No. 45.905 Pint  
No. 45.965 Gallon

## JAX® MASTER METAL PLATING SOLUTIONS

### JAX® SILVER PLATING SOLUTION

Plates pure silver onto copper, brass, bronze and silver.

4 oz.  
No. 45.909

### JAX® COPPER PLATING SOLUTION

Instantly plates copper onto iron, steel, brass and solder.

No. 45.910 Pint  
No. 45.969 Gallon

## JAX® MASTER METAL POLISHING SOLUTIONS

### JAX® SILVER CLEANER and POLISH

Chemically cleans and polishes the blackest silver in one application. Does not strip surface to a raw, dull finish. Incorporates a special polish that will not harm or streak the most delicate surfaces.

No. 45.918 Pint

### JAX® METAL CLEANER POLISH

Chemically cleans and polishes tarnished brass, bronze, copper, pewter, nickel and steel. Removes oxidation, surface dirt, oil and fingerprints.

No. 45.919 Pint

## JAX® MASTER METAL CLEANING SOLUTIONS

### JAX® RUST REMOVER

A rust remover and an effective pre-paint primer for iron and steel.

No. 45.911 Pint  
No. 45.970 Gallon

### JAX® RUST PREVENTER

Prevents rust on clean iron and steel.

No. 45.912 Pint  
No. 45.971 Gallon

### JAX® LACQUER REMOVER

Removes lacquer and paint from metal surfaces. Contains no solvents.

No. 45.972 Pint  
No. 45.973 Gallon

### JAX® TARNISH PREVENTER

Prevents tarnish on clean brass, bronze and copper.

No. 45.913 Pint

### JAX® INSTANT SILVER CLEANER

A heavy-duty cleaner that removes tarnish and oxidation from the blackest silver.

No. 45.914 Pint  
No. 45.954 Gallon

### JAX® INSTANT BRASS and COPPER CLEANER

A heavy-duty cleaner that removes tarnish and oxidation from the blackest copper, brass and bronze.

No. 45.915 Pint  
No. 45.955 Gallon

### JAX® BRASS, COPPER and GOLD CLEANER

A light-duty cleaner for delicate metals. Removes tarnish and surface contamination from fine gold finishes, bronzes, lamps, lighting fixtures, jewelry and antiques. Contains no abrasives. Leaves no residue.

No. 45.916 Pint  
No. 45.974 Gallon

### JAX® BRASS, COPPER, GOLD and MARBLE CLEANER

A heavy-duty cleaner that removes tarnish, surface dirt, old lacquer and grease from brass, bronze and copper, yet is safe for use on gold and marble.

No. 45.917 Pint  
No. 45.975 Quart  
No. 45.976 Gallon

### JAX® ALUMINUM CLEANER

Produces a bright clean finish on all aluminum surfaces.

No. 45.977 Pint  
No. 45.978 Gallon

## CLEAN EARTH™ PLATING SOLUTIONS

All Clean Earth™ plating solutions are cyanide free. They are ecologically safer than standard plating solutions yet plate uniformly and produce a hard, durable finish. The solutions are easy to use and produce rich colors.

**CYANIDE-FREE**



### CLEAN EARTH™ GOLD PLATING SOLUTIONS

Produces a uniform gold color. Use with a stainless steel or pure gold anode. Plate with the solution heated to 140° F (60° C) at 3 to 4 volts for 30 to 45 seconds. Changing the plating time or solution temperature will affect color.

- No. 45.212 1 quart 14K
- No. 45.213 1 gallon 14K
- No. 45.214 1 quart 18K
- No. 45.215 1 gallon 18K
- No. 45.216 1 quart 24K
- No. 45.217 1 gallon 24K

### CLEAN EARTH™ SILVER

Produces a uniform silver plate. Use with a stainless steel or pure silver anode. Plate with solution at room temperature at 1.4 to 1.8 volts for 15 to 90 seconds. The finish will reflect the surface of the underplate; shiny silver over shiny metals and matte silver over a dull surface.

- No. 45.220 1 quart
- No. 45.221 1 gallon

### CLEAN EARTH™ NICKEL MIRROR

Adds a decorative brilliance and a white mirror shine to dull finishes. Best if used over Copper Mirror, Nos. 45.208 or 45.209. An excellent base for rhodium, gold or silver plating. Use with a pure nickel anode. Plate with solution at 140° F (60° C) at 2 to 4 volts for 2 to 10 minutes.

- No. 45.210 1 quart
- No. 45.211 1 gallon

### CLEAN EARTH™ NICKEL FREE

A nickel free alloy similar in color to nickel. Best if used over Copper Mirror, Nos. 45.208 or 45.209. An excellent base for gold and silver plating. Use with a nickel anode. Plate with solution at 140° F (60° C) at 2 to 4 volts for 30 to 90 seconds.

- No. 45.222 1 quart

### CLEAN EARTH™ COPPER PRIMER

Used as a pre-plate to cover difficult to plate metals such as tin, lead, and zinc die-casted metals. An excellent base for nickel plating. Use with a pure copper anode. Plate with solution at 130° F (54° C) at 1 to 2 volt for 2 to 5 minutes.

- No. 45.206 1 quart

### CLEAN EARTH™ COPPER MIRROR

Produces a bright copper finish. Air bubble agitation produces superior uniformity and shine. Use with a pure copper anode. Plate with solution at room temperature at 2 to 3 volts for 2 to 10 minutes. Electroform at 1 to 1.3 volts for 30 minutes to 5 hours.

- No. 45.208 1 quart
- No. 45.209 1 gallon

### CLEAN EARTH™ WHITE FREE

Deposits a beautiful bright, white finish. Best if used over Nickel Mirror, Nos. 45.210 or 45.211 or Copper Mirror, Nos. 45.208 or 45.209. Use a stainless steel anode. Plate with solution at room temperature at 2 to 4 volts for 30 to 60 seconds.

- No. 45.224 1 quart
- No. 45.225 1 gallon



**CYANIDE-FREE**

**CLEAN EARTH™ BLACK FREE**

Use to achieve an antique finish. After article is plated with Black Free, highlights are relieved by polishing. Use with a stainless steel anode. Plate with solution at 120° F (50° C) at 3 to 6 volts for 30 to 90 seconds.  
No. 45.226 1 quart

**CLEAN EARTH™ TIN**

Adds a conductive coat for high quality electroforming. For better results when using MetalForm® paint or any other copper based conductive coating, dip parts in solution for 60 seconds. Use solution at room temperature. Hazardous, Corrosive. This solution is not used with a rectifier.  
No. 45.229 1 gallon

**CLEAN EARTH™ ACID ACTIVATOR SS**

Activator - SS is a powerful activator that provides excellent oxide removal and etching properties to help metals plate onto stainless steel. Activator - SS offers a low cost, easily maintainable and ecological alternative to hazardous and noxious acids. Activator - SS is designed to activate stainless steel for gold plating with Clean Earth Gold Plating Solution, for complete cyanide free process.  
No. 45.244 1 quart

**CLEAN EARTH™ ELECTROCLEANER**

A quick and effective method of cleaning objects prior to plating. The cleaning process uses an electrolytic bath, similar to plating operations. The 2 lb. size makes 8 gallons - 5 lb. size makes 20 gallons. Use with a stainless steel anode. Clean with the solution heated from 120° to 160° F (50° to 71° C) at 2 to 6 volts for 15 to 30 seconds.  
No. 45.202 2 lb.  
No. 45.203 5 lb.

**CLEAN EARTH™ ACTIVATOR**

This powdered acid is mixed with water to produce a mild solution for etching, brightening and cleaning. Use to clean and activate parts to assure strong metallic bonding throughout the subsequent plating process. The 2 lb. size makes 8 gallons - 5 lb. size makes 20 gallons.  
Use at room temperature for 30 to 60 seconds.  
This solution is not used with a rectifier.  
No. 45.204 2 lb.  
No. 45.205 5 lb.

**CLEAN EARTH™ STRIP-FREE**

Used to strip gold plating. Use with a stainless steel anode. Reverse plate with the solution heated to 120° to 150° F (50° to 65° C) at 3 to 6 volts for 30 to 90 seconds.  
No. 45.218 1 quart  
No. 45.219 1 gallon

**CLEAN EARTH™ ULTRASONIC CLEANER**

Degreases and cleans. It is biodegradable, non-ammoniated and phosphate free. The 1 quart size makes 3 gallons and the 1 gallon size makes 12 gallons.  
No. 45.234 1 gallon

## CERAMIT™



Low temperature curing, hard enamel. Requires only 200° F (93° C) for one hour and the result is a ceramic-like surface. A two-part, liquid system, in which the catalyst and the color are mixed in a 2-to-1 proportion. Can be brushed on, sprayed on or applied with a spatula or squeeze bottle. Apply in a single coat or can be built up in successive layers. Has a hardness of 60-75 on the Sward scale, as compared to kiln-fired enamel 65-80, which requires 1500° F (816° C) to cure.

### 1 CERAMIT™ CERAMIC ENAMEL SET

Thirty vibrant colors are available which can be mixed. Adheres to metals, wood, plastics, ceramics, etc. and can be stoned and polished. Complete set includes sufficient catalyst along with the following 14 colors in 1/2 oz. bottles: opaque colors; red, orange, yellow, jade green, turquoise, black, super white and transparent colors; red, orange, yellow, green, blue, brown and clear. Hazardous – Flammable Liquid UN 1866.

No. 45.800

#### CERAMIT™ CATALYST REFILLS

No. 45.880 8 oz.

No. 45.881 1 pt.

No. 45.882 1 qt.

#### CERAMIT™ CERAMIC THINNER

Hazardous – Flammable Liquid UN 1307.

No. 45.884 1 pt. can

### 2 REPLACEMENT COLORS

Individual 2 oz. bottles can be ordered by product numbers listed with colors

**Replacement Colors:**

<p><b>Opaque Colors</b></p> <table border="0" style="width: 100%;"> <tr> <td> Black 45.801</td> <td> Pearl 45.802</td> <td> Super White 45.803</td> <td> Iridescent Pink 45.805</td> <td> Chinese Red 45.807</td> </tr> <tr> <td> Red 45.809</td> <td> Violet 45.810</td> <td> Brown 45.811</td> <td> Cocoa 45.812</td> <td> Orange 45.813</td> </tr> <tr> <td> Yellow 45.816</td> <td> Butterfly 45.817</td> <td> Olive Green 45.818</td> <td> Jade Green 45.819</td> <td> Green 45.821</td> </tr> <tr> <td> Sky Blue 45.823</td> <td> Turquoise 45.824</td> <td> Israeli Blue 45.825</td> <td> Blue 45.826</td> <td></td> </tr> </table>	 Black 45.801	 Pearl 45.802	 Super White 45.803	 Iridescent Pink 45.805	 Chinese Red 45.807	 Red 45.809	 Violet 45.810	 Brown 45.811	 Cocoa 45.812	 Orange 45.813	 Yellow 45.816	 Butterfly 45.817	 Olive Green 45.818	 Jade Green 45.819	 Green 45.821	 Sky Blue 45.823	 Turquoise 45.824	 Israeli Blue 45.825	 Blue 45.826		<p><b>Fluorescent Colors</b></p> <table border="0" style="width: 100%;"> <tr> <td> Red 45.861</td> <td> Green 45.864</td> <td> Blue 45.866</td> </tr> </table> <p><b>Transparent Colors</b></p> <table border="0" style="width: 100%;"> <tr> <td> Red 45.841</td> <td> Violet 45.842</td> <td> Brown 45.843</td> <td> Orange 45.844</td> </tr> <tr> <td> Yellow 45.845</td> <td> Green 45.846</td> <td> Blue 45.847</td> <td> Clear 45.848</td> </tr> </table>	 Red 45.861	 Green 45.864	 Blue 45.866	 Red 45.841	 Violet 45.842	 Brown 45.843	 Orange 45.844	 Yellow 45.845	 Green 45.846	 Blue 45.847	 Clear 45.848
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**1 SIMPLICITY GOLD AND PLATINUM REFINING SYSTEM**

Sending gold and platinum out to be refined can be a very costly experience. Now you can refine all your scrap gold and platinum (bench sweeps, ingots, polishing sweeps, gold filled, rings etc.) in your own shop. The process is safe to operate and costs about one or two dollars per ounce (31 g) of gold. Stones will even dismount from rings without damage. No acids, cyanides or toxic chemicals are used and the process is odorless. Comes with a lifetime warranty and free technical support is available 7 days a week. The system is compact, only about 1 cubic foot (28,000 cc) in size. Detailed written instructions as well as an instructional VHS tape and interactive computer disks (for Windows 95 only) are included. Comes complete as shown including: catalyst (No. 63.502), precipitant (No. 63.504), GC salt (No. 63.504) and precious metal detection liquid (No. 63.508). DC power source not supplied.

**Specifications**

- Capacity 1000 grams
- Purity 999.5+% (999.9% if refined twice)
- Speed Approximately 1 hour for every ounce (31 g) of metal being refined
- Minimum karat No minimum and no maximum, karats can be mixed
- DC Power Requires 25 amp rectifier or a battery charger, 10 amp w/50 amp boost
- ship weight 20 lbs. (9 kg)
- No. **63.500** Complete unit

**Replacement Supplies:**

- No. **63.502** Catalyst, single pack (4 batches)
- No. **63.503** Catalyst, 10 pack (40 batches)
- No. **63.504** Precipitant, single pack, 1 lb (.5 kg)

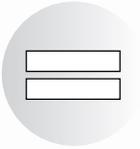
- No. **63.505** Precipitant, 10 pack, 10 lbs. (4.5 kg)
- No. **63.506** GC Salt, 5 lbs. (2.5 kg)
- No. **63.507** GC Salt, 50 lbs. (23 kg)
- No. **63.508** Precious metal detection liquid



**2 SUBZERO GOLD REFINING KIT**

A very inexpensive way to refine your gold. The SubZero method of gold refining is suitable for karat gold, gold filled, refining bench sweeps, polishing sweeps, computer circuit boards, gold nuggets, alluvial gold and about all other forms of gold. Kit includes all the consumable supplies needed, 1 lb. SubZero, 1 lb. urea, 1 lb. Storm Precipant, 1 bottle Precious Metal Detection Liquid and 1 bottle of Ammonium Testing Liquid. Kit does not include muriatic acid, which can be purchased from a paint store or swimming pool supply.

- No. **63.550** - Starter Kit
- No. **63.551** - Storm Precipitant 1lb.
- No. **63.552** - Storm Precipitant 10lb.
- No. **63.508** - Precious Metal Detection Liquid
- No. **63.557** - SubZero 10 lb.



1



## SLIMLINE BOX JOINT PLIERS & NIPPERS

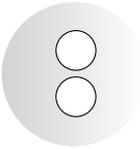
Made in Germany

The Slimline series is lightweight and sized for small to miniature work. These are precision pliers and nippers with box joints to eliminate side play and maintain alignment of jaws even under stress. The heads are brightly finished and the handles have vinyl cushion grips, and fitted with leaf springs which make them suited for repetitive work.

### 1 FLAT NOSE PLIERS

Smooth jaws taper to  $\frac{1}{8}$ " at tips. For holding and manipulating flat pieces. Overall length 5", length of jaws  $\frac{7}{8}$ ".

No. 46.052



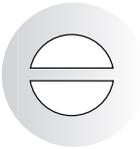
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### 2 ROUND NOSE PLIERS

Smooth jaws taper to  $\frac{1}{32}$ " at tips. Used for making loops, bends, coils and similar operations. Overall length 5", length of jaws  $\frac{7}{8}$ ".

No. 46.054



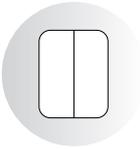
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### 3 CHAIN NOSE PLIERS

Smooth jaws taper to  $\frac{1}{32}$ " at tips and jaw edges are beveled to prevent marring of soft wire. Used to make bends and for gripping and manipulating wire. Overall length  $4\frac{3}{4}$ ", length of jaws  $\frac{7}{8}$ ".

No. 46.056



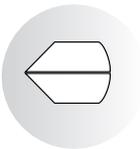
4



### 4 END CUTTERS

Flush cutting edges are for precision cutting of soft wire. Jaws are set at right angles for getting close to work. Overall length  $4\frac{1}{4}$ ", length of cut  $\frac{9}{16}$ ".

No. 46.058



5



### 5 OBLIQUE CUTTERS

Head is angled with pointed tip for getting into tight places. Semi-flush cutting edges are for precision wire cutting of soft wires. Overall length  $4\frac{1}{4}$ ", length of cut  $\frac{9}{16}$ ".

No. 46.062

**1 DIAGONAL CUTTERS with POINTED END**

Also known as side cutters, they have semi-flush cutting edges for precision cutting of soft wires. Overall length 4¼", length of cut ½".  
No. 46.059



**2 DIAGONAL CUTTERS with ROUNDED END**

Also known as side cutters, they have semi-flush cutting edges for precision wire cutting of soft wires. Overall length 4¼", length of cut ½".  
No. 46.066



**Buy in Kit and Save!  
KIT**

Contains three pliers (Nos. 46.052, 46.054, and 46.056) plus two nippers (Nos. 46.062 and 46.066) in deluxe vinyl pouch. Priced lower than when tools are purchased separately – and a free pouch is included!  
No. 46.068

**JEWELERS' SERIES BOX JOINT  
PLIERS & CUTTERS**

*Made in Germany*

This series is standard weight and size for medium to small work. These are precision pliers and nippers with box joints to eliminate side play and maintain alignment of jaws even under stress. The heads are brightly polished and the handles have vinyl cushion grips.

**3 ROUND NOSE PLIERS**

Smooth jaws taper to ½" at tips. Used for making loops, bends, coils and similar operations. Overall length 5¼", length of jaws 1".  
No. 46.104



**4 FLAT NOSE PLIERS**

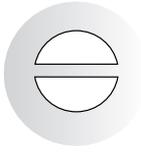
Smooth jaws taper to ⅜" at tip for holding and manipulating flat pieces. Overall length 5¼", length of jaws 1".  
No. 46.102



**5 HALF-ROUND and FLAT NOSE PLIERS**

One smooth jaw is half-round and the other is flat. Overall length 5¼", width of jaw ¼".  
No. 46.114





1



## JEWELERS' SERIES BOX JOINT PLIERS & CUTTERS

### 1 CHAIN NOSE PLIERS

Jaws taper to  $\frac{1}{32}$ " at tips and jaw edges are beveled to prevent marring of soft wire. Used to make bends and for gripping and manipulating wires. Overall length 5 $\frac{1}{4}$ ", length of jaws 1".

No. 46.106 Smooth jaws

No. 46.108 Serrated jaws



2

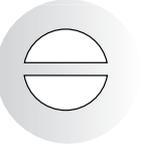


### 2 DIAGONAL CUTTERS

Also known as side cutters. Regular edges for cutting soft to medium hard wires. Length of cut  $\frac{5}{8}$ ".

No. 46.124 Overall length 5"

No. 46.126 Overall length 5 $\frac{1}{4}$ "



3

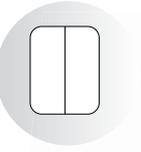


### 3 LONG CHAIN NOSE PLIERS

Jaws taper to  $\frac{1}{32}$ " at tips and can be used to make bends and for gripping and manipulating wires. Overall length 6", length of jaws 1 $\frac{1}{2}$ ".

No. 46.110 Smooth jaws

No. 46.112 Serrated jaws



4



### 4 END CUTTERS

Regular edges for cutting soft to medium hard wires. Jaws are set at right angles for getting close to work. Length of cut  $\frac{3}{4}$ ".

No. 46.118 Overall length 4 $\frac{1}{2}$ "

No. 46.120 Overall length 5 $\frac{1}{4}$ "

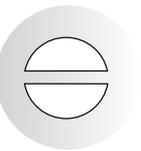


**Buy in Kit and Save!**

#### KIT

Full kit contains three pliers (Nos. 46.102, 46.104 and 46.106) and two cutters (Nos. 46.118 and 46.124) in deluxe vinyl pouch. Priced lower than when tools are purchased separately — and the pouch is free!

No. 46.132



5



## PRO-LINE SERIES BOX JOINT PLIERS & CUTTERS

*Made in Germany*

Standard weight pliers and nippers with box joints, highly polished finish and plastic covered handles. Pliers and nippers in the most popular shapes for precision work.

### 5 CHAIN NOSE PLIERS

Jaws taper to  $\frac{1}{32}$ " at tips and jaw edges are beveled to prevent marring of soft wire. Used to make bends and for gripping and manipulating wires.

No.	Overall Length	Length of Jaws	Jaws
46.170	4 $\frac{1}{2}$ "	1"	Smooth
46.172	5 $\frac{1}{4}$ "	1 $\frac{1}{4}$ "	Smooth
46.174	5 $\frac{1}{4}$ "	1 $\frac{1}{4}$ "	Serrated

## PRO-LINE SERIES BOX JOINT PLIERS & CUTTERS

### 1 ROUND NOSE PLIERS

Smooth jaws taper to  $\frac{1}{8}$ " at tips. Used for making loops, bends, coils and similar operations.

No.	Overall Length	Length of Jaws
46.164	4 $\frac{1}{2}$ "	1"
46.166	5 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "



1

### 2 LONG NOSE PLIERS

Available in the two most popular types: flat and round. Provide greater accessibility. Overall length is 5 $\frac{1}{4}$ ", smooth jaws 1 $\frac{1}{2}$ ".

No.	Description
46.176	Flat nose
46.178	Round nose



2

### 3 HALF-ROUND and ROUND

One jaw is half-round and the other is round. Overall length is 5 $\frac{1}{2}$ "

No. 46.184



3

### 4 SLIM LINE PRECISION PLIERS

Made in Germany

Small lightweight pliers, designed for delicate work. All have box joints to assure perfect alignment with smooth jaws and cushion grips. Overall length is 4 $\frac{1}{2}$ ".

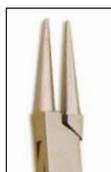
No.	Description	Length of Jaws
46.0281	Flat nose	$\frac{7}{8}$ "
46.0286	Chain nose	$\frac{7}{8}$ "
46.0291	Round nose	$\frac{3}{4}$ "



46.0281  
Flat nose



46.0286  
Chain nose



46.0291  
Round nose



4



1

**1 LIGHTWEIGHT PRECISION PLIERS with LEAF SPRINGS**

*Made in Germany*

A fine series for light production and assembly work. All have box joints, radius edges, cushion grips and leaf springs. Overall length is 4¾".

No.	Description	Length of Jaws
46.0296	Diagonal cutter	9/16"
46.01005	Flat nose	7/8"
46.01105	Chain nose	15/16"
46.01205	Round nose	15/16"
46.01305	Curved tip chain nose	15/16"



46.0296  
Diagonal  
cutter



46.01005  
Flat nose



46.01105  
Chain nose



46.01205  
Round nose



46.01305  
Curved tip  
chain nose



2

**2 PRIDELINE® BOX JOINT PLIERS**

Lightweight stainless steel work pliers have smooth jaws and are completely rust proof. Polished heads prevent marking soft metals. Cushion grip handles. Overall length is 5".

No.	Description
46.0160	Flat nose
46.0162	Chain nose
46.0164	Round nose
46.0166	Side cutter



46.0160  
Flat nose



46.0162  
Chain nose



46.0164  
Round nose



46.0166  
Side cutter

**KIT IN VINYL POUCH**

Kit contains three pliers (Nos. 46.0160, 46.0162 and 46.0164) and one cutter (No. 46.0166) in vinyl pouch. Priced lower than when tools are purchased separately. No. 46.0040



3

**3 PRIDELINE® LAP JOINT PLIERS**

Good quality carbon steel work pliers have smooth jaws. Polished heads to prevent marking on soft metals and cushion grip handles. Overall length is 4½".

No.	Description
46.0170	Flat nose
46.0174	Long chain nose
46.0175	Chain nose
46.0180	Round nose
46.0185	Side cutter



46.0170  
Flat nose



46.0174  
Long  
chain nose



46.0175  
Chain nose



46.0180  
Round  
nose



46.0185  
Side cutter

**KIT in VINYL POUCH**

Kit contains three pliers (Nos. 46.0170, 46.0175 and 46.0180) and two cutters (Nos. 46.0185 and 46.0190) in vinyl pouch. Priced lower than when tools are purchased separately. No. 46.0035

### 1 GROBET USA® FOAM GRIP BOX JOINT PLIERS

Top quality box joint construction - smooth, non-mar jaws. Brushed satin finish and double leaf spring return. Foam grip comfort handles. Overall length is 4¾".

No.	Description
46.080	Chain nose
46.081	Round nose
46.082	Flat nose
46.083	Bent chain nose
46.084	Side cutter



No. 46.080 Chain nose    No. 46.081 Round nose    No. 46.082 Flat nose    No. 46.083 Bent chain nose    No. 46.084 Side cutter

#### FIVE PLIER KIT

Kit contains four pliers (Nos. 46.080, 46.081, 46.082 and 46.083) and one cutter (No. 46.084) in vinyl pouch. Priced lower than when tools are purchased separately.

No. 46.085



1

### 2 GROBET USA® ECONOMY SLIMLINE PLIERS

Box joint construction. Polished heads with double leaf spring return. Plastic grip handles. Overall length is 4½".

No.	Description
46.421	Chain nose
46.422	Round nose
46.423	Flat nose
46.424	Side cutter
46.425	End cutter



No. 46.421 Chain nose    No. 46.422 Round nose    No. 46.423 Flat nose    No. 46.424 Side cutter    No. 46.425 End cutter



2

### 3 FULL SIZE PLIERS

Made in Germany

Sturdy full size pliers have box joint for smooth operation. Have leaf spring and cushion grips for comfort. Overall length is 5¾".

No.	Description	Length of Jaws
46.0257	Flat nose	1⅜"
46.0258	Round nose	1⅛"
46.0259	Chain nose	1¼"
46.0260	Curved chain nose	1"
46.0261	End cutter	29/32"
46.0262	Side cutter	¾"



46.0257 Flat nose    46.0258 Round nose    46.0259 Chain nose    46.0260 Curved chain nose    46.0261 End cutter    46.0262 Side cutter



3

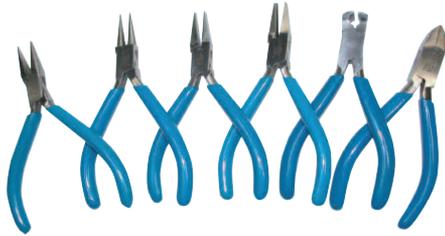
ESCA PLIERS & CUTTERS

**1 ESCA JEWELERS' PLIERS and CUTTERS**

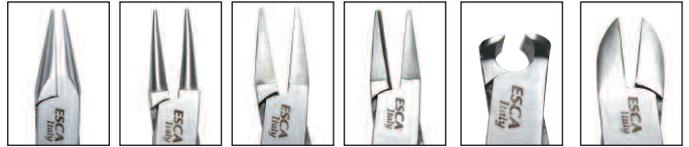
Box joint construction outlasts and out performs other types. Vinyl cushion grips provide comfort and retains precise alignment.



1



No.	Description	Overall Length
46.260	Chain nose	5 1/8"
46.261	Round nose	5 1/8"
46.262	Flat nose	5 1/8"
46.263	Round/Flat	5 1/8"
46.264	End cutter	4 3/4"
46.265	Diagonal cutter	5 1/8"



46.260 Chain nose	46.261 Round nose	46.262 Flat nose	46.263 Round/Flat nose	46.264 End cutter	46.265 Diagonal cutter
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**SIX PLIER KIT**

Kit contains all six pliers listed above (Nos. 46.260, 46.261, 46.262, 46.263, 46.264 and 46.265).  
No. 46.269

**2 ESCA SLIMLINE PLIERS and CUTTERS**

The slimline series is lightweight and sized for small to miniature work. Box joint construction provides quality and durability that out lasts other types.



2



No.	Description	Overall Length
46.270	Chain nose	4 3/4"
46.271	Round nose	4 3/4"
46.272	Flat nose	4 3/4"
46.273	Round/Flat	4 3/4"
46.274	End cutter	4 1/2"
46.275	Diagonal cutter	4 3/4"



46.270 Chain nose	46.271 Round nose	46.272 Flat nose	46.273 Round/Flat nose	46.274 End cutter	46.275 Diagonal cutter
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**SIX PLIER KIT**

Kit contains all six pliers listed above (Nos. 46.270, 46.271, 46.272, 46.273, 46.274 and 46.275).  
No. 46.279

## TEBORG PLIERS & CUTTERS

Made in Sweden

The finest pliers at the best price! Every part of the plier has been designed for quality and comfort

- Rockwell hardness
- Harden and treated handles
- Grips will not spin or rotate
- Will not break with proper use

*teborg*  
made in  
Sweden

### 1 TEBORG DIAGONAL CUTTERS

Also known as side cutters, they have semi-flush cutting edges for precision wire cutting of soft wires. Cushion grips provide comfort and retains precise alignment.

No.	Description	Overall Length
46.9140	Round jaw, Standard bevelled cutting	5 1/8"
46.9141	Round jaw, Semi-flush cutting	5 1/8"
46.9150	Round jaw, Flush cutting	5 1/8"
46.9160	Round jaw, Standard bevelled cutting	5 1/8"
46.9190	Pointed jaw, Semi-flush cutting	4 3/4"



46.9140  
Standard  
bevelled



46.9141  
Semi-flush



46.9150  
Flush



46.9160  
Standard  
bevelled



46.9190  
Semi-flush



1



2

### 2 TEBORG OBLIQUE END CUTTER

Jaws are set at 11° angle for getting close to work.

No.	Description	Overall Length
46.9291	Semi-flush cutting	5 1/8"



46.9291  
Semi-flush

### 3 TEBORG JEWELERS' PLIERS

High quality, extremely precise and accurate pliers.

No.	Description	Overall Length
46.9490	Flat nose, smooth jaw	5 1/8"
46.9590	Round nose	5 1/8"
46.9890	Snip nose, smooth jaw (long)	5 1/8"
46.9892	Snip nose, 60° bent tip, smooth jaw	5 1/8"
46.9893	Snip nose, smooth jaw (short)	4 3/4"



46.9490  
Flat nose,  
smooth jaw



46.9590  
Round nose



46.9890  
Snip nose,  
smooth jaw  
(long)



46.9892  
Snip nose,  
60° bent tip,  
smooth jaw



46.9893  
Snip nose,  
smooth jaw  
(short)



3

## LINDSTROM PLIERS

Made in Sweden.

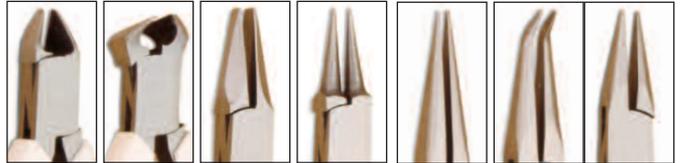


1

### 1 SUPREME SERIES (White Handles)

High quality, extremely precise and accurate pliers. Specially forged box joint with extra long contact surfaces. Joint moves smoothly for extra precision even at the tip. Box joint allows for smaller overall dimensions, improving accessibility in confined areas. With dual spring-loaded handles and comfortable cushion grips, marked with information on pliers' capacity.

No.	Description	Lindstrom Number	Overall Length	Length of Jaws
46.200	Side cutter	7190	4 $\frac{5}{16}$ "	1 $\frac{11}{32}$ "
46.201	End cutter flush cut	7291	4 $\frac{1}{4}$ "	1 $\frac{19}{32}$ "
46.202	Flat nose	7490	4 $\frac{3}{4}$ "	2 $\frac{25}{32}$ "
46.203	Round nose	7590	4 $\frac{3}{4}$ "	2 $\frac{25}{32}$ "
46.204	Long chain nose	7890	5 $\frac{3}{16}$ "	1 $\frac{1}{4}$ "
46.205	Curved tip chain nose	7892	5 $\frac{1}{16}$ "	1 $\frac{1}{8}$ "
46.206	Chain nose	7893	4 $\frac{3}{4}$ "	2 $\frac{25}{32}$ "



46.200 Side cutter  
46.201 End cutter flush cut  
46.202 Flat nose  
46.203 Round nose  
46.204 Long chain nose  
46.205 Curved tip chain nose  
46.206 Chain nose



2

### 2 80 SERIES (Yellow Handles)

Advanced diagonal cutting nippers, unsurpassed in cutting capacity. Manufactured with screw-type precision lap joint for optimum strength, exact movement and maximum accessibility. Dual spring-loaded handles and oval jaw design.

No.	Description	Lindstrom Number	Overall Length	Length of Jaws
46.207	Micro-bevel	8140	4 $\frac{5}{16}$ "	3 $\frac{11}{16}$ "
46.209	Flush cut	8141	4 $\frac{5}{16}$ "	3 $\frac{11}{16}$ "
46.210	Micro-bevel	8150	4 $\frac{13}{32}$ "	1 $\frac{1}{2}$ "
46.211	Micro-bevel	8160	4 $\frac{15}{16}$ "	5 $\frac{11}{16}$ "
46.213	Flush cut	8144	4 $\frac{5}{16}$ "	3 $\frac{11}{16}$ "



Micro-bevel Flush cut

**1 RING BENDING PLIERS**

For straightening and bending rings, wires, rods and strips. With smooth box joint. Overall length is 6¼", width of jaws 1¼".

No. 46.0062



1

**2 LOOP CLOSING PLIERS**

Jaws are shaped and smoothly finished to close loops, jump rings, bracelet links, bows, etc., without distorting or scratching. With box joint and cushion grip handles. Overall length is 4½".

No. 46.0057



2

**3 SOLDER CUTTER**

Solder sheets can be easily cut in clipped pieces. Sheets are placed on bottom jaw and snipped. Pieces drop out cleanly. These can also be used to cut wire solder by inserting the wire into the side hole. Available in two sizes; 1.5 mm and 3 mm.

No. 53.812 1.5 mm



3

**4 RING HOLDING PLIERS**

Large, grooved, semi-circular jaws hold rings during filing or polishing. With box joint. Overall length is 5¼".

No. 46.038



4

**5 RING BENDING PLIERS**

Similar to No. 46.0062 but concave portion is wider. Nickel-plated. Overall length is 5¼".

No. 46.342



5



1

## SPECIAL FEATURE PLIERS &amp; CUTTERS

**1 BOW CLOSING PLIERS**

Heavy-duty pliers for closing bows and loops. Rugged enough for bending ring shanks. Overall length is 6½".

No. 46.306



2

**2 CHAIN NOSE SETTING PLIERS**

Curved tips taper to ⅛" for setting small stones. Box joint for alignment with built-in spring. Overall length is 4½".

No. 46.329



3

**3 STONE SETTING PLIERS**

For setting or tightening the prongs on stone set rings. Jaws have been shaped so that they fit over the prongs on a setting. Overall length is 5". Economical value.

No. 46.346



4

**4 STONE SETTING PLIERS**

Used to tighten loose prongs or for initial setting of stones. Overall length is 5".

No. 46.348



5

**5 BOW OPENING PLIERS**

Jaws open when handles are compressed. For opening bows, links and rings. Spring in handle keeps pliers closed. These are special-joint, heavy-duty pliers. Overall length 5¾".

No. 46.303



6

**6 PENDANT BOW CLOSING PLIERS**

For closing and adjusting pendant bows and bending rings. With box joint. Overall length is 6". Economical value.

No. 46.037J

**1 PERFECT SET PLIERS**

A unique design used for closing prongs. the angled jaw allows for properly bending the prong. Great for tennis bracelet.

No. 46.139



1

**2 STONE REMOVAL PLIERS**

Easily removes stones from settings while preventing damage. Can be used on all prong settings, bead settings, clusters, channels, fishtails and baguettes. Thin, narrow tips fit into tight recessed areas and very small settings. With box joint for perfect alignment of jaws and cushion grip handles for comfort. Overall length is 4 3/4".

No. 46.0059



2

**NYLON JAW PLIERS****3 FLAT NOSE NYLON PLIERS**

Two nylon jaws are excellent for holding wire because they will not scratch. The jaws taper from 9 mm to 5 mm and are great for straightening wire and for wire wrapping. Overall length 5 1/2".

No. 46.5762P

No. 46.5762PJ Replacement jaws



3

**4 FLAT, CLAMPING PLIERS**

Nylon jaws are 10 mm wide and will not scratch or mar. Great for forming wire or stock and to straighten kinks. Overall length 5 1/2".

No. 46.5767P

No. 46.5767PJ Replacement jaws



4

**5 BRACELET FORMING PLIER**

Reshaping bracelets is easy with these gently arched nylon jaws. The nylon jaws mean this plier will not scratch the bracelet.

Overall length 5 1/2".

No. 46.769P



5

**6 FLAT/ROUND NOSE PLIERS**

The flat jaw is nylon, so you won't scratch or mar the surface. The metal jaw is round, making these ideal for bending ring shanks and shaping earring wires. Use on sheet and wire to form intricate designs. Overall length 5 1/2".

No. 46.5764P



6

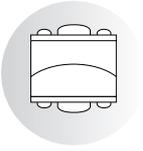


1



**1 BENDING PLIER/WIRE and RING**

These flat nose pliers with two nylon jaws will not mar or scratch, and they provide a firm, secure grip on the work. One jaw is grooved for easily gripping rings or wire shanks. Overall length 5½".  
No. 46.5710P

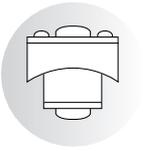


2



**2 RING FORMING PLIER**

For bending rings, sizes 6½" and larger, these pliers save the work from scratches and unsightly marring. Overall length 5½".  
No. 46.5720P

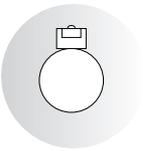


3



**3 RING BENDING PLIERS**

Form wire or flat stock into a smooth, uniform curve without scratching or marring the surface of the work. Overall length 5½".  
No. 46.5770P



4



**4 JEWELERS COLD BEND PLIERS**

These heavy duty pliers consistently and repeatedly form stock and wire without pinching or binding. The nylon roller makes it quicker and easier to form rings, from size 4 up to bangle bracelets without marring or scratching the surface. Overall length 5½".  
No. 46.045P



5



**5 LOOP CLOSING PLIERS**

The jaws on these pliers are hollowed and ground allowing the flat parts to be parallel. For easy and quick closing of jump rings, bows and charm links. Overall length 5".  
No. 46.5065P

**1 CASE CLOSING PLIERS**

Parallel closing jaws with circular, rubber padded, hinged discs provide dependable case closing. Overall length is 7½".

No. 46.805

No. 46.804 Set of replacement pads



1

**2 ROSARY PLIERS**

Combination round nose/side cutter. Loops and bends can be made and wire cut without changing tools. Overall length is 5¼".

No. 46.190



2

**3 BRASS LINED FLAT NOSE PLIERS**

Jaws are brass lined and smooth to prevent marring of finishes and damage to delicate parts. Overall length is 4½", length of jaws ¾".

No. 46.316



3

**4 STAINLESS STEEL JEWELRY MARKING PLIERS**

Little pressure is needed to stamp precious metals, including white gold. Can be used on curved or flat surfaces and stamps inside rings as small as size 4. Easy to use, requires no set-up and no hammering. Made of durable stainless steel with adjustable screw to lock stamp in place. Overall length is 5½". Punches not included, order below.

No. 46.02405

No. 55.02401/1 10K punch

No. 55.02401/2 14K punch

No. 55.02401/3 18K punch

No. 55.02401/7 STER (sterling silver)

No. 46.02401/4 Replacement nylon anvil



4

**5 BENT NOSE CHAIN PLIERS**

Tips are angled 60° for picking up and manipulating precision wires. Lightweight design. Overall length is 5", length of jaws 1". Return spring in handles and plastic grips.

No. 46.328



5



1

## MINIATURE NIPPERS

### 1 FLUSH CUTTING NIPPERS

Handmade from tool steel with long wearing, honed cutting edges that far outlast the ordinary nipper. For special or difficult wire cutting problems. These miniature oblique nippers will cut spring steel wire up to B & S #28, as well as soft wires up to B & S #18. Snap cut right to the tips. Width of jaws is  $\frac{3}{4}$ ". Overall length length is 5".

No. 46.563



2

### 2 SHEAR CUTTERS

This economical shear-action cutter is indispensable for anyone involved with bead stringing. It easily cuts regular bead cord and "Tigertail." Comfortable grip handles. Overall length is 4 $\frac{1}{2}$ ".

No. 46.573



3

### 3 SLIM-LINE MIDGET NIPPERS

For flush cutting wire less than .025". Nickel-plated with box joint and on-off leaf spring. Will snap cut along cutting edge as well as at tips. Overall length is 4", width of jaws  $\frac{7}{32}$ ".

No. 46.0222

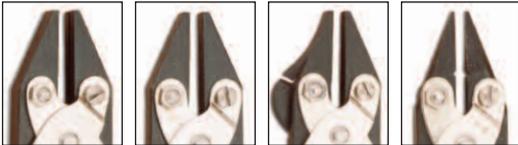
## PARALLEL ACTION PLIERS & CUTTERS

Jaws open and close parallel along entire length. Handles and jaws are nickel-plated.

### 1 PARALLEL ACTION PLIERS

Provides a square vise-like grip.

No.	Description	Jaws	Slot	Overall Length
46.506	Heavy, flat nose	Serrated	"V"	5½"
46.510	Light, flat nose	Serrated	"V"	5"
46.512	Light, flat nose	Smooth	"V"	5"
46.514	Flat nose/Cutter	Serrated	"V"	5"
46.516	Flat nose/Cutter	Serrated	"V"	5½"
46.520	Chain nose	Smooth	Cross	5"



46.506  
Heavy, flat  
nose

46.510/512  
Light, flat  
nose

46.514/516  
Flat nose/  
Cutter

46.520  
Chain nose



1



2

### 2 PARALLEL ACTION DIAGONAL CUTTERS

Has spring action handle. Cuts soft wire ½", half hard wire ⅜", ¾ hard wire ⅜" and piano wire ⅜". Overall length is 5½" with maximum jaw opening of ¼".

No. 46.532



3

## HEAVY DUTY CUTTERS

For larger wire, rod, sprues and piano wire.

### 3 BERGEON HEAVY DUTY DIAGONAL CUTTING PLIERS

Ideal for sprue cutting. Consistently makes clean cuts with one closing action. The unique linkage design multiplies the pressure exerted. With hardened steel cutting jaws for years of perfect cuts. Locking system holds pliers closed when not in use to protect cutting edges.

Overall length is 10", cutting edge ⅞", jaws open from ⅝" - ⅞".

No. 64.6599



4

### 4 BERGEON MESH BRACELET CUTTER/TRIMMER

Hardened steel cutting jaws make a clean cut with one closing action. The pressure exerted is multiplied many times by the unique linkage design. Little effort is required to complete the job quickly. Overall length is 9½", cutting edge ⅞".

No. 64.6496



1

**1 END CUTTERS/SPRUE CUTTERS**

Multi-leverage with return spring in handles. Cuts up to  $\frac{13}{16}$ " rods. End type cuts close to work and cutters are great for close precision cuts. Overall length is 7", cutting edge  $\frac{13}{16}$ ".  
No. 46.574



2

**2 SIDE CUTTERS/SPRUE CUTTERS**

Multi-leverage with return spring in handles. Heavy-duty type cuts up to  $\frac{1}{4}$ " rods. Overall length is 8", cutting edge  $\frac{3}{4}$ ".  
No. 46.582



3

**3 FLUSH SPRUE CUTTERS**

Strong action with a thick cutting blade. Lock holds pliers closed when not in use. Overall length is 10", cutting edge  $\frac{7}{8}$ ".  
No. 46.583



4

**4 COMPOUND SPRUE/MEMORY WIRE CUTTER**

The jaws are made of hardened tool steel. The cutters are able to cut memory wire up to 16 gauge and sprues up to  $\frac{1}{8}$ ". The Grobet Compound cutter has an overall length is  $8\frac{1}{2}$ " and a jaw length of  $\frac{5}{8}$ ".  
No. 46.420



5

**5 BEAD CRIMPING PLIERS**

A revolutionary hand tool which forms a smooth, unobtrusive crimp. It can be hidden in a clam-type bead tip or slipped into a large-hole bead. Works well with round or tube crimps. Comes complete with instructions. Overall length 5".  
No. 46.411

## BOBBING, CROCUS & TRIPOLI COMPOUNDS

For cutting or abrasive action. Leaves metal scratch-free, but dull in appearance.



### 1 GRAYSTAR - 69

Polishing compound for cutting, smoothing rough edges and removing scratches.

No.	Approx. Wt. of Bar
47.0349	1 lb.



### 2 BOBBING COMPOUND (Tan)

For brush or lap work, as it will adhere to these surfaces.

No.	Type	Approx. Wt. of Bar
47.431	Original Formula	1 lb.
47.477	Grobet Premium	1 lb.
47.477B	Grobet Bulk 12/Pack	—



### 3 BLUE PLATINUM

Removes light scratches and prepares for final polishing of platinum

No.	Type	Approx. Wt. of Bar
47.42001	Grobet Premium	5 oz



### 4 WHITE DIAMOND TRIPOLI - XXX TYPE

For use with brass, copper, aluminum, bronze, nickel, silver and softer metals.

No.	Type	Approx. Wt. of Bar
47.454	Original Formula	2 lbs.



### 5 WHITE DIAMOND TRIPOLI - XXXX TYPE

Excellent for gold, silver and platinum.

No.	Type	Approx. Wt. of Bar
47.448	Original Formula	1 lb.
47.489	Grobet Premium	1 lb.
47.489B	Grobet Bulk 12/Pack	—



### 6 BROWN TRIPOLI

Standard, fast-cutting tripoli, used when rouge will be used for final finish.

No.	Type	Approx. Wt. of Bar
47.437	Original Formula	4 oz
47.440	Original Formula	1 lb.
47.443	Original Formula	2 lbs.
47.480	Grobet Premium	1 lb.
47.481	Grobet Premium	2 lbs.
47.479B	Grobet Bulk 12/Pack	—
47.480B	Grobet Bulk 12/Pack	—
47.481B	Grobet Bulk 12/Pack	—



### 7 GRAY OR PLATINUM TRIPOLI

Very popular for use with split laps. Great for platinum and hard metals.

No.	Type	Approx. Wt. of Bar
47.446	Original Formula	1 lb.
47.484	Grobet Premium	2 lbs.
47.484B	Grobet Bulk 12/Pack	—



### 8 GRAY STEEL

No.	Type	Approx. Wt. of Bar
47.493	Grobet Premium	2 lbs. 8 oz
47.493B	Grobet Bulk 12/Pack	—

## ROUGE STICKS

First quality rouges for various polishing needs. Available in the following compositions:



### 1 BLUE

Use on platinum for the highest possible finish.

No.	Type	Approx. Wt. of Bar
47.351	Original Formula	12 oz.



### 2 ROYAL VELVET RED - XXG TYPE

No finer composition exists for producing the final, wondrous color and luster on gold and silver.

No.	Type	Approx. Wt. of Bar
47.413	Original Formula	2 oz.
47.416	Original Formula	4 oz.
47.419	Original Formula	6 oz.
47.422	Original Formula	1 lb.
47.461	Grobet Premium	7 oz.
47.461B	Grobet Bulk 12/Pack	—



### 3 GREEN

Use on white gold, platinum, chrome and stainless steel.

No.	Type	Approx. Wt. of Bar
47.407	Original Formula	4 oz.
47.467	Grobet Premium	6.5 oz.
47.467B	Grobet Bulk 12/Pack	—



### 4 WHITE

Use on platinum, chrome and stainless steel.

No.	Type	Approx. Wt. of Bar
47.410	Original Formula	4 oz.
47.470	Grobet Premium	4 oz.
47.470B	Grobet Bulk 12/Pack	—



### 5 DEEP RED

No.	Type	Approx. Wt. of Bar
47.401	Original Formula	4 oz.
47.462	Grobet Premium	8 oz.
47.462B	Grobet Bulk 12/Pack	—



### 6 GOLDEN GLO

Adds high luster and color to gold.

No.	Type	Approx. Wt. of Bar
47.404	Original Formula	6.5 oz.



### 7 YELLOW

Very dry, low-residue compound imparts a brilliant finish on gold, platinum and other hard metals.

No.	Type	Approx. Wt. of Bar
47.425	Original Formula	4 oz.



### 8 PUMPKIN PLATINUM ROUGE

Specially formulated for the final polishing of platinum.

No.	Type	Approx. Wt. of Bar
47.420	Grobet Premium	5 oz.



**1 FABULUSTRE®**

Provides a high-luster finish on all types of precious and decorative metals. Special formulation removes light scratches and produces a fast, mirror-bright, final finish without discoloration. Greaseless, dry but not dusty, which means fast and easy cleanup with little or no residue.

No. 47.312 1/4 lb. tube

No. 47.313 1 lb. tube



**2 ZAM® BUFFING COMPOUND**

Formulated especially for silver and turquoise jewelry. Will not scratch soft stones such as turquoise. Time-saving to use, since stones do not have to be removed before buffing a new piece. Leaves a high luster without residue. Fast clean-up, does not cling to or penetrate surface of stones. Versatile, many goldsmiths prefer ZAM to rouge as a final finish.

No. 47.502 1/4 lb. tube

No. 47.503 1 lb. tube



**3 FLITZ METAL POLISH**

Cleans, polishes and protects. Acid-free, non-toxic, non-abrasive paste rubs on and wipes off. Protects up to 6 months. Concentrated so a little goes a long way. Use on gold, silver, brass, platinum, chrome, copper and marble. Safe for heavy plated work.

No. 47.457 50-gram tube

No. 47.458 150-gram tube



**4 C-CLEAR® PLASTIC RENEWER**

Every watch repair can have a crystal that looks brand new. Easy to use; wheel is charged with compound and crystal is then gently buffed. 1/4 lb. bar.

No. 47.310



### 1 PRO-CRAFT® ROUGE and TRIPOLI in PEEL-BACK TUBES

Eliminates the mess and does away with broken bars. Peel-back cardboard tube exposes only the amount needed.

Available in the following compositions:

- No. **47.320** **Black rouge** - For producing a rich, dark luster on white gold, platinum, or silver. 5 oz.
- No. **47.321** **Green rouge** - Imparts a high luster on hard metals such as chrome, stainless steel or platinum. 6 oz.
- No. **47.322** **Plastic compound** - For polishing hard plastics (not for soft or low melting plastics such as polyethylene). 5 oz.
- No. **47.323** **Red rouge** - For producing the final high color and luster on gold, silver and other soft metals. 7 oz.
- No. **47.324** **Water soluble red rouge** - Special formulation makes easy clean up. 7 oz.
- No. **47.325** **Tripoli** - A fine cutting abrasive for use on all metals where rouge will be used for final finish. Leaves metals scratch-free, but dull in appearance. 4 oz.
- No. **47.326** **White rouge** - A quick polishing compound for hard metals such as stainless steel, chrome or platinum. 7 oz.
- No. **47.327** **Yellow rouge** - For hard metals such as platinum, chrome and stainless steel. Leaves little residue on work. 6 oz.
- No. **47.331** **Emery** - For iron, steel and hard metals for coarse buffing and removing scratches, rust, corrosion, burs, etc. Not for gold, silver or plated articles. 5 oz.
- No. **47.328** **Wonder bar** - The final touch for finishing metals and plastics. Removes scratches and leaves a high finish. Clean and greaseless with no discoloration. 5 oz.

### SET of 5 PEEL-BACK COMPOUNDS

Contains the five most used compounds: red rouge, yellow rouge, brown tripoli, plastic rouge and emery. All in peel-back cardboard tubes.

No. **47.330**

### 2 GROBET USA® ROUGE and TRIPOLI in PUSH-UP TUBES

Eliminates the mess and does away with broken bars. Push-up cardboard tube exposes only the amount needed. Approx. Weight 3.25 oz.

Available in the following compositions:

- No. **47.376** **White rouge** - A quick polishing compound for hard metals such as stainless steel, chrome or platinum.
- No. **47.377** **Green rouge** - Imparts a high luster on hard metals such as chrome, stainless steel or platinum
- No. **47.378** **Red rouge** - For producing the final high color and luster on gold, silver and other soft metals
- No. **47.379** **Yellow rouge** - For hard metals such as platinum, chrome and stainless steel. Leaves little residue on work.
- No. **47.380** **Black rouge** - For producing a rich, dark luster on white gold, platinum, or silver.
- No. **47.381** **Plastic compound** - For polishing hard plastics (not for soft or low melting plastics such as polyethylene).
- No. **47.382** **Tripoli** - A fine cutting abrasive for use on all metals where rouge will be used for final finish. Leaves metals scratch-free, but dull in appearance.
- No. **47.383** **One Step** - The final touch for finishing metals and plastics. Removes scratches and leaves a high finish. Clean and greaseless with no discoloration.
- No. **47.384** **Emery** - Used on iron, steel and hard metals for coarse buffing and removing scratches, rust, corrosion, burs, etc. Not for gold, silver or plated articles.
- No. **47.385** **EZ Clean Red** - Water soluble red rouge - Special formulation

## GROBET USA® DELUXE DUST COLLECTORS

More features and more value than any other units on the market today.

### Specifications:

- Newly engineered air intake with greater suction power
- Squirrel-cage suction unit provides strong air current
- Unique rear off-set design allows for air escapement
- Filter is placed ahead of blowers, protecting them from dust and dirt
- On/off switch for motor and lights
- Dual lights placed to highlight work

- Convenient outlet for polishing motor
- Mounted on rubber feet to reduce noise and prevent slipping
- Can hold accessories up to 6" in diameter
- Overall dimensions 33½" W x 11" H x 22" D
- Made in USA



### 1 DUST COLLECTOR ONLY

Ship weight 50 lbs.

No. 47.031 110 volt

No. 47.031X 220 volt

### Replacement Accessories:

No. 47.177 Filter - measures 10" x 32" x 2"

No. 47.03001 Shield only



### 2 GROBET USA® DUST COLLECTOR with BALDOR 1/4 HP SEALED MOTOR

Ship weight 92 lbs.

No. 47.142 Dust collector with motor

No. 47.114 Baldor motor only



### 3 GROBET USA® DUST COLLECTOR with 1/2 HP MOTOR

Capacitor start. ½" straight shaft, with a shaft height of 5". Tapered spindles are included.

No. 47.2026 110 volt

No. 47.2026X 220 volt



### 4 PRO-CRAFT® DUST COLLECTOR with SINGLE SIDE POLISHING MOTOR

Comes with 1/3 HP, 3450 RPM motor with a ½" shaft and tapered spindle. Shaft height is 5" so that large buffs can be used. Dust collector has single axial fan blower, replaceable fiberglass filter and light under hood. Cabinet measures 10¼"W x 10" H x 17¼" D. Replacement filter measures 10" x 10" x 2". Ship weights as follows: No. 47.066 - 35 lbs., Nos. 47.064 and 47.064X - 18 lbs. and No. 47.067 - 17 lbs.

No. 47.066 Dust collector with motor

No. 47.067 Polishing motor only

No. 47.064 Dust collector only

### Replacement Spindles:

No. 47.276 ½" - Right

No. 47.277 ½" - Left



1

### 1 SINGLE SPINDLE DUST COLLECTOR

- Polishing/Grinding Motor is 1/3 HP, 3450 RPM, 6.3 Amps
- Use with 4" diameter buffs
- Separate suction motor and light for better vision
- With 1/2" spindle and 9 3/4" x 12 3/4" x 2" filter
- Measures 16" W x 17" D x 10" H

**47.1050/0** 110 Volt AC - Ship wt. 39 lbs.

#### Replacement Parts

- No. **47.176** Filter.
- No. **47.276** Spindle
- No. **47.1051** Polishing Motor
- No. **47.1052/1** Switch -
- No. **47.1052/2** Plexiglass Shield -



### 2 JUNIOR POLISHING SET

Designed to meet the needs of the keen craftsman. Motor speed can be varied for use with various grinding, polishing, and buffing wheels. Hood catches polishing debris, keeping area clean.

#### Features:

- 1/15 HP, 5000 RPM motor
- Electronic variable-speed control
- Operates on 120 volt AC
- Attractive hammertone finish
- Mounted on rubber feet to prevent creeping
- Has four holes for mounting
- Measures 14" W x 6" D x 7" H
- Ship weight 8 lbs.

#### Includes the Following Accessories:

- 2 1/2" diameter muslin buff for tripoli
- 2 1/2" diameter cotton flannel buff for rouge
- Tripoli compound - No. 47.479
- Red rouge
- Two black bristle wheel brushes
- Two felt cones
- One wood mandrel for ring shells
- Two emery ring shells
- Two 3/8" tapered spindles for motor

No. **47.100**



### 3 VIGOR® MULTI-GRINDER

Multi-purpose 1/8 HP machine, with variable speeds from 1500 to 4000 RPM, can be used as a carver, grinder, sander, smoother, polisher, cutter, buffer, etc. Comes with a compact, powerful, 36" long flexible shaft and handpiece which fits comfortably in your hand. The handpiece accepts a large variety of accessories with 3/32" or 1/8" shafts. It can also be used as a bench grinder/polisher, equipped with two 3/4" x 3" wheels, one grinding and one polishing. Can be bolted to your bench for greater stability. Measures 7" W x 4 3/4" D x 6 1/2" H.

No. **47.0217**

#### Accessories:

- No. **17.01220** Extra fine muslin buff
- No. **17.01222** Felt buff
- No. **47.0807** Replacement polishing wheel



### 1 LATHE MOTOR

Designed especially for use with watchmaker's lathes. Smooth running and powerful, with wide base pedestal. Rugged for durability and long effective operation. Complete with 34.322 foot pedal and 8' rubber cord with molded plug on junction block. 110 volt AC, 1/20 HP.

No. **47.0100** Motor complete

No. **47.0100/1** Motor only



### 2 BALDOR SEALED POLISHING LATHE MOTORS

Powerful, totally enclosed, dust proof motors, will not overheat. With special ball-bearings and tapered shafts. All Baldor motors are 14½" L x 7¼" W x 8½" H.

No. **47.114** 110 volt with 1/4 HP 2 speed

No. **47.119** 110 volt with 1/2 HP 1 speed

Replacement Spindles (shown on page 286):

No. **47.234** Right

No. **47.235** Left



### 3 POLISHING MOTOR

300 - 4,000 RPM Speed Range

The quick-change chuck is easily mounted on right side. The standard dental taper shafts with chuck removers will accommodate all types of chucks. The industrial grade, sealed ball bearings never need lubrication. It is UL recognized and CSA certified for electrical safety. Of rugged construction and modern design. The Base may be bench mounted. Manufactured in the USA

#### Specifications:

Overall length (spindle tip to spindle tip) 13¾"

Base dimensions 6¾" X 7½" deep

Height to center of motor shaft 5¼"

1/3 HP, 115 volt 60 hz standard

1/3 HP, 230 volt 50/60 hz optional for export

Ship weight 31 lbs

No. **47.115**



### 4 BALDOR HEAVY DUTY 3/4 HP MOTOR

(Use with Grobet USA® Heavy Duty Split Lap Machine)

#### Features:

- 3450 RPM
- Shafts are tapered and threaded, no set screws needed
- Very strong for buffs up to 8" diameter
- Shaft heights 8"
- Motor Height 11½"
- Available with right hand or left hand shafts
- Spindle size ⅝" tapered

No. **47.120**



### 1 GROBET USA® STANDARD FLOOR MODEL DUST COLLECTOR

With a heavy-gauge metal cabinet, powered by a quiet, 1/4 HP, 960 cfm suction motor, this unit is designed to improve your production and your profits. The 4" thick pleated filter provides more surface area, making it an excellent collecting system for polishing compounds and metal sweeps. The complete unit includes a Baldor 2-speed (1725/3450 rpm), double-spindle, sealed polishing motor; right and left tapered spindles; two splash pans with adjustable safety shields, topped by a utility shelf. Suitable for wet or dry polishing.

Made in USA. Ship weight 225 lbs.

#### Dimensions:

- Overall height including top shelf 53"
- Floor to bench top height 38"
- Width of unit 34"
- Depth of unit 20"

- No. **47.085** 110 volt dust collector w/polishing motor
- No. **47.190** Replacement pleated filter
- No. **47.236** Screw Chuck-Brass (Right)
- No. **47.237** Screw Chuck-Brass (Left)



### 2 GROBET USA® DELUXE FLOOR MODEL DUST COLLECTOR

This deluxe dust collector offers a dust-free polishing environment, with the addition of a single plexiglass enclosure surrounding the polishing area. The hands and work are placed inside the enclosure, while the 960 cfm, 1/4 HP suction motor collects compounds and debris. Two flexible-neck lamps are affixed to the cabinet for concentrated lighting. Heavy-gauge metal cabinet is supplied with a Baldor polishing motor and tapered spindles. Suitable for wet or dry polishing. Made in USA. Ship weight 272 lbs.

#### Dimensions:

- Overall height (excluding lamps) 53"
- Floor-to-bench top height 40"
- Width of unit 44"
- Depth of unit 18"

- No. **47.087** 110V deluxe dust collector, 2 speed polishing motor
- No. **47.088** 110V deluxe dust collector, w/variable speed motor
- No. **47.190** Replacement pleated filter



### 3 GROBET USA® REPLACEMENT PLEATED FILTER

Used in both dust collectors described above, this filter measures only 12" x 24" x 4"; yet, because of its pleated construction, you get nearly five times the surface collection area than you would in a regular flat filter of the same size! Shipping weight 4 lbs.

No. **47.190**



### 1 REPLACEMENT FILTERS

No.	Dimensions
47.171	10" x 10" x 2"
47.176	9 <sup>3</sup> / <sub>4</sub> " x 12 <sup>3</sup> / <sub>4</sub> " x 2"
47.177	10" x 32" x 2"
47.178	10 <sup>1</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " x 1"
47.179	12" x 20" x 2"
47.180	12" x 25" x 2"
47.181	10" x 10" x 1"
47.182	12" x 32" x 2"
47.183	10" x 20" x 1"
47.184	8" x 16" x 1"
47.185	12" x 25" x 1"
47.186	12" x 27" x 1"
47.187	9 <sup>3</sup> / <sub>4</sub> " x 12 <sup>3</sup> / <sub>4</sub> " x 1"
47.188	10" x 20" x 2"
47.189	9 <sup>3</sup> / <sub>4</sub> " x 32" x 1"
47.190	12" x 24" x 4"



### 2 POLISHING/BUFFING KIT for SMALL MOTORS

Just right for 1/15 HP motors with variable speeds.

#### Kit contains:

- 2<sup>1</sup>/<sub>2</sub>" diameter muslin buff for tripoli – No. 17.201
- 2<sup>1</sup>/<sub>2</sub>" diameter cotton flannel buff for rouge – No. 17.573
- 2<sup>1</sup>/<sub>2</sub>" diameter black bristle wheel for tripoli – No. 16.372
- 2<sup>1</sup>/<sub>2</sub>" diameter black bristle wheel for rouge – No. 16.372
- ¼ lb. bar of tripoli – No. 47.479
- ¼ lb. bar of red rouge – No. 47.461
- Wood mandrel – No. 11.333
- Two emery ring shells – 2/0, No. 11.322 and 3, No. 11.326
- Two felt bobs – No. 17.278

No. 47.026



### 3 POLISHING/BUFFING KIT for LARGE MOTORS

Larger buffs and brushes for 1/6 to 1/2 HP motors with 3450 RPM.

- 4" diameter muslin buff for tripoli – No. 17.582
- 4" diameter cotton flannel buff for rouge – No. 17.205
- 2<sup>1</sup>/<sub>2</sub>" diameter black bristle wheel for tripoli – No. 16.372
- 2<sup>1</sup>/<sub>2</sub>" diameter black bristle wheel for rouge – No. 16.372
- Two felt crevice buffs – No. 17.490
- Two felt ring buffs – No. 17.320
- One wood mandrel – No. 11.331
- Six emery ring shells – No. 11.331
- ¼ lb. bar of red rouge – No. 47.479
- ¼ lb. bar of tripoli – No. 47.461

No. 47.027



### 4 LATHE SPLASHER

Made of fine grade aluminum, highly polished and rust resistant. Has moveable, leakproof tray. Offers protection to bench and area around it when brushes, buffs or grinding wheels are rotating at high speeds. Measures 12" H x 6<sup>1</sup>/<sub>2</sub>" W x 10<sup>1</sup>/<sub>4</sub>" D. No. 47.300



**1 POLISH IT!**

This unique item makes polishing bracelets and chains fast, easy and safe.  
No. 48.075



**2 MSA ADVANTAGE RESPIRATOR**

Protection against a variety of respiratory hazards. Maintenance-free operation requires only periodic, easy to change filter replacement. Two adjustable, lightweight, elastic straps and a flexible sealing surface to fit facial contours. With storage/disposable bag. Faceplate and cartridges are incinerable. Includes instructions and technical information. Order respirator and cartridges separately.  
No. 47.4000 Faceplate only  
No. 47.4110 Pair of filter cartridges (type H-approval #TC-21C-600)  
No. 47.4120 Pair of chemical cartridges (type GMC-approval #TC-23C-1278)  
No. 47.4130 Pair of chemical/filter cartridges (type GMCH-approval #TC-23C-1283)



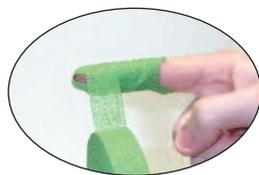
**3 RUBBER FINGER COTS**

Made of soft, molded rubber to provide comfortable protection from oil, dirt and grime. Sold by the dozen.  
No. 23.225 Small  
No. 23.226 Medium  
No. 23.227 Large  
No. 23.228 Extra large



**4 LEATHER FINGER GUARDS**

Full length-split leather with superior wrap-around style and elastic comfort back. Maximum protection for all jewelry-making operations.  
No. 47.526 Open end finger guards. Box of 10  
No. 47.527 Open end thumb guards. Box of 10  
No. 47.528 Closed end finger guard. Box of 10  
No. 47.529 Closed end thumb guard. Box of 10  
No. 47.531 Open end, wool-lined finger guard. Box of 12



3



**5 SAFETY TAPE**

Lightweight but strong. Will protect your skin from cuts and burns. Open mesh allows skin to breath. Just wrap around twice for full protection. 3/4" x 90 ft.  
Sold in package of 16 rolls  
No. 47.532



**6 WHITE COTTON GLOVES**

Protect jewelry, silverware, etc., from fingerprints, spotting, and tarnishing. One size fits most hands, with the lighter version slightly smaller than the heavier version. Sold by the dozen.  
No. 17.101 Small Heavyweight style  
No. 17.102 Heavyweight style  
No. 17.103 Lightweight style  
No. 17.109 Extra Large Heavyweight style



### 1 DISPOSABLE LATEX GLOVES

Protect your fingers and hands when polishing, finishing, or using solutions. Medium size will fit either hand. Sold by box of 100.

WARNING: DO NOT USE if you are NRL-latex sensitive.

No. **17.104** Small size, Economy

No. **17.105** Small size

No. **17.106** Medium size

No. **17.107** Large size



### 2 DENIM APRON

Blue denim apron, 28" x 36" with breast and waist pockets.

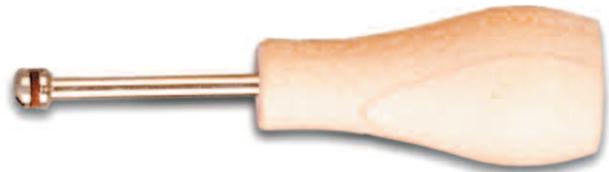
No. **47.306**



### 3 HANDLE with CHUCK

End of wood handle is bored and reinforced. Can be threaded onto tapered spindles so that small wheels, burs, etc. can be used on larger polishing motors. The chuck opens from .085" to .128" to fit  $\frac{3}{32}$ " and  $\frac{1}{8}$ " mandrels. Overall length 3 $\frac{1}{2}$ ".

No. **37.760** Handle with chuck



### 4 WOOD HUB MANDREL

Heavy duty for right side.  $\frac{1}{16}$ " diameter screw.

No. **47.260**

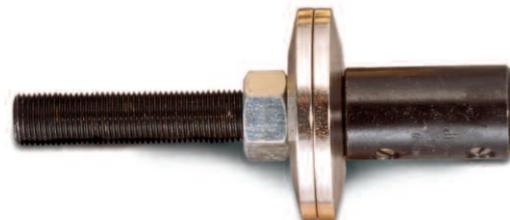


### 5 TAPERED CHUCK for BRUSHES

Brushes with  $\frac{1}{8}$ " holes can be threaded onto the hardened steel taper, which in turn can be threaded onto a standard tapered spindle. Handy way to use small setting brushes on polishing motors.

No. **47.258** Right

No. **47.259** Left



### 6 WHEEL ARBOR

Designed to hold grinding wheel on right side of motors with  $\frac{1}{2}$ " straight shaft. For wheels with  $\frac{1}{2}$ " hole. Steel.

No. **47.256**



### 1 ABRASIVE BAND CHUCKS for TAPERED SHAFT MOTORS

Abrasive bands are held in place when rubber head is expanded.

Made in USA. Brass.

No. 47.250 Right

No. 47.251 Left

No. 47.254 Replacement rubber heads



### 2 TAPERED SPINDLES for STRAIGHT SHAFT MOTORS

Designed to fit any straight shaft motor. Made with either right or left-handed threads (for right or left side of motor) and held to shaft by set screws. Threads are clear and deep, and the end is pointed. Steel. Made in USA.

Right	Left	Shaft
47.270	47.271	1/4"
47.272	47.273	5/16"
47.274	47.275	3/8"
47.276	47.277	1/2"
47.278	47.279	5/8"



### 3 TAPERED SPINDLES for TAPERED SHAFT MOTORS

Made in USA.

No.	Side	Metal
47.236	Right	Brass
47.237	Left	Brass
47.238	Right	Steel
47.239	Left	Steel
47.234	Right (Baldor)	Brass
47.235	Left (Baldor)	Brass



### 4 TAPER CHUCK

Steel with 1/4" shank.

No. 47.224 Right



### 5 STONE CHUCK

Steel with 1/4" shank. For wheels up to 2 1/2" diameter and 1/4" thick, with 1/4" arbor hole.

No. 47.226 Right



### 6 BAND CHUCK

Brass with 1/4" shank.

No. 47.230 Right



### 7 BRASS STONE CHUCKS for MOTORS

Taper is 1/4" per foot. For use with wheels up to 3" diameter and 1/4" thick, with 1/4" arbor holes.

No. 47.200 Right

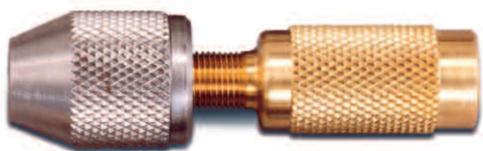
No. 47.201 Left



### 8 BUR CHUCK for MOTORS

1/4" capacity with short shank. Steel; for right shaft.

No. 47.203



**1 BUR CHUCK for TAPERED SHAFT MOTORS**

$\frac{3}{32}$ " capacity for right shaft. Brass body with steel knurl.

No. 47.205



**2 AUTOMATIC SPRING CHUCK for TAPERED SHAFT MOTORS**

For tools with  $\frac{3}{32}$ " shanks. Steel; for right shaft.

No. 47.207

**3 POWDERED COMPOSITIONS**

For use with hand buffs, brushes, felts and wood laps. Can be mixed with water or fine oil to form a paste that will impart a high luster.

- Red Rouge For platinum, gold and silver.
- Tin Oxide For lens polishing and other glassware, as well as fine steel.
- Linde A For precious gems, gold, silver and other metals.
- Ruby Powder Gives a high luster to platinum, gold, steel, precious stones, pearl, ivory, horn shell and porcelain.
- Pumice Powder For scrubbing, cleaning or polishing.

47.510 Red Rouge

47.516 Tin Oxide

47.520 Linde A

47.524 Ruby

47.525 Ruby



**3**

23.400 Pumice-Flour-200 mesh

23.401 Pumice-Fine-150 mesh

23.402 Pumice-Medium-80 mesh

**GROBET ROTARY TUMBLERS**

Provide outstanding polishing and smoothing. These units offer ease of use, excellent durability, and quiet, water-tight operation.



**4 ONE-BARREL TUMBLER**

3 lbs. capacity tumbler features a heavy gauge steel base, water-tight, molded rubber barrel, and thermally protected motor.

Ship weight 6 lbs.

No. 47.781 110-volt model

No. 47.781X 220-volt model

No. 47.784 Replacement barrel



**5 TWO-BARREL TUMBLER**

Versatile, two barrel 6 lbs. capacity tumbler uses two 3 lbs. long-life, molded rubber barrels. Ideal for small batches of jewelry. Continuous-duty, fan-cooled motor with overload protection. Ship weight 9 lbs.

No. 47.782 110-volt model

No. 47.782X 220-volt model

No. 47.784 Replacement barrel

**6 HEAVY-DUTY TUMBLER**

Professional quality tumbler features a larger, more powerful, continuous-duty, fan-cooled motor with overload protection. Steel hexagon barrel with removable liner ensures long, efficient and quiet operation. 15 lbs. capacity, with a five year warranty on the barrel and liner. Ship weight 18 lbs. Replacement barrel ship weight 8 lbs.

No. 47.780 110-volt model

No. 47.780X 220-volt model

No. 47.783 Replacement barrel



**6**

## MAGNETIC MACHINES

Magnetic Finishing presents itself as the pinnacle of methods to efficiently burnish and polish small non-ferrous metals. With media as small as .010 in diameter and .250 in length, these stainless steel pins are able to work in areas such as undercuts, recesses, slots, etc., where no previous method has been found suitable. Centrifugal Magnetic Finishing is quiet by comparison to many other forms of finishing. Typically, on soft non-ferrous metals, the finishing cycle can be as low as 30 minutes. This alone assures faster turnaround time on parts when compared to any other method. Centrifugal magnetic tumbling as an automated process, addresses the most intricate and detailed parts imaginable in finishes where others fail. It should be noted that on large, smooth or flat surfaces the finish will appear frosted and a slight buffing or a run in a dry finisher is recommended.

### What is a Centrifugal Magnetic Finisher?

The machine has a direct, fan-cooled drive. The magnetic disk is made up of many powerful magnets that are precisely placed in a cast disk. The alternating polarity is constantly changing, thereby allowing the media to move freely in a liquid solution that constantly changes its makeup. This, combined with centrifugal force, allows for super quiet and fast time cycles.



### 1 CMF-400

Raytech's smallest capacity Magnetic Finisher has a 4" diameter chamber that finishes the equivalent of 8-10 rings. The machine comes complete with an ample amount of pins and compound. Pin capacity is 100 grams. The CMF-400 has a fixed speed complete with mechanical timer and molded bowl and cover. Ship weight 17 lbs., 1.0 cu. ft.

No. **47.660** CMF-400, 115 V

No. **47.660X** CMF-400, 230 V



### 2 CMF-610

Raytech's Model CMF-610 is the former Model CMF-600. Designed to integrate programmable functions. Variable speed, forward/reverse. Timer functions are easily programmed to suit your cycle times. The Model CMF-610 has a 6" molded bowl with cover and carries a pin capacity of 200 grams and a parts equivalent to 20-30 rings. Pins and compound are included. Ship weight 25 lbs., 2.13 cu. ft.

No. **47.662** CMF-610, 115 V

No. **47.662X** CMF-610, 230 V

Model	HP	Amps at 115V 60 Hz	Pin Capacity in grams	Ring Capacity	Forward/Rev. Function	Variable Speed	Bowl Diameter		Timer	Voltage Available		Shipping Weight
							(in)	(mm)		115V 60HZ	230V 50HZ	
CMF-400	1/32	2.0	100	8-12	No	No	4	200	Mechanical	Yes	Yes	17 lbs.
CMF-610	1/12	2.5	200	30	Yes	Yes	6	150	Programmable	Yes	Yes	25 lbs.



### 3 MAGNETIC SEPARATOR

Exclusive design by Raytech which eliminates tedious separation of parts from media. Magnetic Separators can be placed in water to separate the parts. No need to drain water as separator will not rust. Mates with CMF-400 & CMF-600/620.

No. **47.665** Magnetic Separator 400/600

## RAYTECH TUMBLERS



### 1 TUMBLE-VIBE 5

This popular low-cost unit is a favorite of the hobbyist and is used commercially as well. Holds 25 ring castings with media or will process about 4 lbs. of rock. Bowl diameter is 8 inches with new convenient solid lid system. Ship weight 7 lbs.

- No. **47.701** 115V/60 Hz
- No. **47.701X** 230V/50 Hz CE
- No. **47.70101** Spare Bowl & lid
- No. **47.70102** TV-5 with Stone Finishing Kit *(Available in 230V)*



### 2 TUMBLE-VIBE 10

Industrial model TV-10 has heavy duty drive and suspension combined with tough, cross-linked polyethylene bowl. Machine comes equipped for use with compound rinsing system 47.706. Capacity of bowl is .10 cu. ft. (.0013cu. m) Bowl is supplied with noise dampening cover and liquid drain. Ship weight 12 lbs.

- No. **47.702** 115V/60 Hz
- No. **47.702X** 230V/50 Hz CE



### 3 AV-18 (formerly TV 18)

Raytech's former TV-18 has been redesigned to a much heavier duty machine. The AV-18 features adjustable amplitude, provides inlet and outlet ports for compound rinsing and has a capacity of .18 cubic feet. Ship weight 22 lbs.

- No. **47.703** TV-18 with drains 115V/60 Hz



### 4 ADJUSTA-VIBE 25SS

The Model 25SS is specifically designed for use when steel/SS media processing is required. A popular size for small production lots and when combined with the 47.706 Compound Rinsing System, accomplishes a myriad of applications. Designed with heavy-duty drive and suspension system, amplitude adjustment, and discharge port for easier unloading. Steel/SS media capacity: 50 lbs. All medias can be used. Ship weight 22 lbs.

- No. **47.704** 115V/60 Hz



### 5 ADJUSTA-VIBE 40SS

The Model 40SS is specifically designed for use when steel/SS media processing is required. It has a capacity of .35 cubic feet and is equipped with amplitude adjustment, inlet and outlet ports for compound rinsing systems, discharge port for easier unloading, and heavy duty cross linked polyethylene bowl construction. Sound dampening covers are standard. Steel/SS media capacity: 100 lbs. All medias can be used. Ship weight 51 lbs.

- No. **47.705** AV-40SS 115V/60 Hz



### 6 DRI-POLISHER

The Dri-Polisher features a 10-inch bowl with a capacity of .12 cubic feet. As a bonus, all Dri-Polishers come supplied with a free charge of Dri-Shine III, a Raytech exclusive universal polishing media. Ship weight 8 lbs.

- No. **47.710** 115V/60 Hz
- No. **47.710X** 230V/50 Hz CE
- No. **47.712** Spare Bowl & lid

Tumbler	Bowl Model	Working Capacity		Bowl Diameter			Steel (SS)	All Ceramic & Porcelain	Media Caplates	
		Cu. Ft.	Liters	A	B	C			Plastic	All Dry Medias
TV-5	B-5	.05	1.5	8	4	3.75	—	5lb.	3lb.	1 lb.
TV-10	B-10	.10	2.5	10	3.5	5	—	9	6	2 lbs.
TV-18 w/drain	B-18	.15	3.5	12	4	4.25	25 lbs.	13	8	4 lbs.
AV-25SS	BS-20	.22	5.0	14	3.5	5.75	50 lbs.	20	13	7 lbs.
AV-40SS	BS-33	.35	9.0	17	4.25	7	100 lbs.	32	20	11 lbs.

## POLISHING TUMBLERS

### VIGOR® WET/DRY VIBRATORY TUMBLERS

Vibratory tumbling is an economical finishing technique which gives you a more uniform finish on large quantities of parts, in much less time than standard hand finishing, without the mess. It maintains the overall shape of the pieces and allows you to check the progress of the work without stopping the unit. Compact, yet durable, the Vigor® vibratory tumblers are donut shaped for uniform polishing and maximum coverage. The heavy polyethylene lids and bowls remove easily and quickly for emptying and cleaning. Units have two valves and a strainer for optional flow-through operation (except No. 47.785) Ball-bearing motors operate at relatively low noise levels, have thermal overload protection and are 3000 RPM at 60/Hz. One-year warranty. Made in USA.



#### 1 3-QUART TUMBLER

##### Features and Specifications:

- Can be used wet or dry
- Capacity approximately 50 rings
- 3 quart capacity
- .10 cu. ft.
- Holds 8 lbs. of plastic shot, 3 lbs. dry shot
- Ship weight 12 lbs.
- Bowl size 10" x 4" high

No. **47.786** 110-volt unit  
 No. **47.786X** 220-volt unit  
 No. **47.78601** Replacement 3-quart bowl



#### 2 6-QUART TUMBLER

##### Features and Specifications:

- Can be used wet or dry
- Capacity approximately 100 rings
- 6 quart capacity
- .20 cu. ft.
- Holds 15 lbs. of plastic shot, 6 lbs. dry shot
- Ship weight 19 lbs.
- Bowl size 11½" x 6" high

No. **47.787** 110-volt unit  
 No. **47.787X** 220-volt unit



#### 3 4¾"-GALLON TUMBLER

##### Features and Specifications:

- Can be used wet or dry
- Capacity approximately 300 rings
- 4¾" gallon capacity
- .60 cu. ft.
- Holds 50 lbs. of plastic shot, 22 lbs. dry shot
- Bowl size 17" x 7" high
- Ship weight 26 lbs.

No. **47.788** 110 volt unit  
 No. **47.788X** 220 volt unit



#### 4 3-QUART DRY VIBRATORY TUMBLER

##### Features and Specifications:

- Use dry only-cannot be used with Flow-Through system
- Capacity approximately 50 rings
- 3-quart capacity
- .10 cu. ft.
- Holds 3 lbs. dry shot
- Bowl size 10" x 4" high
- Ship weight 12 lbs.

No. **47.785** 110 volt unit

## VIGOR® STAINLESS STEEL SHOT

A fast form of tumbling used to burnish metal to a mirror bright finish. Uniform in size and shape, non-abrasive and carefully tempered to ensure long life. Stainless steel is rust and corrosion-resistant, making it ideal for use in wet, flow-through systems. Sold in 10 lbs. (4.5 kg) boxes.



### 1 MIXED SHOT

A combination of  $\frac{3}{16}$ " balls,  $\frac{3}{16}$ " ball cones,  $\frac{1}{8}$ " x  $\frac{3}{8}$ " pins and  $\frac{1}{8}$ " diagonals for maximum coverage on a wide variety of pieces.

No. 47.0138 Carbon

No. 47.0238 Stainless



### 2 BALLS

General purpose media.

No. 47.0136/10 Carbon  $\frac{1}{8}$ "

No. 47.0236/10 Stainless  $\frac{1}{8}$ "



### 3 BALL CONES

Similar to balls but works into crevices better.

No. 47.0231/10 Stainless  $\frac{1}{8}$ "



### 4 PINS

Tapered to a point, ideal for getting into deep recesses.

No. 47.0134/10 Carbon  $\frac{1}{16}$ " x  $\frac{9}{32}$ "

No. 47.0135/10 Carbon  $\frac{1}{8}$ " x  $\frac{3}{8}$ "

No. 47.0234/10 Stainless  $\frac{1}{16}$ " x  $\frac{9}{32}$ "

No. 47.0235/10 Stainless  $\frac{1}{8}$ " x  $\frac{3}{8}$ "



### 5 DIAGONALS

Large surface area with beveled edges, ideal for corner work.  $\frac{1}{8}$ ".

No. 47.0233/10 Stainless

MEDIA



**1 CERAMIC**

Ceramic media is the heaviest media and is also the fastest finisher. Bonded of the highest quality materials available, selected aluminum oxide abrasives produce constant quality. This durable, long-lasting media is extremely versatile for deburring machined, cast, or fabricated parts. Density - 90 lbs. / Cu. Ft.



**2 PLASTIC**

Formulated for very fine surface conditioning. Low R.M.S. finishes are commonly achieved. Plastic medias are widely used in the precision metal industries. Also due to fine surface finishes achieved, parts are prepared for preplate, pre-anodize, or decorative polishing. Brown, V-Cut, Cone (medium cut), Green (light cut), and White (very fine cut). Density - 55 lbs. / Cu. Ft.



**3 MICROBRITE® PORCELAIN BALLS**

The alternative to steel or stainless steel media for final finishing and used with Raytech's Compound D. Please note that there is a break-in period of 4-6 hours required. Mixing in the 1 mm and 2 mm with larger sizes is recommended for good vibratory action. Sizes available, 1 mm, 2 mm, 3 mm, 4 mm, & 6 mm. Available in 5 lbs., 15 lbs., and 50 lbs. packages.



**4 DRI-SHINE I**

A nut-shell based media treated with Red Rouge. This irregular particle-sized media, when allowed to run in excess of 5 hours in a vibrating tumbler, provides excellent coloring characteristics. Density - 35 lbs. / Cu. Ft.



**5 DRI-SHINE III**

A corn-cob based media treated with Raytech's proprietary polishing compound, performs equal to, or better than Dri Shine I. Clean to use; rouge stain is eliminated. Density - 30 lbs. / Cu. Ft.



**6 DRI-SHINE V**

Consists of a blend of 5 sizes of pre-treated hard wood media, which contains Cubes (2 sizes), Pegs, Triangles, and Wedges designed specifically for final finishing on plastic. Available in packages of 5 lb., 15 lb., and 30 lb. Density - 30 lb. / Cu. Ft.

Media	5lb.	Price	15lb.	20lb.	30lb.	50lb.
<b>1 Ceramic</b>						
Triangles	—		—	47.80001	—	47.80002
Angle Cut Cylinders	—		—	—	—	47.80012
3/8" Polyhedron	—		—	—	—	47.80022
<b>2 Plastic</b>						
1/4" Brown Pyramids	47.80103		—	—	—	47.80105
1/4" White Pyramids	47.80106		—	—	—	—
1/4" Green Pyramids	47.80109		—	—	—	47.80111
<b>3 Microbrite Porcelain Balls</b>						
1 mm Balls	47.80160		47.80161	—	—	—
2 mm Balls	47.80170		—	—	—	—
3 mm Balls	47.80180		47.80181	—	—	—
4 mm Balls	47.80190		47.80191	—	—	—
6 mm Balls	47.80195		—	—	—	—
<b>4 Dri-Shine I</b>	—		47.801	—	—	—
<b>5 Dri-Shine III</b>	—		—	—	—	47.80102
<b>6 Dri-Shine V</b>	—		—	—	47.80152	—

## NATURAL MEDIA

Used in a dry tumbling process for the final finish. Can be used alone or charged with polishing compounds.



### 1 VIGOR® UNTREATED CORN COB

Used dry, produces a brighter finish when tumbled for 12 to 24 hours. Absorbs moisture.

No. **47.0106/5** 5 lbs. box

No. **47.0106/25** 25 lbs. box



### 2 VIGOR® CHARGED WALNUT SHELL

Finely ground and bonded with rouge to produce a gleaming final finish on metal and stone.

No. **47.769** 5 lbs. box

### 3 TUMBLE SOAP

Recommended for fine finishing and burnishing precious metals, brass, bronze and similar materials with plastic, ceramic or metal media. Supplied with Raytech MFA metal finishing kits. Use approximately 1 tsp. per pint of water.

No. **47.80114** Compound A, 1 lb.

No. **47.80115** Compound A, 50 lbs.



### 4 GRIFFITH OXALIC ACID

Great for cleaning most quartz crystals. 2 Tb. to one gallon of distilled water-heated (not boiling) will leach out iron stains from most quartz crystals. Alternately heating and cooling the solution with the crystal in it may be necessary, but 1/2 hour is generally all it takes.

No. **23.215** 6 oz

No. **23.216** 16 oz



### 5 BURNISHING COMPOUND D

Uniquely formulated liquid compound for use with steel shot. Also can be used as storage compound due to rust inhibitors in the formulation. Dilute 2% to water.

No. **47.80117** Compound D, 1 quart

No. **47.80117/G** Compound D, 1 gallon



### 1 JIFFY JUMP RING TOOL

This highly versatile tool will produce round and oval jump rings in seconds, as well as giving a square, clean cut to watch bands, tubing, sizing stock, etc. The handy V-block will hold items up to 1/4" (6 mm) in size. Made of stainless steel and silicone bronze for long life.

No. 43.115



### 2 RING SETTERS CLAMP

Smooth hardwood handle for comfortable hand-held operation. Includes nine plastic sleeve inserts, marked clearly in U.S. sizes from 2 to 13. Also in mm sizes from 13 mm to 22 mm. All attractively displayed in a hardwood box.

No. 48.135



### 3 RING SOLDERING TWEEZERS

Holds ring from inside for easy soldering.

No. 48.230



### 4 HEAD and SHANK TWEEZERS – PREMIUM QUALITY

Slide-locking, stainless steel tweezers securely holds the setting and shank in position for easy soldering of solitaires. One tip is curved to hold shank, the other is serrated to grip setting.

No. 48.235



### 5 HEAD and SHANK TWEEZERS

Position the ring shank and setting to solder solitaires quickly and easily. Curved jaw has groove to hold shank securely, while flat jaw is serrated to prevent movement. Stainless steel. Overall length 5 1/2" (140 mm).

No. 57.0398



### 6 RING GRIPPER

Used to hold rings with vise-like grip while polishing. No more burned or blistered fingers from overheated rings. Also helps eliminate buffing wheel "grab". Adjusts to fit most rings.

No. 48.070



### 1 WOOD RING CLAMP

Quality wood clamp with leather-lined jaws for holding rings and other pieces. One side is rounded, the other is squared off. Wedge can be driven into either end to close the other jaw tight.

No. 48.125



### 2 MAHOGANY RING CLAMP

Handy tool for holding rings to be filed or polished and for general ring work. Made of fine polished mahogany with round and flat leather lined jaws. Includes wooden wedge.

No. 48.126



### 3 KIRKLAND RING CLAMP/HOLDER

One end clamps from the outside for polishing and stone setting, while the other end holds from the inside for total circumference polishing and buffing. Metal construction conducts heat away from ring. Holds ring sizes 1 through 13.

No. 48.105



### 4 KIRKLAND EXTERNAL RING CLAMP

Clamps rings securely for filing, sanding and polishing inside of rings.

No. 48.106



### 5 BENCH BLOCK RING CLAMPS

Versatile ring clamp, with lip, fits securely into solid hardwood bench block for optimum stability. Hard plastic clamp tightens easily and has rubber lined jaws for non-marring grip. Can also be used as hand-held clamp for increased maneuverability.

No. 48.130 Clamp with lip

No. 48.0700 Clamp with lip and bench pin

No. 13.0202 Bench pin only



### 6 MASCOT® RING CLAMP

A double-ended clamp with thick leather-lined jaws, for holding rings and other jewelry pieces securely while filing, polishing, stone setting, etc. The tough material used to make this clamp outlasts wood many times over and the molded construction assures perfect alignment of jaws. The wedge supplied is made of the same tough material and can be driven in hard for a tight grip.

No. 48.100

**1 ELECTRIC RING CUTTER**

In an emergency, speed, safety and comfort are essential. Cuts the strongest alloys in less than 10 seconds, without heat or discomfort. High quality, powerful cordless motor comes with a handy recharging unit. Since it's cordless, you can take it anywhere, making it ideal in emergencies. Chrome blade assembly can be sterilized. 3 year warranty on cutting unit (except blade). US Pat 4864730.

No. **48.0610** Ring cutter

No. **48.0611** Pack of 2 replacement blades

No. **48.0610/4** Cover plate

**2 BEAVER RING CUTTER**

Our most popular model. Saws ring while on or off finger. Satin chrome-finished metal parts are set in molded plastic handle with comfort grip design.

No. **48.220** Ring cutter

No. **48.224** Replacement saw

No. **48.225** High speed steel saw for harder alloys only

**3 RING CUTTER**

Lightweight model with knurled, non-slip handle. Nickel-plated, except for saw.

No. **48.180** Ring cutter

No. **48.181** Replacement Hex Key

No. **48.192** Replacement saw

**4 ECONOMY RING CUTTING PLIERS**

This strong, yet lightweight, cutter has box joint construction and is completely enclosed. Chrome-plated brass with comfort-grip handle.

No. **48.02430** Ring cutting pliers

No. **48.02431** Replacement blade

**5 STAINLESS STEEL RING CUTTER**

Pliers type design and large key make this cutter very easy to use. Stainless steel. 6 3/4" (170 mm) long.

No. **48.193** Ring cutter

No. **48.194** Replacement saw





### 1 WEDDING RING SIZER

Reduces and enlarges wedding rings without effort. Can be bolted to bench or used as a portable. This well-made sizer has six splines on the enlarging mandrel and takes rings up to size 15. The reducing plate has sixteen openings and is smoothly polished to prevent marring.

No. **48.350**



### 2 ENLARGER for STONE SET RINGS

Rolls out the shanks of stone set rings to stretch the metal and enlarge the size. Has 17 polished rollers for different sizes and styles of rings. Can also be used on wedding bands. Easy to use, economically priced.

No. **48.300** Enlarger and rollers

### 3 RATHBURN RING STRETCHER

Ring is placed on stretcher and the gentle tapping with the mandrel causes ring to expand. Economical and easy to use.

No. **48.360**



## RING GUARDS

**1 FINGER-HOLD RING GUARDS**

Sold in packs of one dozen.

Size	Yellow	White
Ladies	38.0500A	38.0505A
Gents	38.0501A	38.0506A
Giants	38.0502A	38.0507A

**2 14 KT GOLD-FILLED RING GUARDS**

Easy to attach and won't slip off. Keeps ring in proper place. No sharp edges to tear clothing or scratch skin. Sold in packs of one dozen.

Size	Yellow	White
Ladies	38.501	38.507
Gents	38.502	38.508
Giants	38.503	38.509

**3 SCHOOL RING GUARDS with BRIDGE SUPPORT**

Make his ring fit her! Adjusts to any size with no springs or wires to pinch or catch. Will not twist off during active use. Bridge provides strength when reducing from larger boy's size to smaller girl's size. All sold in packs of one dozen.

Size	Yellow	White
Regular School	38.404	38.408
Large School	38.406	38.410
Family	38.400	38.402



3

## GROBET USA® ROLLING MILLS

A line of rolling mills custom made for Grobet in Italy. Engineered with modern equipment using old world technology. Years of research and design have gone into making this line of rolling mills the finest rolling mills available anywhere. Top quality components, precision-machined to close tolerances, combined with expert manufacturing practices, assure you of years of productive and reliable service.



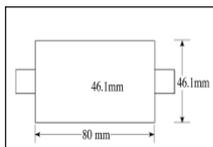
### 1 80 MM BENCH TOP ROLLING MILLS

Ship weight 44 lbs. (20 kg).

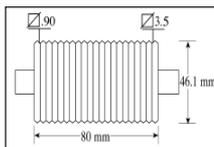
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No. 28.183 Wire

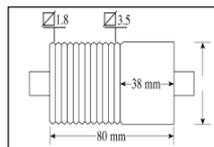
No. 28.184 Combination flat and wire



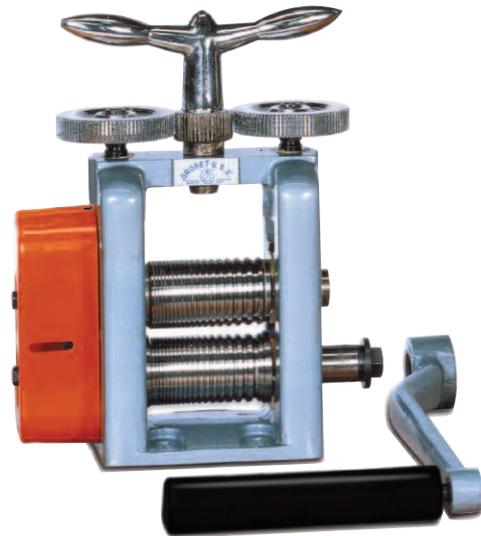
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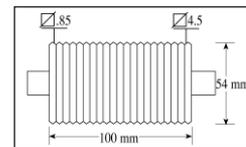
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### 2 100 MM and 120 MM BENCH TOP ROLLING MILLS

Ship weight 55 lbs. (25 kg).

No. 28.186 100 mm wire



No. 28.186

### 3 100 MM and 120 MM BENCH TOP ROLLING MILLS

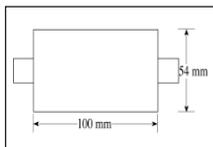
with REDUCTION

Ship weight 74 lbs. (34 kg)

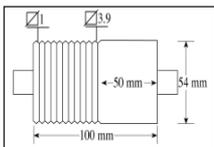
No. 28.194 100 mm flat with reduction

No. 28.196 100 mm combination with reduction

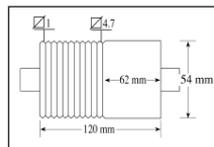
No. 28.199 120 mm combination with reduction



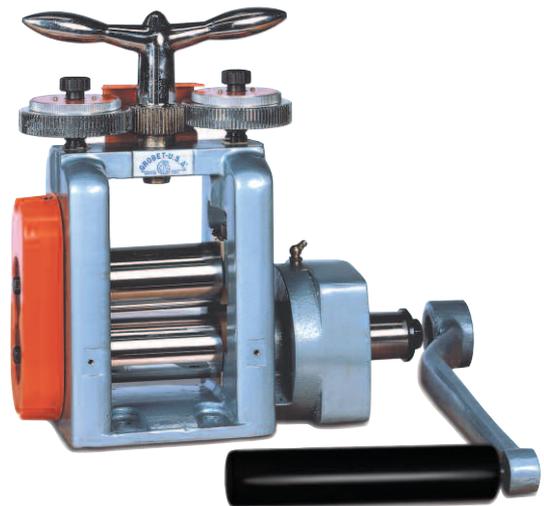
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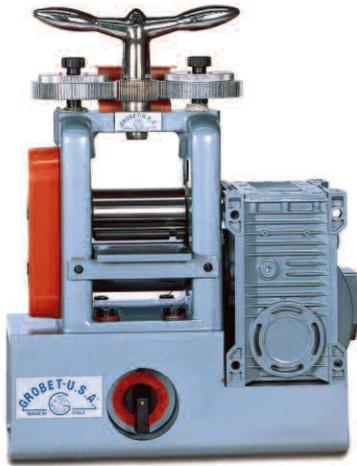
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No. 28.199



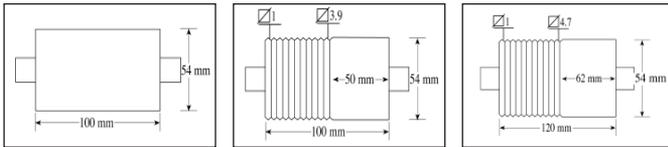
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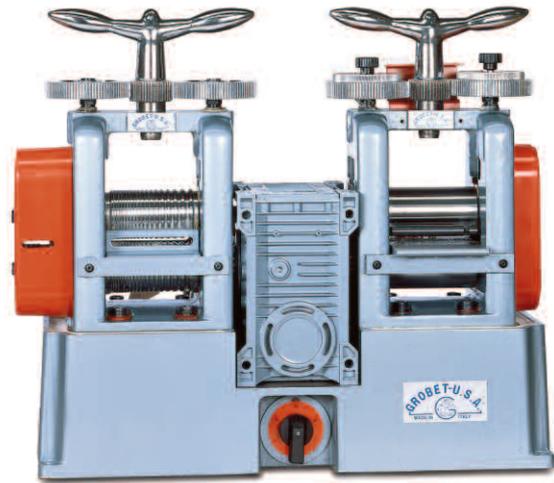
**1 ELECTRIC BENCH TOP SINGLE ROLLING MILLS**

Specifications:	100 mm Size	120 mm Size
Roll diameter	54 mm	54 mm
Wire thickness	1 to 3.9 mm	1 to 4.7 mm
Maximum plate opening	7 mm	7 mm
Roll speed	3.95 m/min	3.95 m/min
Overall size	16" x 17" x 19" (406 x 432 x 483 mm)	17" x 17" x 20" (432 x 432 x 508 mm)
Motor	1 hp	1 hp
Ship weight	121 lbs. (55 kg)	132 lbs. (60 kg)

- No. 28.205 100 mm flat (plate)
- No. 28.206 100 mm combination flat and wire
- No. 28.207 120 mm combination flat and wire



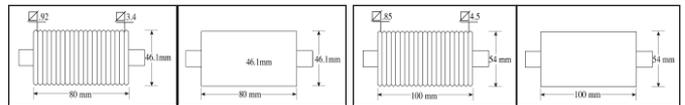
No. 28.205      No. 28.206      No. 28.207



**2 ELECTRIC BENCH TOP DOUBLE ROLLING MILLS**

Specifications:	80 mm Size	100 mm Size
Roll diameter	46.1 mm	54 mm
Wire thickness	.9 to 3.5 mm	.85 to 4.5 mm
Maximum plate opening	7 mm	7 mm
Roll speed	3.95 m/min	3.95 m/min
Overall size	21" x 17" x 17" (533 x 432 x 432 mm)	23" x 17" x 18" (584 x 432 x 457 mm)
Motor	1 hp	1 hp
Ship weight	154 lbs. (70 kg)	220 lbs. (100 kg)

- No. 28.200 80 mm flat plate and 80 mm wire
- No. 28.201 100 mm flat plate and 100 mm wire



No. 28.200      No. 28.201

All units are 110 volt, and are shipped without plugs.  
A dedicated 20 amp line is required.  
220 volt-models are available.

Larger Floor Models Available Upon Request.

**3 ROLLING MILL STANDS**

- No. 28.192 Double
- No. 28.193



3

## JEWELERS' PIERCING SAWBLADES

Made in Switzerland, these are the finest jewelers' sawblades available. Manufactured to exacting tolerances for angle, size and cut of each tooth. For cutting all metals and other hard materials.

### Features:

- Our unique tempering process ensures consistent flexibility and long blade life. It also gives our sawblades their exclusive golden straw color, which is your guarantee of receiving the world's finest sawblades. Rounded back makes cutting curves easier. Uniformly set teeth reduce binding and breakage. Special alloy steel make our blades last longer and stay sharper.



### 1 SWISS MADE PIKE® BRAND JEWELERS' SAWBLADES

Swiss quality sawblade at a very affordable price. Sold by the gross.

No.	Size	No.	Size
49.440	8/0	49.450	2
49.441	7/0	49.451	3
49.442	6/0	49.452	4
49.443	5/0	49.453	5
49.444	4/0	49.454	6
49.445	3/0	49.456	8
49.446	2/0	49.458	10
49.447	1/0	49.460	12
49.448	1	49.462	14

### 2 SWISS MADE SCIES® JEWELERS' PIERCING SAWBLADES

Premium quality; extremely flexible, yet hardened for long life and smooth cutting. Sold by the gross.

No.	Size	No.	Size
49.400	8/0	49.410	2
49.401	7/0	49.411	3
49.402	6/0	49.412	4
49.403	5/0	49.413	5
49.404	4/0	49.414	6
49.405	3/0	49.416	8
49.406	2/0	49.418	10
49.407	1/0	49.420	12
49.408	1	49.422	14



### 3 SWISS MADE DAGGER® BRAND YELLOW LABEL SAWBLADES

Provide good performance normally not associated with blades in this price range. Sold by the gross.

No.	Size	No.	Size
49.600	8/0	49.610	2
49.601	7/0	49.611	3
49.602	6/0	49.612	4
49.603	5/0	49.613	5
49.604	4/0	49.614	6
49.605	3/0	49.616	8
49.606	2/0	49.618	10
49.607	1/0		
49.608	1		

### 4 SWISS MADE PIKE® PLATINUM JEWELERS SAWBLADES

The only sawblades specifically developed for use on platinum. Sold by the gross.

No.	Size	No.	Size
49.475	4/0	49.479	1
49.476	3/0	49.480	2
49.477	2/0	49.481	3
49.478	1/0	49.482	4

### 5 SWISS MADE PRIOR JEWELERS' PIERCING SAWBLADES

Made in Switzerland, a high quality blade; hardened for long life and smooth cutting. Sold by the gross.

No.	Size	No.	Size
SBP8Z	8/0	SBP1	1
SBP7Z	7/0	SBP2	2
SBP6Z	6/0	SBP3	3
SBP5Z	5/0	SBP4	4
SBP4Z	4/0	SBP5	5
SBP3Z	3/0	SBP6	6
SBP2Z	2/0	SBP8	8
SBPZ	1/0		



5

## JEWELERS' SAWBLADES

**1 HERKULES® "WHITE LABEL" SAWBLADES**

German-Made for cutting all metals, bone, pearl and other hard materials. Round backs make it easy to turn corners and follow curves, operations that may break other saws. Sold by the gross.

No.	Size	No.	Size
49.100	8/0	49.110	2
49.101	7/0	49.111	3
49.102	6/0	49.112	4
49.103	5/0	49.113	5
49.104	4/0	49.114	6
49.105	3/0	49.115	7
49.106	2/0	49.116	8
49.107	1/0	49.118	10
49.108	1	49.120	12
49.109	1 1/2	49.122	14

**3 SPIRAL SAWBLADES**

Cuts in any direction. Used for cutting rubber, plastics, wax, plaster and similar materials. Sold by the dozen.

No.	Size	Diameter	
		(in)	(mm)
49.299	2/0	.027"	0.70
49.300	1/0	.030"	0.77
49.301	1	.032"	0.80
49.302	2	.037"	0.94
49.303	3	.041"	1.05
49.304	4	.042"	1.07
49.305	5	.043"	1.08
49.306	6	.045"	1.15

## Chart of sizes

Size	Thickness		Width		Teeth per	
	(in)	(mm)	(in)	(mm)	(in)	(cm)
8/0	.006"	0.15	.013"	0.33	84	33
7/0	.007"	0.18	.014"	0.36	84	33
6/0	.007"	0.18	.014"	0.36	76	30
5/0	.008"	0.20	.016"	0.41	66	26
4/0	.009"	0.23	.017"	0.43	64	25
3/0	.010"	0.25	.019"	0.48	57	22
2/0	.010"	0.25	.021"	0.53	53	21
1/0	.011"	0.28	.023"	0.58	51	20
1	.012"	0.30	.025"	0.64	47	19

**2 ANTILOPE® SAWBLADES**

German-made, excellent quality piercing blades for hard metals. Length 5 1/4" (133 mm) with round back. Sold by the gross.

Blue	Yellow	Size	Blue	Yellow	Size
49.900	49.500	8/0	49.911	49.511	3
49.901	49.501	7/0	49.912	49.512	4
49.902	49.502	6/0	49.913	49.513	5
49.903	49.503	5/0	49.914	49.514	6
49.904	49.504	4/0	49.915	49.515	7
49.905	49.505	3/0	49.916	49.516	8
49.906	49.506	2/0	49.918	49.518	10
49.907	49.507	1/0	49.920	49.520	12
49.908	49.508	1	49.922	49.522	14
49.910	49.510	2			

**4 SKIP-A-TOOTH SAWBLADES**

These blades are designed for wax cutting. Every other tooth is eliminated which provides smooth cutting and non-loading action.

Size #1. Sold by the dozen.

No. 49.320

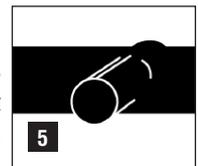


## UTILITY SAWBLADES

**5 HIGH CARBON STEEL PINNED SAW BLADES**

High carbon steel 5 inch pinned saw blades. These blades are heat-treated and tempered to be flexible but maintains hardness for good life. 18 teeth per inch with a slight set to the teeth. The tooth set provides smooth cutting action with the narrowest kerf possible. Used for cutting bone, pearl, plaster, plastic and similar materials. Sold in Packs of 100.

No. 49.875



Size	Thickness		Width		Teeth per	
	(in)	(mm)	(in)	(mm)	(in)	(cm)
2	.013"	0.33	.027"	0.69	44	17
3	.014"	0.36	.029"	0.74	40	16
4	.015"	0.38	.031"	0.79	37	15
5	.016"	0.41	.033"	0.84	35	14
6	.017"	0.43	.037"	0.94	33	13
8	.020"	0.51	.045"	1.14	28	11
10	.024"	0.61	.053"	1.35	24	10
12	.024"	0.61	.065"	1.65	20	8
14	.024"	0.61	.067"	1.70	16	6

## GROBET SWISS-MADE SAWFRAMES

Revolutionary design in three lightweight, perfectly balanced sawframes. Ergonomic handles reduce fatigue and provide greater dexterity. Patented blade-lock design eases blade insertion, maintains perfect alignment and eliminates wobble which reduces blade loss during use.\* Precision-made at our Swiss factory of the highest quality spring steel with non-glare finish. Set screws can be used on either the left or right side of the frame according to your preference. 2 3/4" (70 mm) deep.

\* Blade tightening screw must be opened wide enough to allow sawblades to be inserted all the way.



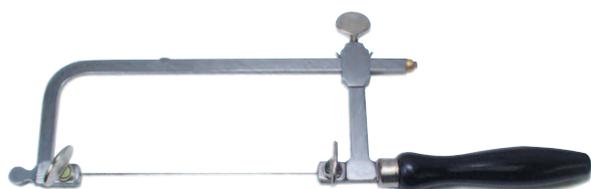
**1** No. 49.720 Adjustable style



**2** No. 49.722 Fixed style



**3** No. 49.724 4" deep



## 4 STANDARD JEWELERS' SAWFRAMES

For use with piercing, flat and spiral sawblades. Serrated clamps hold blades firmly. Strongly constructed with flat steel frames, hardwood handles and thumb-screw locking devices. Most common depth is 2 1/4" (57 mm), while others are for use when greater cutting depth is required.

No.	(in)	(mm)	No.	(in)	Depth (mm)
49.700	2 1/4"	57	49.705	5"	127
49.703	3"	76	49.706	6"	152
49.704	4"	102	49.708	8"	203

Note: Replacement screws and lugs are available.

## 5 SAWFRAMES with END SCREWS

Equipped with tension screw for drawing blades taut. Otherwise, same construction as standard frames.

No.	(in)	Depth (mm)
49.750	2 1/2"	63
49.753	3"	76
49.754	4"	102

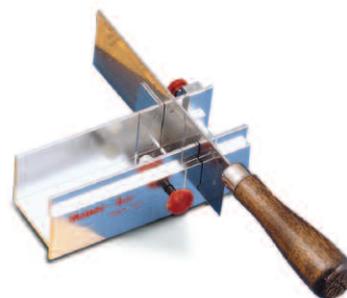
Note: Replacement screws and lugs are available.



## 6 SWISS CUT SAW FRAME

Frame for 5 inch pinned blades. Designed with "S" bends to the frame it accommodates unobstructed viewing directly over the area to be cut. The frame is equipped with an ergonomic pistol grip handle fabricated with reinforced fiber filled plastic. Knurled thumbscrew provides easy to use blade tension control.

No. 49.800



## 7 MATT MITER BOX

Slice bars, rods and wax ring tubes into tablets with perfectly straight and parallel walls or tapered sides. The ring tube is held firmly in position inside the box so there is no strain on your hand. With stop/lock feature for cutting several tablets of the same thickness. Set includes extruded aluminum 6" x 2" (152 x 51 mm) miter box, steel hand saw and stop/lock.

No. 21.02920 Miter box

## 8 CIRCULAR SAWS

For miniature work. Made of .004" (.10 mm) thick stainless steel. With 1/16" (1.6 mm) diameter center holes for mandrel mounting. Sold by the dozen.

No.	(in)	Diameter (mm)	Teeth per (in)	(cm)
49.890	3/4"	19	42	16
49.891	7/8"	22	45	17



**8**

## GROBET DIGITAL SCALES

The new line of Grobet Digital Scales are ideal for Jewelry, Industrial, Laboratories, Speciality and more.



### 1 PRECISION BENCH BALANCES

These new balances are ideal for Jewelry, Industrial, Laboratories, Research, Educational, Specialty and more. Small compact size for portability and efficient bench space. Powered by battery or available AC adapter. Auto off function for extended battery life.

No. **50.305** 500 g x 0.1 g

No. **50.306** 2000 g x 0.1g



### 2 POCKET SCALE

Weighs in grams, ounces, carats and grains. Removable cover protects scale and will hold items to be weighed. Use 2 AAA batteries – not included.

No. **50.250**



### 3 POCKET SCALE

Weighs in grams, ounces, carats and grains. Clear plastic cover protects scale and folds flat so larger objects can be weighed. Uses 2 AAA batteries which are included.

No. **50.251**



### 4 POCKET SCALE

Weighs in grams, ounces, troy ounces and pennyweight. Plastic cover protects weighing plate and folds flat so larger objects can be weighed. Uses 2 AAA batteries which are included.

No. **50.252**

No.	grams	ounces	carats	grains	Scale Wide	Scale Deep	Scale High	Pan Wide	Pan Deep	Parts Counting
<b>50.250</b>	100 x 0.01	3.5 x 0.001	500 x 0.05	1500 x 0.1	2½"	3½"	¾"	2⅛"	2⅛"	No
<b>50.251</b>	500 x 0.1	17.6 x 0.001	2500 x 0.1	7700 x 1	2¾"	4¾"	¾"	2"	2¼"	Yes



**1 POCKET SCALE**

Weighs in grams, ounces, pennyweight and grains. Also has parts counting. Protective cover folds out of the way so larger objects can be weighed. Comes with a weighing pan protector that can be used to hold objects to be weighed. Uses 2 AAA batteries which are included.

No. 50.253



**2 POCKET SCALE**

Weighs in grams, ounces, troy ounces and pennyweight. . Also has parts counting. Comes with a pan cover that can be used to hold items to be weighed. Hinged cover protects scale. Uses 2 AAA batteries which are included.

No. 50.245



**3 POCKET SCALE**

Weighs in grams, ounces, pennyweight and troy ounces. Removable protective cover can be used to hold items to be weighed. Uses 4 AAA batteries – not included.

No. 50.255



**4 POCKET SCALE**

Weighs in grams, ounces, troy ounces and pennyweight. Removable pan cover can be used to hold items to be weighed. Comes with a soft cover. Uses 2 CR2032 batteries which are included.

No. 50.257



**5 POCKET SCALE**

Weighs in grams, ounces, troy ounces and pennyweight. Removable scale cover can be used to hold items to be weighed. Spring-loaded display and keyboard, retracts into scale body. Comes with a soft cover. Uses 4 AAA batteries which are included.

No. 50.258



**6 POCKET SCALE**

Weighs in grams, ounces, pennyweight and grains. Removable pan cover can be used to hold items to be weighed. Use 2 AAA batteries which are included

No. 50.259

No.	grams	ounces	ounces troy	penny weight	grains	Scale Wide	Scale Deep	Scale High	Pan Wide	Pan Deep	Parts Counting
50.252	500 x 0.1	17.6 x 0.01	16 x 0.01	320 x 0.1		3 3/8"	4 7/8"	7/8"	2 1/2"	3"	No
50.253	500 x 0.1	17.6 x 0.01		320 x 0.1	7700 x 1	3 1/4"	4 5/8"	7/8"	2 1/2"	2 1/2"	Yes
50.255	500 x 0.1	17.6 x 0.001	16 x 0.01	320 x 0.01		3 1/4"	5 1/8"	5/8"	2 3/4"	3 1/4"	No
50.257	600 x 0.1	21 x 0.01	19 x 0.01	385 x 0.1		5 3/8"	2 7/8"	5/8"	3 1/4"	2 1/2"	No
50.258	2000 x 0.1	70 x 0.01	64 x 0.01	1280 x 0.1		4 1/2"	3 3/8"	3/4"	3 3/4"	2 3/4"	No
50.259	500 x 0.1	17.6 x 0.005		320 x 0.1	7700 x 1	3 1/2"	3 3/4"	7/8"	3 7/8" dia		No
50.245	500 x 0.1	17.6 x 0.001	16 x 0.001	320 x 0.01		4 3/4"	3 1/8"	7/8"	3 1/8"	2 1/4"	Yes



**1 DIAMOND SCALE**

Weighs in grams, ounces, pennyweight and carats. Fold-up plastic cover protect keyboard and display. Has a separate draft shield which folds up. Comes with a small tray for holding stones, a small scoop, tweezers and a 10 gram calibration weight. Uses 3 AG13 batteries which are included or can be powered with the supplied USB cord, which is plugged in a computer. Comes with a soft protective case.

No. **50.260** 20 gram model

No. **50.261** 50 gram model



**2 DIAMOND SCALE**

Weighs in grams, ounces, troy ounces, pennyweight and carats. Also has parts counting. Touch screen display makes this a very easy scale to use. Has a flip-top draft shield. Comes with a 10 gram calibration weigh, a removable flat round tray for holding items to be weighed and a scoop tray. Uses 4 AAA batteries which are supplied.

No. **50.262**



**3 DIAMOND SCALE**

Weighs in grams, ounces, carats and grains. Removable pan cover can be used to hold items to be weighted. Comes with a soft case. Uses 2 CR2032 batteries which are included.

No. **50.256**



**4 DIAMOND SCALE**

Weighs grams, pennyweight, carats and grains. Comes with tweezers, a 5 gram and a 10 gram calibration weight. Draft shield folds up. Uses 2 AAA batteries which are supplied.

No. **50.303**

No.	grams	ounces	ounces troy	penny weight	carats	grains	Scale Wide	Scale Deep	Scale High	Pan Wide	Pan Deep	Parts Counting
<b>50.256</b>	60 x 0.01	2 x 0.001			300 x 0.01	920 x 0.1	5 <sup>3</sup> / <sub>8</sub> "	2 <sup>7</sup> / <sub>8</sub> "	5/8"	3 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>2</sub> "	No
<b>50.260</b>	20 x 0.001	.7 x 0.0001		12 x 0.001	100 x 0.01	310 x 0.01	3 <sup>1</sup> / <sub>2</sub> "	5 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>8</sub> " dia		No
<b>50.261</b>	50 x 0.001	1.7 x 0.0001		31 x 0.001	250 x 0.01	750 x 0.01	3 <sup>1</sup> / <sub>2</sub> "	5 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>8</sub> " dia		No
<b>50.262</b>	10 x 0.001	.35 x 0.0001	.32 x 0.0001	6 x 0.001	50 x 0.001	155 x 0.001	2 <sup>3</sup> / <sub>4</sub> "	5 <sup>3</sup> / <sub>8</sub> "	1 <sup>3</sup> / <sub>8</sub> "	1" dia		Yes
<b>50.245</b>	500 x 0.1	17.6 x 0.001	16 x 0.001	320 x 0.01			4 <sup>3</sup> / <sub>4</sub> "	3 <sup>3</sup> / <sub>8</sub> "	7/8"	3 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>4</sub> "	Yes
<b>50.303</b>	10 x 0.001			6 x 0.001	50 x 0.001	155 x 0.01	2 <sup>1</sup> / <sub>2</sub> "	4 <sup>1</sup> / <sub>2</sub> "	1 <sup>5</sup> / <sub>8</sub> "	1" dia		No



### 1 BENCH SCALE

Weighs in grams, ounces, troy ounces and pennyweight. Large plate makes weighing large objects easy. Use a 9 volt battery which is included.

No. 50.265



### 2 VIGOR ELECTRONIC SCALES

Features:

- Advanced load cell technology for accurate readings
- Full digital calibration
- LCD digital readout
- One-touch zeroing
- Automatic tare capacity
- Low battery and overload indicators for protection
- 9V battery operated for complete portability
- Optional AC plug-in adapter

#### Scale specifications:

Capacity and Sensitivity

No.	Carat	Platform Size	Overall Dimensions
51.01550*	50 x 0.01	1 1/8"	3" Wx 5 1/8" Dx 1 1/2" H

\*Protective carrying case is included.

No.	grams	ounces	ounces troy	penny weight	carats	grains	Scale Wide	Scale Deep	Scale High	Pan Wide	Pan Deep	Parts Counting
50.265	1000 x 0.1	35 x 0.01	32 x 0.01	640 x 0.1	---	---	6 1/4"	7 3/8"	1 3/8"	6 1/4"	6 1/8"	No
50.01550	10 x 0.001	.35 x 0.0001	---	6 x 0.001	50 x 0.001	---	3"	5 1/8"	1 1/2"	1 1/4" dia	---	---



### 3 PENNYWEIGHT/GRAM SCALE

Similar in design to the Hamilton scales, but economically priced. Pennyweights and grams are combined on one scale strip. 40 dwt (60 g) capacity.

No. 51.0906



### 4 DIAMOND SHOVELS

No. 51.095 Nickel-plated chrome finish



### 5 GRAM WEIGHT SET

238 g capacity.

No. 51.093

## GROBET USA® SCISSORS & SHEARS

In keeping with a tradition of excellence in metal forming and finishing, these scissors and shears are made of drop forged steel, expertly tempered and hardened. The edges are hand ground to retain a keen cut after long use. Although the line is limited by number, the uses and application areas are extremely varied. For shop, office, hobby, craft and precision use.



### 1 SHORT STRAIGHT BLADE SCISSORS

Stainless steel, near razor-sharp blades cut fine wire, filament threads, nickel ribbon, etc. Widely used in precision applications. Overall length is 3½" (89 mm) and length of cut is ½" (13 mm).

No. 53.201



### 2 SHORT CURVED BLADE SCISSORS

Stainless steel, near razor-sharp blades cut fine wire, filament threads, nickel ribbon, etc. Widely used in precision applications. Overall length is 3½" (89 mm) and length of cut is ½" (13 mm).

No. 53.205



### 3 STRAIGHT MEDIUM BLADE SCISSORS

Stainless steel straight blade is near razor-sharp to cut fine wire, filament threads, nickel ribbon, etc. Widely used in precision applications. Overall length is 4¼" (108 mm) and length of cut is ¾" (19 mm). Design of points is well suited for providing access to hard-to-reach areas. Made in Germany.

No. 53.220



### 4 CROWN SCISSORS

For hard wire or sheet up to B & S #27 and soft wire up to B & S #16. With short, stubby blades ⅝" (14 mm) long and ¼" (6 mm) wide. No. 53.630 with serrated blades is recommended for cutting wires. Overall length is 4½" (105 mm) with large loop handles. Made in Germany.

No. 53.620 Straight blades

No. 53.630 Straight serrated blades

No. 53.640 Curved blades



### 5 COMPOUND ACTION SHEARS

Suited for straight or shallow arc cutting. Cuts copper up to B & S #16 with half the effort of ordinary shears. Serrated blades prevent slippage. Overall length is 10" (254 mm) with a 1½" (38 mm) length of cut. Made in U.S.A.

No. 53.836



### 6 ALL-PURPOSE STANDARD SHEARS

Excellent medium to heavy-duty shears for leather, cardboard, etc., and up to 22 B & S gauge copper. Double-plated chrome over nickel, with black handles, for complete rust protection and long life. Tension can be adjusted easily with screwdriver. Overall length is 8" (203 mm) and length of cut is 2¼" (73 mm). Made in Germany.

No. 53.350



### 1 STRAIGHT SHEARS

Similar to No. 53.350 except the handles are longer and the blade is shorter for greater leverage. Will cut copper up to B & S #20. 7¼" (184 mm) long with a 1½" (38 mm) length of cut.

No. 53.820



### 2 LIGHTWEIGHT METAL SNIPS

For cutting templates and patterns from medium hard metal sheet up to B & S #20 or soft sheet to B & S #16. Available with straight or curved blades (for cutting circular shapes). Regular scissors handles. Overall length is 7" (178 mm) with a 1½" (38 mm) length of cut. Made in Germany.

No. 53.800 Straight blade

No. 53.802 Curved blade



### 3 LIGHTWEIGHT METAL SNIPS

For cutting templates and patterns from medium hard metal sheet up to B & S #20 or soft sheet to B & S #16. Plain handles. Overall length is 7" (178 mm) with a 1½" (38 mm) length of cut. Made in Germany.

No. 53.804 Straight blade

No. 53.806\* Straight blade

No. 53.808 Curved blade

No. 53.810\* Curved blade

\*Have return springs in handle.



### 4 SOLDER CUTTER

Solder sheets can be easily cut in clipped pieces. Sheets are placed on bottom jaw and snipped. Pieces dropout cleanly. These can also be used to cut wire solder by inserting the wire into the side hole.

No. 53.812 1.5 mm size



### 5 JEWELERS' SHEARS with LEAF SPRINGS

Long handle permits greater flexibility in cutting. Excellent for clipping chains, solder and thin metal. Jaws are polished. Overall length is 7" (178 mm).

No. 53.0917 Straight blade

No. 53.0927 Curved blade



### 6 MULTI-PURPOSE SCISSORS

Commonly called electrician scissors, but used by anyone who wants extra cutting power from a short scissor. Only 5" (127 mm) long but will cut medium gauge wire. Double plated, chrome over nickel with notches and chrome handles. Length of cut 1¾" (44 mm).

No. 53.286



### 1 SET of WATCHMAKERS' SCREWDRIVERS

Precision-made, with set screw to hold blade firmly. Hexagonal swivel heads prevent rolling and each handle is color banded for size identification. Lengths are proportioned to blade size and range from 4 1/8" to 3 1/4" (105 to 83 mm). Sets contain all nine blade sizes, 3.00 mm to .60 mm (.118" to .023"). Swivel stand has compartments for separate blades in the center.

No. 52.0905 Set of screwdrivers in wood box



### 2 SCREWDRIVER SETS

Designed especially for watchmakers. Nickel-plated to prevent rust. Reversible, double-ended blades and threaded ferrules for easy replacement. Color identified heads for quick selection.

See chart below for sizes.

No. 52.0762 Set of seven, numbers 3 to 9 for baguette and pocket sizes, in polished hardwood stand with carborundum sharpening stone built into base and a side compartment for spare blades

No. 52.0730 Set of seven, numbers 3 to 9 for baguette and pocket sizes, in box

No. 52.0763 Replacement stand

No. 52.0732 Set of seven replacement blades for Nos. 52.0730 and 52.0762

#### Individual Blades

Blades sold by dozen.

Blade Diameter		No.	Blades
(in)	(mm)		
.059"	1.50	3	52.0735/3
.050"	1.28	4	52.0735/4
.047"	1.20	5	52.0735/5
.039"	1.00	6	52.0735/6
.031"	.80	7	52.0735/7
.027"	.70	8	52.0735/8
.024"	.60	9	52.0735/9

### 3 WATCHMAKERS' SCREWDRIVERS

Set of screwdrivers on swivel stand Individual Watchmakers' Screwdrivers and Blades

Blades sold by dozen.

No. 52.540



Blade Diameter (in)	(mm)	Color	Screwdrivers	Blades Pk 12
.118"	3.00	Brown	52.550	52.560
.089"	2.50	Blue	52.551	52.561
.078"	2.00	Green	52.552	52.562
.063"	1.60	Purple	52.553	52.563
.055"	1.40	Gray	52.554	52.564
.047"	1.20	Red	52.555	52.565
.039"	1.00	Black	52.556	52.566
.031"	0.80	Yellow	52.557	52.567
.024"	0.60	Lilac	52.558	52.568



### 4 SCREW CHUCK SCREWDRIVER SET

Set of six well-constructed, precision screwdrivers with replaceable blades that are held firmly in the handle by means of screw chucks. Blades are made of quality tool steel, which have been heat treated for toughness and long wear. The bodies are plated and have hexagonal swivel heads which will not roll on bench. 3 1/2" (89 mm) overall length. Comes in plastic pouch.

No. 52.480

Individual Screw Chuck Screwdrivers and Blades

Blades sold in 3 packs..

Blade Size (in)	(mm)	Screwdrivers Pk of 3	Blades Pk of 3
.100"	2.54	52.482	52.492
.078"	2.00	52.483	52.493
.070"	1.80	52.484	52.494
.055"	1.40	52.485	52.495
.040"	1.02	52.486	52.496
.025"	0.64	52.487	52.497

4



### 1 NON-MAGNETIC SCREWDRIVERS

Precision screwdrivers with hexagonal swivel heads to prevent rolling, and knurled handles for firm grip. Color identifier bands allow for easy selection and set screw holds blades securely. Sold individually.

Screwdrivers	(in)	Blade Size (mm)
52.0911/2	.031"	0.80
52.0911/3	.039"	1.00
52.0911/5	.055"	1.40



### 2 ECONOMY SCREWDRIVER

Precision screwdrivers with hex shaped heads, heat treated blades range from size .80 to 2 mm. Set of 6 in plastic pouch

No. 52.320



### 4 SWISS PATTERN SCREWDRIVER SET IN PLASTIC BOX

Economical screwdrivers, with steel blades set firmly in metal handles. Hexagonal swivel head prevents rolling on bench. Overall lengths are proportional with blade sizes and range from 3 3/4" to 2 1/8" (95 to 67 mm). Set contains seven Swiss pattern screwdrivers, styles 3 through 9.

No. 52.514

#### Individual Screwdrivers

No.	Blade Diameter		Style
	(in)	(mm)	
52.521	.079"	2.00	2
52.522	.071"	1.80	3
52.523	.059"	1.50	4
52.524	.047"	1.20	5
52.525	.039"	1.00	6
52.526	.031"	0.80	7
52.527	.028"	0.70	8
52.528	.024"	0.60	9



### 3 BERGEON SET of NINE SCREWDRIVERS with STAND

Beautifully made precision screwdrivers in nine sizes: .019", .023", .031", .039", .047", .055", .065", .078" and .089" (.50, .60, .80, 1.00, 1.20, 1.40, 1.60, 2.00 and 2.50 mm) with an extra blade in each size in center compartment. Swivel heads and knurled handles with set screws to keep blades tight.

No. 5970

#### INDIVIDUAL SCREWDRIVERS and BLADES

For set No. 30009, 2639, 2631, 2868, 4063, 3044A and 5970.

Screwdrivers	Blades (pk of 10)	Blade Diameter		Screwdrivers	Blades (pk of 10)	Blade Diameter	
		(in)	(mm)			(in)	(mm)
30080/B	30080A/50	.019"	0.50	30080/H	30080A/1.60	.065"	1.60
30080/C	30080A/60	.023"	0.60	30080/J	30080A/2.00	.078"	2.00
30080/D	30080A/80	.031"	0.80	30080/K	30080A/2.50	.089"	2.50
30080/E	30080A/1.00	.039"	1.00	30080/L	30080A/3.00	.118"	3.00
30080/F	30080A/1.20	.047"	1.20	-	30080A/1.30	.051"	1.30
30080/G	30080A/1.40	.055"	1.40				

#### REPLACEMENT SCREWS - Pk 10

No. 30080/X .50 mm, No. 30080/Y .60 - 1.60 mm, No. 30080/Z 1.80 - 3.00 mm



### 5 SET of FIVE PHILLIPS SCREWDRIVERS

Knurled nickel-plated brass handle provides a sure grip. Color-coded, hexagonal head makes size identification easy and prevents rolling. With strong, heat treated steel Phillips blades. Comes in handy protective pouch. See chart below for sizes.

No. 52.0720

#### Individual Screwdrivers

Screwdriver	Blade Diameter		Color
	(in)	(mm)	
52.571	.047"	1.20	Gray
52.572	.059"	1.50	Violet
52.573	.079"	2.00	Green
52.0724	.098"	2.50	Blue
52.0725	.118"	3.00	Brown



### 1 SCREW-HOLDING SCREWDRIVER

Features self-adjusting jaws. Will hold screw straight and securely while removing or replacing. Overall length 4<sup>3</sup>/<sub>4</sub>" (121 mm).

- No. **52.850** Screwdriver with 2mm flat blade
- No. **52.852** Replacement blade, 2mm flat, pack of 3
- No. **52.853** Replacement blade with clamp, 2mm flat

- No. **52.749** Screwdriver with 1mm flat blade
- No. **52.74901** Replacement blade, 1mm flat, pack of 3
- No. **52.74904** Replacement blade with clamp, 1mm flat

- No. **52.748** Screwdriver with 2mm Phillips blade
- No. **52.74801** Replacement blade, 2mm Phillips, pack of 3
- No. **52.74804** Replacement blade with clamp, 2mm Phillips



### 3 SET of THREE REMOVERS/EXTRACTORS

Includes one each of removers/extractors noted in chart below.

No. **52.470**

#### Individual Removers/Extractors and Blades

Size (in)	Size (mm)	Removers/Extractor	Replacement Blades (pk of 3)
.078"	2.00	<b>52.473</b>	<b>52.476</b>
.059"	1.50	<b>52.472</b>	<b>52.475</b>
.049"	1.25	<b>52.471</b>	<b>52.474</b>



### 5 SCREWDRIVER SHARPENER

Spring action holds screwdriver firmly in place. Steel wheels are carefully set into body to provide even action when wheeled over stone. Overall width is 1<sup>1</sup>/<sub>16</sub>" (40 mm). Stone and screwdriver shown for illustration purposes only.

No. **52.469**



### 7 QUICK-WEDGE SCREW-HOLDING SCREWDRIVER

A metal tube slides forward over the two spring steel blades to wedge the tip in screw slot. Both plastic handle and tube are insulated against electrical shock.

No.	Blade Width		Blade Diameter		Blade Length		Overall Length	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
<b>52.864</b>	1 <sup>8</sup> / <sub>8</sub> "	3.2	.020"	.51	3"	176	5"	127

Beveled tip for smaller screws.



### 2 DOUBLE BLADE SCREWDRIVERS

Perfectly balanced, with a nickel finished knurled body to permit a firm grip and heavy pressure. Overall length 4<sup>1</sup>/<sub>2</sub>" (114 mm).

- No. **52.450** Screwdriver with flat blade, 1.5mm x 2.2mm
- No. **52.462** Screwdriver with Phillips blade, 1.5mm x 2.2mm

#### REPLACEMENT BLADES, Sold in Packs of 3

- No. **52.454** Flat 1.5mm x 2.2mm
- No. **52.453** Flat 1.5mm x 1.5mm
- No. **52.458** Flat 2.0mm x Phillips 2.2mm



### 4 10 PIECE NUTDRIVER SET

Set contains 10 color-coded nutdrivers in sizes: 3<sup>1</sup>/<sub>32</sub>", 1<sup>1</sup>/<sub>8</sub>", 5<sup>1</sup>/<sub>32</sub>", 3<sup>1</sup>/<sub>16</sub>", 7<sup>1</sup>/<sub>32</sub>", 1<sup>1</sup>/<sub>4</sub>", 9<sup>1</sup>/<sub>32</sub>", 5<sup>1</sup>/<sub>16</sub>", 1<sup>1</sup>/<sub>32</sub>" and 3<sup>1</sup>/<sub>8</sub>". The torque handle measures 1" x 3<sup>1</sup>/<sub>8</sub>" (25.4 x 79.4 mm).

No. **52.888**



### 6 MINIATURE OPEN END WRENCH SET

Six steel wrenches, with smooth black oxide finish and set in aluminum hex handles. Set is supplied with the following sizes.

Size	Opening	Size	Opening	Size	Opening
1	3 <sup>1</sup> / <sub>32</sub> "	3	5 <sup>1</sup> / <sub>32</sub> "	5	1 <sup>1</sup> / <sub>4</sub> "
2	1 <sup>1</sup> / <sub>8</sub> "	4	3 <sup>1</sup> / <sub>16</sub> "	6	5 <sup>1</sup> / <sub>16</sub> "

No. **52.464**



### 8 METAL KEY CHAIN SCREWDRIVER

With flat and Phillips blade. .065" (1.6mm) blade. Comes in pack of 24.

- No. **52.466** Gold color
- No. **52.467** Nickel color

## BEADING TOOLS



### 1 GROBET USA™ BEADING TOOLS

Used to form beads that hold diamonds and other stones in settings. Also used for tightening loose stones. Sets come in protective plastic organizer case. Handle included.

No. **77.2931** Set of 23 pieces plus handle

No. **77.2930** Set of 12 pieces plus handle

#### Individual Tools

No.	Size #						
77.2900	0	77.2906	6	77.2912	12	77.2918	18
77.2901	1	77.2907	7	77.2913	13	77.2919	19
77.2902	2	77.2908	8	77.2914	14	77.2920	20
77.2903	3	77.2909	9	77.2915	15	77.2921	21
77.2904	4	77.2910	10	77.2916	16	77.2922	22
77.2905	5	77.2911	11	77.2917	17		

No. **77.2940** Replacement handle



### 2 PEARL DRILL SET

Set of 12 drills in wood stand with cover. For drilling the holes for setting seed pearls and other round or half-round stones. Sizes 1.05 mm to 3.00 mm (.041" to .12"), with 1/8" (3.00 mm) shank. There are 2 of the 3.00mm.

No. **53.120**

#### Individual Drills

No.	(in)	Diameter (mm)	No.	(in)	Diameter (mm)
53.121	.041"	1.05	53.128	.089"	2.26
53.122	.047"	1.20	53.129	.094"	2.40
53.124	.057"	1.45	53.130	.104"	2.65
53.125	.065"	1.65	53.131	.111"	2.83
53.126	.073"	1.85	53.132	.118"	3.00
53.127	.081"	2.05			



### 3 MILLGRAIN TOOL SETS

Cup-shaped cutters on wheels used to dress up a setting, ring mounting, or any piece of jewelry, by forming a decorative bead or fine row of cuts along the edge. Sets contain six sizes plus chuck-holding handle.

No. **53.0210** Set of 6 (sizes 2,4,6,8,10,12)

No. **53.100** Set of 6 (sizes 1-6)

#### Individual Tools

No.	Size #	No.	Size #	No.	Size #
53.101	1	53.105	5	53.109	9
53.102	2	53.106	6	53.110	10
53.103	3	53.107	7	53.111	11
53.104	4	53.108	8	53.112	12

No. **37.767** Replacement Handle



### 4 BUSH PEARL DRILLS

Cup-shaped cutters on wheels used to dress up a setting, ring mounting, or any piece of jewelry, by forming a decorative bead or fine row of cuts along the edge. Sets contain six sizes.

#### Individual Tools

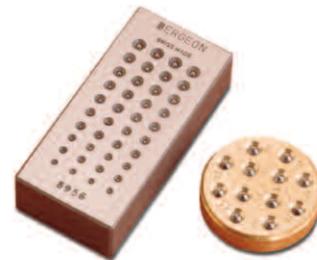
No.	Size #	No.	Size #
53.510	0.9	53.513	1.6
53.511	1.0	53.514	2.1
53.512	1.2	53.515	2.3
53.51201	1.4	53.516	2.5



### 5 BEADING TOOL STAND/HOLDER

Small, plastic organizer stand with cover, used to hold up to 24 beading tools.

No. **19.923**



### 6 BEADING BLOCKS

For reshaping ends of beading tool punches. Specially hardened steel blocks, perfectly formed and highly polished.

No. **53.0153** 40 holes

No. **53.013** 12 holes



**1 HANDLES with CHUCKS**

Rounded wood handle with chucks that open from 0 to .129" (0 to 3.3 mm). Holds a variety of tools. Ideal for beading and millgrain tools. Overall length 3" (76 mm). No. **37.764** With two chucks



**2 STEEL BURNISHERS**

Oval-shaped tool steel burnishers for smoothing of bezels around stones and smoothing other parts of soft metals. Highly polished blades are firmly set in wood handles.

**Blade Length**

Curved Blade	(in)	(mm)	Straight Blade	(in)	(mm)
<b>18.050</b>	1½"	38	<b>18.060</b>	1½"	38
<b>18.052</b>	2"	51	<b>18.062</b>	2"	51
<b>18.053</b>	2½"	64	<b>18.063</b>	2½"	64
<b>18.054</b>	3"	76	<b>18.064</b>	3"	76



**3 SLIM BLADE BURNISHERS**

Especially useful for jewel settings. Blade 1¼" (44 mm) long. No. **18.058** Curved blade  
No. **18.059** Straight blade



**4 MARGIN ROLLER/BURNISHER**

For burnishing scratches from gold, making it possible to salvage many pieces without gold loss. The ⅜" (5 mm) head consists of five steel rollers that act as rotating mallets. ⅜" (2.4 mm) shank for use with handpiece. No. **18.080**



**5 FACETED GEM SETTING OUTFIT**

For setting diamonds and other stones. Both sets consist of six gravers, six wood handles and a step-by-step model plate. Set No. 53.070 has gravers: onglette #0 and #1, flat #38 and #40 and round #50 and #52. Set No. 53.0501 has gravers: onglette #2, flat #38, knife #2, oval #65, square #6 and taper square #3. No. **53.070**  
No. **53.0501**



**6 TUBE HOLDERS**

Seven collets, ranging in size from ½" to ¼" (0.8 to 6 mm) firmly hold tubes for stone setting without collapsing. Collets fit into wood handle with screw chuck. No. **53.150**



**1 THE NEW FINAL TOUCH**

For quick and secure tightening of both snap-in and hand-set round prong settings. Tightens all four or six prongs with one light tap. Includes urethane base and five different size punches. Base holds 12 studs.  
No. 53.192



**2 BEZEL PUSHER**

Grooved steel tool mounted in wood handle for pushing bezels around stones.  
No. 53.140



**3 BEZEL ROLLER**

Has a half-round, highly polished, steel head for rolling bezels around stones in rings, pendants, broaches etc.  
No. 53.142



**4 PRONG LIFTER**

Especially designed to gently and easily pry prongs loose from stones when remounting, resetting or retipping. A real time saver.  
No. 53.143  
No. 53.144



**5 PRONG PUSHER**

Handy tool for pushing prongs or crown points around stones. Steel tool mounted in wood handle.  
No. 53.146



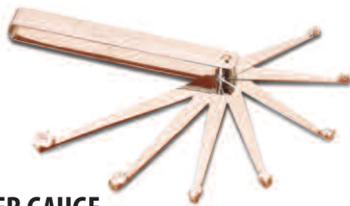
**6 PEARL DRILLING VISE**

Holds all popular size pearls securely in position for drilling. Knurled locknuts provide quick clamping and releasing action.  
No. 53.0660



**7 BRACELET HOLDER**

Saves time when setting stones, while eliminating the need for messy shellac. Suitable for prong, pave or channel settings on bracelets up to 1/2" (7 mm) wide and will not mar or distort. Has space on outer side for clasps. Made of aluminum with diameter of 3 1/2" (89 mm). Hex wrench included.  
No. 43.060



**8 DIAMOND SELLER GAUGE**

Ideal for closing the sale without using expensive stones. Cubic zirconia, mounted on stainless steel arms, folds within a protective cover when not in use. Each arm has the size of the stone in carats and millimeters. Comes in compact leather case. Ten sizes ranging from 0.10 to 2 carats  
No. 35.555 .



**9 TEXTURING TOOLS**

Produce a sparkling finish. Available with either diamond tip or carbide tip. Tools fit into all popular style hammer handpieces. The tapping action of the handpiece produces small, bright-cut dents, pave style.

No. 53.195 Diamond tip  
No. 53.196 Carbide tip

## ELECTRIC PICKLING

Pickling is the immersion of metals in an acid solution, for the purpose of removing surface fire scale and oxides caused by heating, annealing, casting, soldering, etc. The pickle solution works better if heated to a temperature of approximately 125° F (52° C).



### 1 FERRIS ELECTRIC PICKLERS

Automatically keeps solution at the right temperature and prevents it from boiling away. Plastic basket is included with each unit for holding articles in solution.

115V	Capacity	Diameter	Height
45.302	1½" qt.	8½"	5"
45.304	1 pint	5½"	7¼"
45.306	12 oz.	5"	5¾"

220V	Capacity	Diameter	Height
45.304X	1 pint	5½"	7¼"
45.306X	12 oz.	5"	5¾"

#### Replacement Baskets

No. 45.312 1½" quart

No. 45.314 1 pint

No. 45.315 12 oz.

### 2 PORCELAIN PICKLING PAN

Used for boiling pickling solutions containing metal pieces to be cleaned and brightened. 4 oz. capacity.

No. 45.200

## PICKLING COMPOUNDS

Dry, granular acid compounds for removing oxides caused by heating precious and non-ferrous metals, such as gold, silver, copper, bronze, brass, German silver, etc. These substitutes for sulfuric acid are non-flammable and non-explosive.



### 3 PRO-CRAFT® PRE-PO PICKLE

Pre-cleans before soldering; pickles after heating and soldering, to remove oxides. Works well even at room temperature. When solution is exhausted it turns from pink to amber to alert you. Biodegradable and mixes with water to make solution.

No. 45.100 Makes one quart of solution

No. 45.102 Makes one gallon of solution



### 4 PRO-CRAFT® PICKLE

Standard sodium bisulfate compound is mixed with warm water to make economical solution. Works best at 125° F (52° C).

No. 45.122 10 oz. can makes one quart

No. 45.124 2½" lb. can makes one gallon

No. 45.126 40 lb. drum makes 16 gallons



### 5 GRIFFITH PICKLE SAFE

A dry, granular acid compound used to pickle gold, silver, and other non-ferrous metal castings.

No. 45.135 10 oz makes one quart.

No. 45.136 2½" lb. makes one gallon



### 6 GRIFFITH NICKEL PICKLE

A pickling compound for nickel, German silver, brass, bronze, copper, and imitation gold metals.

No. 45.140 10 oz. makes one quart

No. 45.141 2½" lb. can makes one gallon

No. 45.142 40 lb. makes 16 gallons



### 7 SPAREX PICKLE

Dry granular acid compound specially made for pickling and the cleaning and removing of surface oxidation and scale from copper and silver. Non-flammable and non-explosive.

No. 45.127 2½" lb. can makes one gallon

No. 45.128 10 oz. can makes one quart

No. 45.129 45 lb. drum makes 18 gallons

## "THIRD HAND" HOLDERS

These handy holding devices are available with either round or horseshoe bases. Each are heavy, non-tipping bases equipped with ball joint attachments which can position work at any angle. Cross-locking tweezers and various types of clamps will fit on these bases. Handy for positioning pieces to be joined by solder or adhesive, freeing both hands.



### 1 "THIRD HAND" with TWEEZERS

Cross-locking, 6½" tweezers closes when released. Mounted on heavy-duty round or horseshoe base.

No. 54.080 Round base

No. 54.090 Horseshoe base



### 2 DOUBLE CLAMP-ON STAND

No. 54.085 Round base

No. 54.095 Horseshoe base



### 3 CERAMIC RING STAND

Mounted on base with swivel to provide the exact position or angle desired. 6" ceramic rod is much cleaner than carbon and holds heat better. Clamp releases rod for replacement.

No. 54.131 Ring stand

No. 54.130 Replacement carbon rod

No. 54.132 Replacement ceramic rod



### 4 CARBON RING STAND

Holds rings, leaving both hands free. Mounted in fixed position on asbestos-free base. Length of rod is 6".

No. 54.128 Ring stand

No. 54.130 Replacement carbon rod

No. 54.132 Replacement ceramic rod



### 5 SOLDER/ASSEMBLY STATION

Large work area 12" x 9½". Fully adjustable and interchangeable holding fixtures. Slotted/grooved jaws to grip unusually shaped items. 3X magnifier for close-up work. Rubber edging to hold the station in place.

No. 54.025 Solder/assembly station

No. 54.211 Replacement asbestos free soldering board 6" x 12"

Note: The surface of the station is not flame or heat resistant. Use No. 54.211 asbestos free soldering board (sold separately) which withstands temperatures up to 3000° F (1649° C) for soldering or torch use.



### HEAD and SHANK TWEEZERS

Stainless steel slide-locking tweezer securely holds the setting and shank in position for easy soldering of solitaires. One tip is curved to hold shank, the other serrated to grip setting.

6 No. 57.0398 Economy, Overall length 5½"

7 No. 48.235 Premium Quality

### 8 RING SOLDERING TWEEZERS

Holds rings from inside shank for easy soldering.

No. 48.230



**1 TITANIUM SOLDER PICS**

Colored metal handles to eliminate contamination of different solders. Titanium is best for precious metals except platinum. 6 3/8" long. Handle has 6 sided end to stop tool from rolling on bench.

- No. 54.778 Blue handle
- No. 54.779 Gold handle
- No. 54.780 Red handle



**3 SOLDER PIC - METAL HANDLE**

Soldering pic with titanium tip and metal handle. For gold and silver solder. No. 54.774



**5 COMBINATION BLOWER/SOLDER-OFF BULB**

Rubber body with Teflon tip, makes it suitable as a blower or for suctioning excess molten solder.

No. 54.135



Replacement parts:

- No. 54.054 Round tapered Carbon
- No. 54.055 Small pencil Carbon
- No. 54.068 Clip with electrodes
- No. 54.060 Clamp with Lug
- No. 54.064 Carbon Stand
- No. 54.095 "Third Hand" Holder
- No. 54.830 Silver Solder Paste with Flux
- No. 54.833 Gold Solder Paste with Flux



**2 SOLDER PIC**

Wood handle with sharp pointed tip for placing, holding and positioning solder in just the right place.

- No. 54.771 Gold & silver soldering with titanium tip
- No. 54.772 Platinum soldering with tungsten tip



**4 TUNGSTEN SOLDER PIC**

With wood handle, tungsten solder pic for use with platinum. 6" long. No. 54.775



**6 SET OF 5 CARBONS**

Includes carbons: 54.054 - round taper, 54.055 - 2 small pencil, 54.057 - large cylindrical, and 54.058 - large cylindrical/flat.

No. 54.066

Replacement Carbons:

- No. 54.054 Round taper
- No. 54.055 Small pencil

**7 PRO-CRAFT® ELECTRIC SOLDERING MACHINE**

- No torch or gas tanks needed.
- Used for hard or soft soldering.
- Up to 2000° F (1093° C).
- Demagnetizes watch movements, small instruments and small tools.
- Low voltage unit is shock resistant – your hands may safely touch any part of the carbon holders or contact clips.

Compact, efficient machine for soldering rings, jewelry, spectacle frames or any piece where hard or soft solder is needed. The heat range is acceptable for soldering very light to heavy items. Heat control is easily achieved by turning the selector knob. The heat is produced electrically, without flame, by touching a carbon electrode to the work to be soldered. The current passing through the carbon will heat the object in a matter of seconds. Carbons are copper plated to insure good contact. The large carbon holder can be adjusted to use carbons both horizontally or vertically. Maximum 1000 watts. Soldering machine comes with foot control switch, 54.064 - Complete Carbon Stand, 54.066 - Set of 5 carbon lead wires, and instructions. 90 day warranty. Ship weight 12 lbs.

- No. 54.050 110 volt model - 15 amps
- No. 54.050X 220 volt model - 7.5 amps



### 1 BLOWPIPE CHARCOAL

4½" x ¾" x 1" size is most popular for soldering with blowpipes.  
Sold by package of 12.  
No. 54.180



### 2 GROBET USA® CHARCOAL SOLDERING BLOCKS

A time proven technique for effective soldering. Under flame, the charcoal glows and reflects heat back in to work, making the flame more efficient. Select, close-grained, knot-free wood is chemically prepared with a special process for soldering. Easily punctured to hold work. (Not heat rated)

Box of 6	Individual	Size
54.151	54.152	3½" x 2¼" x 1½"
54.161	54.162	4¾" x 3" x 1½"
54.171	54.172	7" x 4" x 1½"
54.181	54.182	140mm x 70mm x 30mm



### 3 LENK SOLDERING PENCIL

Melts solder in 90 seconds. Perfect for fine jewelry work.  
No. 54.0960 Pencil



### 4 ADJUSTABLE SOLDERING BOWL

Stainless steel bowl holds workpiece when soldering, leaving both hands free. Mounted on solid base, bowl adjusts in any position for use on any job. Bowl is 4" in diameter and 1½" deep. Comes filled with Therma-Guard (No. 54.469) and can also be used with pumice stone.  
No. 54.0720



### 5 ROTATING NON-ASBESTOS SOLDERING TABLE

Grooved work surface disk is 4½" in diameter. Rotates on ball bearings, lazy-susan style, providing 360° access. Perfect for soldering small parts.  
No. 54.116 Soldering table  
No. 54.117 Replacement disk



### 6 ANNEALING PAN

Allows positioning of work while annealing or soldering on a heat reflecting material, such as pumice. Rotates on ball bearings, providing 360° access. Pan is 12" in diameter and comes with 2½" lbs. of lump pumice. Ship weight 6 lbs.  
No. 54.120 Annealing pan  
No. 54.122 Replacement pumice, 2-1/2 lbs. (1.1 kg)



**1 GRIFFITH SOFT SOLDERING FLUX**

For use with lead-tin and lead-tin bismuth solders which melt under 450° F (232° C).  
No. 54.423 4 oz.



**2 GRIFFITH PRIP'S FLUX**

A liquid hard soldering flux that prevents the formation of firecoat and firescale during soldering.  
No. 54.501 4 oz..  
No. 54.504 32 oz.  
No. 54.502 8 oz.  
No. 54.505 1 gal.  
No. 54.503 16 oz.



**3 BORAX FLUX**

Controls oxidation during the melting process.  
No. 22.820 8 oz.



**4 BORAX**

Prepared borax for making flux for soldering jewelry. Dissolves easily when rubbed on borax slate. Comes in 4 oz. cone.  
No. 54.252



**5 GRIFFITH BORAX POWDER**

Used for making soldering and casting fluxes.  
No. 22.822 16 oz.



**6 GRIFFITH BORIC ACID POWDER**

Used as an anti-oxidizer soldering or in making flux.  
No. 54.522 7 oz.  
No. 54.523 16 oz.



**7 GRIFFITH BORIC ACID GRANULES**

Used as an anti-oxidizer soldering or in making flux.  
No. 54.520 7 oz.  
No. 54.521 16 oz.



**8 VIGOR® CREAMY SILVER BRAZING FLUX**

Spreads quickly and wets the surface completely so alloys flow better. Protects from oxidation while heating and retards discoloration of brazed area. Working temperature range is 1100°- 1350°F (593°- 732°C). Excess flux can be removed with hot water. No waste or loss due to drying, simply add water until creamy.  
No. 54.0340 2 oz.  
No. 54.0341 8 oz.



**1 BATTERN'S® SELF PICKLING HARD SOLDERING FLUX**

For over 50 years, the proven standard of quality. Makes hard soldering as easy as soft soldering. Use on gold, silver, platinum and other metals with high melting points. Preserves temper and color of metal and the adhesive qualities of this liquid flux hold solder in place.

- No. 54.400 1 oz.
- No. 54.402 3 oz.
- No. 54.404 8 oz.
- No. 54.406 16 oz.
- No. 54.408 32 oz.
- No. 54.410 1 gal., ship weight 9 lbs.



**2 GRIFFITH SELF PICKLING FLUX**

A liquid hard soldering flux for metals which melt under 2000° F (1093° C).

- No. 54.510 1 oz.
- No. 54.511 4 oz.
- No. 54.512 8 oz.
- No. 54.513 16 oz.
- No. 54.514 32 oz.
- No. 54.515 1 gal.



**3 DANDIX® PASTE FLUX**

For use in low temperature brazing and silver soldering ferrous and non-ferrous metals. Begins to dissolve oxides at 800°F (427°C) and is fluid- active between 1100° and 1600°F (593° and 871°C). Contains no fluoride.

- No. 54.440 1½" oz.
- No. 54.442 8 oz.
- No. 54.444 16 oz.



**4 GRIFFITH GRIFFLUX #1**

A hard soldering paste flux for use on all ferrous and non-ferrous metals and alloys.

- No. 54.445 1½" oz.
- No. 54.446 8 oz.
- No. 54.447 16 oz.



**5 PRO-CRAFT® JEL-FLUX®**

For hard soldering with flame. Stays put like a paste, will not run like a liquid and yet is transparent. Eliminates blind joint soldering. Jel-Flux produces less oxides and residues, allowing for faster pickling. With no toxic fumes and it's biodegradable.

- No. 54.438 2 oz.



**6 GROBET USA® FLUX DISPENSER PUMP**

Compact, convenient, 4 oz. capacity polyethylene bottle, with stainless steel pump-action lid. Dispenses just the right amount of flux or other liquids. Pump the lid lightly and the fluid is dispensed into the well. The one-way pump holds the fluid in the well of the cap, preventing contamination of the unused fluid. For best results and to avoid clogging, the well should be emptied and the cap cleaned between uses. Flux not included.

- No. 54.415



**1 ASBESTOS-FREE PAD for PLATINUM**

Ideal for bench protection. Steadying pins can be inserted. Withstands temperatures up to 3000° F (1649° C).  
 No. 54.210 Measures 6" x 6" x 1/2"  
 No. 54.211 Measures 6" x 12" x 1/2"  
 No. 54.212 Measures 12" x 12" x 1/2"



**2 MAGNESIA SOLDERING BLOCK**

Soft, fire-proof material, into which work or pins can be easily pressed. Measures 6" x 3" x 1 1/2". Withstands temperatures up to 2000° F (1093° C).  
 No. 54.186



**3 CERAMIC SOLDERING BLOCK**

Round block has holes, approximately 1/8" in size. Withstands temperatures up to 6000° F (3315° C). Provides a permanent flat surface with very low loss of heat.  
 No. 54.0965 4 1/2" (114 mm) diameter



**4 HONEYCOMB DESIGN CERAMIC SOLDERING BLOCKS**

Contain no asbestos. Lightweight blocks reflect heat and perforations hold pins to keep work in place while heating. Withstands temperatures up to 2000° F (1093° C).  
 No. 54.215 Measures 3 3/4" x 5 1/2" x 1/2"  
 No. 54.216 Measures 5 1/2" x 7 3/4" x 1/2"



**5 CORDIORITE SOLDERING BOARD with GROOVES**

Non-asbestos. Flat on one side, with grooves on the other, for holding shanks, chains, etc. Withstands temperatures up to 2000° F (1093° C).  
 Measures 7 1/2" x 7 1/4" x 1/8".  
 No. 54.219



**6 CORDIORITE SOLDERING BOARD with RUBBER FEET**

Non-asbestos. Withstands temperatures up to 2000° F (1093° C). Rubber feet keep board raised above bench.

No.	Size
54.218	6" x 6" x 1/2"
54.220	6" x 12" x 1/2"



**HAZARDOUS**

**7 GRIFFITH ANTI-FLUX**

Effectively prohibits the flow of solder to unwanted areas.  
 No. 54.464 4 oz.



**8 PRO-CRAFT® YELLOW OCHRE**

When this powder is mixed with water or alcohol, it can be used to prevent the flow of solder to unwanted areas, such as a previously soldered joint or the moving parts of a catch. 1/2 lb. box.  
 No. 54.470



**9 GRIFFITH'S YELLOW OCHRE**

Just add small amounts of Griffith's Yellow Ochre with alcohol to area needed to be soldered.  
 No. 54.471 2 oz. powder

## 1 FIRESCOFF™ CERAMIC COATING

Firescoff™ is a revolutionary heat activated ceramic spray coating. Firescoff™ provides an all-in-one scale preventer, high performance non-fluorinated flux, for both hard and soft solder, and the convenience of easy removal in warm water. Jewelry and gemstones evenly coated with Firescoff™ are protected from scaling. Firescoff™ transforms from a clear liquid mist to a protective ceramic anti-oxidation barrier with built-in flux. The Firescoff™ coating can be removed by simply rinsing jewelry in warm water or placing jewelry briefly in an ultrasonic cleaner.

No. 54.485 FS Soldering Flux 4 FL OZ

No. 54.486 RH Soldering Flux 4 FL OZ



## 2 VIGOR® HEAT SHIELD PROTECTIVE PASTE

Protects components under direct 5000°F (2760°C) flame. Not necessary to remove stone before soldering. Prevents oxidation and is odorless and non-toxic. Good for dozens of applications. Washes off with water.

No. 54.448 1 lb. jar

No. 54.449 2 oz. tube



## 3 HEAT SHIELD™ Hands Free™ SOLDERING STATION

It instantly facilitates precise positioning of items to be soldered. Virtually eliminates need for jig devices or investment. Precious stones, enameling, solder joints are protected. Flame resistant, Water removable, Non-toxic, Reusable. Similar to Heat Shield Paste but the consistency is thicker to hold pieces to be soldered in place.

No. 54.450

No. 54.451 10.5 oz refill



## 4 THERMA-GUARD PROTECTIVE BLANKET

Made of Silquar, a unique ceramic material which forms a protective blanket around any stone or jewel while adjacent metal parts are being soldered or heated. Resists temperatures up to 2000°F (1093°C), Odorless, non-toxic and easy to use. Comes in 2 oz. jar, good for hundreds of jobs, because it's reusable.

No. 54.469



## 5 STOP FLOW ANTI-FLUX

Prevents solder from flowing to unwanted areas.

No. 54.472 ¼ oz.



## 6 KOOL-JOOL

Protects jewels from heat while soldering. No need to remove jewels from settings (except opals). If flame is used for soldering, the jewel will stay cool. Rinses off in plain water. 8 oz. jar.

No. 54.468



**1 STAY-BRITE SOLDER**

High strength silver-bearing solder melts and flows at 430°F (221°C). Provides strength without distortion caused by high temperature brazing. Kit contains ½ oz. of solder and ½ oz. of flux.

No. 54.452 Kit

No. 54.456 1 lb. spool of 3/4" Stay-Brite solder



**2 LEAD FREE SOLDER**

Excellent for use in any soft solder applications. Does not contain any lead, antimony or zinc. Free flowing and produces a bright white finish.

No. 54.811



**3 STAY-CLEAN FLUX**

No. 54.453 4 oz.

No. 54.454 16 oz.

No. 54.455 32 oz.



**4 SOLDER PASTE with FLUX**

Ingenious dispenser contains solder with flux. The proper amount of solder and flux can be placed at the exact point required, eliminating waste and improving the appearance of the joint. Solder contains no cadmium.



**5 LOW TEMPERATURE SOLDER**

Excellent for use at low temperature of 430°F (221°C). Contains no lead or corrosive materials. Easy to use, paste dispenser contains the proper amount of solder and flux. Five times as strong as ordinary solder and will not tarnish.

No. 54.801

No.	Type	Quantity	Melting Point	
			°F	°C
54.830	Easy - silver	½ oz.	1240	671
54.831	Medium - silver	½ oz.	1275	691
54.832	Hard - silver	½ oz.	1365	741
54.833	Yellow gold, 14K	1 dwt.	1265	685
54.834	White gold, 14K	1 dwt.	1160	627

*Call for current pricing.*



**6 TIX ANTI-FLUX®**

Prevents solder from flowing to unwanted areas. Brushes on easily. ½ oz. bottle.

No. 54.462



**7 TIX FLUX®**

A non-corrosive flux, harmless to hands or clothing. Washes off with water even after drying. Works with any soft solder. ½ oz. bottle.

No. 54.460



**8 TIX SOLDER**

Hardest soft solder on earth. Melts at 275°F (135°C) and has a holding power of 4300 PSI. Adheres to all ordinary solderable materials and works with gun, iron, torch or soldering machine. Stays white and does not tarnish. Comes in 3" sticks, with 20 sticks per package.

No. 54.808



### 1 "N"-BRAND GOLD SOLDERS

Superior color, ductility and strength. All are easy flowing. Match karat to the work being soldered. Packed in envelopes of 1 dwt. each.

For Karat	White	Melt Point		Yellow	Melt Point	
		°F	°C		°F	°C
Low K	—	—	—	<b>54.626</b>	1325	718
8K	—	—	—	<b>54.638</b>	1385	752
10K	—	—	—	<b>54.640</b>	1320	716
14K	<b>54.614</b>	1430	777	<b>54.644</b>	1315	713



### 2 CLIPPED SOLDERS

#### Gold

In .04" square flat pieces, ready to use. Matches karat color exactly.  
No. **54.652** One dwt. (1.55 g) for 10K yellow

#### Silver

.04" square flat pieces, Easy Flo grade. Ready to use. 1/4 oz. in bottle.  
No. **54.750**



### 3 SILVER SOLDERS

Available in sheets or wire coils.

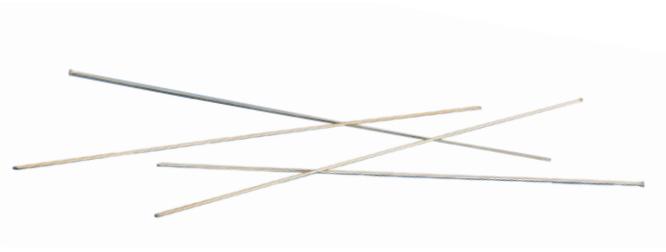
Grade	Melting Point		Sheet 1/4 oz	Wire .031" 1 oz (28 g)
	°F	°C		
Easy Flo*	1325	718	<b>54.700</b>	<b>54.720</b>
Easy	1240	671	<b>54.701</b>	<b>54.722</b>
Medium	1275	691	<b>54.702</b>	<b>54.732</b>
Hard	1365	741	<b>54.703</b>	<b>54.742</b>

\*Contains cadmium.

#### 10K GOLD WIRE SOLDER (not shown)

One dwt. for 10K yellow .02" diameter.

No. **54.660**



### 4 SILVER ALLOY SOLDERING RODS

Ideal for soldering non-precious and gold filled jewelry. Silver alloy rods have flux core eliminating the need for additional flux or cleaning agents. 6" long x 1/32" diameter solder rods provide a strong, permanent bond with a gold-tone finish. Each rod contains .129 dwt. of silver. Melting temperature 1275° F (691° C).

No. **54.755** Pack of 4 rods

No. **54.756** Pack of 12 rods

**Call for current pricing.**

### 5 SOLDER CUTTER

Solder sheets can be easily cut in clipped pieces. Sheets are placed on bottom jaw and snipped. Pieces drop out cleanly. These can also be used to cut wire solder by inserting the wire into the side hole. Available in two sizes; 1.5 mm and 3 mm.

No. **53.812** 1.5 mm



GOLD TESTING



**1 PROFESSIONAL GOLD TESTER - Model GXL-18**

Six to eighteen karat range, state-of-the-art electronic gold testing technology from Tri-Electronics. Technological breakthrough that allows for the measurement of low to high karat gold products, assuring the buyer of gold content in the most critical gold alloys. Measures 12" x 10" x 3" (305 x 254 x 76 mm). UL listed. Three year warranty. Operates using two 9 volt batteries (not included).

- No. **56.762** 110 volt model
- No. **56.766** Replacement gel tube
- No. **56.769** Pro cleaning solution
- No. **56.784** Adapter
- No. **56.783** Replacement sensor
- No. **56.787** Lead wires
- No. **56.791** Test plate



**2 PROFESSIONAL GOLD TESTER - Model GXL-24 PRO**

Six to twenty four karat range, state-of-the-art electronic gold testing technology from Tri-Electronics. Technological breakthrough that allows for the measurement of low to high karat gold products, assuring the buyer of gold content in the most critical gold alloys. Measures 12" x 10" x 3" (305 x 254 x 76 mm). UL listed. Three year warranty. Operates using two 9 volt batteries (not included).

- No. **56.763** 110 volt model
- No. **56.767** Replacement gel tube
- No. **56.769** Pro cleaning solution
- No. **56.790** Replacement sensor
- No. **56.787** Lead wires
- No. **56.791** Test plate
- No. **56.763A** Adapter



**3 GOLD TESTER - Model GT-3000**

The most accurate, low-cost tester available, backed by dependable service and built by Tri-Electronics, the inventor of electronic gold testers. Measures white, yellow, pink and green gold in a full range of values from 6 to 18 karat. No dangerous chemicals or mixing of fluids, so it's ecologically safe. Measures 12" x 9" x 1 1/4" (305 x 229 x 44 mm). UL listed. Three year warranty. Also operates using two 9 volt batteries (not included).

- No. **56.782** 110 volt unit
- No. **56.766** Replacement gel tube
- No. **56.769** Pro cleaning solution
- No. **56.783** Replacement sensor
- No. **56.787** Lead wires
- No. **56.791** Test plate



**4 GOLD TESTER - Model GT-4000**

Accurately measures white, yellow, pink and green gold, along with platinum, in a full range to 24 karat. Accurate to the nearest karat in the 6 to 18 karat range, plus 20, 22 and 24 karat readings. Ecologically safe with no dangerous acids or messy, harmful chemicals. Measures 12" x 9" x 1 1/4" (305 x 229 x 44 mm). UL listed. Three year warranty.

- Also operates using two 9 volt batteries (not included).
- No. **56.785** 110 volt unit
- No. **56.767** Replacement gel tube
- No. **56.769** Pro cleaning solution
- No. **56.786** Replacement sensor
- No. **56.787** Lead wires



**1 ELECTRONIC GOLD TESTER M18A9**

Features

- Starts automatically - no buttons to push
- Tests gold from 9 to 18 karats
- Distinguishes gold flash, and gold plate from solid gold
- Tests all color gold alloys
- Non-destructive testing
- Helps determine platinum
- Determines gold karat in under two seconds
- Advanced technology; patents 5080766,5128016

Two Year Warranty

No. **56.795**

No. **56.798** Test solution



**2 ELECTRONIC GOLD TESTER ET18**

Features

- Tests 10, 14, & 18 karat gold
- Distinguishes gold plate from solid gold
- Tests all color gold alloys
- Non-destructive testing
- Helps determine platinum
- World's smallest pocket size
- Tests in two seconds
- Protects investments; exposes under-karating
- Advanced technology; patents 5080766,5128016

One Year Warranty

No. **56.796**

No. **56.798** Test solution



**3 ELECTRONIC GOLD TESTER M24**

Features

- Tests gold from 9 to 24 karat
- The M24 tests 9K, 10K, 12K, 16K, 20K, 22K, & 24K
- Distinguishes gold flash and gold plate from solid gold
- Tests all color gold alloys
- Non-destructive testing
- Determines platinum Shuts off automatically increases battery life
- Tests in as little as two seconds
- Patents 5080766, 5128016

Two Year Warranty

No. **56.797**

No. **56.799** Test solution



**4 GOLD TESTING SOLUTION**

Testing solution for ET18 & M18. Comes with Activator and Electrolyte.

No. **56.798**

**5 GOLD TESTING SOLUTION**

Testing solution for M24. Testing for gold made easy.

No. **56.799**

DIAMOND/MOISSANITE TESTING



**1 PRESIDIUM GEM TESTER/COLOUR STONE**

The design of the Presidium Gem Tester is based upon the use of heat conductivity to distinguish diamond simulants from diamonds. It incorporates a sophisticated thermoelectric probe and a thermometer which ensures reliable readings. The Presidium Gem Tester can be used on mounted or unmounted stones, which can be as small as 0.02 carat. Includes an AC adapter, a soft vinyl pouch, and a hard plastic case.  
No. 56.720



**2 PRESIDIUM DUOTESTER**

Portable Diamond Testing with thermal conductivity and reflectivity measuring in the same instrument. Double your confidence in testing for diamonds against all known simulants, including Synthetic Moissanite. Operates on alkaline (AAA) batteries (not included) or AC adapter.  
No. 56.721



**3 DIAMOND BEAM DIRECT**

A unique instrument which separates real diamonds from imitation diamonds. Tests diamonds as small as .01 carat. Power supplied by AC/DC adapter or "AAA" batteries. Metal holder for testing loose stones included.  
No. 56.779



**4 PRO-CRAFT® DIAMOND BEAM I**

The DB-100 diamond tester by Tri-Electronics is our most cost-effective tester. With two-sided display and more than double the operation time under battery power. Three year factory warranty. Guaranteed low cost, timely repairs after warranty. UL Listed.  
No. 56.780 110 volt model  
No. 56.780X 220 volt model



**5 DIAMOND JET**

The DB-200 professional diamond tester by Tri-Electronics has less than a six second warm-up time and less than a two second recovery time. Positive identification of simulants and metal and improved sensitivity on small stones and white sapphire. With automatic shut-off. Full six year factory warranty. Guaranteed low cost, timely repairs after warranty. UL Listed.  
No. 56.781 110 volt model  
No. 56.781X 220 volt model



**6 PRESIDIUM MOISSANITE TESTER II**

Presidium Moissanite Tester II is a second generation moissanite tester developed using the technology of electrical conductivity. Operates on AAA batteries (not included).  
Features: • Pocket size • Carrying Case • Low-Battery consumption  
• Continuous beep when measuring moissanite  
No. 56.724

### 1 PRESIDIUM MULTI TESTER PMUT III

The Presidium Multi-Tester utilizes the combined principles of thermal and electrical conductivity from Presidium's patented technology. The measuring probes together with the electronics circuitries are designed to pick up and segregate data collected from the stones via a customized micro-controller. Within a split second, the test result will be displayed.

**Features:**

- Surface mount technology • Retractable tip to ensure the accuracy and consistent pressure between the measuring probe and gemstone • No waiting time between tests • Clear LED display for diamond, moissanite, simulants and metal • Built-in metal detector • Low battery indicator • Automatic power down

**Options:**

- AC Adapter (120v or 230v) • AAA Batteries
- No. 56.719

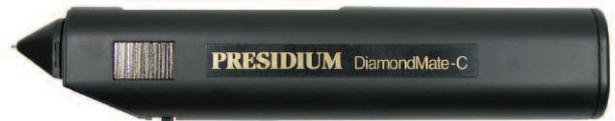


### 2 PRESIDIUM DIAMONDMATE-A

The Presidium Diamond Mate-A utilizes proven thermal conductivity testing method to instantly verify the authenticity of diamonds. The test results are indicated by visual light and audible beeps. Operates on alkaline (AAA) batteries (not included) or AC adapter 120 volts (not included). One-year factory warranty.

- No waiting between tests • Pocket size • Low-battery indicator • Carrying case • Metal detector-intermittent beep • Measured diamond-continuous beep • Metal detector-intermittent beep • Low battery consumption

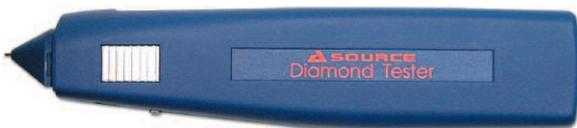
No. 56.722



### 3 PRESIDIUM DIAMONDMATE-C

A pocket-size, thermal conductivity method of verifying the authenticity of diamonds. Operates on a rechargeable battery or AC adapter/charger. Complete with metal detector, carrying case and three-piece Nicad battery pack.

No. 56.723



### 4 A-SOURCE DIAMOND TESTER

This economic and reliable diamond tester utilizes thermal conductivity to instantly verify diamonds. The results are indicated by visual lights as well as audible beeps. Operates on AAA batteries (not included) or AC adapters.

- Pocket size • No waiting between tests • Carrying Case • Low-Battery indicator • Measured diamond continuous beep • Great investment

No. 56.728



### 5 A-SOURCE MULTI-TESTER

The A-Source multi tester uses thermal and electrical conductivity to test stones. The measuring probes together with the electronics are designed to pick up data collected from the stones through a micro-controller. Within a split second, test results will be displayed. Operates on AAA batteries (not included) or AC adapters.

- No waiting between tests • Surface mount technology • Clear LED display for Diamond, Moissanite and Simulantes • Low battery indicator • Automatic power down

No. 56.729

No. 56.730 AC adaptor



**1 GOLD and SILVER TESTING ACID SOLUTIONS**

Testing for gold and silver made simple. Accurate results from these easy-to-use plastic bottles with secure, color-coded caps. Use with test stones sold above

- No. 56.800 For 10 K gold (yellow cap)
- No. 56.801 For 14 K gold (green cap)
- No. 56.802 For 18 K gold (white cap)
- No. 56.803 For 22 K gold (blue cap)
- No. 56.804 For silver (red cap)



**2 BLACK GLASS TESTING STONE**

Economical black glass stone used with solutions and test needles to determine karat values.

No. 56.714 2" x 1½" x 3/16"

**4 TESTING STONE**

Stone used with solutions and test needles to determine karat values.

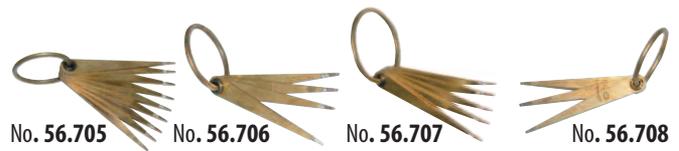
No. 56.744



**5 NATURAL TESTING STONE**

Natural testing stones, available in two sizes, used with solutions and test needles to determine karat values of precious metals. The stones are of high quality and very economical.

- No. 56.715 2½" x 1½" x ¼"
- No. 56.716 2" x 4" x ¼"
- No. 56.710 1½" x 1½" x ¼"



No. 56.705 No. 56.706 No. 56.707 No. 56.708

**3 METAL TEST SET**

For appraisal and testing of gold, silver, platinum, brass, nickel and German silver. Wood case contains three acid bottles with ground glass stoppers and applicators, test stone, set of gold testing needles. Acid must be purchased locally.

- No. 56.700 Set includes nine gold testing needles
- No. 56.0806 Set includes five gold testing needles
- No. 56.748 Replacement wood case
- No. 15.100 Bottle

**Test Needles for Gold**

Used to determine karat content of gold. Needles and item to be tested are rubbed on test stone and treated with acid to determine match.

- No. 56.705 Set of 9 needles for 4, 6, 8, 10, 12, 14, 16, 18 and 20 karat gold
- No. 56.707 Set of 5 needles for 8, 10, 12, 14 and 18 karat gold

**Test Needles for Silver and Gold**

Needles and item to be tested are rubbed on test stones and treated with acid to determine match.

- No. 56.706 Set of 4 needles for 10, 14 and 18 karat gold plus silver

**Test Stones**

A dark stone on which needle and item to be tested are rubbed. Use with test acid solutions.

- No. 56.710 Measures 1½" x 1½" x ¼" (48 x 38 x 6 mm)



**6 GROBET USA® HAND HELD METAL DETECTOR**

The hand-held metal detector detects both Ferrous and Non-Ferrous Metals. Sensitivity is adjustable and can locate jewelry and watch parts in hard-to-reach places.

Perfect for finding parts during repair work.  
No. 15.207

## “THE LITTLE TORCH”

Miniature welding torch maneuvers easily in areas impossible to reach with conventional torches. Produces a perfectly controlled, stable flame hot enough to melt metals, glass and ceramics with thread-thin flames up to 6300°F (3482°C). Color-coded oxygen and fuel gas lines and valves help prevent errors. Uses acetylene, propane and propylene based fuels. Welds an unlimited range of materials and brazes and solders the tiniest elements with ease. All torches supplied with 6' (182 cm) hoses.

### “Little Torch” Fuel Temperatures:

Acetylene 5900° F - 6300° F (3260°C - 3482°C) • Butane 4995° F (2757°C)  
 MAPP 5300° F (2926°C) • Hydrogen 4850° F (2676°C)  
 Natural Gas 4600° F (2537°C) • Propane 4780° F (2637°C)

### 1 FIVE-TIP KITS in BOX

Include torch, hoses, curved tips and instructions.  
 Packaged in display box. Fitting sizes: US -  $\frac{1}{16}$ " , British -  $\frac{3}{8}$ "  
 No. **14.002** For acetylene, with tips 3-7  
 No. **14.00203** For acetylene, with tips 2-6  
 British fittings  
 No. **14.00204** For acetylene, with tips 3-7  
 European fittings  
 No. **14.00205** For acetylene, with tips 2-6  
 Australian fittings



### 2 ONE TIP KIT for DISPOSABLE TANKS

Includes torch, hoses, pre-set oxygen regulator, pre-set propane regulator, size 4 curved tip, tank rest and instructions. Packaged on display card.  
 No. **14.008**



### 3 PORTABLE OUTFIT

Includes “Little Torch” kit No. **14.008**, along with disposable oxygen and propane tanks.  
 No. **14.007**



### 4 “LITTLE TORCH” EXTRA TIPS

Curved Tips No.	Straight Tips No.	Twin Tips No.	Size	Orifice (in) (mm)	
<b>14.012</b>	—	—	2*	.006"	.15
<b>14.013</b>	—	<b>14.023</b>	3	.011"	.28
<b>14.014</b>	<b>14.0141</b>	<b>14.024</b>	4	.020"	.51
<b>14.015</b>	—	<b>14.025</b>	5	.029"	.74
<b>14.016</b>	—	<b>14.026</b>	6	.037"	.94
<b>14.01602</b>	—	—	7	.047"	1.19

\*Tip size 2 is for use with oxygen and acetylene or oxygen and hydrogen only.

### 5 HEATING/MELTING TIPS

Multiple orifice design gives you maximum melting power and increased versatility for melting platinum, gold, silver or bronze in a crucible.

No. **14.030** Use with oxygen and acetylene. Supplies 3000 BTU's for temperatures up to 6000° F (3315° C). 6" long and melts up to 3 oz. of metal.

No. **14.031** Use with propane or natural gas at temperatures up to 5200° F (2871° C). Propane supplies 5000 BTU's, natural gas 2420 BTU's. 6" long and melts up to 5 oz. of metal.





**1 GROBET USA® LITTLE TORCH WITH CYLINDERS**

Contains a Little Torch, oxygen and propane tanks, oxygen regulator and fuel regulator.

No. **14.00801**



**2 ACETYLENE CADDY OUTFIT**

Includes torch, hoses, five tips, empty oxygen tank and regulator, empty fuel gas tank and regulator and handy plastic carrying caddy. Shipping weight 31 lbs.

No. **14.005** Caddy outfit



**3 CADDY OUTFIT for DISPOSABLE TANKS**

Lightweight portable outfit works with those disposable fuel tanks allowed for use indoors. Works with propane or Mapp® tanks. Kit includes torch, hoses, empty oxygen tank regulators with safety check valves, carrying caddy and 5 tips, sizes 3 - 7.

No. **14.00901**



**4 HOSES and CONNECTORS**

Hose assemblies are supplied with connections. Available in 2 lengths and 2 colors (for fuel gas and oxygen).

No. **14.052** 8' red - fuel gas

No. **14.053** 8' green - oxygen

No. **14.01001** Ferrule Tool

No. **14.01002** Ferrule



**5 SMITH EQUIPMENT BRAND REGULATORS and INLET CONNECTIONS**

Designed for use with the "Little Torch", but can be used with any torch. Easy to read. UL listed.

Gas	Stage	Fits Cylinder
Oxygen	<b>14.041</b>	Fits disposable oxygen
Propane	<b>14.042</b>	Fits disposable propane

## 1 ORIGINAL HOKE®-JEWEL TORCHES

For quality, insist on the HOKE®-JEWEL torch, most widely used by professional jewelers for daily work. Ideal for precision metal melting, soldering, brazing and welding. Fingertip control of valves and selection of tips allow user to select type of flame required, from large brush to pinpoint. Valves work easily and surely, with precise mixing of gas and never any leakage. All parts are machined from solid brass stock and seamless brass tubing and are completely nickel-plated. Overall length is 9" (229 mm). Inlets use standard 1/4" hose.

No.	Gas System	Pilot	Tips
14.120	Oxygen & Acetylene	No	4
14.121	Oxygen & Artificial Gas	Yes	4
14.122	Oxygen & Natural Gas	No	3
14.123	Oxygen & Butane or Propane	No	4

NOTE: Pilot light on No. 14.121 allows continuous flow of gas for quick ignition. This is intentional and should not be misunderstood as a faulty leak.

### Extra Tips for Standard Model HOKE®-JEWEL Torches

Gas System	Flame Size			
	Pinpoint	Pencil	Small	Large Brush
Oxygen & Artificial Gas	14.130	14.131	14.132	14.133
Oxygen & Acetylene	14.136	14.137	14.138	14.139
Oxygen & Natural Gas	—	14.142	14.143	14.144

### HOKE®-JEWEL TORCH and ADAPTER TIP KIT (not shown)

*Saves you money!*

We have combined our No. 14.122 HOKE® torch with the No. 14.060 adapter tip kit. No. 14.124

## 2 SET of SIX ADAPTER TIPS and ADAPTER

Expand your HOKE®-JEWEL torch's capabilities with this precision adapter set. Ideal for all soldering, welding and melting jobs. Even fine intricate soldering, from the thinnest chains, rings, pendants and bangles to large silver hollowware, can be done quickly and easily. With these tips you get a non-oxidizing flame, so less pickling is required and jewelry comes out cleaner. Changing tips takes only a few seconds to speed up your production (HOKE®-JEWEL torch must be purchased separately).

No. 14.060

*Note: The adapter tips are not recommended for use with acetylene.*

## 3 ADAPTER

Without tips it can be used to melt small amounts of silver, gold and platinum.

No. 14.061

## 4 TIP with BLUE DOT

Can be used for large areas of soldering, including hollowware work in gold and silver.

No. 14.062

## 5 TIP with YELLOW DOT

Produces a soft, direct flame, and is used much the same way as the #2 and #3 of a standard torch tip.

No. 14.063

## 6 SHORT TIP with RED DOT

Gives the equivalent of a standard #1 torch tip, but is stronger and has a smaller flame.

No. 14.064

## 7 LONGER TIP with RED DOT

Has a micro point flame and is also used as a projection tip, allowing use in areas not ordinarily accessible with a standard torch.

No. 14.065

## 8 SHORT TIP with GREEN DOT

Produces a mini-micro flame.

No. 14.066

## 9 LARGE TIP with GREEN DOT

Produces a super-micro flame, which permits the most complex type of soldering.

No. 14.067





**1 PREST-O-PAK ACETYLENE TORCH OUTFIT**

Permits mixing of acetylene with air at the torch head, so no other source of air is necessary. Four interchangeable tips are supplied, producing a range of flame sizes from small to large, making it suitable for jewelry soldering (except very small work) and melting. The acetylene is stored in tanks as a liquid and only becomes a gas when valve is opened. The four tip outfit (No. 14.235) includes: torch handle, four tips, regulator for "B" tank and a 6' (183 cm) hose with fittings. The silversmith outfit (No. 14.236) includes: torch handle, light flame tip, regulator for "B" tank, torch lighter and a 6' hose with fittings. Uses "B" tank.

- No. 14.235 Four tip outfit
- No. 14.236 Silversmith outfit
- No. 14.238 Replacement tip #1A
- No. 14.239 Replacement tip #3
- No. 14.240 Replacement tip #4
- No. 14.241 Replacement tip #5
- No. 14.244 Replacement regulator
- No. 14.245 Replacement 6' hose



**2 ACETYLENE TORCH KIT**

Fast, concentrated flame with temperatures of 4800°F (2649°C). No oxygen tank involved. Special tip design gives the right mixture of atmospheric air and fuel gas. Tips feature slip-in design and seat perfectly by hand. Easily rotated to any position while flame is lit. Solid brass torch body has trouble-free needle valve. Pre-set regulator gives correct pressure and volume of fuel gas. With super fine tip (#50 drill size) and 6' hose. Uses "B" tank.

No. 14.0370

**Tips for Acetylene Torch**

- No. 14.0371 3/8" Flame Opening
- No. 14.0372 1/4" Flame Opening
- No. 14.0373 3/16" Flame Opening
- No. 14.0374 .147" Flame Opening
- No. 14.0375 .095" Flame Opening
- No. 14.0376 .066" Flame Opening
- No. 14.0379 12' Replacement hose



3

**3 ORCA® TORCH**

- New low-cost torch
- No oxygen or air supply needed
- Use with common gas
- Tips create flame versatility
- Tip #1 (Small) up to 20000F (12000C) • Tip #2 (Medium) up to 23000F (12500C)
- Tip #3 (Large) up to 24000F (13000C)

No. 14.068 Complete Torch Kit with 3 Tips



4

**4 HI-HEAT TORCH**

The mixing chamber of the Model D blowpipe is designed for use with natural, artificial or bottled gas, but not for acetylene. Produces an intense, perfectly formed flame. Uses 1/4" hose.

No.	Gas System	Tips		
		Large	Small	Oxygen
14.150	Natural, artificial & bottled gas with air	1	-	-
14.151	Natural, artificial & bottled gas with air	1	1	-
14.152	Natural, artificial & bottled gas w/air or oxygen	1	1	1

**Extra Tips for Hi-Heat Torch**

- No. 14.155 Large, for gas and air
- No. 14.156 Small, for gas and air
- No. 14.157 For oxygen and gas



5

**5 MIDGET TORCH**

Small size and light weight make this torch ideal for jewelry welding and brazing, as well as other small jobs. Can be used with oxygen and acetylene, hydrogen, natural gas, propane or butane. Control valves are conveniently positioned and hold flame adjustment precisely. Includes three tips and slip-on hose connectors for 3/16" hose. Overall length 6 3/4".

- No. 14.160 Midget torch
- No. 14.161 Replacement tip #1/0 (Small)
- No. 14.162 Replacement tip #1 (Medium)
- No. 14.163 Replacement tip #2 (Large)



**1 SMITH EQUIPMENT BRAND REGULATORS and INLET CONNECTIONS**

Designed for use with the "Little Torch", but can be used with any torch. Easy to read. UL listed.

Gas	Stage	Fits Cylinder
Oxygen	<b>14.035</b>	Fits all industrial
Acetylene	<b>14.036</b>	Fits type B and autolite
Acetylene	<b>14.037</b>	Fits commercial acetylene
Acetylene	<b>14.039</b>	Fits MC
Propane	<b>14.040</b>	Fits POL



**2 STARTER SETS with REGULATORS**

Each contains a "Little Torch" kit No. 14.002, universal oxygen regulator No. 14.035 and one of the following fuel cylinder regulators.

- No. **14.00401** Acetylene type B and autolite cylinder regulator No. 14.036
- No. **14.00403** LP, propylene, MAPP, NPG and POL cylinder regulator No. 14.040
- No. **14.00405** Acetylene type MC cylinder regulator No. 14.039

Order by set number.



**3 CHECK VALVES**

Helps prevent dangerous reverse gas flow.

- No. **14.179** For fuel gas regulator  $\frac{3}{16}$ " LH
- No. **14.180** For oxygen regulator  $\frac{3}{16}$ " RH



**4 CHECK VALVES/FLASHBACK ARRESTORS**

Stops flashback fires by preventing reverse gas flow. With automatic reset between flashes. Solid brass case is durable and easy to install. Fits standard  $\frac{3}{16}$ " "B" connections.

- No. **14.0769** For fuel gas line



**5 HOSE CONNECTIONS**

Used on regulators so that standard ID hose can be used.

Right Hand Thread for Oxygen	Left Hand Thread for Fuel Gas	Size
<b>14.198</b>	<b>14.196</b>	$\frac{3}{8}$ " - 24 for $\frac{3}{16}$ " ID
<b>14.195</b>	<b>14.199</b>	$\frac{9}{16}$ " - 18 for $\frac{3}{16}$ " ID
<b>14.178</b>	<b>14.197</b>	$\frac{9}{16}$ " - 18 for $\frac{1}{4}$ " ID



**6 Y CONNECTORS WITH SHUT-OFF VALVES**

For use in multiple torch hook-ups.

- No. **14.184** Fuel gas  $\frac{9}{16}$ " LH to  $\frac{9}{16}$ " - 18 LH
- No. **14.185** Oxygen  $\frac{9}{16}$ " RH to  $\frac{9}{16}$ " - 18 RH



**1 MICRO TORCH**

Electronic, instant ignition torch requires only one hand to ignite and adjust the flame. The easy, thumb-adjustable gas=flow lever allows precision flame corrections. Approximate burn time is 90 minutes. No. 14.212



**2 MICRO TORCH - ECONO MODEL**

Electronic instant-ignition system for push-button start-ups. Both flame and temperature can be adjusted precisely. Provides up to 90 minutes of burn time before refill is required. High temperature flame of 2500° F (1371°C). Uses butane only, not included. No. 14.214



**3 BUTANE FUEL for MICRO TORCH**

Ultra-refined butane fuel specifically geared for use with Micro Torch. Special, non-clogging formula allows extended use. Includes a single piece, universal tip. 5 1/2 fl. oz. can. No. 14.220



**HAZARDOUS**

**4 DISPOSABLE OXYGEN TANK**

Shipping weight 2 lbs. 14.224



**HAZARDOUS**

**5 DISPOSABLE PROPANE TANK**

Shipping weight 2 lbs. 14.223



**6 REINFORCED RUBBER HOSES**

3/16" diameter x 12 1/2" long twin fuel gas/oxygen hoses.  
 No. 14.0780 With two 1/16" "B" fittings  
 No. 14.0781 With 3/8" "A" and 1/16" "B" fittings  
 No. 14.0379 12' replacement hose



**TUBING**

For connecting torches, bunsen burners, compressors, etc. Sold by the foot.

- 7** No. 14.188 Clamp for 1/4" ID
- 8** No. 14.189 Green reinforced oxygen 1/4" ID
- 9** No. 14.190 Red reinforced fuel gas 1/4" ID
- 10** No. 14.186 Black rubber 3/16" ID
- 11** No. 14.191 Pure gum 5/16" ID



**1 MAGNETIC TORCH HOLDER**

Versatile, magnetic, “third-hand” holder keeps your torch nearby on your bench. Use it right on the stand when you need both hands free. Heavy metal base keeps the holder safely in place and has seven holes for extra tip storage. (Torch not included)

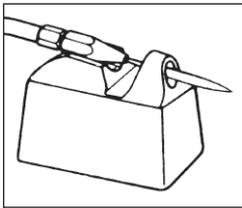
No. 14.058



**2 WEIGHTED TORCH STAND**

A quick and convenient place to rest your torch while working. Stainless steel rod ensures easy placement and removal of the torch without sacrificing safety. Texturized cast-iron base provides strong, balanced support, as well as storage space for your extra tips. (Torch not included)

No. 14.203



**3 TORCH-MATE**

Electronic torch lighter. Depress activator bar with torch and spark instantly lights torch. Uses 2 AA batteries (not included). Safe and easy to use.

No. 14.204



4



5



6

Mount anywhere on your bench to accommodate most torches.

4 No. 14.202 Low bracket-type with wide top

5 No. 14.201 Hook-type

6 No. 14.200 High bracket-type with narrow top

**TORCH HOLDERS**



**7 TORCH LIGHTER**

Makes sparks to light gas without open flame. Includes one flint.

No. 14.205 Lighter

No. 14.206 Box of 5 flints



**8 TORCH WRENCH**

Fits all nuts on torches listed in our catalog.

No. 14.164

## BUNSEN BURNERS

**1 BUNSEN BURNER**

Has needle valve gas control adjustment to provide flame from very hot brush to needle with intense heat. 3" base diameter with 4½" height. Uses ¼" tubing. For artificial or natural gas.

No. **14.260**

**2 BUNSEN BURNER**

Nickel-plated with tapered, serrated stems for use with ⅝" (8 mm) ID tubing. 1⅛" ignition collar stabilizes flame. With adjustable air intake and 3" base diameter. For use with natural gas.

No. **14.266** 5" high

No. **14.267** 4" high

**3 MICRO BUNSEN BURNER**

Nickel-plated with tapered, serrated stem for use with ⅝" (8 mm) ID tubing. Lever in base adjusts air intake. 2" base diameter with 2⅝" height. For use with natural gas.

No. **14.268**

**4 BUNSEN BURNER**

Has adjustable pilot flame with T-handle valve. An 1⅛" ignition collar stabilizes flame. Use with ⅝" ID tubing. 3" base diameter with 6" height. For use with natural gas.

No. **14.269**

**5 BUNSEN BURNER**

Has 2" diameter black enamel base and the height is only 2⅝". Uses 1/4" tubing. For use with natural gas.

No. **14.271**

No. **14.272** Wax cup

**1 TRIPODS with MESH SCREEN**

Can be placed over bunsen burner or alcohol lamp, or used with heating frame (No. 14.330) so that work can be heated from below while soldering or enameling. Mesh screen is 6" square.

- No. **14.312** Tripod with 6½" legs and mesh screen
- No. **14.315** Tripod with 9" legs and mesh screen
- No. **14.321** Tripod only, 9" legs
- No. **14.325** Replacement mesh screen



**2 HEAVY HEATING FRAME**

Used on tripod, charcoal block, or asbestos, so that work can be heated from below while soldering or enameling. Measures 6" x 6".

No. **14.330**

**3 GLASS ALCOHOL LAMPS**

Nickel-plated brass burner with screw adjustment for wick. Includes 3" wick, 3/16" diameter. (Uses Griffith Alcohols, page 252)

No.	Diameter	Height	Capacity (oz)
<b>14.278</b>	2½"	1"	1½
<b>14.279</b>	2½"	1¾"	3



**4 SIMPLICITY BURNERS**

Flame can be adjusted by raising or lowering split sleeve. Faceted bowl measures 3 ⅞" in diameter and holds 4 oz. of fuel. (Uses Griffith Alcohols, page 252)

- No. **14.285** With ½" diameter wick
- No. **14.286** With ¼" diameter wick

**5 METAL ALCOHOL LAMPS**

Polished chrome-plated brass with screw adjustment for wick. Supplied with ⅜" diameter wick.

No.	Diameter	Height	Capacity (oz)
<b>14.288</b>	3"	1"	3
<b>14.289</b>	3½"	1"	5



Replacement Wicks for Alcohol Lamps. Supplied in packs of one dozen.

- No. **14.292** ½" diameter
- No. **14.293** ⅜" diameter
- No. **14.294** ¼" diameter



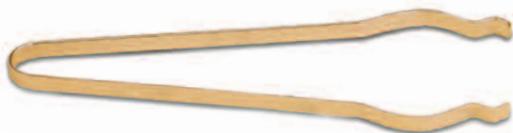
### 1 BENT CRUCIBLE TONGS

For holding crucibles as well as picking up hot objects.  
19" (483 mm) length.  
No. 57.066



### 2 CRUCIBLE and FLASK TONGS

For picking up crucibles and 1½" (38 mm) diameter flasks.  
19" (483 mm) length.  
No. 57.080



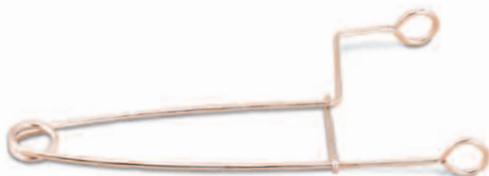
### 3 FLASK TONGS

For lifting small and large flasks to and from oven.  
15" (381 mm) length.  
No. 57.068



### 4 DRAW TONGS

Serrated jaws for pulling wire. Made of forged steel with ergonomic design.  
No. 57.056 8" (203 mm) length  
No. 57.058 10" (254 mm) length



### 5 BURNO CRUCIBLE TONGS

10½" (267 mm) length.  
No. 57.060



### 6 COPPER TONGS with OFFSET POINTS

Suitable for pickling and acid solutions. 8½" (216 mm) length.  
No. 57.054



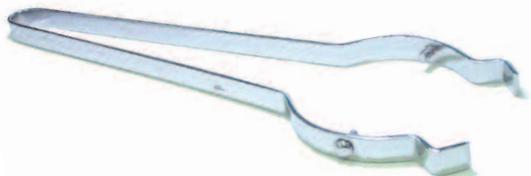
### 7 COPPER TONGS with CURVED POINTS

Suitable for pickling and acid solutions. 9" (229 mm) length.  
No. 57.052



### 8 GROBET USA® CRUCIBLE and FLASK TONGS

All-purpose laboratory and industrial tongs for holding, manipulating and pouring, as well as for picking up hot objects. With serrated points. 9" (229 mm) length.  
No. 57.085 Stainless steel with long neck



### 9 PERFORATED FLASK TONGS with PINS

Stainless steel, specifically designed with pins to engage the holes in perforated casting flasks for safe, secure handling. Not for use with non-perforated flasks. Length of 14 7/8" (378 mm)  
No. 57.069



### 10 TONGS FOR CRUCIBLES

For Picking up crucibles.  
No. 22.790

## TWEEZERS

For handling miniature and micro-miniature parts and assemblies, tweezers are as essential as the fingers on your hand. There are definite differences in their patterns. Point finish and the materials used make some numbers more suitable for a particular job than others.



1 Peer-Vigor - Made in Switzerland for Grobet USA®.

2 Dumont - Finest Quality - Manufactured at the Dumont factory, in Switzerland.

3 Dumont II - Excellent Quality - Manufactured at the Dumont factory, in Switzerland.

4 Grobet USA® - Great value - Made Exclusively for Grobet.

### How To Select Tweezers

To help in making the proper selection, the information in the charts on this page can be used as a general guide, while additional details will be found along with the illustrations for each stock number.

### SWISS PATTERN TWEEZERS

Precision watchmakers' tweezers. These tweezers are forged from the finest grades of metal and machined to a smooth satin finish. The Titanium tweezers are 40% lighter than steel. They are 60% stronger, are resistant to high temperatures, maintain their sharp tips without resharping and, because they are light, cause less hand fatigue. Extensive hand operations are used in shaping, adjusting and finishing the points on the Dumont style tweezers, making them the only ones recommended for work under a microscope. Use the chart below for quick comparisons.

Tips	Points		Shanks		Length		Patterns
	Finish	Profile	Edges	(in)	(mm)		
Needle Sharp	Micro-Honed	Indented	Beveled	4½"	114	4, 5, 5A	
Very Sharp	Fine-Honed	Tapered	Beveled	4¾"	120	3	
Very Sharp	Fine-Honed	Tapered	Beveled	4½"	114	3C	
Very Sharp	Fine-Honed	Tapered	Flat	4½"	114	0	
Very Sharp	Fine-Honed	Tapered	Flat	3½"	89	0C	
Sharp	Honed	Curved	Beveled	4½"	114	7, 7A, 7B	
Sharp	Honed	Tapered	Beveled	4¾"	120	1, 11N	
Sharp	Honed	Hooked	Flat	4½"	114	6	
Blunt	Honed	Indented	Flat	4¾"	120	2	
Blunt	Honed	Tapered	Flat	4¾"	120	00	
Rounded	Honed	Tapered	Flat	3½"	89	H	
Rounded	Honed	Indented	Flat	4¾"	120	2A	
Beveled	Honed	Straight	Flat	4¾"	108	8	
Cutting	Honed	End Nipper		4¾"	108	15	
Cutting	Honed	Oblique Nipper		4½"	114	15A, 15AP	

### BOLEY STYLE TWEEZERS

Excellent tweezers, with less extensive hand craftsmanship than is devoted to the Dumont style. The matched points have received finishing at the tips making them suitable for sorting and assembly operations of small parts and components under low power magnification.

### DIAMOND TWEEZERS

Tweezers with finely serrated jaws that grip and hold even the most delicate objects securely without damage. Used extensively for handling diamonds.

### SPECIAL PURPOSE TWEEZERS

Miscellaneous tweezers such as jewel holders, three-prong holders, pocket tweezers, vacuum pickup, etc.

### Metals Used

The chart below shows general property relationships among the various metals used in the manufacturing of tweezers. In addition, note that the points of the harder metals will wear longer and are less subject to bending. The softer metals will not scratch delicate parts and usually have additional desirable properties such as being non-magnetic, etc.

Metal	Hardness	Non-Magnetic	Corrosion or Acid Resistance
Carbon Steel	Very hard	No	Poor
Stainless Steel	Hard	No	Satisfactory
Non-Mag Stainless	Soft	Yes	Good
German Silver	Very soft	Yes	Fair
Brass	Very soft	Yes	Fair
Titanium	Hard	Yes	Good
Carpenter 20	Medium	Yes	Excellent
Nickel-Plated Steel	Very hard	No	Satisfactory
Chrome Plated Steel	Very hard	No	Satisfactory



Metal	Dumont	Price	Peer-Vigor
<b>Pattern 1</b>			
Carbon Steel	—		<b>57.400</b>
Stainless Steel	<b>57.249</b>		<b>57.401</b>
Anti-Acid/Mag SS	<b>57.516</b>		<b>57.402</b>
Titanium	—		<b>57.0801</b>
<b>Pattern 11N</b>			
German Silver	—		<b>57.403</b>



Metal	Dumont	Peer-Vigor
Carbon Steel	—	<b>57.408</b>
Stainless Steel	<b>57.517</b>	<b>57.409</b>
Anti-Acid/Mag SS	<b>57.250</b>	<b>57.410</b>
Titanium	—	<b>57.0802</b>



Metal	Dumont	Peer-Vigor	Grobet USA	Dumont
Carbon Steel	—	<b>57.412</b>	—	—
Stainless Steel	—	<b>57.413</b>	<b>57.0752A</b>	<b>57.213</b>
Anti-Acid/Mag SS	<b>57.01202A</b>	<b>57.414</b>	<b>57.803</b>	<b>57.214</b>
Carpenter 20	—	<b>57.0902A</b>	—	—



Metal	Dumont II	Peer-Vigor	Grobet USA	Dumont
Carbon Steel	—	<b>57.417</b>	—	<b>57.217</b>
Stainless Steel	<b>57.518</b>	<b>57.418</b>	<b>57.808</b>	<b>57.218</b>
Anti-Acid/Mag SS	<b>57.251</b>	<b>57.419</b>	<b>57.809</b>	<b>57.219</b>
Titanium	—	<b>57.0803</b>	—	—



Metal	Dumont II	Peer-Vigor	Grobet USA	Dumont
Carbon Steel	—	<b>57.425</b>	—	<b>57.225</b>
Stainless Steel	<b>57.519</b>	<b>57.426</b>	<b>57.816</b>	<b>57.226</b>
Anti Acid/Mag SS	<b>57.252</b>	<b>57.427</b>	<b>57.817</b>	<b>57.227</b>
Titanium	—	<b>57.0803C</b>	—	—



Metal	Peer-Vigor	Grobet USA	Dumont
Stainless Steel	<b>57.431</b>	<b>57.821</b>	—
Anti-Acid/Mag SS	<b>57.432</b>	<b>57.822</b>	<b>57.232</b>
Titanium	<b>57.0804</b>	—	—

### PATTERNS 1 and 11N

For general use, assembly, inspection, sorting. Tweezers feature tapered shanks with beveled edges, and sharp, plain-finished points. Pattern 11N is made of non-magnetic German silver and is the same length as pattern 1. Overall length 4 3/4" (121 mm).

### PATTERN 2

General use tweezers with sturdier points slightly wider and thicker tips than pattern No.1. Indented and have flat edges for gripping object with tip or side. The plain finished points have a fine tip. Overall length 4 3/4" (121 mm).

### PATTERN 2A

Similar to pattern 2, except points are .055" (1.4 mm) wide and rounded at the tips. Overall length 4 3/4" (121 mm).

### PATTERN 3

Excellent tweezers for handling all miniature and micro-miniature parts. Shanks are tapered with beveled edges; points have been honed and are very sharp. Overall length 4 3/4" (121 mm).

### PATTERN 3C

Shorter version of pattern 3. Overall length 4 1/2" (114 mm).

### PATTERN 4

Ideally suited for handling microscopic parts. Shanks are indented with beveled edges and points that have been extra-honed to a needle-like shape and sharpness. Overall length 4 1/2" (114 mm).

**PATTERN 5**

Similar to pattern 4, except have very narrow needle-like points. Overall length 4½" (114 mm).



Metal	Dumont II	Peer-Vigor	Grobet USA	Dumont
Carbon Steel	—	—	—	<b>57.235</b>
Stainless Steel	<b>57.520</b>	<b>57.436</b>	<b>57.0755</b>	<b>57.236</b>
Anti-Acid/Mag SS	<b>57.254</b>	<b>57.437</b>	—	<b>57.237</b>
Titanium	—	<b>57.0805</b>	—	—

**PATTERN 5A**

Similar to pattern 5, except with oblique points, and slightly more tension, for micro-fine work. Overall length 4½" (114 mm).



Metal	Dumont II
Stainless Steel	<b>57.01105A</b>

**PATTERN 6**

Sharp hooked points for wire wrapping, forming, bending and coiling. The angled points can also be useful for hard-to-get-at spots. Overall length 4½" (114 mm).



Metal	Dumont II	Peer-Vigor	Dumont
Carbon Steel	—	—	<b>57.240</b>
Stainless Steel	<b>57.01106</b>	<b>57.441</b>	<b>57.241</b>
Anti-Acid/Mag SS	<b>57.01206</b>	<b>57.442</b>	—

**PATTERN 7**

Excellent tweezers for handling all miniature and micro-miniature parts and components. The shape permits the user to rest his hand on the bench during assembly operations. The curved shanks have beveled edges; points have a plain finish, but are very sharp. Overall length 4½" (114 mm).



Metal	Dumont II	Peer-Vigor	Grobet USA	Dumont
Carbon Steel	—	<b>57.444</b>	—	<b>57.244</b>
Stainless Steel	<b>57.01107</b>	<b>57.445</b>	<b>57.835</b>	<b>57.245</b>
Anti-Acid/Mag SS	<b>57.01207</b>	<b>57.446</b>	<b>57.836</b>	<b>57.246</b>
Titanium	—	<b>57.0807</b>	—	—

**PATTERN 7A**

Blunt tip tweezers for handling all miniature and micro-miniature parts and components. The shape permits the user to rest his hand on the bench during assembly operations. The curved shanks have beveled edges; points have a plain finish, but are very sharp. Overall length 4½" (114 mm).



Metal	Peer-Vigor	Grobet USA
Carbon Steel	<b>57.459</b>	—
Stainless Steel	<b>57.461</b>	<b>57.837</b>
Anti-Acid/Mag SS	<b>57.462</b>	—

**PATTERN 7B**

Tweezers with serrated jaws for handle all miniature and micro-miniature parts and components. The shape permits the user to rest his hand on the bench during assembly operations. The curved shanks have beveled edges; points have a plain finish, but are very sharp. Overall length 4½" (114 mm).



Metal	Peer-Vigor	Grobet USA	Dumont
Stainless Steel	<b>57.453</b>	—	<b>57.253</b>
Anti-Acid/Mag SS	<b>57.465</b>	<b>57.838</b>	—



**PATTERN 8**

Straightens terminal lead wires, needle point indicators, etc. Blades are extra thick with blunt jaws. Overall length 4 1/4" (108 mm).

Metal	Dumont II
Carbon Steel	57.256



**PATTERN 35A**

Large flat points. Overall length 4 3/8" (118 mm).

Metal	Peer-Vigor
Anti-Acid/Mag SS	57.355



**PATTERN A**

A general utility tweezers, for assembly, inspection, sorting, etc. Shanks are thick and have flat edges that enable the user to grip and hold with the edge as well as the tip. Points are plain and tips are blunt and wider than pattern 00. Overall length 4 3/4" (121 mm)

Metal	Peer-Vigor	Dumont
Carbon Steel	—	57.284
Anti-Acid/Non-Mag SS	57.473	—



**PATTERN AC**

Similar to pattern 00C, except the points are plain and the tips are slightly wider. Overall length 4 1/2" (114 mm).

Metal	Peer-Vigor	Dumont
Carbon Steel	57.480	57.287



**PATTERN H**

Stubby, wide shanks for a strong grip on the object. Generally used in pairs for wire bending, adjusting, etc. Tapered shanks with flat edges; points are honed and have round blunt tips. Overall length 3 1/2" (89 mm).

Metal	Peer-Vigor	Dumont
Carbon Steel	—	57.259
Stainless Steel	57.460	57.260



**PATTERN O**

For handling miniature and micro-miniature parts. With tapered shanks, not as thick as pattern 00, flat edges and points that have been honed and are very sharp. Overall length 4 1/2" (114 mm).

Metal	Dumont II
Stainless Steel	57.01136



**PATTERN P**

Tips are slightly thicker and sturdier than those on pattern 1. Overall length 4 3/4" (121 mm).

Metal	Dumont
Carbon Steel	57.296
Anti-Acid/Non-Mag SS	57.248

**PATTERN S**

Less expensive version of pattern 3; points are not as precision finished. Overall length 4 3/4" (121 mm).



Metal	Dumont II
Carbon Steel	57.290
Stainless Steel	57.522
Anti-Acid/Non-Mag SS	57.523

**PATTERN SS**

Fine, long and narrow points. Overall length 5 1/4" (133 mm)



Metal	Peer-Vigor	Dumont
Stainless Steel	57.0728	—
Anti-Acid/Non-Mag SS	57.0659	57.01244
Titanium	57.0808	—

**PATTERN OC**

Shorter version of pattern O. Overall length 3 1/2" (89 mm).



Metal	Dumont II	Peer-Vigor	Dumont
Carbon Steel	—	—	57.268
Stainless Steel	57.01130C	57.469	57.269
Anti-Acid/Mag SS	—	—	57.270

**PATTERN OA**

Similar to pattern O, except the shanks are notched and the points have been rounded and finished for fine assembly work. Overall length 4 3/4" (121 mm).



Metal	Dumont
Carbon Steel	57.273

**PATTERN OO**

A general utility tweezers for assembly, inspection, sorting, etc. Shanks are thick and have flat edges that enable the user to grip and hold the object with the edge as well as the tip. Points are honed and have blunt tips. Overall length 4 3/4" (121 mm).



Metal	Peer-Vigor	Grobet USA	Dumont
Carbon Steel	57.476	—	57.276
Stainless Steel	57.477	—	57.277
Anti-Acid/Non-Mag SS	57.478	57.842	57.278



**PATTERN OOC**

Shorter version of pattern OO. Overall length 4 1/8" (105 mm).

Metal	Dumont
Carbon Steel	57.281



**PATTERN OOD**

Pattern OO with serrations on tips and grips. Overall length 4 3/4" (121 mm).

Metal	Peer-Vigor
Carbon Steel	57.489
Stainless Steel	57.490

## BOLEY STYLE

Boley style tweezers are excellent general utility tweezers. All shanks are tapered and have beveled edges, except the GG pattern.

### PATTERN AA

For assembly, inspection, sorting, soldering, etc. of small parts. A non-glare black oxidized finish is available in this pattern and solder will not adhere to this finish. Overall length 4 3/4" (121 mm).



Metal	Dumont II	Peer-Vigor	Grobet USA	Dumont
Nickel-Plated Steel	—	<b>57.550</b>	<b>57.850</b>	—
Black Oxidized	—	<b>57.551</b>	—	—
Stainless Steel	<b>57.524</b>	<b>57.553</b>	<b>57.0738</b>	—
Anti-Acid/Non-Mag SS	<b>57.525</b>	<b>57.554</b>	—	<b>57.306</b>



### PATTERN BB

Hollow light tension points. Overall length 4 1/2" (114 mm).

Metal	Peer-Vigor
Nickel-Plated Steel	<b>57.558</b>



### PATTERN HH

Thick, strong shanks are the main feature of this short tweezers. Overall length 4 1/2" (114 mm).

Metal	Peer-Vigor
Nickel-Plated Steel	<b>57.564</b>

### PATTERN GG

Pointed, indented shanks Overall length 5 1/8" (130 mm).

Metal	Dumont II	Peer-Vigor
Nickel-Plated Steel	—	<b>57.562</b>
Stainless Steel	<b>57.01139</b>	—



### PATTERN MM

Similar to pattern AA, but heavier. The shanks are slightly longer and the corner of the handle has been rounded. Overall length 5" (127 mm).

Metal	Dumont II	Peer-Vigor	Grobet USA
Nickel-Plated Steel	—	<b>57.566</b>	<b>57.866</b>
Stainless Steel	<b>57.526</b>	<b>57.567</b>	—
Anti-Acid/Mag SS	<b>57.527</b>	<b>57.568</b>	—



### PATTERN AM

Non-magnetic brass version of pattern MM. Excellent for handling parts that scratch easily. Overall length 5" (127 mm).

Metal	Peer-Vigor
Non-Mag Brass	<b>57.556</b>



### PATTERN NN

Shorter version of pattern MM. Overall length 4 1/2" (114 mm).

Metal	Peer-Vigor
Nickel-Plated Steel	<b>57.570</b>

### PATTERN RR

Hefty, heavy-duty tweezers with wide shanks and points similar to those on pattern AA. The shanks and handle are extra thick. Overall length 5 1/2" (140 mm).

Metal	Peer-Vigor	Grobet USA
Nickel-Plated Steel	<b>57.574</b>	<b>57.0311</b>



## SWISS PATTERN CUTTING

For use on very fine wires only.

### PATTERN 15

End cutter for very soft wire or for stripping fine magnet wire. Overall length 4½" (108 mm).



Metal	Dumont
Carbon Steel	<b>57.309</b>



Metal	Peer-Vigor
Carbon Steel	<b>57.512</b>

### PATTERN 15A GOLD

Cuts soft copper, gold, silver and magnetic wire up to .010" (.25 mm). Very popular, very long-lasting cutter. Overall length 4½" (114 mm).



Metal	Peer-Vigor
Titanium Nitrite	<b>57.340</b>

### PATTERN 15AP

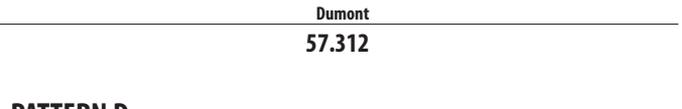
Cuts .010" (.25 mm) and smaller soft wire. Overall length 4½" (114 mm) long with parallel cutting edges.



Metal	Peer-Vigor
Carbon Steel	<b>57.515</b>
Stainless Steel	<b>57.0715AP</b>

### PATTERN 15A

The most popular wire cutting tweezers. Strong oblique cutting edge gives crisp, clean, close cuts on many types of fine wire. Overall length 4½" (114 mm).



### PATTERN D

Transverse end cutter with rounded cutting edge. Overall length 3¾" (95mm).



Metal	Peer-Vigor
Carbon Steel	<b>57.560</b>

## Swiss Eco-Line

All the same features as the higher-end tweezers but at a more affordable price. Satin finish stainless steel tweezers have perfectly aligned tips and are light weight.



Grobet #	Style
<b>57.170</b>	00



Grobet #	Style
<b>57.171</b>	3



Grobet #	Style
<b>57.172</b>	3C



Grobet #	Style
<b>57.173</b>	5S



Grobet #	Style
<b>57.174</b>	4A



Grobet #	Style
<b>57.175</b>	7A



Grobet #	Style
<b>57.176</b>	2A



Grobet #	Style
<b>57.177</b>	AA

## RUBIS SWISS-MADE TWEEZERS

Manufactured with the highest quality surgical stainless steel.

- Hand finished • Precision aligned tips • Rust and acid proof

### Swiss tweeze®

Practical and functional, these lightweight tweezers are contoured to fit comfortably in your hand. A unique perforated design guarantees a non-slip grip. Made of superior surgical stainless steel, non-magnetic and acid resistant, these tweezers have precision tips, perfectly aligned that will never let you down.



Grobet	Style
57.178	1G



Grobet	Style
57.179	2AG



Grobet	Style
57.180	2G



Grobet	Style
57.181	3G



Grobet	Style
57.182	3CG



Grobet	Style
57.183	4G



Grobet	Style
57.184	5G



Grobet	Style
57.185	5AG



Grobet	Style
57.186	5ARG



Grobet	Style
57.187	7G

### Orange Satin Finish Swiss Tweezers

The satin soft touch provides a comfortable, non-slip grip. These tweezers provide symmetry and balance for all normal applications – shaping, adjusting and finishing.



Grobet	Style
57.160	SS



Grobet	Style
57.161	1



Grobet	Style
57.162	3



Grobet	Style
57.163	3C



Grobet	Style
57.164	0



Grobet	Style
57.165	00



Grobet	Style
57.166	2A



Grobet	Style
57.167	5



Grobet	Style
57.168	5A



Grobet #	Style
57.169	7

## GROBET USA® CROSS-LOCKING

1

**1 SHARP TIP with REVERSE-ACTION**

Nickel-plated steel. Overall length 4¾" (121 mm).  
No. 57.750

**2 BLUNT/SERRATED TIP with REVERSE-ACTION**

Nickel-plated steel. Overall length 6½" (165 mm).  
No. 57.753

**3 SHARP/SERRATED TIP with REVERSE-ACTION**

Nickel-plated steel. Overall length 6½" (165 mm).  
No. 57.752

**4 BLUNT/SERRATED TIP**

Nickel-plated steel. Overall length 6½" (165 mm).  
No. 57.0385

**5 STRAIGHT TIP with FIBER GRIPS**

Heat-resistant fiber grips. Stainless steel. Overall length 6½" (165 mm).  
No. 57.760

**6 CURVED TIP with FIBER GRIPS**

Heat-resistant fiber grips. Stainless steel. Overall length 6½" (165 mm).  
No. 57.761

**7 STRAIGHT and CURVED TIP with FIBER GRIPS**

Heat-resistant fiber grips and permanent tension, self-locking jaws are ideal for soldering operations, or for holding parts. With long, tapered, non-serrated blunt jaws. Stainless steel. Overall length 6½" (165 mm).  
No. 57.0373 Straight  
No. 57.765 Curved

## GROBET USA® SLIDE-LOCKING

Closing pressure is easily adjusted.

8

**8 BLUNT TIP**

Nickel-plated steel. Overall length 6½" (165 mm).  
No. 57.774

**9 ROUNDED/SERRATED TIP**

Nickel-plated steel. Overall length 6" (152 mm).  
No. 57.772

**10 SHARP/SMOOTH TIP**

Nickel-plated steel. Overall length 4¾" (121 mm).  
No. 57.770

## GROBET USA® SOLDER/UTILITY TWEEZERS

Heavier duty tweezers. Selection of a solder/utility tweezers involves overall length desired, shape and size of points, with or without serrations, etc.



### 1 SMALL SHARP TIP

Overall length 4¾" (121 mm).

No. 57.700 Nickel-Plated Steel

No. 57.701\* Steel

\*Satin finish with rust-resistant coating.



### 2 SMALL SHARP TIP INDENTED

Nickel-plated steel. Overall length 4¾" (111 mm).

No. 57.705



### 3 SMALL INDENTED SQUARE/SERRATED TIP

Nickel-plated steel. Overall length 5" (127 mm).

No. 57.710



### 4 LONG INDENTED

Nickel-plated steel. Overall length 7" (178 mm).

No. 57.713



### 5 LONG STRAIGHT/SMOOTH TIP

Nickel-plated steel. Overall length 7" (178 mm).

No. 57.0352



### 6 LONG STRAIGHT/SERRATED TIP

With serrations on handles. Overall length 7" (178 mm).

No. 57.0350 Nickel-Plated Steel

No. 57.0450 Stainless Steel



### 7 LONG WEDGE CURVED TIP

Nickel-plated steel. Overall length 6¾" (171 mm).

No. 57.716 Wedge/Smooth tip



### 8 LONG ROUND/SMOOTH CURVED TIP

Nickel-plated steel. Overall length 7" (178 mm).

No. 57.0351

### 9 LONG SHARP/SERRATED CURVED TIP

Curved, finished points and fine serrations on the handle make this tweezers ideal for even the most delicate objects. Nickel-plated steel. Overall length 6" (152 mm).

No. 57.721



1



### 1 CERAMIC-TIPPED TWEEZERS

These ceramic-tipped, non-rusting tweezers have an aluminum shank. They are extremely smooth and long wearing because they are harder than both stainless steel and carbon steel. They are anti-magnetic and lightweight with a high heat and chemical resistance. Silver and soft solders will not adhere to these tweezers. They will withstand heat up to 1000°C, making them a great choice when soldering platinum.

No. **57.500**

No. **57.501** Replacement point

## COATED FORCEPS/STEAM TWEEZERS

Plastic coating on points provides chemical resistance. Use with steam cleaners and ultrasonic cleaners for non scratch retrieving. Made of nickel-plated steel.

### 2 CROSS LOCK

Overall length 6½" (165 mm).

No. **57.777**



### 3 STRAIGHT

Overall length 8" (203 mm).

No. **57.921**



### 4 LONG STRAIGHT

Overall length 10" (254 mm).

No. **57.922**



### 5 EXTRA-LONG COATED TIP TWEEZERS - ECONOMY

Ideal when using ultrasonic cleaners or steamers. Insulates and provides resistance to heat and chemicals. Extra-long, sturdy, chrome-plated steel tweezers keep you a safe distance from the steam and provides a sure grip and non-scratch retrieving. Chrome-plated steel.

No. **57.0956** Overall length 8" (203 mm)

No. **57.0957** Overall length 12" (305 mm)

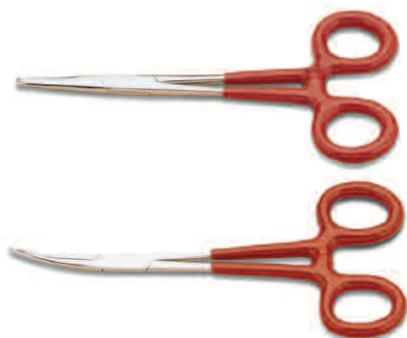


### 6 HEMOSTATS

These versatile, stainless steel pliers can be used as a clamp, heat sink or third hand while soldering. Handles have a two-position locking device and are insulated with vinyl plastisol. Box joint prevents looseness and wobble in the serrated jaws. The serrations are not sharp and will not cut into soft materials. Overall length 5¼" (146 mm).

No. **46.454** Straight

No. **46.456** Curved

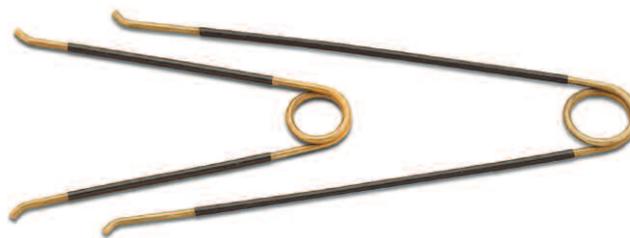


### 7 SPRINGRIP

Made of solid brass with a durable rubber comfort grip. Points are bent to secure work and prevent slippage. Can also be used for inspecting, lacquer and antique application and sandblasting.

No. **57.01400** Overall length 9½" (241 mm)

No. **57.01401** Overall length 6" (152 mm)



## GROBET USA® RETRIEVING FORCEPS

The retrieving forceps have blunt rounded serrated points. Drop-forged for extra durability, and ideal for use when steam cleaning or ultrasonic cleaning.



### RETRIEVING FORCEPS with BENT POINTS

Metal	No.	Length		Guide Pin
		(in)	(mm)	
Nickel-Plated Steel	<b>57.910</b>	10"	254	No

### RETRIEVING FORCEPS with STRAIGHT POINTS



Metal	No.	Length		Guide Pin
		(in)	(mm)	
Nickel-Plated Steel	<b>57.917</b>	6"	152	No



Metal	No.	Length		Guide Pin
		(in)	(mm)	
Nickel-Plated Steel	<b>57.918</b>	8"	203	No



Metal	No.	Length		Guide Pin
		(in)	(mm)	
Nickel-Plated Steel	<b>57.914</b>	10"	254	Yes
Nickel-Plated Steel	<b>57.919</b>	10"	254	No



Metal	No.	Length		Guide Pin
		(in)	(mm)	
Nickel-Plated Steel	<b>57.915</b>	12"	305	Yes
Nickel-Plated Steel	<b>57.920</b>	12"	305	No

## DISSECTING FORCEPS



### 8 HANDLING FORCEPS with STRAIGHT SHAFT

Overall length 5" (127 mm).

Metal	No.	Points	Guide Pin
Nickel-Plated Steel	<b>57.935</b>	Blunt	Yes



### 10 PATTERN 20

With straight shaft. Overall length 4½" (114 mm).

Metal	No.	Points	Guide Pin
Nickel-Plated Steel	<b>57.929</b>	Sharp	Yes

## GROBET USA® HANDLING TWEEZERS

Forged from the best grades of stainless steel, machined to smooth finishes. Extensive hand finishing insures proper shape and alignment of the points, tips and shafts. Curved points are ideal for many operations where small parts need to be precisely placed.



### 6 HANDLING TWEEZERS with REGULAR LENGTH POINTS

Metal	No.	Length		Points
		(in)	(mm)	
Stainless Steel	<b>57.894</b>	6"	152	Serrated



### 7 HANDLING TWEEZERS with ELONGATED POINTS

Metal	No.	Length		Points
		(in)	(mm)	
Stainless Steel	<b>57.896</b>	6"	152	Smooth
Stainless Steel	<b>57.898</b>	6"	152	Serrated



### 9 HANDLING FORCEPS

Well balanced tweezers with serrations on handle. Provides firm gripping action. Overall length 5" (127 mm).

Metal	No.	Points	Overall Length		Guide Pin	Serrated
			(in)	(mm)		
Nickel-Plated Steel	<b>57.927</b>	Blunt	4½"	114	Yes	No



### 11 STAMP FORCEPS

These tweezers have thin, spade-shaped tips which make it easy to pick up delicate objects, such as stamps. Overall length 4½" (114 mm).

No. **57.926** Straight, round spade tip

## SWISS DIAMOND TWEEZERS

Superb quality, Swiss-made with serrated points for easy handling of stones.



### 1 STAINLESS STEEL SLIDE-LOCK with SATIN FINISH

Overall length 6" (152 mm).

Metal	Peer-Vigor	Points	Finish
Stainless Steel	<b>57.605</b>	Fine	Satin
Stainless Steel	<b>57.606</b>	Medium	Satin



### 3 CARBON STEEL SLIDE-LOCK with BLACK FINISH

High quality tweezers with black finish for optimum diamond visibility. Overall length 6" (152 mm).

Metal	Peer-Vigor	Points	Finish
Carbon Steel	<b>57.607</b>	Fine	Black
Carbon Steel	<b>57.608</b>	Medium	Black



### 5 NICKEL-PLATED STEEL SLIDE-LOCK

Overall length 6" (152 mm).

Metal	Peer-Vigor	Points
Nickel-Plated Steel	<b>57.616</b>	Medium



### 7 STAINLESS STEEL STANDARD

Swiss-made tweezers with medium points, serrated tips, and corrugated handles. Overall length 6 3/8" (162 mm).

No. **57.0964**



### 9 STAINLESS STEEL SLIDE-LOCK ECONOMY

Strong, corrugated points.

Metal	Points	Length	
		(in)	(mm)
<b>57.0356A</b>	Medium	5 1/2"	140
<b>57.0357A</b>	Fine	5 1/2"	140



**11**



### 2 CARBON STEEL STANDARD with BLACK FINISH

Slender tweezers with black finish for optimum diamond visibility.

Overall length 6" (152 mm).

No. **57.620**



### 4 NICKEL-PLATED STEEL STANDARD

With regular width points. Overall length 6" (152 mm).

Metal	Peer-Vigor	Points
Nickel-Plated Steel	<b>57.612</b>	Medium
Nickel-Plated Steel	<b>57.614</b>	Fine



### 6 TITANIUM

Very light and sensitive tweezers. Overall length 6" (152 mm).

No. **57.625** Medium tip

No. **57.626** Fine tip

No. **57.627** Extra-fine tip



### 8 STAINLESS STEEL SLIDE-LOCK

Swiss-made tweezers with medium points, serrated tips, and corrugated handles. Overall length 6 3/8" (162 mm).

No. **57.0967**



### 10 STAINLESS STEEL ECONOMY with SATIN FINISH

Metal	Points	Length	
		(in)	(mm)
<b>57.0394A</b>	Fine	5 3/4"	146
<b>57.0395A</b>	Medium	6 1/2"	165

### 11 CARBON STEEL ECONOMY with BLACK FINISH

Metal	Points	Length	
		(in)	(mm)
<b>57.0348</b>	Fine	6 1/4"	159

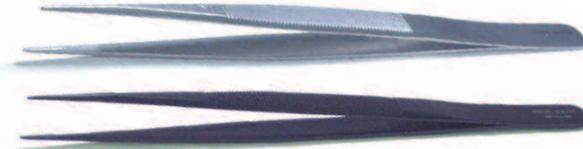
## DIAMOND TWEEZERS

These select styles of high quality tweezers make handling diamonds easy. Made of quality stainless and blackened stainless steel. Overall length 6¼" (160mm).



### 1 SHARP

No.	Style	Description	Tip Diameter
57.120	XF	Sharp points, Matt	.0016"
57.122	F	Sharp points, Matt	.0024"
57.124	M	Sharp points, Matt	.0035"
57.126	L	Sharp points, Matt	.0047"
57.121	XF	Sharp points, Black	.0016"
57.123	F	Sharp points, Black	.0024"
57.125	M	Sharp points, Black	.0035"
57.127	L	Sharp points, Black	.0047"
57.129	XL	Sharp points, Black	.0071"



### 2 ROUNDED POINTS with INSIDE GROOVE

No.	Style	Description	Tip Diameter
57.130	M1	Inside groove, Matt	.0035"
57.132	L1	Inside groove, Matt	.0047"
57.134	XL1	Inside groove, Matt	.0071"
57.136	XXL1	Inside groove, Matt	.0094"
57.131	M1	Inside groove, Black	.0035"
57.133	L1	Inside groove, Black	.0047"
57.135	XL1	Inside groove, Black	.0071"



### 3 SHARP POINTS with SLIDE-LOCK

No.	Style	Description	Tip Diameter
57.138	FR	Slide-lock, Matt	.0024"
57.140	MR	Slide-lock, Matt	.0035"
57.142	LR	Slide-lock, Matt	.0047"
57.144	XLR	Slide-lock, Matt	.0071"
57.139	FR	Slide-lock, Black	.0024"
57.141	MR	Slide-lock, Black	.0035"



### 4 ROUNDED POINTS with SLIDE-LOCK and INSIDE GROOVE

No.	Style	Description	Tip Diameter
57.146	MR1	Slide-lock, inside groove, Matt	.0035"
57.150	XLR1	Slide-lock, inside groove, Matt	.0071"
57.147	MR1	Slide-lock, inside groove, Black	.0035"
57.149	LR1	Slide-lock, inside groove, Black	.0047"
57.151	XLR1	Slide-lock, inside groove, Black	.0071"

## SERRATED TIPS

Extra high quality European-made tweezers with finely serrated tips that grip and hold even the most delicate objects securely without damage.



### 5 STANDARD

Smoothly polished chromium-plated tweezers. Shanks are tapered and have beveled edges.

Medium Points

No. 57.590 Overall length 5½" (140 mm)

No. 57.592 Overall length 6" (152 mm)

No. 57.594 Overall length 6¾" (162 mm)

Fine Points

No. 57.591 Overall length 5½" (140 mm)

No. 57.593 Overall length 6" (152 mm)

No. 57.595 Overall length 6¾" (162 mm)



### 6 SLENDER

Lightweight shape with very fine points for picking up smaller objects and stones. Overall length 5½" (140 mm).

No. 57.598 Stainless steel



### 7 CURVED TIP

Slender pattern with very fine points. Stainless steel. Overall length 5½" (140 mm).

No. 57.601



### 8 SLIDE-LOCK

Chromium-plated steel tweezers with serrated points and locking device.

Overall length 5½" (140 mm).

No. 57.603 Medium points

No. 57.604 Fine points



### 1 BALANCE WEIGHT FORCEPS

Designed for manipulating balance weights. Plastic tip version eliminates possibility of scratching fractional weights and also provides some acid, alkali and solvent resistance. Overall length 4" (102 mm).

Metal	No.	Points
Stainless Steel	57.907	Plain



### 2 RING SOLDERING TWEEZERS

Holds rings from inside shank for easy soldering.  
No. 48.230



### 3 HEAD and SHANK TWEEZERS - PREMIUM QUALITY

Stainless steel slide-locking tweezers securely holds the setting and shank in position for easy soldering of solitaires. One tip is curved to hold shank, the other serrated to grip setting.  
No. 48.235



### 4 HEAD and SHANK TWEEZERS

Position the ring shank and setting to solder solitaires quickly and easily. Curved jaw has groove to hold shank securely, while flat jaw is serrated to prevent movement. Locking handles apply even pressure. Stainless steel, anti-magnetic and anti-acid. Overall length 5½" (140 mm).  
No. 57.0398



### 5 PEER® PEARL-HOLDING TWEEZERS

Tips are cup-shaped to hold small round objects. Overall length 4½" (114 mm). Swiss made.  
No. 57.641



### 6 POCKET THREE-PRONGED HOLDER for STONES and DIAMONDS

Small holder fits in pocket. Wire jaws contract into body and plunger in end opens the jaws. Overall length 2" (51 mm).  
No. 57.636



### 7 PRONGED HOLDING TWEEZERS for STONES and DIAMONDS

For gripping and holding small objects. Plunger in handle opens wire jaws that contract back into handle. Overall length 4¾" (121 mm).  
No. 57.634 Three-pronged holder  
No. 57.635 Four-pronged holder



### 8 SCREW-HOLDING TWEEZERS

A cross-slot cut into the tip of the tweezers allows easy pick up of screws or small pieces for placement or examination. Overall length 4" (102 mm).  
No. 57.731



### 1 TWEEZER with shovel

Excellent for handling diamonds, pearls and other precious gemstones.  
6-1/2" long  
No. 51.099



### 2 PIN TUMBLE TWEEZER

Retrieving forceps have blunt rounded serrated points. Nickel plated steel.  
6" long (152 mm).  
No. 57.939



### 3 SELF LOCKING SREW HOLD TWEEZER

Self-locking, straight tip. 4 3/4" long (121 mm).  
No. 57.759



### 4 GLASS FILL RED TWEEZER

Never rusts, resists acetone, alcohol and acids. Also used to hold batteries.  
No. 57.958

## TWEEZERS KITS IN POUCH

### 5 FIVE PIECE ALL-PURPOSE TWEEZERS KIT

A complete, basic tweezers set. An ideal way to sample and select the proper type tweezers for most applications. The tweezers have hundreds of uses and the deluxe vinyl pouch provides handy storage. Kit contains: 4 1/2" (114 mm) pointed tweezers (No. 57.929), 4 3/4" (121 mm) stamp tweezers (No. 57.926), 6" (152 mm) retrieving forceps (No. 57.917), 6" (152 mm) solder/utility tweezers (No. 57.721) and 6 1/2" (165 mm) self closing tweezers (No. 57.753).  
No. 57.936



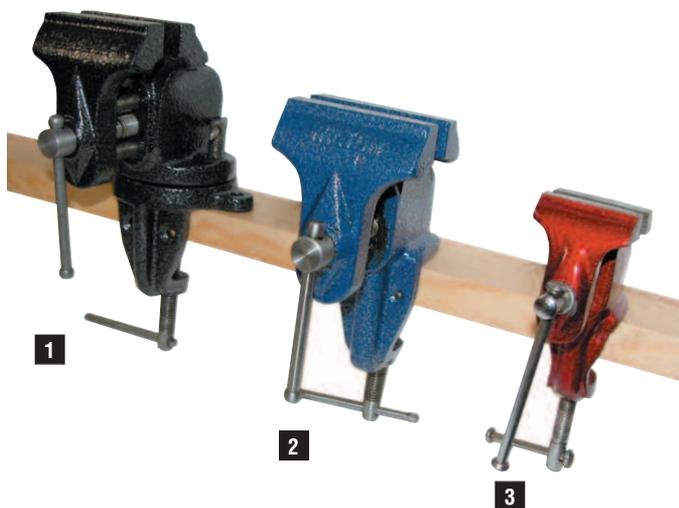
### 6 FIVE PIECE SOLDER/UTILITY TWEEZERS KIT

Contains two self-closing general purpose tweezers (Nos. 57.750 and 57.753) and three utility/solder types (Nos. 57.705, 57.713 and 57.716) in a deluxe vinyl pouch.  
No. 57.937



### 7 12 PIECE ALL-PURPOSE TWEEZERS KIT

Kit contains:  
4 3/4" (119 mm) Dumont style stainless tweezers: #1 (No. 57.0751), #2A (No. 57.0752A), #3 (No. 57.0753), #5 (No. 57.0755) and #7 (No. 57.0757), 6 1/4" (15.9 cm) black non-reflective diamond tweezers (No. 57.0347), 5 1/2" (140 mm) chrome slide-lock fine diamond tweezers (No. 57.0357A), 5 1/2" (140 mm) chrome slide-lock medium diamond tweezers (No. 57.0356A), 5" (127 mm) Boley style tweezers AA (No. 57.0301), 5 1/2" (140 mm) Boley style tweezers RR (No. 57.0311), 6 1/2" (165 mm) soldering tweezers (No. 57.0373) and 4 3/4" (117 mm) plastic tweezers (No. 57.958). Comes in a plastic pouch.  
No. 57.01250



**1 SWIVEL BENCH VISE**

Swivel base permits vise to be positioned in any direction and locked. With twin guide rods to assure parallel operation and rigidity. Smooth jaws will not mar soft metals. With anvil on top. Jaws are 2½" (64 mm) wide and open to 2½" (64 mm). Fits benches up to 2" (51 mm) thick.  
No. 58.104

**2 BENCH VISE**

Bench vise with twin guide rods to assure parallel closing and rigidity. Jaws are smooth to prevent marring of soft metals. Body is enameled. Jaws are 2½" (64 mm) wide and open to 2½" (64 mm). Fits benches 2" (51 mm) thick.  
No. 58.10

**3 BENCH VISE**

Well made, strong with rust-proof finish. Jaws are 1¾" (44 mm) wide and open to 1¾" (44 mm). Fits benches up to 2" (51 mm) thick.  
No. 58.0519



**4 WOOD HANDLED HAND VISE**

A lightweight vise mounted in a wood handle. Smooth jaws are 1¼" (32 mm) wide and open to 1" (25 mm). Overall length is 6¼" (159 mm).  
No. 58.130



**5 STEEL HAND VISE**

Spring action handle keeps the serrated jaws open. Jaws are 1¼" (32 mm) wide and open to 7/16" (11 mm). The jaws are closed by turning wing screw. Overall length is 3¾" (95 mm).  
No. 58.120



**6 WING NUT HAND VISES**

Serrated, grooved, spring action jaws open and close with large wing nut. Handles are hollow so that long wire will pass through. Two jaw widths are available. Both open to 1/4" (6 mm). Overall length is 4½" (114 mm).  
No. 58.140 Jaw width ¼" (6 mm)  
No. 58.141 Jaw width 5/8" (16 mm)



**7 LOWELL PATTERN HAND VISE**

With hollow handle and grooved corrugated jaws that open and close by turning handle. Design allows you to hold long wire pieces not accessible with regular hand vise. Width of jaws ½" (13 mm), overall length 4¾" (121 mm).  
No. 58.0528

## PIN VISES

Used to hold a wide variety of items such as small drills, taps, wire, rods, and screws.



### 1 BABY PIN VISE

Midget-sized hollow handle metal pin vise with screw chuck. Capacity 0 to .020" (0 to .51 mm), overall length 1 7/8" (48 mm).

No. 58.200



### 2 DOUBLE-ENDED PIN VISE

Different size steel collets are mounted in both ends of hollow handle. Capacity 0 to .099" (0 to 2.5 mm), overall length 4 1/4" (108 mm).

No. 58.215



### 3 SWIVEL HEAD PIN VISE

With large free wheeling head, making it suitable for drilling, tapping, or using as a screwdriver. Comes with two double-ended collets, one in screw chuck and the other stored in the handle. Capacity 0 to .125" (0 to 3.2 mm), overall length 3 1/2" (89 mm).

No. 58.221

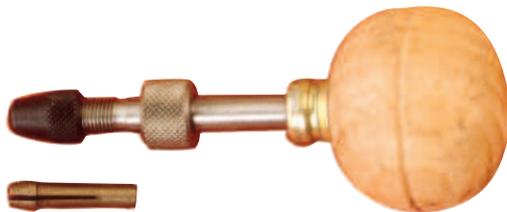


### 4 WOOD HANDLE PIN VISES

Economical pin vises with black fluted wood handles and steel chucks.

No. 58.231 Capacity 0 to .047" (0 to 1.19 mm), overall length 4" (102 mm)

No. 58.232 Capacity 0 to .059" (0 to 1.5 mm), overall length 4 1/2" (114 mm)



### 5 SWIVEL TOOL HANDLE

Ball-shaped, wood swivel handle fits in the palm of your hand, making it useful for setting, reaming, tapping, etc. Both tools include 2 chucks which open respectively from 0 to .089" (0 to 2.3 mm) and .13 to .239" (3.1 to 6 mm).

No. 37.769

No. 37.771 Economy



### 6 UNIVERSAL BALL JOINT SWIVEL VISE with VACU-BASE

Completely portable, attaches instantly to any smooth, non-porous surface. Large 3" (76 mm), V-grooved, iron jaws open to 3" (76 mm) with precision screw action. Universal ball joint rotates vise to any desired working angle. Includes a set of protective rubber jaws.

No. 58.103 Vise with vacu-base



**1 DOUBLE-ENDED PIN VISE**

With reversible steel collets in each end. Hexagonal heads prevent rolling. Hollow handle and heads made of brass. Capacity is 0 to .125" (0 to 3.2 mm), overall length 4 1/8" (105 mm).

No. 58.240



**2 PIN SLIDE**

Knurled ring slides forward to close steel jaws, making it easy to operate with one hand. Handle is hollow. Capacity 0 to .051" (0 to 1.3 mm), overall length 4 1/8" (105 mm).

No. 58.300



**3 SQUARE CHUCK PIN VISE**

Has two steel chucks with spare chuck held in end of hollow brass handle. Will not roll off bench. Capacity 0 to .079" (0 to 2.0 mm).

No.	Length	
	(in)	(mm)
58.249	3"	76
58.250	3 3/4"	95
58.252	4 1/4"	108
58.253	4 3/4"	121
58.254	5"	127



**4 BRASS HANDLE PIN VISE**

Steel collet is set into hollow brass handle with screw chuck. Capacity 0 to .028" (0 to .71 mm), overall length 3 1/8" (79 mm).

No. 58.205



**5 PRECISION PIN VISES**

Tool steel collets grip firmly when screw chuck is tightened. Chromium-plated handles are hollow to permit holding of long wires. Body is stepped, with the small portion knurled, so that it can be rotated between fingers. The larger portion is smooth so it can be held

precisely in lathes and drill presses. Set of 4 precision pin vises.

Made in USA.

No. 58.284

**Individual Pin Vises**

No.	Capacity		Length	
	(in)	(mm)	(in)	(mm)
58.280	0 to .040"	0 to 1.02	3"	76
58.281	.025" to .062"	0.6 to 1.60	3 1/4"	83
58.282	.050" to .125"	1.3 to 3.20	3 7/8"	98
58.283	.115" to .188"	2.9 to 4.80	4 1/4"	108

5



### 1 TRIPLE DUTY KRAFT REPAIR ENVELOPES

Each numbered envelope has two numbered detachable stubs; one for the customer and the other for filing. Available with or without lay-away schedule on back. Envelope measures 5 3/4" x 3 1/8" and is packed 1,000 to a box.

Series Numbers	With Lay-away	Without Lay-away
Series 1 to 1000	<b>61.151</b>	<b>61.15101</b>
Series 1001 to 2000	<b>61.152</b>	<b>61.15201</b>
Series 2001 to 3000	<b>61.153</b>	<b>61.15301</b>
Series 3001 to 4000	<b>61.154</b>	<b>61.15401</b>
Series 4001 to 5000	<b>61.155</b>	<b>61.15501</b>
Series 5001 to 6000	<b>61.156</b>	<b>61.15601</b>
Series 6001 to 7000	<b>61.157</b>	<b>61.15701</b>
Series 7001 to 8000	<b>61.158</b>	<b>61.15801</b>
Series 8001 to 9000	<b>61.159</b>	<b>61.15901</b>
Series 9001 to 10000	<b>61.160</b>	<b>61.16001</b>

Also available with custom 3-line imprint. Minimum 5,000. Call for details.



### 3 COIN ENVELOPES

Plain white coin envelope. Envelope measures 1 3/4" x 1 3/4".

No. **61.0137**



### 2 BLANK JOB ENVELOPES

Very handy and can be rubber stamped with your name and address. Identifies your work when you send samples or orders to your supplier and helps prevent misdirected orders. With gummed flaps.

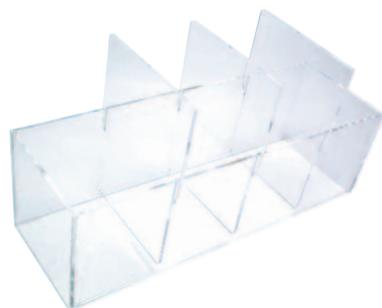
No.	Size	Description	Box
<b>61.110</b>	1 1/2" x 1"	White woven	1000
<b>61.112</b>	2 3/4" x 1 3/4"	#00 white, coin	1000
<b>61.0133</b>	3 1/2" x 2 1/4"	#1 kraft, coin	500
<b>61.113</b>	4 1/4" x 2 1/2"	#3 kraft, coin	500
<b>61.0131</b>	4 1/2" x 3"	#4 kraft, coin	500
<b>61.114</b>	5 1/2" x 3 1/8"	#5 1/2 kraft, coin	500
<b>61.115</b>	6" x 3 1/2"	#6 kraft, coin	500



### 4 STOCK CONTROL ENVELOPES

Heavy-duty, brown kraft envelopes, 3" x 4 1/2" (76 x 114mm) with long flap, on both sides. 500 per box.

No. **EV 610140**



### 5 ACRYLIC JOB ENVELOPE HOLDER

Slim line acrylic job envelope holder is 3 1/2" x 11". Comes with three dividers to keep your job orders separate.

No. **61.500**



### 1 "MINI-GRIP" ZIPPAK BAGS

Perfect for customer orders, stones, parts, findings, displays, etc. Each 2 mil thick bag has unique locking feature to provide tight seal. Bags are available completely clear or with white label block for marker use. Sold in boxes of 1000.

Size	Clear	With White Label Block
2" x 2"	<b>61.120</b>	—
2" x 3"	<b>61.121</b>	<b>61.131</b>
3" x 4"	<b>61.122</b>	<b>61.132</b>
3" x 5"	<b>61.123</b>	<b>61.133</b>
4" x 4"	<b>61.124</b>	—
4" x 6"	<b>61.125</b>	<b>61.134</b>
5" x 7"	<b>61.130</b>	—



### 2 ECONOMY BAGS

2 mil thick bags lock to provide tight seal. Bags are available completely clear or with white label block. Sold in boxes of 1000.

Size	Clear	With White Label Block
2" x 2"	<b>61.12001</b>	—
2" x 3"	<b>61.12101</b>	<b>61.13101</b>
3" x 4"	<b>61.12201</b>	<b>61.13201</b>
3" x 5"	<b>61.12301</b>	<b>61.13301</b>
4" x 4"	<b>61.12401</b>	—
4" x 6"	<b>61.12501</b>	<b>61.13401</b>
5" x 7"	<b>61.13001</b>	—



### 3 ANTI-TARNISH TISSUE

For wrapping silverware, jewelry and other gifts. Made of the finest quality white bleached tissue, which will not tarnish the merchandise. Comes in rolls or flat reams.

- 61.051** 7<sup>3</sup>/<sub>8</sub>" x 1100" roll
- 61.052** 20" x 720" roll
- 61.053** 20" x 30" 480 sheets



### 4 ANTI-TARNISH PAPER SQUARES

Fine quality tissue, free of all lint. Sold in boxes of 1000 sheets.

- No. **61.0144** Vigor brand 4" square
- No. **23.555** Grobet brand 4<sup>1</sup>/<sub>4</sub>" square



### 5 TISSUE and GIFT WRAP CUTTERS

Has sturdy frame that can be screwed to table.  
No. **61.092** Wood frame for 7<sup>3</sup>/<sub>8</sub>" rolls



### 6 "GIFTS of DISTINCTION" GIFT BAGS

Printed with "Gifts of Distinction" rose design. Available in silver and gold.  
Sold in packs of 1000.

Silver	Gold	size
<b>61.173</b>	<b>61.174</b>	4" x 6"
<b>61.177</b>	<b>61.178</b>	5" x 7"
<b>61.179</b>	<b>61.180</b>	6" x 9"



**1 OFFICIAL JEWELRY APPRAISAL FORMS**

Three-part appraisal form, package of 50.  
No. 61.171



**2**

**3**

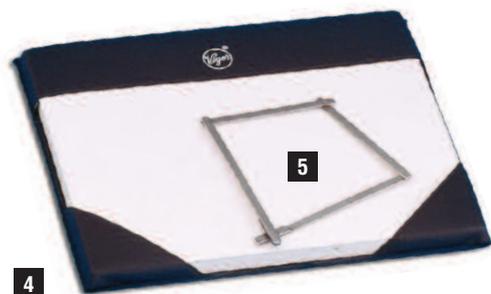
**2 TRIPLE LAYER FOLDED DIAMOND PAPERS**

Both super strong and extra soft. Used to wrap and protect other precious stones.  
Box of 25 sheets.  
No. 61.085 3" x 1<sup>1</sup>/<sub>16</sub>"  
No. 61.086 3<sup>3</sup>/<sub>4</sub>" x 2"

**3 VIGOR PARCEL PAPERS**

The brand world renowned for quality. Protects stones, shows them off at their best and keeps stock in order. Three-ply paper measures 7" x 5<sup>3</sup>/<sub>4</sub>". Sold in boxes of 100.

No.	Use For	Outside Paper	Inside Paper
61.0570	Diamonds	White	Blue
61.0575	Diamonds	White	White



**4**

**4 SORTING PADS**

Fine quality white paper with heavy cardboard backing. Bound on three sides, blotter-style, to prevent curling or lifting. Sold in pads of 50 sheets.  
No. 61.0586 10" x 12"

**5 DIAMOND PAPER WEIGHT**

Holds folded diamond paper in open position. Neatly folds up when not in use. Made of stainless steel. Length 6<sup>1</sup>/<sub>2</sub>".  
No. 61.080



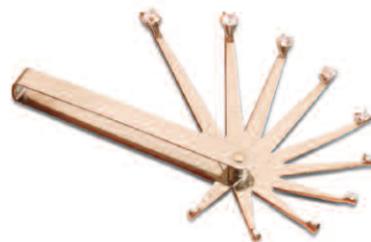
**6 SHOVELS with HANDLES**

Excellent for handling diamonds, pearls and other precious gemstones.  
No. 51.095 Nickel-plated with chrome finish  
No. 51.0552 Non-reflective black finish



**7 GENUINE LEATHER PARCEL PAPER BOX with ZIPPER**

Gives maximum protection to stones. Fully felt-lined with elastic band to keep papers in proper order. Measures 7" L x 3<sup>3</sup>/<sub>4</sub>" W x 2" D.  
No. 61.0760



**8 DIAMOND SELLER**

Ideal for closing the sale without using expensive stones. Cubic Zirconia mounted on stainless steel arm folds within a protective cover when not in use. With 10 sizes ranging from 0.10 to 2 carats. Each arm has size of the stone in carats and millimeters.  
No. 35.555



**1 PRONG SETTING DISPLAYS for DIAMONDS**

Show off the beauty of a diamond inexpensively in these silver and gold prong setting displays. Your choice of short and long prong settings.

Sold in packs of 12.

No. **35.100** Silver, short prong .....

No. **35.101** Gold, short prong

No. **35.102** Silver, long prong

No. **35.103** Gold, long prong



**2 JEWELRY PINS**

White or yellow jewelry pins have long, sharp points for pinning all types of jewelry to pads, trays, easels, etc.

No. **61.560** Box of 1000 white

No. **61.561** Box of 100 white

No. **61.563** Box of 1000 yellow

No. **61.564** Box of 100 yellow



**3 BASIC BLACK TRAYS and CASES**

The high contrast and sophistication of black gets results in sales. The vibrant black velvet trays and cases prove that impressive and effective displays need not be expensive. The eight items in this line include trays and cases for 12, 24, 36 and 72 rings. Cases are wood, covered in textured black vinyl, with simply designed metal latches. Slotted black foam under the velvet inserts hold rings firmly in place. Covers are lined in black satin. Trays have decorative gold tooling around the edges.

No. **61.502** 12 Ring tray

No. **61.504** 24 Ring tray

No. **61.506** 36 Ring tray

No. **61.508** 72 Ring tray

No. **61.512** 12 Ring case

No. **61.514** 24 Ring case

No. **61.516** 36 Ring case

No. **61.518** 72 Ring case



**4 JEWELRY DISPLAY TRAY**

Bring out the best in your merchandise. These solid trays are black. Velvet pads are sold separately. Tray measures 14<sup>3</sup>/<sub>4</sub>" x 8<sup>1</sup>/<sub>4</sub>" x 1".

No. **61.537** Tray

No. **61.538** Black velvet pad



**5 DIAMOND SIEVES**

Hand-made sieves to sort rough and polished diamonds. Complete set supplied in zippered carrying case. Chart shows plate size of stones per carat; weight and size in millimeters. Each with 21 plates, 0-20.

No. **51.0560** 1<sup>7</sup>/<sub>8</sub>" diameter

No. **51.0565** 2<sup>5</sup>/<sub>8</sub>" diameter

# PROFESSIONAL EAR PIERCING EQUIPMENT FROM STUDEX®

The safe and effective way to pierce ears profitably!

## EAR PIERCING KITS

Each kit contains a universal ear piercing instrument which pierces three sizes of studs; maxi, mini and regular, plus the additional accessories listed. Studs are 24K goldplate over surgical stainless steel, with surgical stainless steel posts.



### 1 UNIVERSAL STARTER KIT

Includes 12 pairs of assorted studs in three sizes, non-toxic marking pen, window banner, counter sign, release forms, tube of ear care gel, one pair of training studs and instructions.

No. 65.0997



### 2 UNIVERSAL INSTRUMENT KIT

Includes non-toxic marking pen, tube of ear care gel, one pair of training studs and instructions.

No. 65.0993

## PIERCED EAR STUDS

Each stock number is sold in packs of one dozen pairs.



### 3 REGULAR BEZEL BIRTHSTONES

No. 65.0204 Crystal - April

### 4 CUBIC ZIRCONIA

No. 65.0460 Maxi

No. 65.0400 Regular

No. 65.0450 Mini

### 5 REGULAR TIFFANY BIRTHSTARS

No. 65.0104 Crystal - April

### 6 TRADITIONAL BALLS

No. 65.0300 Maxi

No. 65.0200 Regular

No. 65.0100 Mini

### 7 REGULAR PEARL BEZEL

No. 65.0301

### 8 REGULAR STAR SHAPE

No. 65.0501

### 9 REGULAR HEART SHAPE

No. 65.0502

**BEZEL BIRTHSTONE ASSORTMENT** (not pictured)

Contains one pair of each month.

No. 65.0213 Regular

No. 65.0214 Mini

## EAR PIERCING DISPLAYS

Ideal for increased sales and profits.



### 10 SMALL DISPLAY STAND

Selection of 24 styles of pierced ear studs. Compact but effective.

No. 65.0982



### 11 LARGE EASEL DISPLAY

Complete selection of the best selling pierced ear studs.

No. 65.0981



**1 EAR PIERCING ACCESSORIES ALCOHOL PREPS**

200 individually wrapped cleaners per box.

No. 65.0900



**2 RELEASE FORMS**

A must when working with consumers. Sold in packs of one dozen.

No. 65.0910



**3 MARKING PEN**

Unique pen safely marks the desired area on the ear for placement of the earring stud. Sold individually.

No. 60.719

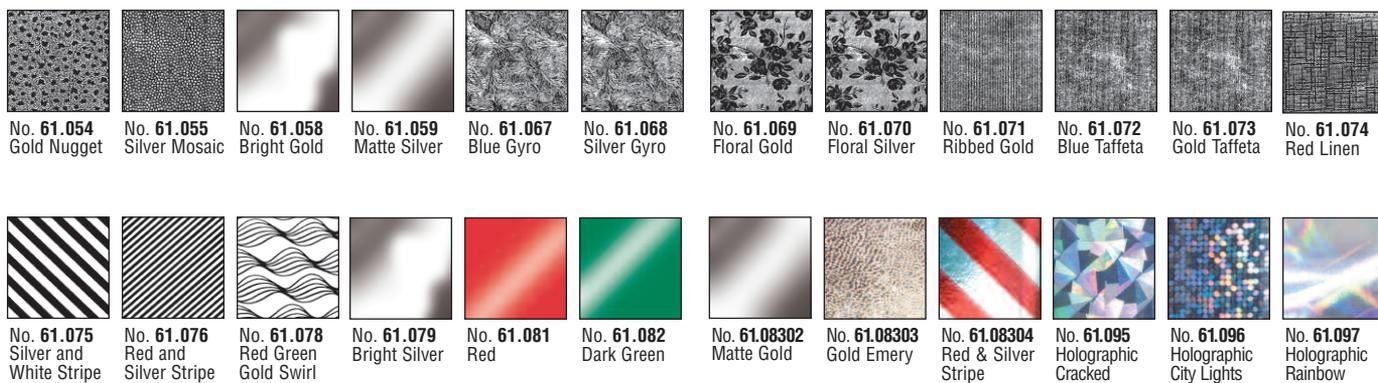
**4 STUDEX EAR PIERCING GEL**

.02 oz, 24pk

No. 65.0905

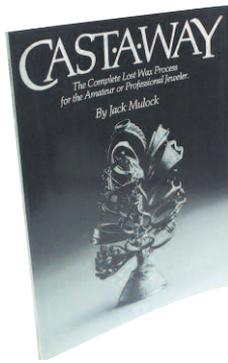


**FOIL GIFT WRAP**



**FOIL GIFT WRAP**

Measures 7½" x 150'

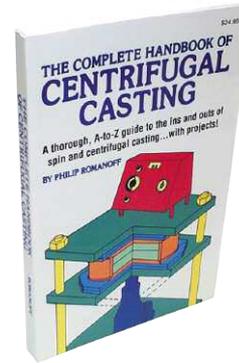


### **1 CAST-A-WAY The Complete Lost Wax Process for the Amateur or Professional Jeweler**

*By Jack Mulock*

Begins with a brief description of the tools and supplies necessary, then goes into details of spruing, investing, burnout, pickling, cleaning and polishing. Soft cover, 61 pages.

No. **62.106**

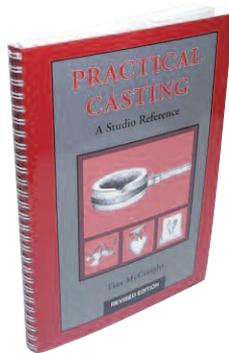


### **2 The COMPLETE HANDBOOK of CENTRIFUGAL CASTING**

*By Philip Romanoff*

An extremely thorough, A to Z guide to the practical "ins and outs" of casting, including projects. Well-illustrated and well-written by an acknowledged expert in the field. Soft cover, 256 pages.

No. **62.108**



### **3 PRACTICAL CASTING - A Studio Reference**

*By Tim McCreight*

A studio reference for jewelers, metalsmiths and sculptors. Hundreds of drawings and concise descriptions. A complete appendix includes charts and tables not available elsewhere. Of special note are the thorough safety considerations that make this book a unique addition. Soft cover, 153 pages.

No. **62.107**

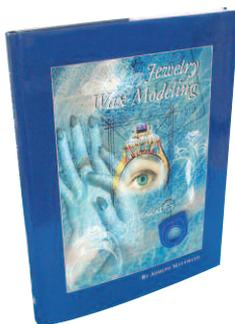


### **4 JEWELRY CASTING - Centrifugal or Lost Wax**

*By Murray Bovin*

A thorough book covering casting by the centrifugal or lost wax method. Many of the techniques used commercially are explained in detail. While many tips are included for the beginning craftsman, this well-illustrated book is a must for anyone who does professional work. Chapters on mold making, casting waxes, spruing and investing, burnout, centrifugal casting machines, etc. Soft cover, 144 pages.

No. **62.102**

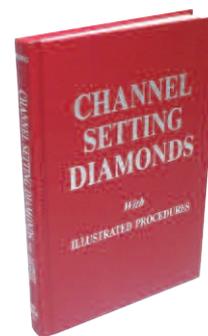


### **5 JEWELRY WAX MODELING**

*By Adolfo Mattiello*

This book has been written by one of the world's best known jewelers and model makers. His knowledge of creating jewelry from the wax modeling method will prove invaluable to beginners and professionals alike.

No. **62.493**

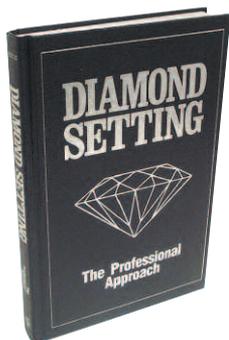


### **6 CHANNEL SETTING DIAMONDS with Illustrated Procedures**

*By Robert R. Wooding*

Written to help clarify misinterpretations about channel setting diamonds. The book explains the fundamentals with the help of illustrations. It also provides an opportunity for diamond setters to learn how to set diamonds by a variety of means, under different situations. Hard cover, 140 pages.

No. **62.446**



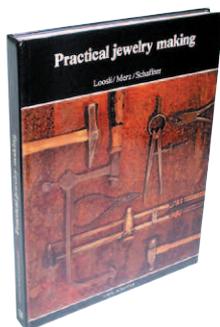
**1 DIAMOND SETTING - The Professional Approach**

By Robert R. Wooding  
 Experienced diamond setters as well as beginners can benefit from reading this book. It begins by describing the tools and supplies necessary and goes on to detail the steps necessary to do pin-point settings, prong settings (both round and fancy cut), bezel settings, channel settings, fishtail settings and bead settings. Hard cover, 178 pages.  
 No. 62.450



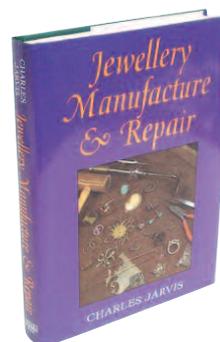
**2 JEWELRY MAKING for Schools/Tradesmen/Craftsmen**

By Murray Bovin  
 Revised and enlarged edition. Clear text, with useful photographs and diagrams of fundamental processes and techniques such as enameling, plating and etching. Includes sections on the three types of casting, stones used for jewelry and methods of setting stones. Appendix and supplementary tables. Soft cover, 288 pages.  
 No. 62.451



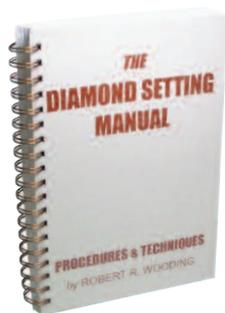
**3 PRACTICAL JEWELRY MAKING**

By Loosli/Merz/Schaffner  
 Details valuable exercises from trainee level to master working procedures. The use of each tool is described as well as a presentation of basic exercises. A special section follows where room is left for the drawing imposed by the master and space is provided for illustrating the apprentices own creation. It can be a handy workshop aid and reference book for the experienced professional. Hard cover, 164 pages.  
 No. 62.01409



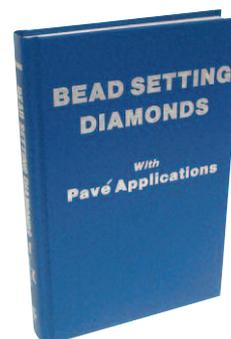
**4 JEWELRY MANUFACTURE and REPAIR**

By Charles Jarvis  
 With over 280 line drawings, it's a comprehensive reference book which covers the entire field of jewelry manufacture and repair. Hard cover, 212 pages.  
 No. 62.459



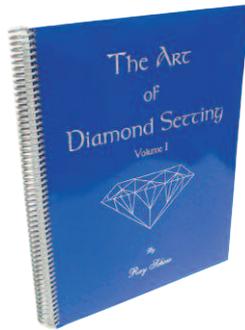
**5 The DIAMOND SETTING MANUAL Procedures and Techniques**

By Robert R. Wooding  
 Discussions and illustrations describe how diamonds are set in specific settings. The procedures and techniques detailed in this book will help the diamond setter advance in his/her skills.  
 No. 62.447



**6 BEAD SETTING DIAMONDS with Pavé Applications**

By Robert R. Wooding  
 Detailed, well-illustrated instructions will assist the apprentice as well as the expert. Tools, bead setting procedures, applications and pavé setting are the four major sections. Many enriched techniques are included. Hard cover, 192 pages.  
 No. 62.449

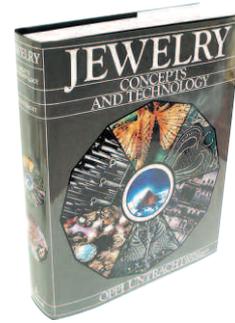


**1 ART of DIAMOND SETTING**

*By Ray Schow*

You will begin by learning the procedures and techniques for bead setting and bright cutting and proceed to more advanced work. With over 220 detailed photos, complicated operations are made simple. This book is a guide to help you with your setting. It will help you learn to set stones from scratch or to improve the setting you are now doing. Soft cover, 220 pages.

No. **62.440**

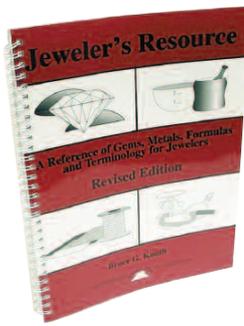


**2 JEWELRY - Concepts and Technology**

*By Oppi Untracht*

The definitive guide and handbook for jewelry makers of all levels of ability. Ten years in preparation and production make this one of the most comprehensive books available on the subject. Contains work by 300 jewelers from 26 countries, with 900 photos and over 300 illustrations. Hard cover, 840 pages.

No. **62.498**



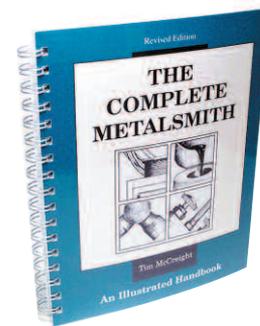
**3 JEWELER'S RESOURCE**

**A Reference of Gems, Metals, Formulas and Terminology for Jewelers**

*By Bruce Knuth*

A unique and practical tool for the bench jeweler and student, as well as the retail jeweler. Easy to follow text and illustrations on many aspects of gems and jewelry including: a listing of gems and gem properties, a list of birthstones, diagrams of more than 40 gem cutting styles, legal standards of diamond, gold and silver marketing, formulas and chemical preparations, ring size gauges and sizes, measurement conversion tables and more. Soft cover, 112 pages.

No. **62.443A**

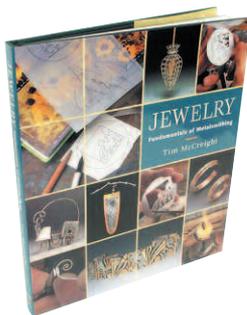


**4 The COMPLETE METALSMITH  
An Illustrated Handbook**

*By Tim McCreight*

An illustrated handbook describing everything from metals and their properties to tools and how to use them. Easy-to-follow index makes the answers easy to find.

Soft cover, 195 pages.  
No. **62.500**



**5 JEWELRY - Fundamentals of Metalsmithing**

*By Tim McCreight*

Offers the beginning and intermediate metalsmith clear and insightful instruction on jewelry-making methods. Subjects include cutting and bending; texturing; fusing and soldering; cold connections; finishing and patina; stone setting; casting; mechanisms and chains. Illustrated with both demonstration and completed jewelry photos. Hard cover, 145 pages.

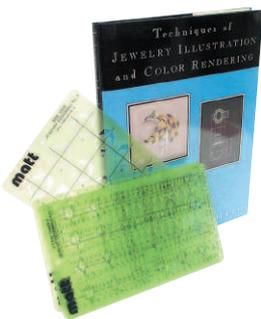
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**6 METALS TECHNIC - A Collection of Techniques for Metalsmiths**

This unique collection gathers the experience of a dozen leaders of fine metalsmithing. From techniques as ancient as granulation and depletion gilding to the latest word in fold forming and anticlastic raising, this book is a valuable addition to every jewelry makers' library. Hard cover, 151 pages.

No. **62.471**



**1 Techniques of JEWELRY ILLUSTRATION and COLOR RENDERING**

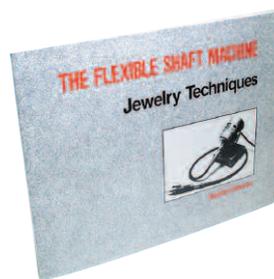
*By Adolfo Mattiello*

Illustrating jewelry is the act of transforming ideas into reality. Professional looking illustrations give the designer an advantage. This manual brings the talents and expertise of outstanding jewelry designers into one volume. The templates provide support in giving your ideas a pleasing visual rendering. The manual and template set together, helps either student or trained designer bring design ideas to life.

No. **62.495** Manual with 5 templates

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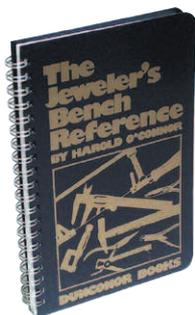


**2 The FLEXIBLE SHAFT MACHINE - Jewelry Techniques**

*By Harold O'Connor*

The flexible shaft machine is probably used more often than any other tool by the practicing craftsman. This well-illustrated book serves as a starting point. Soft cover, 47 pages.

No. **62.499**



**3 The JEWELER'S BENCH REFERENCE**

*By Harold O'Connor*

A wealth of information on findings, processes, techniques and materials for the novice or intermediate craftsman. Instructs on care and use of equipment and gives expert information on jewelry making techniques. Soft cover, 68 pages.

No. **62.460**

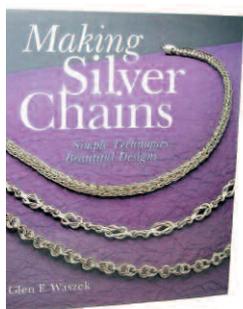


**4 SILVERSMITHING and ART METAL for Schools/Tradesmen/Craftsmen**

*By Murray Bovin*

Written for all who do metalsmithing. Contains the latest techniques and practical ideas and includes chapters on art metal work. Instructions are clear, easy to follow and are supported by over 300 illustrations. Soft cover. 184 pages.

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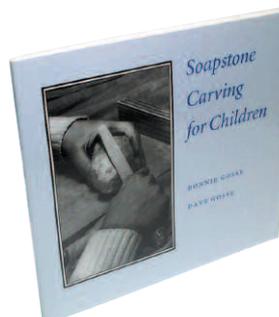


**5 MAKING SILVER CHAINS Simple Techniques, Beautiful Designs**

*By Glen F. Waszek*

Silver chains are the backbone of any jewelry collection! Walk through the basic processes of silver-working, from soldering to pickling. Start with the basic trace design and work up to sophisticated and original designs.

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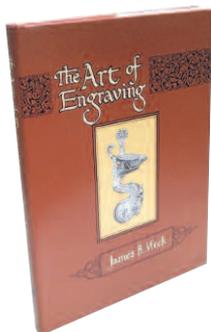


**6 SOAPSTONE CARVING for CHILDREN**

*By Bonnie Gosse*

A book for adults as well as children. Takes the novice through simple step-by-step instructions, tool descriptions, detailed photos and how-to sketches. Soapstone is an inexpensive, soft material found all over the world, ideal for carving. Soft cover, 47 pages.

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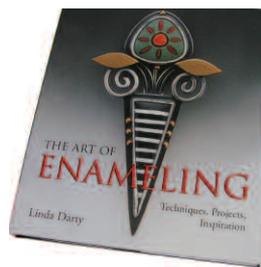


**1 The ART of ENGRAVING**

*By James B. Meek*

A magnificent, deluxe book with nearly 1400 photos, drawings and designs. Many focus on gun engraving, but the techniques can be universally applied. This is an instant classic on which no effort was spared. Hard cover, 196 pages.

No. 62.356

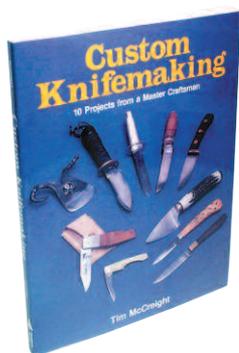


**2 The ART of ENAMELING Techniques, Projects, Inspiration**

*By Linda Darty*

A complete course in enameling for beginners and more advanced artisans. Learn about each type of enamel, tools and equipment needed as well as detailed information in preparing, applying, firing, and setting.

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**3 CUSTOM KNIFEMAKING 10 Projects from a Master Craftsmen**

*By Tim McCreight*

Step-by-step illustrated instructions for making 10 unique and beautiful pieces ranging from pre-cut to art knives. Includes sections on tools, materials, forge set-up, sheathmaking and knife design. Soft cover, 222 pages.

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**4 GROBET USA® PLATING GUIDE**

A complete booklet on the subject of plating precious metals. Soft cover, 12 pages.

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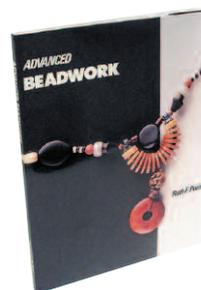


**5 STEP-BY-STEP BEAD STRINGING A Complete Illustrated Professional Approach**

*By Ruth F. Poris*

Describes basic tools, supplies and findings for bead stringing and describes in detail the techniques necessary to string multiple strands, endless strands and plain strands. Soft cover, 45 pages.

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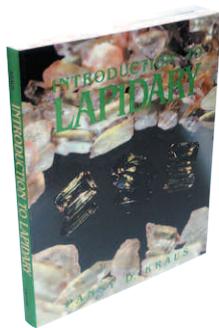


**6 ADVANCED BEADWORK**

*By Ruth F. Poris*

With over 300 illustrations and photographs. A perfect book for teachers or individuals having an interest in beadwork. Soft cover, 146 pages.

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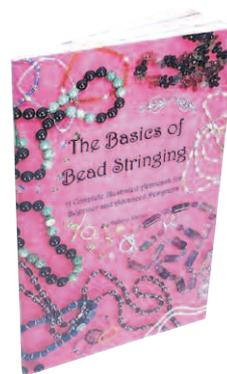


**1 INTRODUCTION to LAPIDARY**

By Pansy D. Kraus

An introduction to all aspects of lapidary, describing the processes and tools and equipment, from the basics of getting started to studio visits with renowned artists. Many photographs and illustrations. Soft cover, 196 pages.

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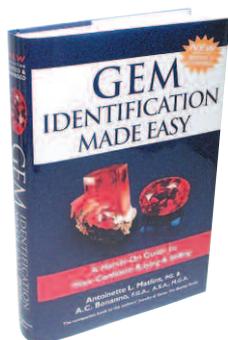


**2 The BASICS of BEAD STRINGING - A Complete Illustrated Approach for Beginner and Advanced Designers**

By Debby Kanan

Well illustrated, completely updated, including: tools, bead selection, stringing materials, getting started, hand knotting a necklace and helpful tips. Illustrations are life sized and very easy to follow. Soft cover, 48 pages.

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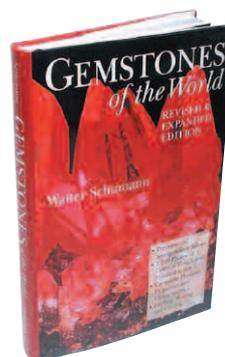


**3 GEM IDENTIFICATION MADE EASY**

By Antoinette L. Matlins and A.C. Bonanno

This book explains in non-technical terms how to use pocket, portable and laboratory instruments to identify diamonds and colored gems. It also shows how to separate real gems from the imitation and look-alike. Hard cover, 270 pages.

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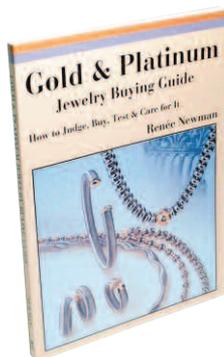


**4 GEMSTONES of the WORLD**

By Walter Schumann

Authoritative reference work, with color photographs of more than 1400 specimens, many shown before and after cutting. Special sections on fabricated and synthetic gems, recognizing gems by color, birthstones and organic gems such as coral and pearl. Includes technical data on gemstone properties, formation and structure of gems and cutting. Soft cover, 256 pages.

No. 62.417

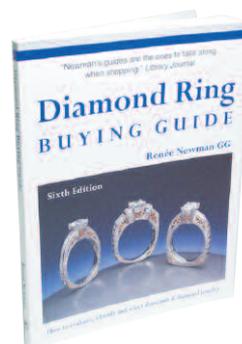


**5 GOLD and PLATINUM JEWELRY BUYING GUIDE**

By Renée Newman, GG, MA

This guide offers detailed guidelines on judging jewelry quality. Covers how to buy jewelry on a budget, how to detect fakes, caring for your gold and platinum jewelry, and how to spot poor craftsmanship. Gives you a wealth of information on gold chains, mountings, multi-colored gold and coin jewelry. Many photographs, both color and black and white. Soft cover, 156 pages.

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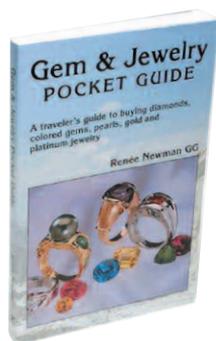


**6 DIAMOND RING BUYING GUIDE**

By Renée Newman, GG, MA

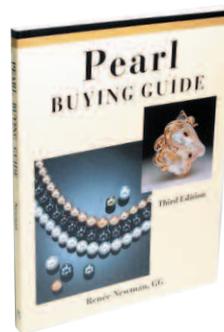
Explains how to spot value and avoid rip-offs. Written by an experienced gemologist, it gives practical advice on selecting diamonds and ring mountings. Also tells how to care for and protect diamond jewelry, and how to compare prices of gold, platinum and diamond jewelry. Soft cover, 150 pages.

No. 62.404



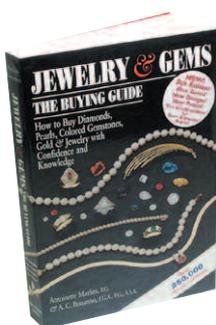
**1 GEM and JEWELRY POCKET GUIDE**

*By Renée Newman, GG, MA*  
 Find simple buying tips from a respected gemologist in this handy pocket-sized guide. It contains highlights on diamonds, pearls, colored gem stones, platinum and gold jewelry. Great for shoppers and travelers. Soft cover, 156 pages.  
 No. **62.405**



**2 The PEARL BUYING GUIDE**

*By Renée Newman, GG, MA*  
 Pearl buying made simple. Written in easy-to-read everyday English by consumer author Renee Newman, GG (GIA), a gemologist, lecturer and talk show guest. Lots of explanatory photos and step-by-step pointers on how to buy the best pearls for the money. Learn how to recognize real pearls, compare prices and save money. Soft cover, 188 pages.  
 No. **62.406**



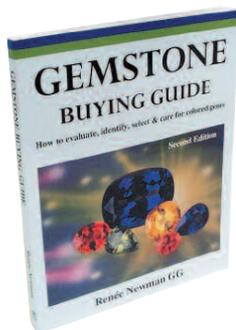
**3 JEWELRY and GEMS - The Buying Guide**

*By Antoinette L. Matlins and A.C. Bonanno*  
 With over 100 illustrations, it's a thorough, comprehensive, easy to understand laymans course in gem and jewelry buying. Valuable price charts, money-saving tips, a "how-to-know-what-you're-buying" book. Covers diamonds, pearls, precious and other popular gems. Soft cover, 213 pages.  
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**4 RUBY, SAPPHIRE and EMERALD BUYING GUIDE**

*By Renée Newman, GG, MA*  
 Written by a gemologist and lecturer with broad experience who will teach you how to tell a ruby from red glass and a good sapphire from a bad one. The first and only consumer book on the ruby, sapphire, & emerald. Tells you how to spot value and avoid rip-offs. Many photos and step-by-step pointers on how to get the most for your money. Soft cover, 204 pages.  
 No. **62.414**



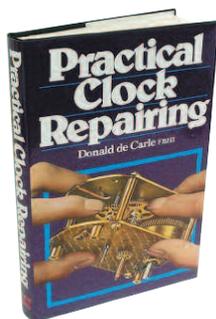
**5 GEMSTONE BUYING GUIDE**

*By Renée Newman GG, MA*  
 A full-color, comprehensive guide to evaluating, identifying, selecting and caring for a variety of colored gem stones. The Gemstone Buying Guide teaches both consumers and professionals how to judge color, transparency, flaws and brilliancy. A valuable resource for every jeweler's and gem lover's library. Soft cover, 148 pages.  
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**6 The BESTFIT WATCH and JEWELRY REPAIR RECORD BOOK**

Complete Information:  
 • Name and address of owner • Tag and record number • Dates received, repaired and delivered • Received by and delivered to • Complete description of case, case no., movement no. and markings • Repairs made with charges and special information • Wide spaces between lines • Wide spaces for each category of information • Space for 2000 entries • Each line is a complete transaction with all information at your fingertips. • These records should be kept for at least three years. Hard cover, 142 pages.  
 No. **62.01135**

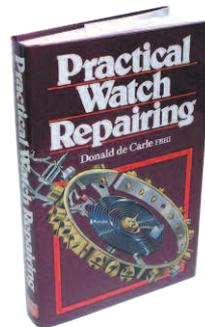


**1 PRACTICAL CLOCK REPAIRING**

By Donald de Carle, FBHI

Deals with the usual faults likely to develop in each type of movement in general use, from grandfather to alarm clocks. All tools and equipment are described and illustrated, along with information on proper use. Has 400 illustrations. Hard cover, 240 pages.

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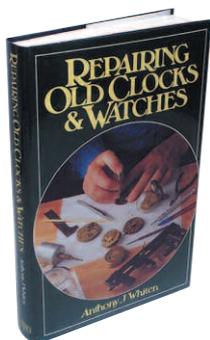


**2 PRACTICAL WATCH REPAIRING**

By Donald de Carle, FBHI

This book contains 550 illustrations describing the theories and processes of repairing and adjusting the modern watch precisely and with meticulous detail. Hard cover, 299 pages.

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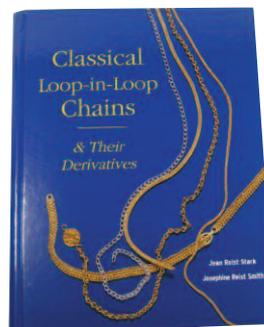


**3 REPAIRING OLD CLOCKS and WATCHES**

By Anthony Whiten

Geared for the less affluent collector. Concentrates on the more common timepieces available and how to deal with each component, suggesting original short cuts and ingenious ideas for making simple tools. Step-by-step sequences and complete movements with all important parts identified in position. High readability and originality. Hard cover, 296 pages.

No. 62.243

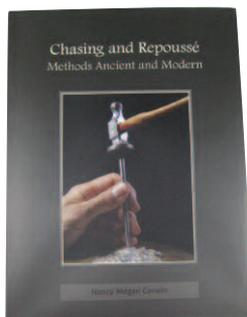


**4 CLASSICAL LOOP-IN-LOOP CHAINS**

by Jean Reist Stark

Josephine Reist Smith The ultimate resource for jewelers interested in the chains. With clear instructions and illustrations, this book is a tribute to the beauty and variety of a chainmaking technique.

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**5 CHASING and REPOUSSE**

by Nancy Megan Corwin

Chasing and repousse have been used for centuries to embellish metal objects. This long-awaited book provides lucid and practical instruction that will appeal to beginners and advanced craftspeople.

No. 62.561

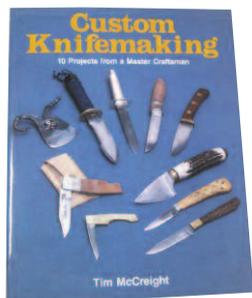


**6 CREATIVE STONESETTING**

by John Cogswell

This book features suggestions of new ways to think about stonesetting. In detailed text and illustrations, new concepts are described along with techniques that will appeal to jewelers of every skill level.

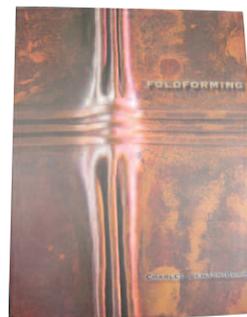
No. 62.562



**1 CUSTOM KNIFEMAKING**

by *Tim McCreight*

Spanning the gap between pre-cut and "art" knives with step-by-step illustrated instructions for unique and beautiful knives. Features 10 projects. No. **62.01516**



**2 FOLDFORMING**

by *Charles Lewton-Brain*

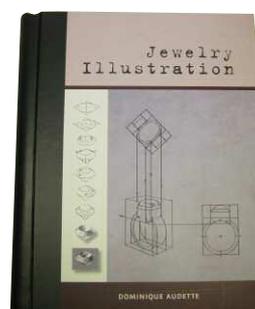
Foldforming is a conceptual, physical and intuitive approach to metalsmithing that is informed by the natural characteristics of metals. It refers to a collection of procedures that generate an incredibly wide range of forms in metal. This book is the first and most comprehensive book on foldforming, and one that will remain a vital resource. No. **62.563**



**3 INTRODUCTION to PRECIOUS METALS**

by *Mark Grimwade*

There is a historic separation between science and the arts, this book offers a bridge between the two worlds. This book provides information for metallurgists and craftspeople alike. Knowing the underlying logic of materials helps make decisions about solders, fabrication and casting. No. **62.564**



**4 JEWELRY ILLUSTRATION**

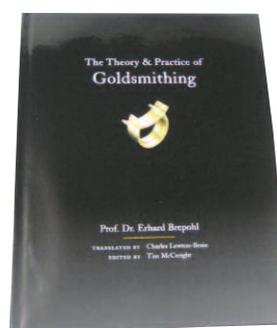
by *Dominique Audette*

This book is the most comprehensive book available on jewelry illustration. It covers orthographic projection, perspective drawing and perspective drawing developed from the orthographic projection. No. **62.565**

**5 The THEORY & PRACTICE of GOLDSMITHING**

by *Prof. Dr. Erhard Brepohl*

This book has established itself as a dominant resource for jewelers, sculptors and all who work with metals. The book provides detailed coverage of jewelry alloys, a comprehensive description of chemistry related issues for metalsmiths and instruction in the physics of material that is both rigorous and practical. This valuable resource also explains soldering, eutectic bonding, electroplating as well as information on silversmithing, chainmaking, stonemaking and jewelry repair. No. **62.569**



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- No. **63.007** PMC Basics
- No. **63.008** PMC Beads
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- No. **63.021** Channel Setting Diamonds
- No. **63.022** Diamond Setting For Beginners
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An instructional DVD demonstrating use of the Tri-Cord™ knotting tool. Running time: 30 minutes. See our Tri-Cord™ knotting tool and kits on page 34.

No. **63.01513**

- No. **63.025** Pavé
- No. **63.030** Basic Gemstone Setting
- No. **63.031** Oval Gemstone Setting
- No. **63.032** Pear Gemstone Setting
- No. **63.033** Marquise Gemstone Setting
- No. **63.034** Princess Cut Gemstone Setting
- No. **63.035** Emerald Cut Gemstone Setting
- No. **63.036** Bezel Gemstone Setting

### PEARL and BEAD STRINGING with Henrietta

Henrietta Virchick teaches you how to make a beautiful mother-of-pearl necklace and bracelet. You are given step-by-step instructions on various techniques for creating genuine, precious and semi-precious high-fashion jewelry. Useful for beginners or experienced craftsmen. Running time: 50 minutes.

No. **63.1514**

### The COMPLETE METALSMITH by Tim McCreight

A DVD encyclopedia of basic jewelry making techniques. Covers the major elements of joining, cutting, forming and surface techniques. Included is a section illustrating techniques for making three pieces of jewelry. Running time: 70 minutes.

No. **63.004**

*Videos are supplied in sealed packages and cannot be returned for any reason if seal has been broken.*

## QUARTZ CLOCK MOVEMENTS

### 1 MINI-QUARTZ CLOCK MOVEMENTS

Features:

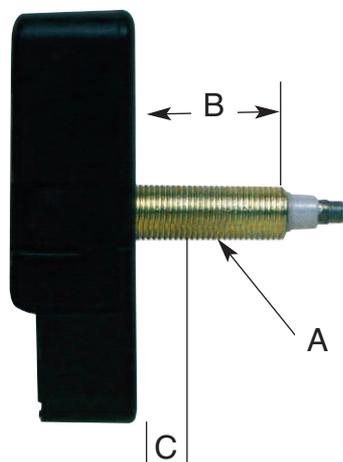
- Sturdy, compact design
- Rear time - set knob
- Clip on hanger
- Precise quartz crystal
- High stability
- 2-year warranty
- 3-post lengths for different face thicknesses

Specifications:

- Uses one AA battery, not included
- Rated voltage: 1.5V DC
- Operating voltage range: 1.2V to 1.7V DC
- Motor: stepping and self-starting
- Operating temperature range: -10°C to +50°C
- 10 mm shaft thickness, fits standard 1/2" hole in clock face
- 2 1/8" high x 2 1/8" wide x 1/2" thick

Includes:

- Rubber cushion
- Hanger
- Brass washer
- Mounting nut
- Cap nut and gold color hour, minute and sweep second hands



No.	A Brass Bushing Length	B Total Post Length	C Fit Faces Up To
CM 7441	5/16"	5/8"	1/4" Thick
CM 7442	9/16"	7/8"	1/2" Thick
CM 7443	13/16"	1 1/8"	3/4" Thick

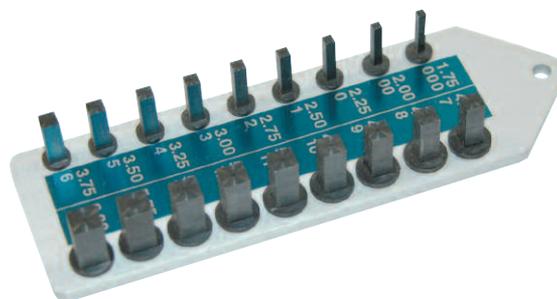
1 each is 6pcs.

## CLOCK GAUGE

### 2 SQUARE GAUGE CLOCK KEYS

Solves the problem of how to measure the square hole in a clock key. 18 sizes of squares from 1.75 to 6.00 mm, mounted on a metal plate, permits the fitting of a clock key over the square to obtain the correct key size. Assures accuracy in ordering needed keys.

No. **GA 71231**



## CLOCK REPAIR TOOLS

### 3 HEAVY DUTY HAND and GEAR PULLER

For all types of clocks and instruments. Jaws are adjustable to fit over various sized hands and pusher is always centered. Screw pressure pulls hand or gear away from post or pinion. Does not touch dial. Jaws open to 1/8" (11.1 mm), post size 1/16" (1.6mm).

No. **24.581**



### 4 BERGEON ALARM and CLOCK HAND REMOVER

Precision finished jaws are placed under the hands and subjected to uniform upward pressure when screw-in frame is pressed against clock pinion. Hands are gently raised without damage to hands or dial.

Includes two sets of jaws.  
No. **30002**



### 5 CLOCK HAND REMOVER

Screw pressure forces hand away from post. Does not touch dial or rest of mechanism. Also used for pulling small gears, etc. Jaws open to 1/8" (3.2 mm), post size 1/16" (1.6 mm).

No. **24.580**





### 1 CLOCK REGULATING STAND

Hold clock movements when regulating and making adjustments. Grooved brackets are adjustable up to 11" (279 mm). Two leveling screws are in base.  
No. **CM 24800**



### 2 CLOCK HOLE CLOSING PUNCHES

For reducing hole size in brass plates of clocks, meters, etc. Spring center guides punch so that it will be concentric. Punch is tapped with small hammer.  
No. **PN 24719** Set of all 7 sizes in case



### 3 CLOCKSPRING WINDER

For loop end mainsprings. Winds up on mainwheel and arbor from clock.  
No. **CM 24752**



### 4 WIRE LOOPING PLIERS

Holds inner coil of mainspring when adjusting or forming to fit the barrel arbor. Stepped nose design, with one round and one concave jaw, allows smooth looping. Overall length 4½" (114 mm).  
No. **PL 46039A**



### 5 CIRCULAR GLASS CUTTER

Cuts circles from 2½" to 16½" (64 to 419 mm) in diameter. Cutting wheel can be set anywhere along beam, which is graduated in millimeters.  
No. **CM 52972** Glass cutter  
No. **CM 52973** Replacement wheels



### 1 BERGEON CLOCK MAINSPRING WINDER

Simplifies the problem of placing the clock mainspring into the barrel. The barrel is held in place by a bench vise. The crank handle is used to wind the spring into the barrel. Contains eight barrels ranging from 18-65 mm.

No. **30076** ..... \$1495.00



### 2 BERGEON CLOCK MAINSPRING WINDER

For winding hole end clock mainsprings. Has three different size hooked arbors for most spring sizes. Length 4" (102 mm). Used in bench vise.

No. **4126**

### 3 BERGEON SET of DOUBLE-ENDED CUTTERS

Set of six for enlarging holes, beveling, cleaning screw heads and clearing dial feet. Packaged in polished wood case.

No. **30414** Set of 6 cutters

No. **30414A/1** Replacement conical cutters, 3-4.5 mm

No. **30414A/2** Replacement beveling cutters, 3-4 mm

No. **30414A/3** Replacement cutter for clearing screw ends, 2.5-4 mm

No. **30414A/4** Replacement hollow center burr removers for cutting edges, 3-4 mm

No. **30414A/5** Replacement beveling cutters, 1-2 mm

No. **30414A/6** Replacement cutter for clearing screw ends, .09-1.3 mm



### 4 POLYWATCH®

Removes scratches from plastic watch crystals. Apply a small amount of polyWatch to the crystal and polish with a cotton cloth. The scratches will disappear and the surface of the crystal will look as good as new

No. **PS 47001** polyWatch Scratch Remover  
(1 tube carded)

No. **PS 47002** polyWatch Scratch Remover  
(Display Box of 24 tubes)



### 5 DISPLEX DISPLAY POLISH

Removes scratches from cell phone displays.

No. **PS 47004** Displex Scratch Remover  
(Display Box of 24 tubes)



### 6 BERGEON RODICO "ONE TOUCH" DRY CLEANER

For cleaning of precision parts and small gears. Removes surplus oils, loose dirt, grime, grease, smudges and finger prints.

No. **6033** Pack of 2

No. **6033/30** Pack of 30

## KNIVES AND OPENERS

**3 MEDIUM DUTY BENCH KNIFE**

Has slim 1 $\frac{3}{4}$ " (44 mm) blade set firmly in hardwood handle.  
No. **39.180**

**HEAVY DUTY BENCH KNIVES**

Blade is firmly set in hardwood handle. Blade length, 1 $\frac{3}{4}$ " (44 mm).

**1** No. **39.105** Standard model

**2** No. **39.0626** Economy model

**4 BLADE STYLE CASE OPENER**

For opening friction fit cases. Well tempered steel blade set in hardwood non-roll handle. Overall length 4 $\frac{3}{8}$ " (111 mm).  
No. **CO 59047**

**5 VIGOR® BLADE CASE OPENER**

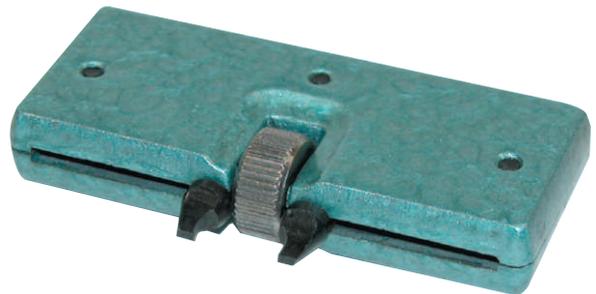
Polished and tempered steel blade with knife edges. Mounted in hardwood handle with metal ferrule. Overall length 4 $\frac{1}{2}$ " (114 mm).  
No. **CO 590625**

**6 BERGEON BLADE CASE OPENERS**

With polished blades. Overall length 4 $\frac{3}{8}$ " (110 mm).  
No. **4932** Single blade  
No. **6403** Double blade

**7 SUCTION TYPE CASE OPENERS**

For waterproof and screw back cases. Apply pressure and turn quickly to open most cases. Rubber end will not mar soft metals.  
No. **CO 59049**

**8 POCKET CASE OPENER**

Compact, convenient wrench for waterproof cases. With tempered pins and easy-to-use adjusting wheel. Measures 2 $\frac{3}{8}$ " x 1 $\frac{1}{8}$ " x  $\frac{1}{2}$ " (67 x 29 x 12.7 mm).  
No. **CO 590610**



### 1 CASE OPENER

Provides a tight, non-slip grip. Long handle for increased pressure. Includes double blade.

No. **CO 590620**



### 2 RUBBER VACUUM CASE OPENER

For opening and closing screw backs and bezels. Has two cup sizes for 0 to 18s watches.

No. **CO 59048**



### 3 CASE OPENER

Steel blade with knife edge. Large grip for extra control.

No. **CO 59017**



### 4 QUARTZ CASE OPENER

Steel blade with knife edge Mounted in plastic handle.

No. **CO 590615**



### 5 BERGEON WATCH CASE OPENER

For prying backs of 3 piece watch cases. 5 mm wide, 110 mm long.

No. **4755**



### 6 BERGEON WATCH CASE OPENER

For pressure fit backs. Plastic handle. 140 mm long.

No. **6484**

## CASE OPENERS

**1 VIGOR® L-G "OPENALL" WATERPROOF CASE WRENCH**

Especially designed for Rolex oyster cases and adaptable for use with the famous L-G wrench. Will open all Rolex waterproof cases. Six knurled rings accurately interlock with the edges on genuine Rolex cases. Diameter of rings: 18.5, 20.2, 22.5, 26.5, 28.3 and 29.5 mm. Sturdy frame fits any bench vise. Adjustable case holder, built into base of frame, accommodates all size cases. Made in USA.

No. **CO 590650** Waterproof case wrench

No. **CO 590655** Center pin

Replacement rings for No. **CO 590650**:

No. **CO 590651/1** 18.5 mm      No. **CO 590651/4** 26.5 mm

No. **CO 590651/2** 20.2 mm      No. **CO 590651/5** 28.3 mm

No. **CO 590651/3** 22.5 mm      No. **CO 590651/6** 29.5 mm

**3 CASE OPENER FOR LARGE CASES**

Extra large body for large watches. Includes 4 sets of pins: round, flat, square and toothed.

No. **CO 59060**

**2 BENCH WATER CASE OPENER**

Designed for use with oyster cases. Six knurled rings interlock with watch back. Diameter of rings are 18.5, 20.2, 22.5, 26.5, 28.3 and 29.5. Has bracket to mount to bench or will fit any bench vise.

No. **CO 59065**

**4 CASE OPENER**

Provides a tight, non-slip grip that will not scratch or mar. Includes sets of easy to insert jaw pins: round, flat, square and toothed.

No. **CO 59050** Wrench set in protective wood box



**1 BERGEON JAXA CASE WRENCH**

Swiss made. Opens almost all types of waterproof cases with four sets of pins which are easily removed and replaced. Precision tool made for hard use. Handle and body are chrome-plated. Packaged in plastic case that holds wrench and pins.

- No. **2819-4** Case wrench
- No. **2819C** Set of three #1 pins Flat
- No. **2819A** Set of three #2 pins Square
- No. **2819B** Set of three #3 pins Round
- No. **2819D** Set of three #4 pins Toothed



**2 ECONOMY WATERPROOF WATCH CASE OPENER**

Includes sets of easy-to-insert jaw pins: round, flat, square and toothed. Provides a tight, non-slip grip that will not scratch or mar. Protective wood storage case included.

- No. **CO 590790** Case opener
- No. **CO 590791/1** Set of replacement pins

CASE OPENERS AND CASE VISES



**3 WOOD CASE VISE**

Will not mar watch cases. Opens to accept all size waterproof cases.

No. **MV 59086**



**4 BERGEON KEY SETS**

For opening oyster cases manufactured by Rolex. Contains wrench and six milled chucks in the following sizes: 18.5, 20.2, 22.5, 26.5, 28.3 and 29.5 mm.

No. **5537**

Replacement chucks for No. **5537**:

- No. **5523-0** 18.5 mm
- No. **5523-1** 20.2 mm
- No. **5523-2** 22.5 mm
- No. **5523-3** 26.5 mm
- No. **5523-4** 28.3 mm
- No. **5523-5** 29.5 mm



**5 BERGEON JAXA CASE VISE**

Has plastic posts to prevent marring. Posts are removable and can be set into different positions for different cases. Opens and closes with large knurled knob. Plastic frame fits into bench vise.

- No. **5090** Case vise 50 x 45 x 35
- No. **5090A** Replacement plastic post
- No. **5685** For large cases. Fits into any bench vise. Plastic mounting, 70 x 90 x 45 mm.



**6 LARGE ALUMINUM CASE VISE**

Plastic posts can be set in 5 different positions up to 2" apart to hold large size cases.

No. **MV 59090**



**7 ALUMINUM CASE VISE**

Four plastic posts prevent damage. Posts can be set in different positions to hold various cases.

No. **MV 59089**



**2 CASE JIG WITH NYLON DIES**

For fitting mineral watch crystals.  
No. **CO 59090**



**4 METAL WATCH PRESS**

For closing snap-back watch cases, installing bezel rings and friction inserting mineral crystals. Includes 15, two-sided dies for a total of 30 sizes.  
No. **CO 59080**



**6 SET OF 12 DIES**

Plastic dies in sizes: 21, 22, 27, 28, 31, 32, 33, 34, 35, 36, 39 and 40 mm. Fits all presses described above.  
No. **CO 59081**

REMOVERS AND CASE PRESSES

**1 VIGOR® METAL WATCH PRESS**

Ideal for closing snap-back watch cases, installing bezel rings and friction inserting mineral crystals. Sturdy metal press makes battery changing easy by eliminating the difficulty of closing cases. Includes 14, two-sided dies, for a total of 28 sizes. Will not scratch.  
No. **CO 590795A**



**3 VIGOR® CRYSTAL LIFT**

Removes and inserts crystals without disassembling the watch. Effortlessly remove and insert any round unbreakable crystal without taking the watch apart or removing the bezel. Eliminates all rings, wrenches or pliers and the brass fingers will not mar the crystal. The gripping force can never lose strength because the fingers are mechanically operated. Access to the dial and hands is instantaneous and the works of one piece cases can be laid bare in seconds. A platform is provided to grip a new crystal for inserting into the watch.

No. **RM 590365X** 8 to 45 mm (3¼" - 20 linge)  
No. **4266** Bergeon Brand, 10 to 45 mm (4½" - 20 linge)  
No. **RM 59102** Economy lift, standard



**5 ECONOMY WATCH PRESS**

Metal press with 12 nylon dies.  
No. **CO 59085**



**7 SET OF EXTRA LARGE DIES**

Plastic dies in sizes: 40, 42.5, 45, 47.5, 50, 52.5, 54, 55, 56 and 57 mm. Fits all presses described above.  
No. **CO 59082**

## SPRING BAR TOOLS

Removes, measures and inserts all types of spring bars. Ends of tool are made of tempered steel with one end flat and the other pointed to permit necessary work. Plastic handle has millimeter scale for measuring and selecting the proper fitting bar.



### 1 BERGEON SPRING BAR TOOL

No. 3153

No. 3153A/10 Package of 10 replacement flat tips

No. 3153A/100 Package of 100 replacement flat tips

No. 3153B/10 Package of 10 replacement pointed tips

No. 3153B/100 Package of 100 replacement pointed tips



### 2 PRIDELINE® SPRING BAR TOOL

No. RM 590420

No. RM 590421/1 Replacement flat tip

No. RM 590421/2 Replacement pointed tips



### 3 BERGEON SPRING BAR GAUGE

Designed to gauge space between case ends to select proper size spring bar. Metal gauge reads in inches and millimeters.

No. 4085



### 4 DELUXE SPRING BAR TOOL

Removes and inserts all types of spring bars. Tempered steel with two tips; one large and forked and the other reversible, small forked or pointed. Knurled handle provides firm grip.

No. RM 590470 Spring bar tool

No. RM 590471/1 Replacement flat tip

No. RM 590471/2 Replacement pointed tip



### 5 HOLE PUNCH PLIERS

Cuts smooth, clean holes in leather watchbands. Plated steel with contoured handle for comfort. Overall length is 5" (127 mm).

No. PL 4602420



### 6 HAIRSPRING COLLET REMOVERS

Finely tapered jaws can slide easily underneath collet. Even under pressure, will gently remove the collet without damaging hairspring or balance wheel.

No. CM 590307 2.50 mm

No. CM 590308 3.10 mm



### 7 SPRINGBAR REMOVER

One end is forked and the other is straight. Measures 5 7/8" long.

No. RM 59046



### 8 SPRINGBAR REMOVER

Pocket sized, measures 3 3/8" long. One end is forked and the other is straight.

No. RM 59045



### 1 MULTI-PURPOSE LINK AND SPRINGBAR TOOL

For removing stubborn links and westar-type spring bars. Includes 6 pins 0.40 to 2.00 mm. Also includes screwdriver with 2.5 mm tip for screw-type springbars.

No. **RM 59050** Complete Set

No. **RM 59051** Set of 6 replacement pins



### 2 CHAIN LINK REMOVER

Watch band sits in clamp. Large knob makes it easy to turn and pin is pushed out. Standard model is supplied With 2 removable spacers for different thickness band sizes. Also available as adjustable model with a rotating pallet. Supplied with 0.6, 0.8 and 1 mm pins.

No. **59.080** Standard model

No. **RM 59082** Adjustable model

No. **59.081** Set of 3 replacement pins



### 3 BRACELET PIN REMOVING KIT

Kit is complete with hammer, 0.8 mm pin remover, 1 mm pin remover and bracelet holder. Removers include 2 replacement tips.

No. **RM 59055** Removing kit with wooden holder

No. **RM 59056** Removing kit with plastic holder



### 4 BRACELET HOLDER

Use to remove links from watch bands and bracelets. Measures approximately 2" x 2" x 1" mm.

No. **RM 59057** Red Plastic

No. **RM 59058** Gray Plastic

No. **RM 59059** Wooden



### 5 LINK REMOVING PLIERS

Fast and easy way to remove link pins. Includes pins: 0.6, 0.8 and 1 mm.

No. **PL 46001**



### 6 LEATHER STRAP CUTTING PLIERS

Cuts a 3mm wide slot in watchband.

No. **PL 4602410**



### 7 PIN PUSHER

Handle with 3 tips: 0.6, 0.8 and 1 mm.

No. **RM 59060**



### 8 PIN PUSHER

Fine steel point with oversized hardwood handle.

No. **CM 590455**

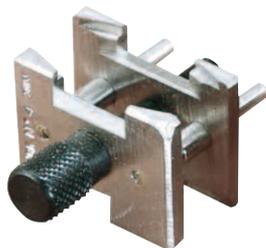


### 9 BERGEON VICE for SCREWING and UNSCREWING BRACELETS

Used to screw and unscrew bars of bracelets and links of any thickness. Tool fitted with a turning table that can be adjusted to 3 heights (0, 0.5 and 1.0 mm) which enables positioning the bracelet screw in the axis blade. Watch case and bracelet are well protected with cushions.

No. **6670**

## HOLDERS AND WINDERS



### 1 TWO-WAY HOLDER

Reversible brass holder will take all shapes and sizes up to 12½" lignes.  
No. HO 59280



### 2 EIGHT-WAY MOVEMENT HOLDER

Each side has 2 sets of cut-outs for different size movements.  
No. HO 59281



### 3 REVERSIBLE HOLDER

One side takes watches up to 18 lignes and the other is for smaller watches. Room for clearance of curved plates and winding stems. Well made with guide pins. Swiss made.  
No. HO 59284



### 4 PLASTIC RESTS

Set of 12 rings for holding round movements from 7½" to 22½" lignes.  
No. HO 590254



### 5 BAGUETTE HOLDER

Designed to hold baguette and very small movements. Easier to work with than larger size holders. Cut-outs provide clearance for winding stems. Swiss made.  
No. HO 59278



### 6 BERGEON MOVEMENT HOLDER

Spring operated. Plastic posts. 36 mm capacity.  
No. 6515



### 7 ALUMINUM CASE HOLDER

The aluminum case holder holds all types of cases when removing backs. Reversible and made of heavy duty aluminum for durability.  
No. HO 590300



### 8 CASE HOLDER with VISE

Holds case securely when removing back. Vise clamps to bench to keep case steady and enables you to use both hands.  
No. HO 590305



### 1 PLASTIC MOVEMENT COVER AND TRAY

Clear plastic cover with compartmentalized tray. 4" diameter x 2¼" high.  
No. **CV 590270**



### 2 DUST COVER

Clear plastic cover and 2 trays, one is compartmentalized and one is not. Measures 3½" diameter and 2½" high.  
No. **CV 590271**



### 3 BROACHING DEVICE

Designed to firmly hold miniature parts, watch hands, rollers or cannon pinions to be broached. Regular size with 10 holes.  
No. **BR 590520**



### 4 BALANCE TACK

Simple but practical for holding bridge with balance attached while putting it in beat, straightening kinks in hairspring, undercutting screws, adding or removing timing washers, etc.  
No. **HS 590310**



### 5 BERGEON ROLLER REMOVER

V-slot slips between hub of staff and seat of roller. Slight pressure on sides of tool is sufficient to lift roller from balance seat. Extra fine jaws permit use on both small and standard sizes.  
No. **2810**



### 6 BERGEON BROKEN SCREW REMOVER

Quickly removes broken plate screws. Deep U-shape permits inserting pocket watches as well as bracelet watches. Complete with four sizes of extra fine cutting jaws. Cutters are placed into head, held firm with set screws and brought to bear on broken screws. One end of head turns, causing the cutting action.  
No. **30209**



### 7 CASE CUSHION

Prevents scratching. Used for opening and closing cases and while making adjustments.  
No. **5394** Bergeon  
No. **MV 59080** Economy



### 8 BERGEON LUMINOUS PASTE

Dilute with water. Contains 2 g.  
No. **5680E** Yellow-Green  
No. **5680G** Green



### 9 BERGEON EXTENDABLE and REVERSIBLE MOVEMENT HOLDER

For pocket watches. Nickelled.  
No. **4040**

## BERGEON TOOLS



### 1 HAND REMOVER

Sturdy, quick acting tool for removing all types of hands from watches and instruments. Hands are removed by pushing downward on the plunger-type handle. Center post acts as a guide and holds hands after removal.  
No. **RM 59314IMP**



### 2 BERGEON PRESTO #7 HAND REMOVER

Turret with four plungers uses center post as support to remove hands, without touching the dial. Very useful for stop watches and curved dials.  
No. **30671/7**



### 3 BERGEON PRESTO #4 CLOCK HAND REMOVER

Revolving turret, with four plungers of different diameters, supports the center post. Removes stubborn hands on gauges and meters, as well as those on watches and clocks, will not touch the dial.  
No. **30669/4**



### 4 HAND REMOVER

Fiber tips will not mar the dial. Sturdy jaws retract when side springs are pressed. Center plunger holds the hands firmly.  
No. **RM 590345**



### 5 BERGEON PRESTO #6 SECOND HAND REMOVER

Removes both regular and sweep second hands. Thin, narrow jaws are very effective for countersunk, curved dials.  
No. **30670/6**



### 6 BERGEON PRESTO #2 CANNON PINION REMOVER

Removes all sizes of cannon pins easily, as well as hands on larger watches. Has sturdy jaws and side springs. Pusher blocks have long strokes.  
No. **30637/2**



### 7 BERGEON PRESTO #9 CROWN REMOVER for SPLIT STEMS

Will not damage the tube or mar the case. Exerts an even pressure on the crown and case to lift the crown straight off without snapping. Can also be used to remove hands and setting knobs on travel alarms and desk clocks.  
No. **4344/9**



### 8 BERGEON PRESTO #3 SWEEP WHEEL REMOVERS

Designed to remove the smallest sweep wheels, as well as large sweep wheels. Three-pronged jaws will fit uneven number of spokes.  
No. **30638/3** For five spoke wheels  
No. **4079/3A** For six spoke wheels



### 9 BERGEON PRESTO #1 HAND REMOVER

Pusher blocks have fiber tips that will not mar the dial. Jaws retract when side springs are pressed. Center plunger holds the hands firmly.  
No. **30636/1**



### 10 CANNON PINION REMOVER

Removes all sizes easily. With sturdy jaws and side springs.  
No. **RM 590346**

JEWELING AND STAKING TOOLS



**1 BERGEON SEITZ PIVOT STRAIGHTENER**  
No. 30350



**2 BERGEON STEEL RIVETING STAKE**  
Contains 15 holes ranging in size from 2.0 to 8.6 mm with 4 cuts.  
Size: 64 x 45 x 20 mm.  
No. 30205

TESTERS, TIMERS AND DIE SETS



**3 BERGEON WATERPROOF TESTER**

- Tests the water-resistance of watch cases, under normal conditions of wear
- Pressure gauge has a range of 0-3 atmospheres (kg/cm<sup>2</sup>)
- Diameter of opening is 50 mm
- Capacity is two watches
- Measures 9<sup>3</sup>/<sub>8</sub>" x 5<sup>7</sup>/<sub>8</sub>" x 12<sup>3</sup>/<sub>16</sub>" (244 x 150 x 310 mm.)
- Ship weight 7 lbs. (3.2 kg)

No. 555TSTR Waterproof tester  
No. 5555/2 Replacement chamber w/4" base  
\* For available accessories, contact your local distributor.



**4 PRECISION METRIC TAP and DIE SET**  
Consists of eight dies covering the range from 1.00 mm to 3.00 mm in sizes listed below. Also included: a die holder, adjustable tap holder, eight sets of three right taps (total 24) and a fitted hardwood case. This set is for clocks, meters and similar sized instruments. German quality.  
No. CM 56150

Individual Taps and Dies

Dies	Taps (Pk of 3)	Size
CM 56151	CM 56161	1.00 mm
CM 56152	CM 56162	1.20 mm
CM 56153	CM 56163	1.40 mm
CM 56154	CM 56164	1.70 mm
CM 56155	CM 56165	2.00 mm
CM 56156	CM 56166	2.30 mm
CM 56157	CM 56167	2.60 mm
CM 56158		



**5 WATCHMAKERS' TIMING MACHINE PAPER**  
For No. TS 592000. Pack of 10 rolls.  
No. TS 590212

## KITS AND SUNDRIES



### 1 VIGOR® CIRCUIT MAKER

Repairs quartz analog and digital circuitry as well as any other fine wire circuits with a minimum of time and effort. Eliminates long drying times. One minute set up time required. Kit includes .05 fluid oz. (1.5 ml) bottle of Circuit Maker® and an applicator.

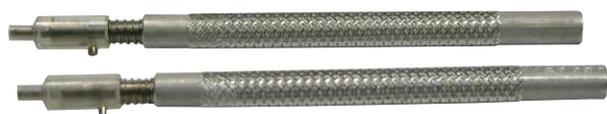
No. **CE 590890**



### 2 BERGEON MAINSPRING WINDERS for UNBREAKABLE MAINSPRINGS

Unbreakable mainsprings require a specially designed barrel arbor hook not found on conventional type mainspring winders.

No. **2729** Set of 7 sizes 3¾"L to 12"L



### 3 BERGEON WINDING TOOLS

Used for winding movements with two piece winding stems.

No. **5727MF** Set of 2 tools

No. **5727M** Male tool

No. **5727F** Female tool



### 4 BERGEON PLASTIC BLOWER

Specially designed to fit the hand. Edging prevents the blower from rolling when not in use. Treated washers will not dry out. 4½" (114 mm) long.

No. **30540**



### 5 RUBBER BLOWER

High quality rubber for long life. Brass tip provides a strong stream of air. Valve in rear of bulb for fast refill.

No. **CM 23320**



### 6 CELL TESTING TWEEZERS

Put cell between tweezers ends to test. Handle shows a red light if cell has a charge. Will test 1.5 to 3 volt cells. Works on flashlight batteries as well.

No. **CE 59090**

## TERMS OF BUSINESS

### Design and Manufacture

The descriptions and pictured representations in this catalog resemble the actual product as closely as possible. However, because of continuing efforts to improve our merchandise, changes are unavoidable and designs and specifications will sometimes vary. If tolerances or dimensions are critical, please mention this in your order.

**Warning:** All products in this catalog are to be used according to directions, industry standards and governmental regulations such as the Occupational Safety and Health Act, Federal Hazardous Substance Act and the Environmental Protection Agency regulations.

Those who are not knowledgeable in the proper usage of hazardous materials as well as electrical, high-speed, grinding, and/or high-temperature equipment should NOT purchase these products, as non-compliance with safety regulations can be dangerous to health and property.

Keep all products out of the reach of children.

### Prices

Prices are subject to change without notice. Price lists are published periodically and the latest price list will be sent upon request. You may also request quotations before shipment by submitting a list of the items you wish to order.

### Shipments

In the absence of special instructions on "how to ship", we will use our best judgment in forwarding merchandise. We will comply with your instructions insofar as DOT, ICC and other applicable government regulations permit. Hazardous materials are subject to strict government regulations and additional charges may be incurred.

### Returns

All products in this catalog should be free of defects in material and workmanship and perform the work for which they were designed. If, upon examination or first use, a product is found to be defective, contact us with the details. Items which have been abused or used for work for which they were not intended will not be replaced or credited. No merchandise may be returned without written authorization to do so.

### General

The products in this catalog were selected for use by technicians and craftsmen working in professional repair and maintenance shops, laboratories, and manufacturing facilities. Some of the products, particularly solutions and compounds, may be considered hazardous if used, stored, or disposed of in an improper manner. These products are intended for professionals and Federal law prohibits the use of some of them in the home. Possession of this catalog does not constitute a right to purchase and identification may be required to ascertain whether a buyer is qualified as a professional user.



Thank you for your interest in our new catalog.  
You will find that the quality of our products and fair pricing represent outstanding value.

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