





### To Our Valued Customers:

Romanoff is your leading source for the latest and most advanced

3D Printing equipment and technology, as well as, having the largest selection of premier lost wax casting machinery.

It is our goal at Romanoff to provide our customers with cutting edge products and knowledge that will allow them to create unique designs and fulfill their wants and needs at a competitive price. Our friendly, knowledgeable and professional staff will advise, inspire and educate our customers' projects and needs.

We treat each customer as an individual and sincerely value our relationships by constantly offering the industries best technical after sales support.

Romanoff was established by Barney and Jessie Romanoff in 1949 in a small, 300 square foot New York City loft. Today, Romanoff is housed in a modern 40,000 square foot building on Long Island, New York. Bob Romanoff has been leading the Romanoff company for 50+ years and his son Brian (3rd generation) has been working by his side for 20+ years. Brian's children (4th generation) ensure that the company will continue to grow for many years to come.

We truly believe that our latest catalog will offer great assistance to you and your future manufacturing requirements.

Sincerely

Bob Romanoff

Bob Romanoff, President

### **ESTABLISHING CREDIT**

All accounts are shipped by payment in advance, by credit card or by check unless credit is established. Freight is always prepaid. To establish credit (open account) with us, accounts must fill out our online credit application and provide 3 known trade references. OPEN ACCOUNT TERMS: NET 30 DAYS. There is a \$30 fee for all returned checks. ASK US ABOUT LEASING.

### SHIPPING INFORMATION:

Shipping will be charged on all orders. We select the best means of shipping at our discretion unless shipping instructions are specified by the customers when placing the order. Freight is usually F.O.B Amityville, NY, however certain equipment is shipped F.O.B. Factory of manufacturer. All shipments through Romanoff must be insured. When shipping of hazardous materials is prohibited by specific means, we ship by the best method permissible. Carriers charge an additional fee for shipping hazardous items.

### **CRATING AND PACKING:**

Normal packaging is included. However, there are wood crating charges on some large and heavy items to help prevent damage to them during shipping.

### **DAMAGED GOODS:**

Extreme care is taken to ensure that items are packed well for shipping. However, on occasion, damage may occur. The carrier is responsible for loss or damage since all products are sold F.O.B. Amityville, NY. ACCEPTANCE OF A SHIPMENT AS DELIVERED IS YOUR ACKNOWLEDGEMENT THAT THE SHIPMENT WAS RECEIVED IN GOOD CONDITION. THEREFORE,

DO NOT SIGN FOR OR ACCEPT A SHIPMENT UNLESS THE DELIVERING AGENT NOTES THE NATURE AND EXTENT OF THE DAMAGES. CLAIMS FOR DAMAGES, VISIBLE OR CONCEALED, CANNOT BE FILED BY US. CHECK YOUR SHIPMENT CAREFULLY, INCLUDING PACKING MATERIALS FOR ALL ITEMS.

### **PRICES:**

All prices in this catalog were current at time of printing. However, due to changing costs beyond our control (e.g., currency fluctuation), prices are subject to change without prior notice. Prices do not include shipping and handling charges.

### **RETURNS AND REPAIRS:**

If you wish to return an item, it must be returned new, unused, freight prepaid, and in its original packaging. Any items returned more than 30 days from the invoice date will be subject to a minimum 30% restocking charge. You also must include a copy of the invoice or packing list to insure proper credit. Special order, non-stocked items (i.e, not in this catalog), or any item made to your specifications are not returnable or cancellable.

There is a minimum \$75 charge to estimate the cost of your repair. This charge is waived if you authorized the repair. All repairs require a signed form. Estimates on 3D printers have a minimum \$250 estimate fee

### **IMPORTANT:**

Please note that all products sold by Romanoff are meant to be purchased and used by professionals who have the knowledge of their safe and proper use.

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## Romanoff Educational Information



### **Stone In Place Casting**

This process produces important benefits such as:

- 1) A diamond setter in gold costs an average of \$25-40/hour.
- A stone in wax setter costs \$12-15 per hour.
- 2) Reducing stone breakage to near zero.
- 3) Production time in the setting department is considerably reduced.
- 4) Training people to become stone-in-wax setters takes a fraction of the time it takes to teach someone diamond setting in gold.
- 5) Lower quality diamonds can be used with little fear of breaking them.
- 6) The process also works well for CZ's, Sapphires, Rubies, and Garnet, as well as diamonds.

Read Full Article on http://www.romanoff.com/help-info/casting-101/stone-in-place-casting

## **Platinum Casting Problems and Solutions**

The first thing for all of us to remember is that Platinum, just like other metals, has its own list of characteristic in all phases of manufacturing that must be professionally addressed. The following guide is designed as an easy to use list of Platinum manufacturing related problems. The guide is intended to get you looking at ways to improve your operation or reduce your costs to manufacture. Model and design limitations in this guide will not be addressed.

Read Full Article on http://www.romanoff.com/help-info/ casting-101/platinum-casting-problems-and-solutions



Find more educational information on our website www.romanoff.com/help-info

	STUDIO 78-9100	PRO 78-8600-SYS	MAX2 78-8800-SYS		
TECHNICAL DATA					
Ease of Use	Plug and print Automa	tic Job set-up, NO SUPP	ORTS NEEDED!		
HIGH PRECISION RESULTS					
Resolution	5000 dots/inch (197 x	197 dots/mm) in XY and 8000 c	lpi (315 dots/mm) in Z		
Accuracy	±0.0010 inch/ir	nch (±25.4µ/25.4mm) along eacl	n axis X, Y and Z		
Layer Thickness	User selectable	through variable slider, up to 0.0	00025in (6.3μm)		
Surface Finish	Layer thickn	ess dependent, up to 32 micro-i	nches (RMS)		
OFFICE ENVIRONMENT					
Build Envelope	6" x 6" x 2" 6" x 6" x 4" 6" x 6" x 4" (152.4 x 152.4 x 50.8 mm) (152.4 x 152.4 x 101.6 mm) (152.4 x 152.4 x 101.6 mm)				
Desktop Size	21.4"W x 18"D x 16"H (558 x 495 x 419mm)				
Weight	75 lbs. (34 kg)				
Power Requirements	90-250-V, 10A @ 230v max consumption				
Ambient Operating Temp	Recommend 60º to 75º F (16º to 22º C)				
Humidity	40% to 60% range of humidity				
Equipment Interface	PC to printer connectivity Hi-Speed USB 2.0		connectivity Ethernet Hi-Speed USB 2.0		
MATERIALS					
Model	Model material formula	ated for clean burnout to produ	ice 100% casting results		
Support		is generated automatically for $\epsilon$ or labor-saving, hands-free ope			
EFFICIENT WORKFLOW					
CAD file input		.stl and .slc files			
3Z®Works	Microsoft compatible software, formats CAD files for 3D printing				
3Z®Touch		Icon based user interface			
User Interface	Status monitoring and fault detection Re-start of build from point of interruption Works unattended up to 72 hours				
AGENCY COMPLIANCES					
Approvals	CE certified; FCC Class A approved - TUV approved (EN 60950 Compliant)				



- **✓ OVER 10 YEARS EXPERIENCE**
- **✓ BI-LINGUAL TECHNICIANS**
- **✓ LARGE INVENTORY**
- **✓** IMMEDIATE SUPPORT
- **✓ INTERACTIVE SKYPE ACCESS**
- **✓** NATION WIDE TECHNICIANS



## 3Z MAX 2 78-8800-SYS

A high precision 3D Printer for the manufacturing of wax patterns. Max<sup>2</sup> supports higher throughput and delivers significant production gains for precision design in jewelry, medical and industrial manufacturing applications. The fully automated Max<sup>2</sup> printer features a user-friendly touch screen and innovative software.





### 3Z PRO 78-8600-SYS

The accuracy of the Solidscape PRO produces models of intricate designs with ultra-fine feature detail and a smooth surface finish that are ideal for wax masters, 3D printer jewelry applications, and more. Solidscape is the leader of 3D printer companies in the industry. Solidscape designs its three-dimensional printing machines with detail and clarity as a high priority.



### 3Z STUDIO 78-9100

The 3Z Studio brings the jeweler's bench to the retail shop where users of any technical level can produce their own intricate wax patterns, ready for casting. The fully automated 3Z Studio marries the passion of fine jewelry design with the power of high precision 3D printing.





NOT ONLY CAN YOU PURCHASE 3D PRINTERS WE ALSO PROVIDE THE RIGHT SOFTWARE AS WELL WITH A SUPPORT TEAM TO HELP YOU ENHANCE YOUR BUSINESS MAKING ROMANOFF TRUELY A 1 STOP SHOP

> 78-6900 JewelCAD 78-8020 Rhinoceros \$965.00

\$3,885.00

# **Solidscape Supplies**

# **Solidscape Supplies**





















































Α	78-8002-L	Solidscape - InduraFill - 11.5 oz.	\$161.70
В	78-8001-L	Solidscape - InduraCast - 14.6 oz.	\$220.50
С	78-8001-PC	Solidscape InduraCast PLUS Build Material 16.9 oz. Bottle	\$220.50
D	78-8601	3Z Build Material - 10 Sticks	\$214.00
Е	78-8602	3Z Support Material - 10 Sticks	\$189.00
F	78-8017	Proto Lube	\$16.07
G	78-801-ORING	Solidscape T76, R66, T66 Fill Port-O-Ring	\$3.33
Н	78-8001-CAP	Solidscape InduraCast Reservoir Cap Only	\$15.39
ı	78-8001-PC/CAP	Solidscape PlusCast Reservoir Cap Only	\$15.39
J	78-8002-CAP	Solidscape InduraFill Reservoir Cap Only	\$15.39
K	78-8601-PC/CAP	3Z Tank Cap - Build Reservoir Side	\$17.37
L	78-8602-PC/CAP	3Z Tank Cap - Support Reservoir Side	\$17.37
М	78-8010	Solidscape Support Jet T66, T76, R66	\$1260.00
М	78-8011	Solidscape Build Jet T66, T76, R66	\$1260.00
М	78-9011	Universal Replacement Jet T76+ & R66+ Only	\$1260.00
N	78-8612	Solidscape Printhead, 3Z Pro Universal Jet	\$1211.54
N	78-9112	Solidscape Printhead, 3Z Studio Universal Jet	\$1211.54
N	78-8712	Solidscape Printhead, 3Z Max Universal Jet	\$1211.54
0	78-8010-1	Solidscape T76, R66 Print Head Cable 39"	\$209.94
0	78-8610-1	Solidscape 3Z Series Print Head Cable	\$182.02

Р	78-8008	Heated Build Line Kit T66, R66, T76	\$441.03
Р	78-8009	Heated Support Line Kit T66, R66, T76	\$441.03
Р	78-8608	Heated Build Line 3Z Series	\$367.53
Р	78-8609	Heated Support Line for 3Z Series	\$367.53
Q	78-8005	6" x 6" Build Plate for Model T66-BT2	\$170.99
Q	78-8005-R66	6" x 6" Build Plate for Model R66-T76	\$127.56
Q	78-8605	6" x 6" Build Plate for 3Z Series	\$118.50
R	78-8000-33P	Air Filter Tank Replacement Kit T66 (S/N 4500+), R66, T76 & Plus Models	\$83.12
S	78-8600-33B	3Z Series Build Tank Filter Reservoir (Round)	\$153.23
Т	78-8600-33S	3Z Series Support Tank Filter Reservoir (Hex)	\$153.23
U	78-8008-B1	Build Tank Heater Kit Solidscape T76, R66, T76+, R66+	\$322.18
U	78-8008-S1	Support Tank Heater Kit Solidscape T76, R66, T76+, R66+	\$322.18
٧	78-8013-3	Solidscape T76+ Y Motor Assembly & Encoder	\$689.00
W	78-8500-71	Solidscape T76, R66 X-Axis Motor	\$238.84
W	78-8013-2	Solidscape 3Z Series X,Y, and Cutter Motor	\$235.67
Χ	78-8600-49M	3Z Pro / Studio Y-Motor Pittman Encoder	\$527.69
Υ	78-8600-49M2	Solidscape 3Z Y Motor Merkle Encoder Assembly Max 2	\$530.81
Z1	78-8000-58D	R66 Cutter End Mill	\$181.84
Z2	78-9000-54	R66 Cutter End Kit	\$370.73
Z3	78-8000-49D	Cable for Y Axis Motor T76, R66	\$243.12

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E	Steendar.	G	H
	J	K	
M	N		P
Q	ROTTECH ::::::::::::::::::::::::::::::::::::	S	T
U	v O	w	X
Y	Z	<b>Z</b> 1	<b>Z2</b>
*This belt tensioning to	ol is needed to maintain	proper tension on the half	ts for smooth operation.
This belt tensioning to	oi is needed to maintain p	proper tension on the bel	ts for smooth operation.

	Α	78-8015	VS0-Bioact - 1 Gal	\$193.50	
	Α	78-8015-5	VS0-Bioact - 5 Gal	\$422.14	
	В	78-8022	Solidscape Primer for Platinum Casting Pints	\$19.95	
	С	78-8000-46	Belt for Y Motor T66, T76/+ (80/103)	\$14.00	
	<b>C</b> 78-8000-74		Belt for X Motor T76, R66	\$15.83	
	С	78-8600-54	Belt for 3Z Series Cutter (0.25"W)	\$16.79	
	D	78-8000-62	Solidscape T66 Belt X Drive	\$30.19	
	D	78-8000-73	Solidscape T76, R66 Belt X Drive (2 Required)	\$28.00	
	D	78-8000-75 Solidscape T76, R66 Belt Y Drive			
	Е	: 78-8000-05 Belt Calibration Tensioning Tool*			
	F	78-8000-21S	Vacuum Bags 4-Pack S-Style	\$23.26	
	G	78-8000-32	Brush, Cleaning Head	\$15.79	
	Н	78-8000-27 Solidscape Syringe			
	ı	78-8018	Purge Tubing - Sold Per Foot	\$1.12	
	J	78-8018-D	T76, R66 Purge Discharge 3" Cups 3-Pack	\$21.10	
	K	78-8018-D1	Solidscape T76, R66 & 3Z Discharge Cup 5-Pack New Style	\$18.27	
	L	78-8500-DWS	Solidscape Dewaxing System 120V	\$1363.00	
	L	78-8500A-DWS	Solidscape Dewaxing System 220V	\$1728.00	
	М	78-8618-D	Solidscape Bottom Purge Discharge Cup 3Z	\$4.12	
	N	78-8618-DR Solidscape Pear Purge Discharge Cup 3Z			
	0	78-8018-2	Silicone Hose Reservoir Hard - Sold Per ft	\$2.66	
	0	78-8018-3	Silicone Hose Reservoir Pinch Soft - Sold Per Foot		
	Р	78-8018-10	Solidscape Plastic "T" Fittings 3/16"	\$2.55	
1	Q	78-8000-44	1/2" Proto-Tape for T66-BT2, T612	\$13.23	
	Q	78-8000-44X	1" Proto-Tape for #z, T76/+, R66/+	\$12.16	
	R	78-8016	Lint Free Kim Wipes	\$6.60	
	s	78-8001-S	Solidscape Tank Measuring Dipstick	\$16.46	
	Т	78-8019	Calibration Cards BX/500	\$23.20	
	U	78-8010-3	Solidscape T76, R66, T66 & Plus Models - Heated Line to Jet Connector	\$13.67	
	v	78-8000-28	Nylatch Cutter Shroud Locking Pins for Solidscape T66, T76, R66	\$13.34	
	W	78-8018-11	Solidscape T76, R66 T66 Purge Spout Cap	\$11.15	
	W	78-8018-4	Solidscape 3Z Series Purge Spout Cap	\$11.15	
	X	Z42-113	Heavy Duty Table, 2' x 2' x 29"H	\$289.00	
	X	Z42-115	Heavy Duty Table, 5' x 2' x 29"H (Not Shown)	\$349.00	
	Υ	78-8600-49M3	Solidscape Y Cable for 3Z Pro	\$170.89	
	Υ	78-8600-49D1	Solidscape Y Cable for 3Z Max II	\$148.16	
on.	Z	78-8600-70	3Z Series CPU Interface Card	\$1,690.00	
	<b>Z</b> 1	78-8800-93	3Z Controller Card Backplane	\$488.50	
	Z2	78-8600-72	3Z Controller Card - All Models	\$1,159.05	



# Professional grade 3D printing made affordable.

### Simplistic Software Usage

- Power Contol via Ethernet Browsers
- Poweful Customized Printing Parameter Settings
- Direct Printing by USB Flash
- Model Preview & Real Time Printing Status Monitoring
- Unlimited Free License
- Slicer and Support Editor



### **Technical Specifications**

	Tiger XXL	Tiger XLT	Tiger MD	Tiger HD	Tiger XHD
Max.Building Size (mm)	150 x 84.4 x 120mm	125 x 70 x 120mm	102 x 57.5 x 120mm	80 x 45 x 120mm	57 x 32 x 120mm
X Y Resolution (um)	78um	65um	53um	41.5um	30um
Wavelength	405nm	405nm	365nm	405nm	405nm
Layer Thickness			5~200um		
Interface	Ethernet Connection, USB (Direct Printing)				
Ideal Temperature & Hum	nidity	dity 50° to 86°F ( 10° -28°C )			
Operating System & Net Browser Windows 7, Windo			ows 8 , Windows 10 & 0	Google Chrome	
Printer Size & Power Input 17 x 17 x 23.5".			83-lbs. , 100-240V AC	, 2A 50/60Hz	

### **Resin Options**

	МО	DEL NAME & NUMBER	FEATURES	APPLICATION
		Burgundy 78-5002	Easy surface or detail checking	Precious Metal
SN		Smart-Res 78-5003-R1	Color Curing Indicators	Precious Metal
S		Orange 78-5003	Easy surface or detail checking	Medical & Dental
RE	(III)	Blue 78-5004	Strongest Material	R&D Master Prototype Conceptional
GER		Clear 78-5011	Hard Material	R&D Master Prototype Conceptional
Ĭ		Pink 78-5013	Flexible	R&D Master Prototype Conceptional













Professional grade 3D printing made affordable.

The most advanced high definition DLP 3D printer in the industry. Easy, fast and reliable.



### **FLEXIBLE & OPEN SYSTEM**

- Open system with a wide range of resins
- Flexible and editable parameter settings

### **CUTTING EDGE OPTICAL SYSTEM TECHNOLOGY**

- 405nm LED configuration with high optical efficiency
- Digital Light Processing technology
- Heavy Duty projector with long life expectancy.

### **POWERFUL SOFTWARE**

- Support Generation Capabilities
- Build Job Preparation
- Printing File Transfer:
- Poweful Customized Printing Parameter Settings
- Direct Printing by USB Flash Drive
- Printing Optimization:
- Surface Smoothing
- Edge Enhancement
- Turbo Printing Speed Mode

### PRINTING PRODUCTIVITY

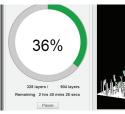
- 3-1/2 Hours creates up to 50+ rings with advanced precision
- Models are created on a heavy duty build plate
- Superior cooling System insures increased printing speed

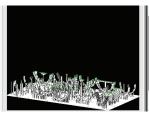
### HIGH RESOLUTION & ACCURACY

- Full HD UV LED projection engine down to 30μm XY resolution
- Excellent optical system designed for high definition3D Printing

### PRINTER TOOL

- Estimates and monitors growth time
- Model Preview & Real Time Printing Status Monitoring







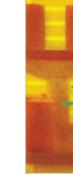
ROMANOFF HAS BEEN PROVIDING **EXCELLENCE IN YASUI CASTING SOLUTIONS AND TECHNOLOGIES** FOR OVER 25 YEARS!





### Yasui Rotating Burnout Furnace #13 PLUS & 37

The Yasui RBF Series features Uniform Heat Transfer, due to the displacement of air created by the Rotating Shelves, within the flask chamber. Accurate Temperatures insure a safe burn-out during stone-in-place casting. The Variable Power Heating System, automatically and precisely maintains set temperatures throughout the cycles, 10 kinds of different burnout cycles can be memorized on the controller. Internal Dewaxing System collects wax outside the flask chamber. The afterburner device neutralizes all smoke fumes, odors and pollution produced during overnight burn-out cycles. The narrow door design creates minimal heat loss. RBF37 is for gold only, while RBF13 Plus is for both gold and platinum. Numbered flasks are automatically moved to the front opening when selected



Inside rotating chamber view

- COOL TO THE TOUCH
- UNIFORM HEAT TRANSFER
- PRECISE TEMPERATURE CONTORL

Item number	# of Flasks	Power	Burnout Temp.	Dimensions	Applications
77-0146 - RBF 13 Plus	13 - 4" dia	220V, 50/60Hz, Single Phase	Max. 950°C	825 mm x 708 mm x 1984 mm	Gold, Platinum & Stainless
77-014 - RBF37	37 - 4" dia	380V, 50/60Hz, 3 Phases	Max. 850°C	1060 mm x 1070 mm x 2140 mm	Gold, Silver & Brass

## Yasui Prime - D-VWIS System (Vacuum Wax Injector System)

74-269A

Yasui has been successfully producing vacuum wax injectors for over 30 years, with over 20,000 units

Their latest model, the Prime Best D-VWIS, offers a precise and controlled amount of wax into a vacuumed mold which eliminates air bubbles, stabilizes wax weights, produces uniform parts and increases productivity significantly.

Because of its advanced user friendly computer control system, the operator can tune in the correct settings needed to for each mold that is necessary to achieve the best possible wax pattern. Afterwards, that molds "recipe" is saved to the unit's memory, ready and waiting for its next order. As an option, the settings for each mold can be saved to a RFID chip that is glued or vulcanized to each mold, so the operator needs to only waive the mold over the optional RFID reader and the Yasui Prime will automatically adjust the settings that are particular for the mold you are working with.

RFID is a radio-frequency identification memory chip that can transfer saved data via an electromagnetic field, automatically identifying and tracking tags attached to objects. The tags contain electronically stored information.



wax without retouch



### **FEATURES OF IC TAG**

Heat Resistant Since the IC Tag is durable fo 200 Degress Celsius, it can be embedded in the rubber mold.

### Thin But Tough



The IC Tag's material is flexible, so it does not crack and has superior impact absorption.

### **Excellent Miscibility**



Excellent miscibility allows IC Tags to be bonded to silicone rubber molds by special adhesive.

> 74-266-ICR 100/pk



### **BENEFITS & FEATURES**

- Largest clamp ever
- Memory for all the molds
- Easy adjustble Z-axis manually
- X-Y clamp movement for accurate clamp pressure point
- Capable of eliminating shrinkage and model distortion
- Equal weight of wax

- Increased productivity
- User friendly
- Auto preheating
- Parameters can be adjusted easily
- Simple to check the parameters
- Easy touch to operate
- \*Optional RFID tags and reader are available

### **SPECIFICATIONS**

- Power Supply: 230V, 50/60 Hz Single Phase
- Wax Capacity: Approx. 3.5 kg **Maximum Rubber Mold Size**
- Standard Size Clamp: 80 x 100 x 50 mm
- Optional Large Clamp: 125 x 150 x 80 mm

### Yasui VCC Platinum Casting Machine

79-600



- Full auto mode, semi auto mode, and manual mode are available.
- Stepless control of rotational speed and initial spin-up.
- High performance servo-motor is built in.
- Double swing arm (pat.) is adopted.
- Control by digital touch panel.
- THERMAL CONTROL WITH HIGH ACCURACY

The Yasui VCC features their exclusive "double swing arm" patented technology to ensure zero turbulence, complete filling, and dense castings every time! An accurate temperature for casting is achieved by the dual spectrum optical thermal control system guaranteeing consistent and accureae casting temperatures + - 2 Degrees Celsius. The unit features a completely vacuumed casting chamber that removes all unwanted gases and backfills with inert argon gas. The acceleration rate and the RPM speed of the casting arm can be programmed independently and can reach top RPM speed in less than 1/3 of a second! The Cooling System has a built-in water circulation system with a temperateure controller, to protect the heating coil in case of a power failure. Vacuum pump is not included.

### Thermal Control with High Accuracy

Thermal control with high accuracy is possible by the optic thermal controller. In addition to heating control by the temperature controller, the machine is newly equipped with the heat power control dial, so the upper limit output can be adjusted steplessly.



Oscilation Power

Oscilation Frequency

Temp. control range

Temp. control method

### Automatic Mode

In the case of automatic mode, automatic gas substitution is possible up to 3 times.

Different from the conventional machine, the semi-auto mode is available, and also the full-auto mode can operate automatically to the finish of casting (rotation).

5kw

Approx. 100kHz

900~2100 C

PID Control

### Double Swing Arm



By the originally- developed Yasui "Double Swing Arm" (Japan Patent No. 3178748), the molten metal can be poured into the mold straight without loss. Improvement of filling efficency, metal density and substantial reduction of metal loss has been realized.

### Conventional Straight-Type Arm Yasui Double Swing Arm

By the originally-developed In the case of centrifugal casting method that is most suitable for casting of platinum, the metal ejected from the nozzle is affected by strong Corilolis Force as well as by centrifugal force simultaneously. Therefore, in the case of conventional straight arm, second pivot there was such difficulty that the metal misses the centre of the mold and splashes around the spreu area of mold.



"Double Swing Arm" the molten metal can be poured into the mold straight, so filling efficiency has been improved. As the figure on the right, the is utilized, so that the metal ejected into the deflected (delayed)

Pt. 400g Melting capacity Flask size Dia. 76mm / 80mm Max. lenght 100mm Max. acceleration 500rpm-0.1 sec. Dimensions (WxDxH)1020x790x1180mm Net weight Approx. 350kg Power Supply AC200V, 50/60 Hz, 3 phase, 6.5kVA

Since 1988, Romanoff has successfully sold hundreds of Yasui casting machines. We have always maintained the most expansive selection of spare parts and provide technical support.

The most popular spare parts are listed below and we have many more in stock. We carry spare parts for older and newer models such as KT15, KT16 and KT17. As well as K2A-D, K2E-5KW, K2E-8KW, K2E-5KW, K2Next, K3A-D and K3-UP.

\* The inside diameter dimensions for the platinum crucibles represents the opening for the crucible support plate.



A	F	J	Continued line of the	R
В	G	K	Constitution in the consti	s
D1	Н	L	Code Statement (Code Statement	т 🌎
D2 E		M	Q	U

Α	79-304-KT17R	Yasui Type Stopper Rod, K2E-8KW, K2Next - Onion Style	23 x 150 mm	\$49.00
Α	79-304-KT17NR	Yasui Type Stopper Rod, K2E-8KW, K2Next - Onion Style - Long Life	23 x 150 mm	\$59.00
В	79-304-KT18	Yasui Type Stopper Rod, K2Next - Flat Head Style - Long Life	23 x 150 mm	\$43.80
В	79-304-K3S	Yasui Type Stopper Rod, K3Next - Flat Head Style - Long Life	15.6 x 128 mm	\$41.00
С	79-302-K2	K Thermocouple K2 A-D, K3A-E (1200°C)	140mm (T/C only)	\$289.50
D1	79-302-K2-R	R Thermocouple K2 A-D, K3A-E (1450°C)	140mm (T/C only)	\$1095.00
D2	79-302-16R	R Thermocouple K2E-8KW, K2Next (1450°C)	140mm (T/C only)	\$1095.00
E	79-302-KT17	K Thermocouple K2E-8KW, K2Next (1200°C)	140mm (T/C only)	\$289.00
F	79-312-FLSL	Silicone Flask Seal	50 x 125 x 6 mm	\$21.50
G	79-312-C	Graphoil Flask Gasket	108 x 177 x 1.5 mm	\$69.00
Н	79-303-K3-C	Outer Crucible Collar K3E	55 x 65mm	\$128.50
I	79-3032-FUN	Metal Guide Charge	58 x 120mm	\$149.00
J	79-313-K2MC	Metal Charge Guide K2A-D, K3A-D	58 x 120mm	\$229.00
K	79-326-K2-8KW	K2E-8KW, K2-Next 8KW Coil	10 Turns	\$795.00
L	79-306-KT18	Outer Ceramic Crucible K2E-8KW, K2Next w/ Legs	100(OD) x 135mm L	\$289.00
М	79-306-K2	Outer Ceramic Crucible K2A-D, K3A-D	95mm L	\$181.00
N	79-303-K2	Graphite Crucible K2E-5KW, K3A-D	8mm Hole, 90 mm L	\$119.00
0	79-303-K2-8KW	Graphite Crucible K2E-8KW, K2Next	60(ID) x 127mm L	\$135.00
0	79-306-KT18	Graphite Crucible K2E-8KW, K2Next - USA	60(ID) x 127mm L	\$99.75
Р	79-303-K3	K3E Graphite Crucible (8mm Hole)	65(OD) x 70mm L	\$102.15
Q	79-303-K2SM	Yasui K2A-E Shot Maker Crucible (2.6mm Hole)	70(ID) x 122mm L	\$157.00
R	79-454	Yasui VCC Pt. Crucible Small	45mm Diameter	\$62.75
R	79-452	Yasui VCC Pt. Crucible Large	53mm Diameter	\$89.75
R	79-452-G	Yasui VCC Pt. Crucible Large - Japan	53mm Diameter	\$98.75
S	79-453	Yoshida Type Pt. Crucible Large	53mm Diameter	\$53.30
S	79-453-T	Yoshida Type Pt. Crucible Large - Long Life	53mm Diameter	\$63.50
Т	78-601-T	Tanabe Pt. Crucible (120gr) Small	33mm Diameter	\$68.00
U	78-501	Tanabe Pt. Crucible (350gr) Large	45mm Diameter	\$106.20
U	78-501-T	Tanabe Pt. Crucible (350gr) Large - Japan	45mm Diameter	\$89.70

direction can be caught almost at the center of the

### MC 15+ and MC 60 Tabletop Casting Machines

### The MC 15+ Is designed...

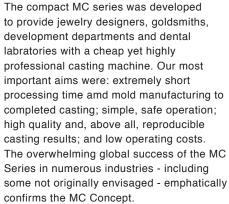
- For the very uncomplicated casting of single models or small trees in high quality
- For casting of every metal, even steel PR platinum

### The MC 15+ Is designed...

- For jewlery casting in gold or silver
- For small series casting in aluminum, copper and other metals











After pouring, the MC Series automatically switch to overpressure in order to optimise the mold filling even for delicate parts. Alternatively it is also possible to keep the vacuum (example shows MC 15+)

### Handling the mini casting system is also extremely simple:

- 1. Fill in the material and heat up
- 2. Take the flask from the oven and insert into the machine.
- 3. Pouring off takes place using a 90° Rotation of the casting unit. After pouring, the MC
- 15+ Automatically switches to overpressure in order to optimise the mold filling even for delicate parts.

With the MC machines, you can easily cast by hand from the crucible to your mold and feel what you are doing - just as it has been done for thousands of years. This works consistently and safely; the entire melting / casting unit is tilted together through a 90° angle. For a perfect balance and to make do with as few moving parts as possible, almost the whole machine moves during tilting; being cylindrical I design, the whole moving section rotates as if in a halfpipe.

### Indutherm Mini Casting - MC Series

### **Table-Top Casting Machines**

Indutherm's multi-award winning and patent-pending vibration system is now available in a compact casting machine. Using vibration can ensure better form filling, creating casts with greater, more consistent densities, higher elasticity and greatly reduced porosity. Vibration technology is a compelling alternative to the frequently used and relatively delicate centrifugal systems, especially when casting platinum or palladium.



MC 15+ The fast all-rounder for any metal

- Shortest combustion times for the flask in the oven approx. 1 hr with a speed investment material.
- With graphite crucible for gold and silver; ceramic crucible for platinum, palladium and steel.
- Maximum temperature 2,000°C.



MC 60, the larger capacity version for gold and silver casting

- Largely the same technology as with the MC 15+ but temperature range up to 1,300°C.
- Hence larger capacity for gold and silver casting
- For flasks up to 80 mm x 120 mm diameter and up to 100 mm x 120 mm length.



MC 20V and the MC 100V are designed based on the same tilting principle as the MC machines are desicribed for intricate casting projects in continuous operation in larger studios.

### Full Text LCD Display for fine adjustment and serial programming

The new operating system features individual setting of parameters to achieve maximum performance from every pattern mold and every alloy. Thanks to the transparent layout of the menu structure and the full display, all settings are quick and easy to program. Of course all process parameters can be saved for repeated castings. Casting quality, maximum temperature, operation

and equipment levels are in fact identical. Even the space requirements differ slightly. Both machines are designed as bench-top models. The decisive differences are the capacity of the crucible volume and flask size.

The MC 100V also offers very short process times.

- Very simple and safe to operate, short training periods
- All process parameters can be saved for repeated castings
- Excellent mold filling at pressures up to 3 bar (vacuum casting also available) and vibration system.

For Gold and Silver

CALL TO ORDER: 1-800-221-7448

	MC-15+ 78-2000-PLUS	MC-20V 78-2100	MC-60 78-2200	MC-100V 78-4500
Maximum Power / Electrical	3.5 KW 230V single phase	3.5 KW 230V single phase	3.5 KW 230V single phase	8 KW 3x400V
Maximum Temperature	2000° C	2000° C	1300° C	2000° C
Casting Volume	100 g Au 18ct 110 g steel / 200 g Pt	100 g Au 18ct 110 g steel / 200 g Pt	450 g Au 18 ct 300 g Ag 925	450 g Au 18 ct 250 g steel 500 g Pt
For flasks up to	ø 30/50/65/80 mm x 80 mm h	ø 30/50/65/80 mm x 80 mm h	Up to ø 80/100 mm x 120mm h	Up to ø 80/100 mm x 120 mm h
Control Panel	Digital Display	by LCD, full text readout	Digital Display	by LCD, full text readout
Auto. Vacuum / Overpressure	Standard	Standard	Standard	Standard
Vacuum or overpressure after	-1 to +2 bar	-1 to +3 bar	-1 to +2 bar	-1 to +3 bar
Function washing by inert gas	Standard	Standard	Standard	Standard

74-925



This Indutherm casting machine will melt and cast under vacuum with temperature control up to 1300°C or 1600°C when using the optional "S" thermocouple or visually up to 2000°C. It will produce high quality castings in brass, gold, silver, platinum, palladium and stainless steel. The vacuum investment mixer with speed, vibration and timer control will produce a uniform and bubble free investment slurry.

The digital programmable furnace will reach up to 2000°F and has 8 ramps and can store 4 programs. This complete casting kit contains all the necessary items needed to produce high quality castings.



Indutherm MC15+ 78-2000-PLUS Maximum Power

Casting Volume

Control Panel

Supply

Maximum Temperature

Temperature Measurement

For Use Of Flasks Up To

Vacuum Or Overpressure

Washing By Inert Gas

Automatic Vacuum & OverPressure Function



Standard: Thermocouple type N up to 1300°C

Optional: Thermocouple type S up to 1600°C

Diameter 30/50/65/80mm x Height 80mm

230V Single Phase, cooling water, inert































This Indutherm casting machine will melt and cast under vacuum with an immersion thermocouple temperature control up to 1300°C or 1600°C with the optional "S" thermocouple or with an optical pyrometer up to 2000°C. The additional advantages of this model casting machine are vibration after the metal has been poured into the flasks to insure denser castings, digital display and casting memories.

It will produce high quality castings in brass, gold, silver, platinum, palladium and stainless steel. The vacuum investment mixer with speed, vibration and timer control will produce a uniform and bubble free investment slurry. The digital programmable furnace will reach up to 2000°F and has 8 ramps and can store 4 programs. This complete casting kit contains all the necessary items needed to

produce high quality castings.











Indutherm MC20V 78-2100	
Maximum Power	3.5KW
Maximum Temperature	2000°C
Temperature Measurement	Standard: Thermocouple type N up to 1300°C Optional: Thermocouple type S up to 1600°C Optical Pyrometer up to 2000°C
Casting Volume	100g Au 18ct 110g Steel / 200g Pt
For Use Of Flasks Up To	Diameter 30/50/65/80mm x Height 80mm
Control Panel	by LCD, full text readout
Automatic Vacuum Function	Standard
Automatic Overpressure After Pouring	Standard
Washing By Inert Gas	Standard
Supply	230V Single Phase, cooling water, inert gas argon or nitrogen
Dimensions & Weight	17.5" H x 16" W / 60lb

Α	78-2100	Indutherm MC20V
В	73-040	Mini 1-1/3qt Wax Injector
С	77-0907	Super Blue 8.5" x 8.75" x 9" Programmable Furnace 110V
D	76-113-MINI	St Louis Vacuum Mixer
Е	7119	Vacuum Pump 3 CFM (120V or 220V)
F	79-001	Hydro-Air Pressure Washer Gun
G	76-110	Investment "Baby Style" Scale
Н	74-000-WC	Platinum Wax Mushroom Base - 5 Pack
- 1	74-0606	Filigree Pink Flake Wax -5lb
J	74-006	Max Wax Speed Pen
K	78-090	14" White Non-Asbestos Gloves
L	79-0305	Maun Sprue Cutter - 6.5" (165mm) Long
М	76-016	Cone Style Sprue Base - 3"
N	21.890-1	Adjustable Sprue Base Holder
0	76-047	2 Stainless Steel Solid Flasks - 3" x 3" / 12 Gauge
Р	76-0855	Non-Asbestos Paper Roll - 2.5" x 1/16" x 75'
Q	76-0881-4RND	5 Non-Asbestos Paper Bases - 4" OD x 0.75" ID
R	76-109	Graduated 3 Liter Measuring Pitcher
S	76-109-250ML	Graduated 250ml Measuring Cylinder
Т	Z14-301-40	Ransom & Randolph Ultra-Vest Investment - 40lb Bliss Box
U	80-137-1CAR	J-Break Platinum Investment Remover
V	Z14-305-606C	J-Formula "606" Platinum Investment With Blue Binder

Dim	Dimensions & Weight		17.5" H x 16" W / 60lb	
		·		
A 78-2000-PLUS Indutherm MC15+				
В	73-040	Mini 1-1/3qt Wax II		
C	77-0907		8.75" x 9" Programmable Furnace 110V	
<u> </u>		<u> </u>	ŭ .	
D	76-113-MINI	St Louis Vacuum N	Mixer	
Е	7119	Vacuum Pump 3 C	CFM (120V or 220V)	
F	79-001	Hydro-Air Pressure Washer Gun		
G	76-110	Investment "Baby Style" Scale		
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N	21.890-1	Adjustable Sprue B	Base Holder	
0	76-047	2 Stainless Steel S	Solid Flasks - 3" x 3" / 12 Gauge	
Р	76-0855	Non-Asbestos Pap	per Roll - 2.5" x 1/16" x 75'	
Q	76-0881-4RND	5 Non-Asbestos P	aper Bases - 4" OD x 0.75" ID	
R	76-109	Graduated 3 Liter Measuring Pitcher		
S	76-109-250ML	Graduated 250ml	Measuring Cylinder	

J-Break Platinum Investment Remover

3.5KW

2000°C

100g Au 18ct

Digital Display

Standard

Standard

-1 or +2 bar

110g Steel / 200g Pt

gas argon or nitrogen

Z14-301-40

U 80-137-1CAR

V Z14-305-606C

J-Formula "606" Platinum Investment With Blue Binder

Ransom & Randolph Ultra-Vest Investment - 40lb Bliss Box

MC 100 V

Indutherm MC100V

Maximum Temperature

Temperature Measurement

Maximum Power

78-4500



Gold/Silver Crucible

A1 78-2004



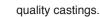
45 x 61 mm

\$44.95

# **Indutherm MC Supplies**

The Indutherm casting machine will melt and cast under vacuum with an immersion thermocouple temperature control up to 1300°C or with it's optical pyrometer up to 2000°C. A significant advantage of the MC100V casting machine is the vibration mode after the metal has been poured into the flasks to ensure denser castings, plus it has a digital display and casting memories. The MC100V will produce high quality castings in brass, gold, silver, platinum, palladium, and stainless steel.

The vacuum investment mixer with speed, vibration, and timer control will produce a uniform and bubble free investment slurry. The digital programmable furnace will reach up to 2000°F and has 8 ramps and can store 4 programs. This complete casting kit contains all the necessary items needed to produce high



8.5KW

2000°C

450g Au 18ct

Standard

Standard

Standard

or nitrogen

Indutherm MC100V

Mini 1-1/3qt Wax Injector

Vacuum Pump 3 CFM (120V or 220V)

Platinum Wax Mushroom Base - 5 Pack

Maun Sprue Cutter - 6.5" (165mm) Long Cone Style Sprue Bases For Indutherm - 100 mm

Indutherm Stainless Steel Flasks - 100 x 120L mm

5 Non-Asbestos Paper Bases - 4" OD x 0.75" ID

Non-Asbestos Paper Roll - 2.5" x 1/16" x 75'

Graduated 3 Liter Measuring Pitcher

Graduated 250ml Measuring Cylinder

J-Break Platinum Investment Remover

Hydro-Air Pressure Washer Gun

Investment "Baby Style" Scale

Filigree Pink Flake Wax -5lb

14" White Non-Asbestos Gloves

Adjustable Sprue Base Holder

Max Wax Speed Pen

250g Steel / 500g Pt





Standard: Thermocouple type N up to 1300°C

and Optical Pyrometer up to 2000°C

Up to 80mm/100mm x 120mm H

3x400V, cooling water, inert gas argon

Diameter 100mm x 120mm H

by LCD, full text readout

24" H x 24" W / 120lb

Super Blue 8.5" x 8.75" x 9" Programmable Furnace 110V

Vacuum Mixer With Vibration 220V 1ph, 6kg With Platinum



































A2	78-2504	Gold/Silver Crucible (MC50 / MC60)	53 x 130 mm	\$109.45
АЗ	78-4504	Gold+Silver Crucible	46 x 78 mm	\$108.37
B2	78-4503	Large Platinum Crucible No Cover	67 x 88 mm	\$86.90
B2	78-4503-CS	Small Platinum Crucible w/Cover	68 x 68 mm	\$116.77
B4	78-4505	Stainless Steel Crucible	50 x 90 mm	\$76.80
C2	78-4502-PT	Thermocouple Protection Tube	75 mm	\$64.40
D3	78-4502	Thermocouple N (MC50 / MC60)	"N" 1300C	\$268.20
D4	78-4502-DP	Dummy thermocouple (MC100)		\$97.60
E1	78-2506	Quartz Tube (MC60 / MC,VTC100V)	55 x 117 mm	\$232.03
F1	78-4507	Adjustable Flask Adapter	80 x 100 x 120L mm	\$296.70
F1	78-4508	Flask Saddle	100x80,100,120L mm	\$246.45
G1	78-2010	Gold & Yellow Platinum Lens	70 x 80 mm	\$48.62
G2	78-2011	Clear "Hot" Window with Gaskets	70 x 80 x 4 mm	\$84.60
H1	78-4513	Replacement Induction Coil (MC100)	6.5 turns Ø55 mm	\$539.50
H1	78-2201	Induction Coil 8.5 turns (MC60)	57 mm OD	\$410.00
H2	78-4515	Solenoid Valve (MC100V)		\$375.00
J3	78-4514	Glass wool bottom chamber	10 x 530 x 160 mm	\$50.57





















**D4** 









G4





G3







H1

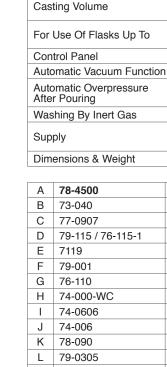
J1







J3



M 76-019-I N 21.890-1

R 76-109

76-0661-

76-0855

S 76-109-250ML

U 80-137-1CAR

V Z14-305-606C

Z14-301-40

76-0881-4RND

0

Р

Q

Т

J-Formula "606" Platinum Investment With Blue Binder

Ransom & Randolph Ultra-Vest Investment - 40lb Bliss Box



# **Indutherm** Tilting Furnaces High Temperature

Indutherm Tilting Furnaces are mainly used in two areas:

- For melting down large quantities of metal such as antique gold or manufacturing residues like casting waste, scrap or swarf. 15 - 60 KW output and low-frequency tuning means fast melting – even for large volumes – and excellent through-mixing.
- For casting large, heavy components e.g. according to the shell casting principle. For pouring off, the inductor/crucible unit is tilted forwards, either using a pivot lever orwheel, optionally with reduction. The wheel is recommended out of preference for safety reasons, as the operator must move away from the splash zone when pouring off.

	TF 1200 - TF 2000 - TF 4000 78-61200 - 78-61300 - 78-614000	TF6000 - TF12000 78-66000 - 78-612000	TF2000C - TF4000C 78-1300C - 78-1500C
Maximum Power / Electrical Connection	15KW (3x400V) 25KW (3x400V) 30KW (3x400V)	40KW (3x400V) 60KW (3x400V)	40KW (3x400V) 60KW (3x400V)
Maximum Temperature	1500°C	1500°C	1700°C
Temperature Measurements By Thermocouple	Thermocouple	Thermocouple	Optional Pyrometer
Crucible Volume	1,200ccm = 18kg Au 18ct 2,200ccm = 30kg Au 18ct 4,000ccm = 60kg Au 18ct	6,000ccm = 90kg Au 18ct 12,000ccm = 180kg Au 18ct	2,000ccm = 5kg-14kg Steel 4,000ccm = 8kg-30kg Steel
Handling & Control	Tilting By Lever	Tilting With Motordrive (Remote Control)	Tilting With Motor Drive (Remote Control)
Temperature Control	LCD Display, Full Text Readout	LCD Display, Full Text Readout	LCD Display, Full Text Readout
Temperature Programs	20	100	20
Interface RS 232 Diagnostic System	Standard Equipment	Standard Equipment	Standard Equipment
GSM Modern For Remote Service	Optional	Standard Equipment	Optional
Dimensions (W x D x H)	700mm x 600mm x 1250mm	1,250mm x 820mm x 1,300mm	700mm x 700mm x 1,250mm



# **Indutherm** MU Series Induction Melting Machines

Indutherm's MU series machines are flexible melting furnaces designed to melt gold and silver alloys as well as aluminum, bronze, brass, and platinum. The strong induction generator and low induction frequency provide excellent stirring of the molten metal.

	MU200 78-1200	MU400 78-1400	MU700 78-1700	MU100C 78-2700PT	MU200C 78-1200C
Maximum Power / Electrical Connection	3.5KW (230V) or 6.0KW (3x4000V)	10KW	12KW	8 KW 3x400V	15KW 3x400V
Maximum Temperature	1300°C or 1500°C	1500°C	1500°C	2000°C	2000°C
Crucible Volume	155cm = 2.3kg AU 18ct	400cm = 6kg AU 18ct	700cm = 9kg AU 18ct	1kg Platinum 50ccm	2.5kg Platinum 155ccm
Temperature Measurement	Thermocouple	Thermocouple	Thermocouple	Optional Pyrometer	Optional Pyrometer
Temperature Control	Standard	Standard	Standard	Standard	Standard
Temperature Program	20	20	20	16 Standard	16 Standard
Interface R2 232 Diagnostic System	Standard	Standard	Standard	Standard	Standard
GSM Modem For Remote Control	Optional	Optional	Optional	Optional	Optional

### **Indutherm** VTC Machines

### **Vacuum Tilt Casting Machines**

The VTC 100V - VTC 800V are extremely versatile casting machines suitable for a wide range of applications – and a number of options that were considered mutually incompatible up to now. Thus, while the VTC series was originally designed as a high-temperature casting machine for casting steel, palladium, platinum etc. (max. 2,000°C), the large flask capacity ensures more production and reduced costs when casting in gold, silver, copper, aluminum and other materials.

	VTC 100V 78-T4100 (78-T4100-TN)	VTC 200V 78-T4200 (78-T4200-TN)	VTC 400V 78-T4400 (78-T4400-TN)	VTC 800V 78-T4800 (78-T4800-TN)
Maximum Power / Electrical	12 KW / 3x400V	15 KW / 3x400V	20 KW / 3x400V	20 KW / 3x400V
Maximum Temperature	2100°C	2100°C	2100°C	2100°C
Graphite Crucible Volume	25 ccm = 450 gr Au 18 ct	145 ccm = 2.0 kg Au 18 ct	300 ccm = 4.0 kg Au 18 ct	600 ccm = 4kg steel
Ceramic Crucible Volume	30 ccm = 600 gr Pt / 250 gr steel / (95gr Ti)	180 ccm = 2.5 kg Pt / 1 kg steel / (450gr Ti)	300 ccm = 2.0 kg steel / (900gr Ti)	600 ccm = 4.0 kg steel / (1800gr Ti)
Maximum Flask Capacity	125mm DIA x 220mm H	125mm DIA x 220mm H	125mm DIA x 220mm H	125mm DIA x 220mm H
Vibration Technology	Standard Equipment - Sweep Mode	Standard Equipment - Sweep Mode	Standard Equipment - Sweep Mode	Standard Equipment - Sweep Mode
Automatic Tilting With Motor Drive	Standard Equipment	Standard Equipment	Standard Equipment	Standard Equipment
Automatic Flask Fixing	Standard Equipment	Standard Equipment	Standard Equipment	Standard Equipment
GSM Modem For Remote Service	Standard Equipment	Standard Equipment	Standard Equipment	Standard Equipment
Pyrometer With Video Output	Optional Equipment	Optional Equipment	Optional Equipment	Optional Equipment
Dimensions (WxDxH)	700mm x 800mm x 1500mm	700mm x 800mm x 1500mm	700mm x 800mm x 1500mm	700mm x 800mm x 1500mm

The VTC 100V - VTC 800V are extremely versatie casting machines suitable for a wide trange of applications. While the VTC series was originally designed as a high-temperature casting machine for casting steel, palladium, platinum, and more... Maximum temps up to 2,100°C, large flasks also make it suitable for economically producing casting in gold, silver and other materials.

The machine combines a dual-chamber differential pressure system with a tilting mechanism. The casting process is achieved by rotating the entire melting-casting unit by 90°. One benefit of the tilting system is the use of economically priced graphite or ceramic crucibles (without holes and sealing rods), these tend to have a longer service life. Some alloys, such as copper beryllium, quickly cause crucibles with holes and sealing rods to become loose and therefore useless, and for this reason, many casters have so far processed such alloys only in open systems – which means they can't choose to optimize the process with overpressure or vacuum.

With the VTC series, these handicaps no longer apply. A vacuum can be produced in the melting chamber and the casting chamber to avoid oxidation processes during melting and air pockets in the casting mould. The flask is automatically pressed against the melting chamber for casting, this makes it possible to switch to overpressure during casting for better mould filling; in addition, the vibration technology optimizes the process even further. As well as casting with flasks, casting into ingot molds is also possible.

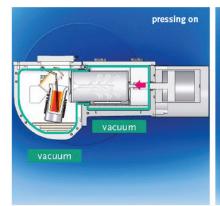
Sweep mode vibration system for perfect results even in Pt and Pd
Due to the advanced vibration technology working with variable frequencies
and the sophisticated vacuum/pressure system, this machine is perfectly
suited to casting platinum and palladium.

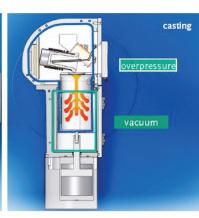
### **Handling and Control**

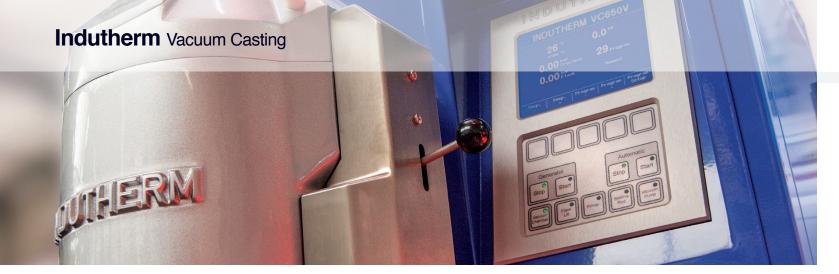
Operation is simple and safe thanks to a clearly arranged and easy-to-use LCD display.

### The High vacuum casting systems VTC 100V Ti - VTC 800V Ti

Highly reactive metals such as titanium, copper, beryllium, amorphous steel, etc.can be challenging to cast. Following numberous modifications such as heavy duty valves and hose connections, special seals and an evacuation and inert gas flushing process tailored to the machine which can produce a full vacuum of 10 Cu. Mbar.







### **FULLY - AUTOMATIC VC VERSIONS**

"State of the Art" Using Vibration Technology

- VC450 Excellent Value
- VC480V, VC650V



	VC450 78-3300	VC480V 78-3400	VC650V 78-4000
Maximum Power / Electrical Connection	4.5KW 3x400V (1400° C)	8 KW 3x400V (1600° C)	12 KW 3x400V (1700° C)
Crucible Volume	170 ccm = 2.5kg Au 18 ct*	170 ccm = 2.5kg Au 18 ct*	245 ccm = 3.6 kg Au 18 ct* or 386 ccm = 5.8 kg Au 18 ct*
Maximum Flask Size	130 mm / 260 mm h	130 mm / 260 mm h	130 mm / 260 mm h or 160 mm / 400 mm h
Vibration Technology	N/A	Standard Equipment	Standard Equipment
Pneumatic Bell Lock	Standard Equipment	Standard Equipment	Standard Equipment
Maximum Pressure	1.5 bar	1.5 bar	3 bar
Programs	20	100	100
Program Control	by LCD-display, full text readout	by LCD-display, full text readout	by LCD-display, full text readout
Flask Temp. Measurement	N/A	N/A	Standard Equipment
Automatic Flask & Chamber Lift	Standard Equipment	Standard Equipment	Standard Equipment
Variable Vacuum in Flask Chamber	Standard Equipment	Standard Equipment	Standard Equipment
RS 232, Diagnostic System	Standard Equipment	Standard Equipment	Standard Equipment

### **SEMI - AUTOMATIC VC VERSIONS**

- VC200/300 Small to Medium Size Shops
- VC500 Semi Automatic for Frequent Casting Cycles



	VC 200   VC 300 78-4200   78-4300	VC 400 78-3000	VC 500 78-3500
Maximum Power / Electrical Connection	2KW 230V (1200°C) Resistance	3.5 KW 230V or 4.5KW 3x400V (1400°C)	10KW 3x400V / 3x208V (1600°C)
Crucible Volume	245 ccm = 3.6kg Au 18 ct*	170 ccm = 2.5kg Au 18 ct*	245 ccm = 3.6 kg Au 18 ct* or 386 ccm = 5.8 kg Au 18 ct*
Maximum Flask Size	130 mm / 260 mm h	130 mm / 260 mm h	130 mm / 260 mm h or 160 mm / 400 mm h
Dual Temperature Control	N/A	Optional	Optional
Flask Temperature	N/A	N/A	Standard Equipment
OverPressure	VC 200 N/A VC 300 Standard	Standard Equipment	Standard Equipment
Flask and Chamber Lift	Optional Equipment	Optional	Standard Equipment
Temperature Programs	N/A	20 temperature programs	20 temperature programs
Turbo Pressure Function	N/A	Standard Equipment	Standard Equipment
RS 232, Diagnostic System	Standard Equipment	Standard Equipment	Standard Equipment
Granulation Tank	N/A	Optional	Optional

### **Indutherm** Vacuum Casting For Larger Parts

### APPLICATIONS

- Rapid Prototyping
- Automotive and Component industries
- Orthopaedic and Medicine Technologies
- Machinery Construction
- Toolmaking
- Sculptures

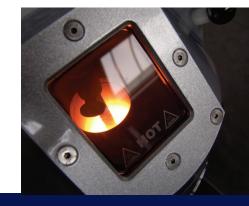




	VC1000* 78-4450	VC3000* 78-4900	VC12000* 78-12000
Maximum Power /	25KW / 3x400V / 40A,	30KW / 3x400V / 50A,	40KW / 3x400V / 50A,
Electrical Connection	50Hz or 60Hz	or 60Hz	50Hz or 60Hz
Maximum Temperature	1500°C	1500°C	1200°C
Owneible Velume	1500ccm = 15kg Ag,	3400ccm = 34kg Ag,	12000ccm = 180kg Au 18ct,
Crucible Volume	4kg Al	9kg Al	30kg Al
Flasks Up To (DxH)	250mm x 500mm	450mm x 600mm	600mm x 800mm
,		or 300mm x 600mm	
Temperature Measurement	N-type thermocouple up to 1300°C S-type thermocouple up to 1500°C	N-type thermocouple up to 1300°C S-type thermocouple up to 1500°C	K-type thermocouple up to 1200°C
	3-type thermocoupie up to 1300 C	3-type thermocoupie up to 1300 C	
Dual Temperature Control	Yes	Yes	Yes
Temperature Programs	20	20	20
Granulation Tank	Optional	Optional	Optional
Magnesium Kit	Optional	Optional	Optional
Protective Gas Supply	3 to 5 bar, pure N2 or pure Ar	3 to 5 bar, pure N2 or pure Ar	3 to 5 bar, pure N2 or pure Ar
Vacuum	0 - 20 mbar max., at least 40 m3/h	0 - 20 mbar max., at least 40 m3/h	0 - 20 mbar max., at least 40 m3/h

<sup>\*</sup> All versions are offered with vibration option as well

The large vacuum pressure casting machines are mostly used for precise castings in aluminum alloys. They are always the first choice for parts with a complicated geometry or when the number of pieces is not large enough for a diecast production. VC 1000, 3000 and 12000 offer the best pre-condition for high quality castings in aluminium: the hydrogen content of Al-alloys may be adjusted by regulation of the vacuum during melting. This way, foaming of molten metal can be avoided without any melt additives. Overpressure in the melting chamber during and after casting and simultaneous vacuum in the flask chamber optimise the form filling especially in filigree or thin-walled areas.





## **Indutherm** GU Series

**Granulating Machines** 

These machines are developed especially for granulating bullions, sheet metal or casting residues into proper grains. The granulation tanks are very easy to remove for clearing. The GU machines are available with crucible sizes from 245 ccm up to 12,000 ccm.

### **APPLICATIONS**

- Preparation of alloys out of gold and master alloy
- Preparation of alloy components
- Preparation of alloys from components
- Cleaning up of already casted metal

	GU500	GU1000	GU3000	GU12000
	78-4600	78-4700	78-4800	78-48100
Maximum Power / Electrical Connection	10 KW / 3x400V 50A,	25 KW / 3x400V 32A,	30 KW / 3x400V 50A,	40 KW / 3x400V 63A,
	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Maximum Temperature	1600°C	1600°C	1500°C	1600°C
Crucible Volume	245-386ccm ~	1500ccm =	3400ccm = 51kg	12000ccm =
	3.6-5.7kg Gold	22kg Gold 18ct	Gold 18ct, 30kg Silver	180kg Gold 18ct
Temperature Measurement	Up to 1300°C N Type or 1600°C S Type Thermocouple	Up to 1200°C N Type or 1600°C S Type Thermocouple	Up to 1300°C N Type or 1500°C S Type Thermocouple	Up to 1600°C B Type Thermocouple
Supply: Inert Gas Argon or Nitrogen	Yes - At 1.5 to 2.0 Bar Pressure	Yes - At 3.0 Bar Pressure	Yes - At 3.0 Bar Pressure	Yes - At 3.0 Bar Pressure
Cooling Water Supply	2.5-6 Bar/	2.5-6 Bar/	2.5-6 Bar/	2.5-6 Bar/
	At Least 200I/h	At Least 300l/h	At Least 300l/h	At Least 300I/h
Vacuum (Optional)	0-20 Mbar Max.,	0-20 Mbar Absolute,	0-20 Mbar Absolute,	0-20 Mbar Absolute,
	At Least 21m³/h	At Least 21m³/h	At Least 21m³/h	At Least 21m³/h
Weight	120kg	220kg	300kg	590kg
Dimensions (WxDxH)	500mm x 1400mm	700mm x 1000mm	800mm x 1100mm	1250mm x 1000mm
	x 820mm	x 1450mm	x 1450mm	x 1450mm

## **Atomizer** AU Series

# For fast and economic production of small batches of metal powder

The Indutherm atomisation plants have been particularly designed for the flexible and economic production of small-scale metal powder batches. Traditional large-scale production plants cannot provide this economic advantage. Frequently changing alloys in production require high cleaning efforts to avoid cross contamination. Particularly in R&D or precious metal powder applications small amounts of various kinds of powder are frequently required, often also new types of alloy powder not available on the market. Especially fast developing applications like SLM and MIM require more and more specialised metal powder.

# At a glance: particular advantages of the atomiser AU series

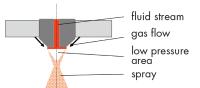
- very simple handling via LCD-Display and neatly arranged control panel
- Flexible and economic production of small scale / high value metal powder batches, which is not feasible on existing, larger plants
- Easy-to-clean concept: minimum metal loss and cross-contamination
- High powder over a particularly wide particle size range via flexible, modular usage of different atomisation nozzles and hot gas atomisation
- Particularly high process stability due to optimised nozzle systems
- Anti-oxidation features



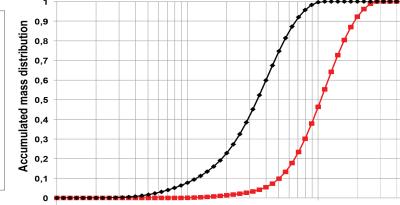
Volume in kg Au 18ct	3.6-5.7	22.0	51.0	180
Generator kw ( 400 V )	10	25	30	4

## Free fall nozzle

# fluid streat primary gas flow nozzle gas flow spray



Close coupled nozzle



- Free Fall Atomization; CuSn10;
  - Atomization gas pressure p $_{gas} = 2$  MPa; Mass median diameter d $_{50.3} = 106$  um: Geometric standard deviation d $_{84.3}/d_{50.3}$  - 1.6;
- Close Coupled Atomization; CuSn10; Atomization gas pressure p<sub>gas</sub> = 2.4 MPa; Mass median diameter d<sub>50.3</sub> = 35 um: Geometric standard deviation d<sub>84.3</sub>/d<sub>50.3</sub> - 1.7;

Particle diameter dp / µm

## The Continuous Casting Machines – the only ones with vacuum and quattro drive

These machines are designed...

- · For fast and flexible production of semi-finished material
- · For use in every metalworking industry
- · As multiple use instruments especially for the production of rings



### More flexibility, lower costs

Indutherm continuous casting machines help you to save production costs. With only one machine, you can produce your own alloys or semi-finished products in different shapes and sizes in the shortest time, for example:

- wires or bars in every diameter you need, up to Ø 85 mm (CC 1000/3000)
- sheets and strips, e.g. ring production, for stamping and pressing
- tubes, perfect as basic material for cutting in sections for wedding ring production
- granulates

As the desired parts and alloys can be produced within minutes, you can reduce your investment for material in storage. Your processes will get faster, more flexible and more efficient. With optionally available equipment as for example sintering set for diffusion bonding and granulation tank the versatility of these machines may be enhanced even more.

### The CC/VCC generation 2015: improved for even higher quality

The new CC/VCC machines are equipped with and highly efficient induction generators. Thanks to a control panel with full text LCD display, all parameters are very easy and convenient to set (100 casting programs).

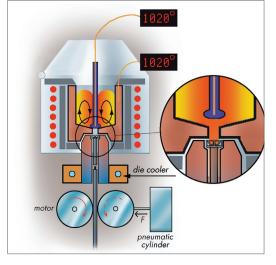
To reduce the risk of oxidation during melting and during drawing, the machines are equipped with inert gas function, vacuum system for the melting chamber (VCC), optical die temperature measurement, die cooler with inert gas flushing and additional secondary cooling system. All these measures are ideal especially for alloys containing copper such as red gold or for silver as these materials tend to oxidise easily.



Degasification under a vacuum results in a substantially improved because of the absence of oxidation semi-finished product.

### Optional quattro drive system

The optional drawing unit with four instead of two motor driven feed rolls produce smoother tubes and sheeting with reduced marks of transportation. This system is available now for each CC or VCC machine.



### **Indutherm** Continuous Casting Machines







VCC 1000

CC 3000

VCC 3000

VCC 400	VCC 1000		VCC 3000	
Performance				
Power max. / Electrical Connection	15 kW 3x400V / 3x208V	25 kW 3x400V	15 kW 3x400V	
Temperature Max.	1500°C	1500°C	1500°C	
Capacity				
Crucible Volume	285 ccm = 4.2 kg Au 18 ct*	1,500 ccm = 22 kg Au 18 ct*	3,400 ccm = 51 kg Au 18 c	
	400 ccm = 6.0 kg Au 18 ct*	<u> </u>		
	700 ccm = 10.0 kg Au 18 ct*			
Wire / Tube Production Up To	ø 15 mm / ■ ø 45 mm	ø 30 mm / ■ ø 85 mm	ø 40 mm** /■ ø 85 mm**	
Sheet Production	50 x 8 mm / o 60 x 8 mm	100 x 10 mm	130 x 12 mm	
Handling + Control				
100 Programs	By LCD-Display, Full Text Readout	By LCD-Display, Full Text Readout	By LCD-Display, Full Text Readout	
Vacuum / Inert Gas Overpressure	CC 400 / ■VCC 400	CC 1000 / VCC 1000	CC 3000 / ■VCC 3000	
Neutral Inert Gas Atmosphere		•		
Optical Die Temperature Measurement	•	•	•	
Die Coller with Protective Gas Flushing	•	•	•	
Die Coller with Protective		•		
Secondary Cooler		•		
End Bar Sensor				
Quality Management				
RS 232 Interface, Diagnostic System				
Data Printer				
GSM-Modern for Remote Service		•		
Accessories				
Quattro-Drawing Unit	•	•	•	
Center Alignment	•	•	•	
Sintering Kit	•			
Granulation Tank	•	•	•	
Bending-Unit	•	•		
Simultaneous Casting of Several Wires		• 3 Wires*	• 5 Wires*	
Coiling Equipment		0	0	
■ = standard equipment • = optional	*Liquid metal up to top level of the crucible	**Standard Sizes - Special dimensions or profiles for watch cases etc. on demand	*** Not in combination with Quattro Drive	

### Indutherm



### **VTC Series**

**VC Series** 

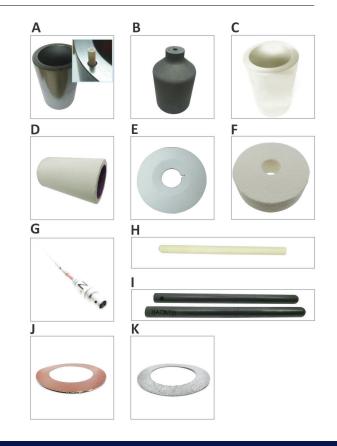
Α	78-4504	Gold/Silver Crucible (VTC100V)	46 x 78 mm	\$113.80
В	78-T4204	Gold/Silver Crucible (VTC200V)	61 x 135 mm	\$146.50
С	78-4503	Large Platinum Crucible - No Cover	67 x 88 mm	\$91.25
С	78-4503-CS	Small Platinum Crucible - No Cover	68 x 68 mm	\$122.65
D	78-T4203-C	Platinum Crucible W/Zirconia oxide coating Long Life (VTC200V)	50 x 115 mm	\$89.00
D	78-T4203	Stainless Steel Crucible (VTC200V)	50(ID) x 115(H) mm	\$86.90
D	78-T4203-1	Platinum Crucible (VTC200V)	50(ID) x 90(H) mm	\$68.00
Е	78-T4206	Quartz Tube (VTC200V)	66(ID) x 70(OD) x 135(H) mm (no notch)	\$228.50
E	78-T4207	Quartz Tube (VTC200V)	66(ID) x 70(OD) x 135(H) mm (w/ notch)	\$118.60
F	78-T4207-W	Glass Woll for Bottom of Tube (VTC200V)	ø 70 x 13(h) mm	\$11.00
G	78-T4210	Flask Adaptot Set (VTC100V / VTC200V)	ø 80 mm Flask	\$651.40
G	78-T4211	Flask Adaptor Set	ø 90 mm Flask	\$625.00
Н	78-T4210-1	Graphoil Gasket, 80mm Flask (VTC100V / VTC200V)	82(ID) x 87(OD) x 2mm	\$16.10
I	78-T4211-1	Graphoil Gasket, 90mm Flask (VTC100V / VTC200V)	62(ID) x 97(OD) x 2mm	\$17.30
J	78-T4209	Graphoil Gasket, 100mm Flask (VTC100V / VTC200V)	62(ID) x 105(OD) x 2mm	\$16.75
J	78-5012-1	Graphoil Gasket, 125mm Flask (VTC100V / VTC200V / VTC800V)	62(ID) x 125(OD) x 2mm	\$20.25
K	78-T4213	Induction Coil (VTC200)		\$625.00
L	78-T5016	Printer Paper (All Machines)		\$7.95





	, ,	* I I I				
	Item #	Description	Nozzle Dia.	Crucible Outer Dia.	Crucible Height	Price
Α	78-3501-I	Graphite Granulating Crucible (VC200/300/500/600/650V)	2	78	120mm	\$116.40
Α	78-3502	Gold/Silver Casting Crucible (VC200/300/500/600/650V)	8	78	120mm	\$110.80
Α	78-3002	Graphite Gold/Silver Crucible (VC400/450/480V)	8	68	120mm	\$98.50
Α	78-3003	Graphite Granulating Crucible (VC400/450/480V)	2	68	120mm	\$94.50
Α	78-3502	Graphite Gold/Silver Crucible (VC500/600/650V)	8	78	120mm	\$111.25
В	78-3502-S	"S" Type Gold/Silver Crucible (VC500/600/650V)	8	78	120mm	\$186.70
С	78-3503	Outer Crucible Shield (VC500/600/650V)	78(ID) x 100(OD) mm x 140(H)mm \$44.65			\$44.65
		0 1 - 0 - 0 - 0 - 0 - 1 - 1 - 1				

В	78-3502-S	"S" Type Gold/Silver Crucible (VC500/600/650V)	8	78	120mm	\$186.70		
С	78-3503	Outer Crucible Shield (VC500/600/650V)	78(ID) x	78(ID) x 100(OD) mm x 140(H)mn				
D	78-3002-SH	Outer Ceramic Shield (VC400/450/480V)	69(ID) x 8	69(ID) x 88(OD) mm x 115(H)mm \$25.73		\$25.73		
Е	78-3010	Filling Cone (VC400/450/480V)	50(ID) x 2	200(OD) mm	x 20(H)mm	\$69.30		
F	78-3006	Bottom Crucible Insulation (VC400/450/480V)	68(OD) mm x 20(H)mm			68(OD) mm x 20(H)mm \$25.89		\$25.85
F	78-3506	Bottom Crucible Insulation (VC200/300/500/600/650V)	78(OD) mm x 25(H)mm			\$24.80		
G	78-3508-N	Thermocouple Type "N" 1300°C (VC400-650V)				\$240.45		
Н	78-3508-PT	Thermocouple Protection Tube (VC200-3000) for 78-3508-N				\$33.20		
1	78-3504	Graphite Sealing Rod (VC200/300/500/600/650V)	12 x 174r	mm		\$33.30		
J	78-3509	Red Silicone Gasket for 100mm Flask	2(ND) x 169 x 110mm			\$19.65		
K	78-3511	Graphoil Gasket 100mm Flask (VC400/450/480V)	2(ND) x 110 x 169mm			\$17.60		



### Romanoff Model 48 Motor-Driven Centrifugal Casting Machine

# The unit that pioneered the centrifugal casting technology in the jewelry industry.

### MAIN FEATURES...

- Automatic timing device controls the casting cycle.
- Variable speed regulator permits choice of revolutions per minute.
- Unlike spring-driven machines which begin to decelerate as soon as they are released, this motor-driven break-arm maintains a constant RPM for the number of seconds chosen and preset on the automatic timer from 2 seconds to 999 seconds.
- Totally enclosed, dust-proof, fan-cooled, ball-bearing motor.
- Heavy gauge, all welded steel construction.
- Metal can be melted either with a torch directly into the casting machine or with a melting furnace.
- Reinforced bronze casting arm has heavy-duty ball-bearings at swivel joint.
- Romanoff Model #48 will accept up to a 4" x 8" flask.
- "Broken" arm designs allows maximum metal flow into flask.
- 1/3hp Motor available in 110V and 220V
- Dimensions: 30"W x 30"D x 39"H
- Includes 3 flask saddle sizes ( 3", 3 1/2" & 4" )

79-003 Romanoff Model 48 Motor-Driven Centrifugal Casting Machine \$5,797.00



### Vacuum Investing Machine

Romanoff presents three outstanding vacuum machines that have been refined over the years to offer you top quality and outstanding durability at a reasonable price. These units are designed for vacuuming multiple invested flasks. These unites feature a totally enclosed cabinet, jiggle plate made of thick, heavy-duty aluminum, removable back cover for easy access to complete machine, large easy-to-read 0-30" vacuum gauge, purge valve to prevent moisture from contaminating oil, and a glass indicator to show level and condition of oil. Note that vacuum pump oil should be changed every three months of operation.

Item #	Vaccum Pump Horsepower	Bell Jar Size	Investment Table	Dimensions	Voltage	Price
76-116	3/4	12" x 10"	16" x 16"	24" x 24" x 39"	110V	\$2,816.00
76-117	1	16" x 14"	20" x 20"	24" x 24" x 39"	220V	\$3,405.00
76-118	1-1/2	20" x 16"	25" x 25"	24" x 24" x 39"	220V	\$4,201.65



### Combination Vacuum Investing Machine

### MAIN FEATURES...

- Vacuum storage tank enables an instantaneous maximum pull around casting flask
- Internal electric solenoid valve assembly enables a hands free operation
- Foot pedal operated for hands free use
- Space saving design incorporates both casting and investing

Item #	Dimensions	Max Flask Size (Dia. X L)	Vaccum Pump Horsepower	Power Settings	Investment Table
79-0386	26" x 21" x 38"	5" x 8.5"	1	110V / 60Hz / 1 Ph	16" x 16"



RCS & CCM CENTRIFUGAL CASTING MACHINES

Capable of casting all metals and alloys, both precious and non-precious, Romanoff RCS Centrifugal Casting Machines offer a wide variety of uses and applications. These models are noted for their high melting efficiency and speed. The patented RCS (Rotating Coil System) not only provides excellent casting results, but can do so without having to cool down due to coil dropping prior to spinning. The RCS machines are available in semi and fully automatic. The unique features are, melting in a vacuum controlled atmosphere, built in Micro-Processer Computer to ensure consistent quality castings, control of initial acceleration and final RPM, Self Diagnostic warning system to notify operators if water pressure or power is low or crucible needs to be changed. The Romanoff casting machines melt under vacuum and allow the operator to introduce argon gas or any other inert gas when required to protect the alloy during melting.





### Programmable RCS



- Built in vacuum pump and Argon gas circuit
- Coil rotation with arm and flask
- Coil still heating during rotation
- Metal injected in liquid phase
- Accurate temperature reader with advanced thermo regulator
- Metal emissivity regulation
- Vacuum-Argon washing cycle
- Built in cooling system

- New heavy duty melting generator
- Easy to use digital Control Panel
- 20 user programs with 10 programmable parameters each (Programmable RCS Model)
- Built in 20 m3 vacuum pump and Argon Gas circuit
- Metal emissivity regulation
- Accurate temperature reader with advanced thermo regulator
- Excellent heating cycle control

	ROMANOFF RCS LITE 4 KW 79-7100	ROMANOFF RCS 4 KW 79-700	ROMANOFF CCM 200 79-500-D1	ROMANOFF CCM 400 79-500-D2
Absorbed Power KW (max)	4.0	4.0	7.5	7.5
Output Frequency kHz	60-105	60-105	50-80	50-80
AC Line Volts (50/60Hz)	230 ±10%	230 ±10%	230 ±10%	230 ±10%
Line Phases	1	1	3	3
Crucible Capacity	200g Pt, 170g Au	200g Pt, 170g Au	350g Pt, 290g Au	750g Pt, 650g Au
Flask Size mm (max)	D = 80 x H = 75	D = 80 x H = 75	D = 100 x H = 120	D = 120 x H = 160
Max Melting T°	2000° C	2000° C	2000° C	2000° C
Operation	Semi-Automatic	Automatic	Automatic	Automatic
Programs	1	20	20	20
Dimensions LxWxH	25.2" x 26.4" x 41.3"	25.2" x 26.4" x 41.3"	29" x 24.4" x 42.9"	39.4" x 32.7" x 42.5"
Weight	342 lbs (155 kg)	342 lbs (155 kg)	551.1 lbs (250 kg)	684.4 lbs (310 kg)

### Romanoff RCS Casting Kit With Optical Pyrometer

The Romanoff RCS Lite will cast all metals and alloys: precious and non-precious. The patented RCS (Rotating Coil System) provides excellent casting results and no cool down due to coil dropping prior to spinning. It has very high melting efficiency and speed, it's easy to install and simple to operate. Reliable, easy to maintain and service. The vacuum investment mixer with speed, vibration and timer control will produce a uniform and bubble free investment slurry. The digital programmable furnace will reach up to 2000°F and has 8 ramps and can store 4 programs. This complete casting kit contains all the necessary items needed to produce high quality castings.







74-928

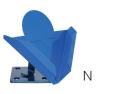


















Romanoff RCS 79-7100	
Absorbed Power Max	4KW
Output Frequency	60-105
AC Line (50/60Hz)	230V ±10%
Line Phases	1
Crucible Capacity	200g Pt, 100g Au
Flask Size	D=90 x H=90
Max Melting Temperature	2000°C
Cooling System	Water-Internal
Weight	440.9lb (200kg)
Dimensions (LxWxH)	26.4" x 21.7" x 41.3" (67cm x 55cm x 105cm)

Α	79-7100	Romanoff RCS Lite
В	73-040	Mini 1-1/3qt Wax Injector
С	77-0911-A	Super Blue 8.5" x 8.75" x 9" Programmable Furnace 110V
D	76-113-MINI	St Louis Vacuum Mixer 220V
Е	7115A	Vacuum Pump 3 CFM (120V or 220V)
F	79-001	Hydro-Air Pressure Washer Gun
G	76-110	Investment Scale
Н	74-000-WC	Platinum Wax Mushroom Base - 5 Pack
1	74-0606	Filigree Pink Flake Wax -5lb
J	74-006	Max Wax Speed Pen
K	78-090	14" White Non-Asbestos Gloves - Pair
L	79-0305	Maun Sprue Cutter - 6.5" (165mm) Long
М	76-016	2 Each - Tree Style Rubber Sprue Bases - 3" Diameter x 3/8"
N	21.890-1	Adjustable Sprue Base Holder
0	76-047	2 Each - Stainless Steel Solid Flasks - 3" x 3" / 12 Gauge
Р	76-0855	Non-Asbestos Paper Roll - 2.5" x 1/16" x 75'
Q	76-0881-4RND	20 Pack- Non-Asbestos Paper Bases - 4" OD x 0.75" ID
R	76-109	Graduated 3 Liter Measuring Pitcher
S	76-109-250ML	Graduated 250ml Measuring Cylinder
Т	Z14-301-40	Ransom & Randolph Ultra-Vest Investment - 40lb Bliss Box
U	80-137-1CAR	J-Break Platinum Investment Remover - 1 Gallon
V	Z14-305-606C	J-Formula "606" Platinum Investment With Blue Binder - 50 lbs Kit

## **Romanoff Centrifugal Casting Machine Supplies**



	Item #	Description	Size	Price
Α	79-452-G	400 gr. Platinum Crucible (High Grade)	51mm	\$98.75
В	79-500-CAR	350 gr. Platinum Crucible (USA)	51mm	\$69.95
С	78-0060	800 gr. Gold Graphite Liner / Ceramic Container Crucible	51mm	\$39.45
D	79-702-SPT-S	Crucible Support Plate	38mm Opening	\$179.00
D	79-702-SPT	Crucible Support Plate	44mm Opening	\$179.00
D	79-503	Crucible Support Plate	51mm Opening	\$179.00
Е	79-702-D	50 gr. Gold / Silver Crucible (Original)	38mm	\$49.70
Е	79-702	150 gr. Gold / Silver Crucible (Original)	44mm	\$59.60
F	79-701	150 gr. Platinum Crucible (Original)	38mm	\$115.50
F	79-701-R	150 gr. Platinum Crucible (USA)	38mm	\$96.90
G	79-701-LG	200 gr. Platinum Crucible	44mm	\$99.00
Н	79-701-SS	80 Gr. Stainless Steel Crucible	44mm	\$94.00
I	79-701-TI	80 Gr. Titanium Crucible	44mm	\$107.00
J	79-703-2	Rotating Coil System - Flask Saddle	2" x 3"	\$179.00
J	79-703	Rotating Coil System - Flask Saddle	2.5" x 3"	\$179.00
J	79-703-3	Rotating Coil System - Flask Saddle	3" x 3"	\$289.00
K	79-711	Rotating Coil System - Replacement Induction Coil	3,4,5kw Models	\$489.00
L	79-505	CS1, CS2, Replacement Induction Coil	9 Turns	\$689.00



### **Induction Easymelt**

An excellent choice for all precious metal buyers who need an induction melting furnace for rapid melts. All models are also available for stainless steel and platinum. Reliable, easy to maintain and service and easy to install and simple to operate. Induction generator cooled by external water. 1-30 minute timer with power regulation 10 -100%. Convenient L.E.D. screen displays power level, time and temperature. \$4,250.00



ITEM#	MAX TEMP.	CRUCIBLE CAPACITY	POWER (ABSORBED)	DIMENSIONS	WEIGHT
79-1100	1200°C	1kg Au	230 +/- 10% (2.8 kW)	360mm x 450mm x 180mm	31 lb (14kg)
79-1300	1200°C	2kg Au	230 +/- 10% (2.8 kW)	360mm x 450mm x 180mm	31 lb (14kg)
79-1400	2000°C	50-250g Pt	230 +/- 10% (2.8 kW)	360mm x 450mm x 180mm	31 lb (14kg)

### **Ultramelt Induction Melters**

These induction melting furnaces are for gold, platinum, and steel melting. Efficient circuit with low energy consumption. These machines are reliable and are also easy to maintain and service. Users will enjoy how easy these machines are to install and how simple they are to operate.

These units feature a digital control panel with advanced service and diagnostic features, such as a power bar-graph indicator. The modern stainless steel enclosure has a temperature resistant top plate. The installed thermocouple allows for better temperature control. Optional infrared temperature reader. Call for Pricing



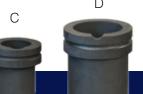
	ULTRAMELT 4G 79-1500	ULTRAMELT 5P 79-1600	ULTRAMELT 10G 79-1700	ULTRAMELT 15G 79-1800
Absorbed Power kW (max)	4.0	5.0	10.0	15.0
AC Line , Volts (50/60Hz)	230 ±10%	230 ±10%	380/480 ±10%	380/480 ±10%
Line Phases	1	1	3	3
Crucible Capacity	4kg Au	120-600g Pt	10kg Au	15kg Au
Max Melting Temperature	1300°C	2000°C	1300°C	1300°C
Cooling System	Water	Water	Water	Water
Weight	123lb (56kg)	123lb (56kg)	275.6lb (125kg)	275.6lb (125kg)
Dimensions LxWxH	18.1" x 15.7" x 37.4"	18.1" x 15.7" x 37.4"	21.7" x 25.6" x 38.2"	21.7" x 25.6" x 38.2"



## **Compact Digital Melters**

Α	8100	Romanoff DigiMelt 1Kg 110V	\$679.00
Α	8100A	Romanoff DigiMelt 1Kg 220V	\$699.00
С	78-0380	Romanoff DigiMelt Crucible 35(ID) x 115(IH) x 40(OD) x 125 (OH) mm	\$29.95

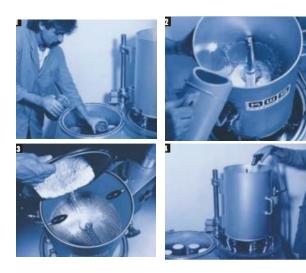
В	77-042-M3D	Italian Electric 3Kg Digital Melter 110V	\$995.00
D	77 042 M2 C	Italian3KgGraphite Crucible	\$44.75
	77-042-M3-C	55(ID) x 120(IH) x 68(OD) x 140 (OH) mm	



## **Romanoff KWS Investment Mixing Machines**



SPECIFICATIONS	76-3001 - EB 5	76-3002 - EB 8	76-3005 - EB 10/16 S	76-3003 - EB 10/16	76-3006 - EB 20/30
Max. Flasks Diameter	120-140mm	140mm	140mm	140mm	160-200mm
Max. Height of Flasks	170mm / 9"	230mm / 9"	270mm / 10.8"	270mm / 10.8"	270mm / 10.8"
Max. Number of Flasks	3 Perforated Flasks	5 Perforated Flasks	6 Perforated Flasks	6 Perforated Flasks	6-8 Perforated Flasks
Flask Chamber	290mm Diameter	380mm Diameter	430mm Diameter	430mm Diameter	610mm Diameter
Max. Powder Capacity	6 kg	10 kg	16 kg	16 kg	30 kg
Mixing Chamber Dia.	200mm Diameter	280mm Diameter	330mm Diameter	610mm Diameter	460mm Diameter
Height of Mixing Chamber	315mm Inside Height	315mm Inside Height	575mm Inside Height	330mm Inside Height	590mm Inside Height
Investment Sieve	N/A	N/A	Included	Included	Included
Machine Dimensions	730 x 490 x 970mm	1015 x 550 x 1405mm	1130 x 640 x 1600mm	1140 x 640 x 1720mm	1340 x 840 x 1710mm
Weight with Pump	72 kg	136 kg / 0025 Pump, 215 kg / 0040 Pump	189 kg	211 kg	292 kg
Shipping Weight	120 kg	215 kg / 0025 Pump, 223 kg / 0040 Pump	283 kg	325 kg	453 kg



This Romanoff KWS investment mixing machines will mix and pour gypsum investment powder under vacuum showing consistent results every batch!.

KWS is second to none and known for its superior quality, heavy duty construction, quality drive motors, designed for easy maintenance and can last a life time.

- Vibration feature insures all gas bubbles are removed during vacuum.

> \*KWS MACHINES ARE **EXCLUSIVELY AVAILABLE THROUGH ROMANOFF**

### High quality casting with a minimum amount of work

The Romanoff KWS investment machine bench-type model is designed to mix 6 kg of investment compound under vacuum and to simultaneously fill 3 flasks.

Models EB10/16S and larger include stainless steel sifter plate which mounts on top of mixing chamber to insure gypsum is in powder form when loading.

Rubber flaps below mixing blades result in all powder is mixed thoroughly. zGrease fittings on all moving parts.

### High surface quality and contour sharpness on castings

It is now also possible to produce castings with a high surface quality and contour sharpness.

### Pleasant and clean work through simple operation

This mixer is simple to operate and ensures a clean and pleasant working environment. The variable speed mixer guarantees that the correct rotational speed for the specific investment process can be selected at all times. Drive motor and mixing chamber are fixed to each other. This construction avoids malfunction of the machine.

### Minimum maintenance needed to maintain the mixer

All parts of the machine are made of stainless steel or of aluminum (Al). This results in minimum maintenance as well as wear and tear. To protect the vacuum pump a filter-system has been installed which improves the life cycle of the pump substantially. The filling taps are made of a special alloy which is not affected by gypsum and water.



### Romanoff KWS Automatic Loading System

76-3008 **CALL FOR PRICING** 

### Automatic Loading of Investing Machines Type EB with water and investment powder

- · Exact dispensing of investment powder and water as well
- · Operation free of dust, no inhalation of investment powder
- · Cutting of processing time
- · Also possible to add to already existing Investment Machines Type EB.

SPECIFICATIONS	DIMENSIONS IN MILLIMETERS	
Max. volume of investment material per operation	30 kg	
Measurement time for both components (30 kg)	3 Min	
Accuracy of measurement 9" Programmable Furnace 110V	+/- 20 gr.9"	
Supply 400 V / 3-phase / 50 c *	2 KW*	
Storage container	120 kg, optional 400kg**	
Measures and weight with storage container 120 kg: Length x Width x Height in mm Net weight ***	2850 x 1300 x 2900mm 300 kg***	
Measures and weight with storage container 400 kg: Length x Width x Height in mm Net weight ***	2850 x 1320 x 2900mm 320 kg***	
Processing: The machine operator has to set the water/invest		

- 1. A dust-free working is guaranteed by the connected dust exhauster.
- 2. There will always be a constant ratio of water and investment powder as well.
- 3. No loss because of calculation errors.

the investment machine's barrel.

4. Cutting of processing time, since measurement and dispensing of new loading will be done parallel to previous mixing procedures.





With the St. Louis Mixers, you can automatically mix and pour your investment in an enclosed see through mixing chamber. A very important feature of these units are, you are mixing and pouring investment under a controlled vacuum environment with vibration. This is a real time saver as you will not have to separate mixing, pouring and vacuuming operations. Since it is user friendly, anyone can be trained in a few minutes on how to operate these units.

ITEM#	POWDER CAPACITY	INVESTING FLASK	MAX FLASK HEIGHT	FLASK PLATE DIAMETER	DIMENSIONS
76-113-MINI	1 Kg	One	120 mm	100 mm	300 mm x 350 mm x 720 mm
76-113-4KG	4 Kg	One	200 mm	150 mm	300 mm x 350 mm x 950mm
76-115	6 Kg	Multiple	200 mm	280 mm	490 mm x 420 mm x 1050 mm
76-115-P	6 Kg Au / 3 Kg Pt	Multiple (gold or platinum)	200 mm Pt / 100 mm Au	280 mm	460 mm x 420 mm x 1050 mm



ITEM #	POWDER CAPACITY	INVESTING FLASK	MAX FLASK HEIGHT	FLASK PLATE DIAMETER	DIMENSIONS
76-114	10 Kg	Multiple	200 mm - 350 mm	360mm	620 mm x 660 mm x 1700 mm
76-114-14XL	14 Kg	Multiple	350 mm	360mm	620 mm x 660 mm x 1700 mm
76-114-6XL	14 Kg Au / 6 Kg Pt	Multiple	150 mm	360mm	620 mm x 660 mm x 1700 mm
76-130	14 Kg - Auto	Multiple	350 mm	330mm	620 mm x 660 mm x 1700 mm
76-131	22 Kg	Multiple	400 mm	450mm	620 mm x 660 mm x 1700 mm + 470 mm x 950 mm x 1000 mm

### Investment Blaster Cabinet (Fast Investment Removal)

The Romanoff built investment blaster cabinet delivers 1500 PSI from it's internal pressure oil pump and motor. It has an adjustable nozzle, and is constructed of heavy-duty polypropylene and welded seams. Your hands are protected by flexible heavy duty rubber gloves. Comes with two foot pedals - one to activate the water pressure and one to activate viewing glass washer. Made in USA.

Z50-002-R Investment Blaster Cabinet - 110V *\$3,550.00* Z50-002A-R Investment Blaster Cabinet - 220V \$3,750.00 80-101-H11 Replacement Heavy Duty Gloves - Large \$39.95





Platinite is designed for high temperature metals, such as platinum and stainless steel.

- Produces satin smooth, consistently superior casting results
- Creates a dense casting by vacuum or centrifugal methods
- Reduces finishing time and increases productivity
- Mixes to a smooth, creamy consistency
- Forms a strong yet permeable mold
- Breaks away cleanly and easily

Satin Cast Xtreme investment is the only high metal temperature (platinum, stainless steel, etc) investment that mixes only with water. Can be used with a rubber sprue base and no paper liner or base.

Satin Cast 20 investment is the only high metal temperature (platinum, stainless steel, etc) investment that mixes only with water. Can be used with a rubber sprue base and no paper liner or base.

76-106-X Satin Cast Xtreme Investment - 100 lb drum \$78.95 76-106-NY Satin Cast 20 Investment - 100 lb drum \$70.56

### Romanoff Tabletop Vacuum Investing Machine



The Romanoff Compact Investing Table / Liquid Mold Making Table is a compact yet heavy-duty vacuum table that includes a vacuum pump, bell jar, and pump oil. The unit has a heavy-duty ball valve used for switching the unit from vacuum mode to exhaust mode, opposed to other similar type units that use a faulty and leaky toggle switch pin valve.

77-0467 Romanoff Port A Vac / Investing Machine ( 3 CFM ), 110V \$919.00 77-0467-8HD Romanoff Port A Vac / Investing Machine ( 8 CFM ), 110V \$1,033.76

### Yasui A1 Premium Platinum Investment Kit



### ROMANOFF IS PROUD TO BE THE OFFICIAL USA DISTRIBUTOR OF YASUI A1 PLATINUM INVESTMENT

This two part Japanese platinum investment has the purest silica formulated specifically for platinum casting. The surface results on your metal castings will be smoother than any other platinum investment, because of the unique silica reaction to molten metal.

**Z14-305-JP** Yasui A1 Premium Platinum Investment Kit - 25 Kilo Box **\$298.00** 76-109-250ML Graduated 250ml Measuring Cylinder

### **Ransom & Randolph Premium Investments**

ULTRA-VEST® investment is a very popular non-ferrous investment designed for casting gold, silver, brass, and bronze and other alloys up to 2200°F / 1478°C. Ultra-Vest investment provides easy quench and easy cleanup, reducing your risk of losing valuable metal.

Α



Plasticast™ was developed, and is ideally suited for, the investing and burnout of commonly used CAD/CAM resins, or wax/plastic pattern materials. The high expansion of these pattern materials requires an equally high expanding, extra high strength investment. Easily removed with water.



Plasticast PT™ Investment & binder system ideally suited for the investing and burnout of commonly used plastic or wax/plastic pattern materials. The high expansion of these pattern materials requires an equally high expanding, extra high strength investment. The investment & binder system provides jewelry casters with a mold material that meets those demands while maintaining mold surface and dimensional integrity for high temperature metal casting.



R&R Solitaire Green Investment was designed to cast gem stones in place. R&R Solitaire provides casters with superior stone protection and higher burnout temperature capacity than other stone-in-place products, providing you with a cleaner dewax and fewer surface defects.



ULTRA-VEST®MAXX investment works exceptionally well with 18kt white gold.Ultra-Vest MAXX investment provides jewelry casters with maximum thermal stability for high metal melt, burnout and casting temperatures- helping to eliminate orange peel defects associated with metal/mold reactions and flashing & spalling defects associated with investment breakdown during burnout of resin pattern materials. NOTE: Not for use with platinum or palladium.



R&R Platinum investment & binder was designed to produce superior platinum & ferrous castings. R&R Platinum investment and binder provides casters with smooth, consistent surface finish. R&R Platinum investment is capable of same day or overnight burnout - decreasing process time. R&R Platinum binder does not separate, providing more consistent results than other 2 part binders.



Astro-Vest investment is the only high metal temperature (platinum, stainless steel, etc) investment that mixes only with water. Can be used with a rubber sprue base and no paper liner or base.

G



	Item #	Description	Max. Oven Temp	Qty 1-17	Qty 18+
Α	Z14-301	Ultra-Vest (100 lb.Drum)	1400° F / 760° C	\$101.86	\$96.80
Α	Z14-301-40	Ultra-Vest (40 lb.Bliss Box)	1400° F / 760° C	\$43.50	\$41.35
В	Z14-304-40	Plasticast (40 lb Bliss Box)	1400° F / 760° C	\$37.90	\$36.00
С	Z14-304-PT50	Plasticast PT (50 lb Bliss Box)	1600° F / 871° C	\$319.00	\$303.05
D	Z14-303-BX	Solitaire (50 lb. Bliss Box)	1166° F / 630° C	\$51.08	\$48.55
Е	Z14-307-40	Ultra-Vest Maxx (40 lb.Bliss Box)	1450° F / 788° C	\$40.75	\$38.70
F	Z14-302	BlueLabelPlat. Invest.&Binder(100lb.)	1600° F / 871° C	\$281.15	\$269.91
G	Z14-306	Astro-Vest (100lb. Drum)	1600° F / 871° C	\$166.19	\$159.55



### Romanoff Air Pressure Wax Injectors

Since 1949, Romanoff's line of wax injectors have been well known for their durability and heavy-duty construction. Units come with easy to read air pressure gauges, gasket sealing covers, heated nozzles, 30 psi safety release valves, power indicator lights & a convenient spigot for easy drainage. Made in USA. 240v Available.

	Item #	Wax Capacity	Max. Temp	Dimensions	Price
Α	73-040	1-1/3 qts or 2.5lbs	250°F / 121°C	7.75" Diameter x 10" High	\$397.00
В	74-075	2-3/4 qt or 5 lbs	250°F / 121°C	10.5" Diameter x 14" High	\$495.00
С	74-057	4 qt or 8 lbs	250°F / 121°C	10.5" Diameter x 21" High	\$639.00

<sup>\*</sup>All units are available with pre-installed optional manual hand pump at an extra charge.



### Super Blue Automatic Furnace

The Super Blue Automatic Furnaces come with the Sentry Xpress digital controller. Can hold 4 programs with 8 steps. Kiln will automatically shut off heat when door is opened and resume when closed. Has alarm when set temp. is reached. Made in USA. 240v Available.

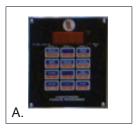
Item #	Total Cubic Ft.	Max. Temp.	Flask Capacity	Chamber Opening WxHxD	Outer Dim. / WxHxD	Price
77-0924-A	0.14'	2300°F	2 ea. 3 x 4" Solid Flasks	5.75" x 6.25" x 6"	11" x 14.25" x 16.75"	\$845.00
77-0908	0.35'	2000°F	4 ea. 3 x 4" Solid Flasks	8.5" x 6" x 12"	14" x 22.5" x 17"	\$880.00
77-0911-A	0.39'	2250°F	2 ea. 4 x 8.5" Perf. Flasks	8.5" x 8.75" x 9"	14" x 17.5" x 19.75"	\$1110.00
77-0907	0.53'	2000°F	3 ea. 4 x 8.5" Perf. Flasks	8.5" x 9" x 12"	14" x 22.5" x 20"	\$1129.00



### Romanoff Programmable Burn-Out Furnace

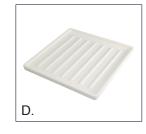
The Romanoff heavy-duty programmable furnaces come in three sizes to fit any application. All sizes feature a built-in computerized furnace temperature controller. The programmable controller allows up to six segments or "ramps" to be pre-set. Each ramp consists of heating or cooling, temperature settings in F or C, and hold time for each "ramp". Also, a delayed start can be entered. Stainless Steel Cabinet. Made in USA.

Item #	Total Cubic Ft.	Max.	Flask Capacity	Chamber Opening WxHxD	Outer Dim. / WxHxD	Power / Amps	Price
77-0913	0.88'	1700°F	4 ea. 4x6" Perf. Flasks	13" x 13" x 9"	18" x 21.5" x 21.5"	240V, 13A	\$2,045.00
77-0914	1.59'	2000°F	8 ea. 4x6" Perf. Flasks	14" x 14" x 14"	19" x 22" x 27"	240V, 16A	\$2,385.00
77-0918	3.37'	1700°F	15 ea. 4x6" Perf. Flasks	18" x 18" x 18"	30.5" x 30.5" x 41.5"	240V, 22A	\$2,749.00











	item number	Description	Price
Α	77-0918-KP	Keypad for 77-0913 and 77-0918 only, 2002 and newer	\$439.00
В	77-0918-TC	Replacement Thermocouple for All Three Furnaces	\$74.50
С	77-0918-015	Replacement Relay for All Three Furnaces	\$49.95
D	77-0021	Ceramic Wax Collection Tray: 8" x 8" x 3/4"	\$66.80
Е	77-0913-HE	Heating Element for 77-0913	\$197.00
Е	77-0914-ELEM	Heating Element for 77-0914	\$289.00
Е	77-0918-ELEM	Heating Element for 77-0918	\$329.00

### ROMANOFE

### J-Formula

### **Two Part Platinum Investment**

Romanoff's J-Formula Platinum Investment is used by most of the best platinum casters. It is proven to produce smooth, superior, and consistent castings flask after flask resulting in reduced rework and finishing. Binder and complete instructions are included in every drum.

Original J-Formula produces the smoothest finish. Blue Label produces the strongest mold.

HAZMAT PRODUCT.

ITEM #	DESCRIPTION	PRICE
Z14-305-50J	Original J-Formula Platinum Investment - 50 lb (22.7 kg)	\$89.00
Z14-305-606A	J-Formula "606" Orange Label Binder Investment - 50 lb (22.7 kg)	\$89.00
Z14-305-606C	J-Formula "606" Blue Label Binder Investment - 50 lb (22.7 kg)	\$89.00
Z14-305-16J	Original White Label J-Formula Binder Only - 16 oz	\$43.95
Z14-305-16J1	Orange Label J-Formula Binder Only - 16 oz	\$43.95
Z14-305-16J2	Blue Label J-Formula Binder Only - 16 oz	\$43.95

### ROMANOFF

### J-Break

### **Phosphate Bonded Investment Remover**

Romanoff's J-Break will remove any phosphate bonded platinum investment (like "J" formula), in less than 30 minutes. It is no longer necessary to use dangerous hydrofluoric acid for this purpose. Because it is reusable, this is a very economical product. Requires low heat. Eliminates hydro-flouric acid. **HAZMAT PRODUCT.** 

ITEM NUMBER	SIZE	PRICE
80-137-1CAR	1 Gallon	\$79.00
80-137-5CAR	5 Gallon	\$289.00



### ROMANOFF

### Fast Cast

### #1 Solution For Same Day Platinum Investment Casting

Fast Cast was designed and formulated with simplicity and cost in mind. With only a four hour burn-out cycle, Fast Cast allows same day casting of high temperature metals such as platinum and stainless steel. Fast Cast has excellent expansion resistance strength, which will allow you to burn-out RP materials that are normally not casting friendly. Available in Full Kits, or Economy Size. **HAZMAT FREE.** 

Z14-305-FC Full Kit Contains - 750 ml of pre-mixed working solution, 3 kgs of powder, Inner flask inserts, Square bases for tree, Wax Sprue bases, Sealing Wax (makes 6 standard 3 x 3" flasks) \$49.95

Z14-305-FC25 Economy Kit Contains - 80 oz Concentrate Solution, and 25 lbs. of powder \$143.00



### ROMANOFF

### Deluxe Roma-Vac

### **Table Top Casting & Vacuuming System**

The Romanoff Roma-Vac System is a convenient table-top unit which offers a combination of investing and casting under vacuum. This casting machine can accept a large flask up to 5" x 8" diameter flasks. It has a compact table top design and solid aluminum casting chamber. Made in USA. Includes 1/2 hp (3CFM Vacuum Oil Pump) and accessories shown.

ITEM NUMBER	DESCRIPTION	PRICE
77-0465-PER	Deluxe Roma-Vac / 110V	\$1,065.00
77-0465A-PER	Deluxe Roma-Vac / 220V	\$1,095.00



### Sprue Bases

	ITEM#	FLASK DIAMETER	STYLE	QTY 1-5	QTY 6+
Α	76-016	3" Dia x 3/8"	Tree Style	\$4.30 ea	\$3.60 ea
Α	76-018	4" Dia x 3/8"	Tree Style	\$5.64 ea	\$4.65 ea
Α	76-0192	5" Dia x 3/8"	Tree Style	\$9.10 ea	\$7.94 ea
В	78-2009-B	1.18" (30mm) Indutherm	Cone Base	\$14.95 ea	\$13.46 ea
В	76-015-I	2" (50mm) Indutherm	Cone Base	\$19.50 ea	\$18.19 ea
В	78-2014	2.5" (65mm) Indutherm	Cone Base	\$23.07 ea	\$21.65 ea
В	76-016-I	3" (80mm) Indutherm	Cone Base	\$23.26 ea	\$21.10 ea
В	76-019-I	4.0" (100mm) Indutherm	Cone Base	\$24.96 ea	\$22.95 ea
С	28.890-1	Holds sprue bases from 3" to 5" (76 to 127 mm)	Sprue Base Holder	\$24.76 ea	

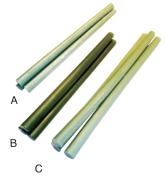
These sprue bases are used for setting up wax trees with sprue rods. Simply press the sprue base on to the bottom of the flask and remove after the investment has hardened.



### Wax Sprue Rods

Romanoff wax sprue rods come in three standard diameters and three lengths. They're available in flexible (green), stiff (light green), or super stiff (light green). Because they have a lower melting point than injection wax, the sprue rods will drain out first, followed by the injection wax, ensuring a cleaner burn out cycle.

	ITEM #	COLOR	HARDNESS	DIMENSIONS	APPROX. QTY/LB	QTY 1-5	QTY 6+
Α	74-046-S	Light Green	Stif	6 x 1/4" (152 x 6.35mm)	90	\$14.59	\$13.15
Α	74-047-S	Light Green	Stif	6 x 5/16" (152 x 7.94mm	60	\$14.59	\$13.15
Α	74-048-S	Light Green	Stif	6 x 3/8" (152 x 9.53mm	45	\$14.59	\$13.15
В	74-046-F	Dark Green	Flexible	6 x 1/4" (152 x 6.35mm)	60	\$15.62	\$14.84
В	74-048-F	Dark Green	Flexible	6 x 3/8" (152 x 9.53mm)	40	\$15.62	\$14.84
С	74-048-SK	Light Green	Super Stiff	6 x 3/8" (152 x 9.53mm)	44	\$14.59	\$13.15
С	74-048-SK-7	Light Green	Super Stiff	7 x 3/8" (178 x 9.53mm)	42	\$14.59	\$13.15
	74-049-24 (not pictured)	Dark Green	Flexible	24 x 3/8" (610 x 9.53mm)	10	\$9.81	\$9.32



### Non-Asbestos Kevlar Gloves

These heat-resistant gloves protect your hands & forearms from high temperature operations. The special thermal material gloves have extra-wide cuffs for quick drop-off in case of emergency.

	ITEM #	DESCRIPTION	LENGTH	PRICE
Α	78-090	White Non-Asbestos Glove Pair	14"	\$39.03
В	78-0902	White Non-Asbestos Glove Pair, Leather Palm	18"	\$64.96
С	78-0902-WLG	Yellow Non-Asbestos LEFT Glove Only, Leather Palm	18"	\$34.79
С	78-0902-WLP	Yellow Non-Asbestos Glove Pair, Leather Palm	18"	\$66.96
D	78-091	Yellow Non-Asbestos Wool Lined Glove Pair	23"	\$52.60









### Freeman Flake Wax

Quantity 1-2 \$30.95

C D

### The Industry Standard For Quality And Consistency

For nearly 40 years, Freeman injection wax has been the industry standard for quality and consistency. The formulations are known for their high pattern detail, rapid wax solidification, minimal shrinkage, excellent flow and low ash content (.003%) enabling the cleanest burnouts and most accurate reproductions possible. *Sold in 5lb Packages.* 

Quantity 3-9 \$28.95

Item #	Color / Shape	Temp.		Item #	Color / Shape	Temp.
74-045-K	Flexible Blue Flake	68°C / 155°F	Ε	74-060	Filigree Pink Flake	68°C / 155°F
74-0601	Turquoise Flake	65°C / 150°F	F	74-0609P	Super Pink Flake	65°C / 150°F
74-060	Aqua Flake	65°C / 150°F	G	74-0602	Ruby Red Flake	65°C / 150°F
74-073	Tuf Guy Green Flake	73°C / 165°F	Н	74-0265	Carvable Purple Flake	77°C / 170°F



	Aqua Green	Turquoise	Ruby Red	Tuf Guy Green	Filigree Pink	Super Pink	Flexible Blue	Carvable Purple
Flow	High	High	High	Medium	Medium	High	Medium	High
Flexibility	Medium	Medium	Medium	High	Medium	Low	Highest	High
Carvability	Low	Low	Low	Medium	Low	Medium	Medium	High
Shrinkage	Low	Low	Low	Low	Low	Low	Medium	Low
Memory	Medium	Medium	Medium	Medium	Medium	Low	High	Medium
Pattern Shelf Life	High	High	High	High	High	Medium	Highest	High
Readability	High	High	High	High	Medium	High	Medium	High
Solidification Time	Medium	Medium	Medium	Medium	Medium	Fast	Medium	Fast

### Pellet Injection Wax

The small, droplet form of pellet injection wax ensures consistent and exceptional results.

Our pellet injection wax is available in a wide variety that will surely meet your specific needs.

Economically priced. Sold per pound or 50-lbs master carton \$4.43 - \$6.70 ea.

Quantity 1-2 \$27.25	Quantity 3-9 \$25.95	Quantity 10+ \$23.50	

Item #		Item # Color / Shape		
Α	74-045-P	Blue Hi-Flow Plastic-Ject Pellet	68°C / 155°F	
В	74-0611	Turquoise Pellet	68°C / 155°F	
С	74-0611-B	New Jersey Blue Pellet	68°C / 155°F	

	Item #	Color / Shape	Temp.
D	74-0600A	New Aqua Pellet	68°C / 155°F
Е	74-0600-JECT	Magna-Ject Pink Pellet	70°C / 158°F
F	74-062-TG	Tuff Green Pellet	73°C / 165°F

Quantity 10+ \$26.95



### Yellow Sticky Wax

Yellow sticky wax is a quick setting adhesive which creates a rigid bond between two wax surfaces. Great for creating complex assemblies or attaching patterns to the sprue rod. Will not leave any residue or hinder melt out.

74-0603-KB Yellow Sticky Wax Beads - \$6.85 lb





# Castaldo Plast-O-Wax - 2kg Bag

Castaldo Plast-O-Wax jewelry injection wax produces patterns that are very flexible, resilient, and durable with great memory. Patterns will not break despite rough handling. Fewer broken patterns mean greater productivity.

74-045 Castaldo Dark Blue \$21.37 Per 2kg bag



# Castaldo Golden River Wax Additive Flakes - 2kg Bag

Castaldo Golden River Wax Additive, also known as Hot Weather Wax, makes jewelry injection waxes flow like water. There is no need to change waxes or clean out your wax pot, just add a handful or two of Golden River Wax Additive to your current pot and see the improved flow almost immediately.

74-062-ADD Castaldo Golden Additive Flakes \$47.99 Per 2kg bag

### Vari-Temp Waxer

This is the most powerful wax heating tool in the industry. Used industry wide, for wax sprueing & burning into rubber molds. Made in USA. 240v Available.

### **Main Features**

- Wide adjustable temperature range
- Heavy-duty 3' long black power cord with twist lock plug
- Heavy-duty hand-piece
- 3 most popular shaped wax tips, (broad spatula RED, round nose bent BLUE, and pointed nose bent YELLOW)

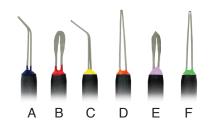
74-004 Vari-Temp Waxer - 3' Black Cord, Hand-Piece, & 3 Tips - 110v **\$229.00**74-004-WHI Vari-Temp Waxer - 3' White Flex Cord, Hand-Piece, & 3 Tips - 110v **\$250.00** 



### ROMANOFF

### Vari-Temp Tips

Compatible with all Vari-Temp Waxer machines.



	ITEM#	DESCRIPTION	PRICE
Α	74-069	Blue Dot-Bent, Round Tip	\$14.48
В	74-068	Red Dot-Broad Spatula Tip	\$12.50
С	74-070	Yellow Dot-Point Tip	\$14.00
D	74-072	Orange Dot-Narrow Tip	\$14.00
Е	74-068-PURP	Purple Dot- Pointed Spear Tip	\$14.48
F	74-071	Green Dot-Fine Point Tip	\$14.48

### ROMANOFF

### Vari-Temp Handpieces And Cords





Designed for All Romanoff Vari-Temp models with twist lock plug and receptacle located on the front of the unit. Heat resistant sheathing will protect against accidental contact with the hot metal tip. White cable is more flexible for wax carving. Black cable is more heat resistant and popular for burning rubber molds.

ITEM#	DESCRIPTION	PRICE
74-005-P-HD	3' Black Heavy Duty Cord & Handpiece Only	\$69.50
74-005-SPL-R	3' White Fabric Cord & Handpiece Only	\$89.30

### Kerr® Ultra-Waxer 2™

The Ultra-Waxer is the standard and ultimate electronic waxer. With dual spatulas for increased productivity, convenient tip holder and easy to use menu functions, such as programmable presets and quick heat function. The Ultra-Waxer 2 is a dual voltage unit. Simply plug the correct Country specific power cord into the back of the unit. Includes 2 popular tips. Temp range 97° F - 500°F (36° - 260° C)

### **INCLUDES 2 PENS**

70-457 Kerr Ultra-Waxer 2 Kit 120v / 240v \$289.00

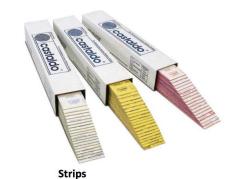


### Kerr® Ultra-Waxer Tips



ITEM NUMBER		DESCRIPTION	PRICE
Α	70-452-PINK	Kerr Pink Tip For Ultra-Waxer	\$67.50
В	70-452-RED	Kerr Red Tip For Ultra-Waxer	\$67.50
С	70-452-ORANG	Kerr Orange Tip For Ultra-Waxer	\$67.50
D	70-452-SPOON	Kerr Yellow Spoon Tip Ultra-Waxer	\$69.50
Е	70-452-GREEN	Kerr Green Tip For Ultra-Waxer	\$54.25
F	70-452-TEAL	Kerr Teal Tip For Ultra-Waxer	\$67.50
G	70-452-BLUE	Kerr Blue Tip For Ultra-Waxer	\$67.50
Н	70-452-PURPL	Kerr Purple Tip For Ultra-Waxer	\$67.50
1	70-452-GREY	Kerr Grey Tip For Ultra-Waxer	\$67.50
J	70-452-BLACK	Kerr Half Hollenback Black Tip For Ultra-Waxer	\$67.50

### Castaldo Jewelry Molding Rubber







Redi-Cuts

Rolls

White Label: Firm yet flexible. All purpose rubber. Good for thin molds. 310F/155C deg. 15min per 1/4".

**Gold Label:** Soft & Pliable. For detailed molds and undercuts. 310F/155C deg. 15min per 1/4".

**Pink Label:** : Minimizes shrinkage and has high adherence for detail. 310F/155C deg. 15min per 1/4".

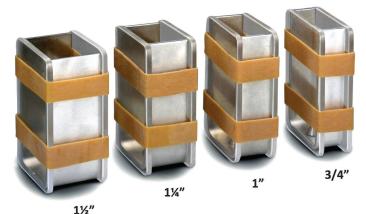
Item #	Description	Dimensions	Qty. 1-5	Qty. 6+
73-071B	White Label Strips	2-7/8" x 18"	\$44.60	\$43.50
73-071B-C	White Label Redi-Cuts	1-7/8" x 2-7/8"	\$45.00	\$44.15
73-071	White Label 50lb Roll	18" x 1/8" x 35'	\$419.00	\$387.09
73-072B	Gold Label Strips	2-7/8" x 18"	\$46.00	\$44.90
73-072B-C	Gold Label Redi-Cuts	1-7/8" x 2-7/8"	\$46.90	\$45.10
73-072	Gold Label 50lb Roll	18" x 1/8" x 35'	\$429.00	\$427.42
73-080B	Pink Label Strips	2-7/8" x 18"	\$52.00	\$50.90
73-080B-C	Pink Label Redi-Cuts	1-7/8" x 2-7/8"	\$55.10	\$52.50

### Castaldo Liquid Mold Frames

### For use with all RTV liquid rubber molds.

- Heavy duty industrial rubber bands fit all frame sizes; additional bands are provided with each frame.
- New taller size. Makes vacuuming easier. No need for paper collars. No more spills!
- · Clear plastic plates release easily from rubber; won't shatter or cuthands like glass plates.





ITEM #	DESCRIPTION	SIZE	PRICE
73-022-C	Castaldo Glass Mold Frame	3/4" (19 mm)	\$15.10
73-023-C	Castaldo Glass Mold Frame	1" (25 mm)	\$17.34
73-024-C	Castaldo Glass Mold Frame	1 1/4" (32 mm)	\$17.89
73-0242-C	Castaldo Glass Mold Frame	1 1/2" (38 mm)	\$18.90



### CAD/CAM LMR Clear Mold Rubber Kit

The best liquid rubber developed, specifically for reproducing CAD-CAM resin models. This is a pure, clear silicone with 0.0% shrinkage, with no heat or pressure. No release sprays required. Clear for easy mold cutting visibility. Excellent tear resistance for long life. It will NOT stick to CAD/CAM resins and is easy to vacuum and debubble.

### Can pour up to 600°F metal in CAD-CAM clear molds. Will not deteriorate over time.

73-050-2	CAD-CAM LMR Clear Mold Rubber Kit - 2 LB	\$53.13
73-050-10	CAD-CAM LMR Clear Mold Rubber Kit - 10 LB	\$199.00
73-050-50	CAD-CAM LMR Clear Mold Rubber Kit - 50 LB	\$689.00



### Original White and Rose' LMR Compound

Romanoff's LMR is the best and most popular liquid mold rubber used by professional mold makers. Romanoff's LMR (Liquid Mold Rubber) requires no heat, cures at room temperature overnight and has 0.0% shrinkage every time. Romanoff's LMR is firm, durable, tear resistant, and has excellent memory. Mixing ratio is 10 to 1, Curing time can be reduced when mold is heated to 125°F. Romanoff Rose'LMR has a slightly higher durometer than traditional White LMR.

3-052	Original White LMR Compound Kit - 10 LB	\$89.29
3-052-5	Original White LMR Compound Kit - 50 LB	\$299.00
3-052-R	Original Rose' LMR Compound Kit - 10 LB	\$59.80
3-052-5R	Original Rose' LMR Compound Kit - 50 LB	\$299.00



### Castaldo LiquiFast Ice

New LiquaFast™ ICE from CASTALDO® is a transparent two-part 0% shrinkage RTV silicone molding rubber that cures very rapidly at normal room temperatures and cures even faster at slightly warmer temperatures. That means that you can make a mold from your CAD CAM, RP and SLA models in the morning, shoot waxes 30 minutes later and cast them that afternoon. No more waiting. New LiquaFast ICE makes strong, tough, tear-resistant permanent molds that last and last and do not become soft with age.

73-0525	Castaldo	LiquaFast	1kg	Kit	\$53.89
73-0526	Castaldo	LiquaFast	4ka	Kit	\$216.75



### Castaldo LiquaCast Long Life

Makes molds that are extremely strong, tough and tear-resistant, another reason they will last and last despite repeated use. It's perfect for complex molds, difficult undercuts and spirals and cores. And it's compatible with most computer-generated CAD-CAM resin and difficult to mold CAD-CAM wax patterns.

### Easy one to one mix ratio.

73-0522 LiquiCast Long-Life 8kg Kit \$198.75 73-0523 LiquiCast Long-Life 20kg Kit \$396.70



### Castaldo LiquaCast

LiquaCast is a 0% shrinkage, room temperature RTV. It is safe, easy to use and reproduces the finest details. Easy to vacumm, debubblize and pour. Kit consists of Part A & Part B, (Ratio 10:1). Cures at room temperature overnight.

73-052-CAST	LiquiCast 10 lb. Kit	\$88.99
73-052-5CAST	LiquiCast 50 lb. Kit	\$394.45

### Standard Table-Top Vulcanizer

Romanoff table top vulcanizers feature a heavy-duty aluminum cast construction, accurate thermostat, heavy guide posts to insure a perfect alignment of top and bottom plates, on-off switch with separate pilot light, thermostat pilot indicating light, a 1" diameter pressure screw and a bar type handle which allows for maximum pressure on the mold. The standard vulcanizer can hold two average size molds. 220V available. Plate size 5" x 8". Made in USA.

### **Exclusive T-handle Design**

73-047 Standard Table - Top Vulcanizer - 110V \$632.00 73-047A Standard Table - Top Vulcanizer - 220V \$632.00

### ROMANOFE

### Deluxe Table-Top Vulcanizer

Romanoff table top vulcanizers feature a heavy-duty aluminum cast construction, accurate thermostat, heavy guide posts to insure a perfect alignment of top and bottom plates, on-off switch with separate pilot light, thermostat pilot indicating light, a 1" diameter pressure screw and a bar type handle which allows for maximum pressure on the mold. The dual thermostat vulcanizer enables you to control both top and bottom heating elements independently, therefore the operator can compensate for heat rise. The deluxe vulcanizer will hold four molds. 220V available. Plate size 6" x 8.5". Made in USA.

### **Exclusive T-handle Design**

73-002 Deluxe Vulcanizer - 110V - Single Control \$943.36 73-002-D Deluxe Vulcanizer - 110V - Dual Control





### **Aluminum Mold Frames**

These jewelry mold frames are for holding uncured rubber and model when vulcanizing. Each frame is machined from hardened aircraft aluminum. The openings are made to accept all standard pre-cut mold rubber available. Pre-cut mold rubber available with no trimming required.

Item number	Frame Type	<b>Mold Dimensions</b>	Price
73-005D	Double	1-7/8" x 2-7/8" x 5/8"	\$34.50
73-006D	Double	3/4" x 1-7/8" x 2-7/8"	\$40.50
73-007D	Double	3/4" x 1-7/8" x 2-7/8"	\$40.50
73-0167	Quad	3/4" x 1-7/8" x 2-7/8"	\$75.38



### Castaldo Super High Strength Silicone Mold

Castaldo, known throughout the jewelry industry for performance, dependability and value, manufactures mold rubber trusted the world over. Castaldo silicone mold rubber is self-releasing with a very low shrinkage rate. Castaldo silicone jewelry molding rubbers produce waxes with an extremely smooth high shine finish that won't stick to the mold. Smooth Skinny waxes means faster cleaning and less polishing of finished castings.

73-073B-SH Castaldo Super High Strength Mold Strips - 2 7/8" - Sold in 5lb box \$43.25



### ROMANOFE

### Original Blue Lo-Shrink Rubber Strips

Romanoff exclusive Blue Lo-Shrink Rubber has been an industry standard for mold making for over 30 years. Can be used by itself or in combination with any other brand of mold rubber. this will save you money and keep shrinkage to a minimum. If you are using Blue Lo-Shrink in combination with other rubbers, place the Blue Lo-Shrink around the model and the standard mold rubber around the outside of the mold. When your mold requires a rubber with very low shrinkage, use Blue Lo-Shrink Rubber, featuring less than 1% shrinkage.

73-079B Original Blue Lo-Shrink Rubber Strips - 2 7/8" - Sold in 5lb box \$62.50



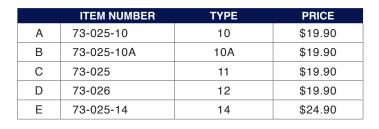
# Swann-Morton®

### **Swann-Morton Surgical Blades**

Founded in Sheffield in 1932, Swann Morton is the world leader in surgical blades, scalpels and handles. It is a name respected globally for quality, precision, consistency and reliability and recognized for combining traditional blade making skills with the latest technology











### Surgical Blade Handles

The perfect companion to our selection of surgical blades. All of these handles are lighweight and designed with the user's comfort in mind. Available in both ergonomic plastic or durable stainless steel and designed to fit a variety of blades.

	ITEM#	DESCRIPTION	TYPE	PRICE
Α	73-032	Plastic Grip Handle	#45 USA	\$26.63
В	73-033	Stainless Steel Handle	#3	\$4.75
С	73-033-SM	Swann Morton Stainless Steel Handle	#5	\$39.95

### Mold Release Sprays

Castaldo Resin Release: Soy based spray for easier removal of resin models.

MS: For resin models & all alloys, silicone free.

CAD CAM: Specifically designed to protect all CAD resin model surfaces from phosphate bonded platinum investment.











ITEM NUMBER		IMBER DESCRIPTION		PRICE
Α	75-003-C	Castaldo Mold Release	12 oz	\$11.50
В	78-049	Romanoff Crystal Clear Cad-Cam Protective Coating	14 oz	\$16.86
С	75-003-RR	Castaldo Resin Release	12 oz	\$14.90
D	75-003-MS	Silicone-Free Resin Release Spray	14 oz	\$18.99
Е	75-003	"GF" Spritz Mold Release	12 oz	\$11.49



# **FOREDOM Quality and Service Since 1922**

### Foredom Deluxe Stone Setting Kit With H.18 Handpiece (13 piece kit)

These permanent magnet motors are specifically designed for high torque/low speed applications, offering more power for jobs like stone setting, wax modeling, and pearl drilling. M.LX, M.LXM, and M.LXB ball bearing motors feature full power and torque from start up and throughout the entire speed range up to 5,000 rpm. They are ideal for use with Foredoms drill presses. They also are well matched with the H.18, H.15 and H.15D Quick Change and Hammer Handpieces for stone setting. It comes equipped with a motor bale for hanging, and our standard 39" long key-tip shafting for connecting to any of Foredoms interchangeable, quick disconnect handpieces.





### Flex Shaft Machines With Foot Pedals

Foredom's most popular 1/6HP motor is teamed up with either an SCT or an FCT foot pedal. Foredom's 1/6 HP, universal, flexible shaft machine runs in forward and reverse rotation at speeds up to 18,000 RPM. The SR combines the most important features our customers expect-power, reversibility, reliability, and versatility- all into one motor. Both foot pedals offer the user the smooth control they need with a non-skid material along the bottom to prevent slippage. The SCT foot pedal is made of a heavily, more durable material than it's FCT counterpart. Made in USA. 220V Available.

A. 71-101-1 Foredom SR Flex Shaft Machine With SCT Foot Control & Reverse - 110V \$207.90 B. 71-101A-1 Foredom SR Flex Shaft Machine With FCT Foot Control & Reverse - 220V \$219.50

- 71-101-M+S Foredom 110V SR Motor & Flex Shaft Only (Not Shown) \$158.50



### Foredom SR Motor With H.30 Handpiece (54 piece kit) Flex Shaft System

Foredom's most popular and best motor for general use. The 1/6 HP, ball bearing, hang-up style M.SR runs in forward and reverse at speeds up to 18,000 RPM. It comes equipped with a motor bale for hanging, and our standard 39" long key tip inner shafting for connecting to any of Foredoms interchangeable handpieces.

71-101-S Foredom SR Motor With H.30 Handpiece Flex Shaft System \$238.50



### Foredom SR Motor With H.20 Quick-Change Handpiece (43 piece kit) Flex Shaft System

Our prepackaged tool kits take the guess work out of product selection. Offering the best value and featuring smart tool combinations for specific applications. They contain just about everything you need to get to work- motor, speed control, handpiece and accessories. his picture kit features an SR Series motor, an FCT foot pedal, a H.20 handpiece, flexible shaft grease, and a forty-three piece accessory kit. Additional kits are available with a variety of handpieces and accessory kits.

71-092 Foredom SR Motor With H.20 Quick-Change Handpiece Flex Shaft System \$252.00





# FOREDOM Quality and Service Since 1922



### FOREDOM

### Foredom - Micromotor Kit 1070 High Speed Rotary

For high speed applications up to 38,000 rpm including light deburring of cast pieces, bright cutting in jewelry making and fine detailing in wood. 115 or 230 volt. Kit includes control box, handpiece with 3/32" collet, variable speed foot control, handpiece cradle, spare pair of motor brushes, spare fuse and collet changing wrenches. The back of the control box has a convenient Voltage Selector switch for operating with either 115 or 230 Volt operation. The control converts AC current to DC current required for the handpiece. Compared to flexible shaft machines, micromotors have less torque, however, their higher speed results in a comparable rate of material removal with a lighter touch.

71-630 Foredom - Micromotor Kit 1070 High Speed Rotary \$369.00



### OREDOM

# Foredom Brushless Kit - High Torque & Speed - 2.35mm (3/32") Collet

Kit includes control box with digital display, handpiece with 2.35mm (3/32"), variable speed foot pedal, handpiece cradle, and extra fuse. Brushless motor design carbon brushes NEVER need changing. Brushless motors are ideal for all applications at high, medium, and low speed. Additional kits are available with a variety of handpieces to suit your needs.

71-650 Foredom Brushless Kit - High Torque & Speed - 2.35mm (3/32")
Collet \$969.00



### OPEDOM

### Foredom Dual Handpiece Brushless Kit - 2.35mm (3/32") Collet Rotary Brushless & Hammer Brush Type

This Hammer Action micromotor is ideal for stone setting applications and engraving techniques. It has a slender contoured grip and impact adjustment ring for precise hammering work. Operates from 0-2,500 strokes per minute. The force of the impact of the MH-011 reciprocating handpiece can be adjusted from light to full by turning the metal ring while the motor is off or running. The speed of the hammer action can also be varied from 0-2,500 strokes per minute with the dial on the control unit. Used with the supplied Graver Holder, the handpiece becomes a precision power engraver- no need for an air compressor or a flexible shaft drive.

71-635 Foredom Dual Handpiece Brushless Kit - 2.35mm (3/32") Collet Rotary Brushless & Hammer Brush Type \$1,545.00

### Foredom H.30 Handpiece With Handy Chuck

Foredom H.30 original general purpose handpiece has pre-lubricated ball bearings that require no maintenance.

71-115-F *\$66.95* 

### H.30 Large Chuck Key & Handpiece

Our chuck key is easily held with the attached, comfortable handle. Keeping this handy and harder to misplace. It's easy hold handle makes tightening chucks easier on the hand.

71-115-CKH **\$8.00** 

### H.30X Style Handpiece - Import

The H.30X general purpose handpiece has prelubricated ball bearings that do NOT require any additional lubrication. Comes with Chuck Key in molded plastic handle for changing accessories.

71-115 \$35.00

### Foredom H.18 Quick Change Handpiece Without Spring

The Foredom H.18 Quick Change HandPiece without spring is for use with only 2.35mm (3/32") shank burs. A press lever action, features a very slim grip and pre-lubricated ball bearings that do not require any lubrication. For use only with 2.35mm (3/32") burs.

71-164-1 \$139.55

### Foredom H.18D Handpiece With Lever Duplex

The Foredom H.18D Handpiece with Lever Duplex has the same specs as the Foredom H.18 Handpiece, except includes a duplex spring for added flexibility. For most users, the "straight" handpiece (P/N 71-164-1) with no duplex spring is the preferable solution. For use only with 2.35mm (3/32") burs.

71-164 \$165.00

### Faro Quick Release Handpiece Without Spring

A slender handpiece with rotating lever action that releases and closes the collet for quick and easy changes. It requires lubrication after the first 2-3 months of continuous use. For use only with 2.35mm (3/32") burs.

71-122 \$189.95

### Foredom H.10D Handpiece With Duplex Spring Quick Change Lever

The H.10D is a slender handpiece with rotating lever action that releases and closes the collet for quick and easy changes. It requires lubrication after the first 2-3 months of continuous use. For use only with 2.35mm (3/32") burs.

71-121-FORD **\$285.00** 

### Romanoff Quick Release H.20X Import Handpiece With Lever

Will accept 3/32" (2.3mm) shank accessories and burs.

71-124 *\$75.00* 

### Foredom H.20 Lever Action Handpiece

The H.20 is for exclusive use with 3/32" (2.35mm) shank burs. A lever action on the the handpiece body is all that is required to change accessories. It has a molded plastic front grip with tapered sides for easy and close handling, plus pre-lubricated ball bearings that do not require additional lubrication.

71-122-F *\$89.18* 



### **Adalox Paper Discs**

Adalox discs are aluminum oxide coated paper discs used for grinding and pre-polishing. They are 1-1/2" (38mm) x 1/16"(1.6mm). Their maximum speed is 30,000 RPM and are packaged 500 per box.



### **Separating Discs**

Separating discs are used for cutting any type of precious metal as well as porcelain and acrylics. They are available in "regular silicon carbide," abrasives on one side and safe on the other, or "high speed" aluminum oxide, with abrasives on both sides. Separating discs are also popular for cutting prongs.



ITEM #	GRIT	QTY 1-2	QTY 3+
91-019	80	\$62.95 ea	\$56.75 ea
91-020	100	\$62.95 ea	\$56.75 ea
91-021	120	\$62.95 ea	\$56.75 ea
91-022	150	\$62.95 ea	\$56.75 ea
91-0226	220	\$62.95 ea	\$56.75 ea

ITEM#	SPEED	QTY	SIZE	QTY 1-2	QTY 3+
91-015	Regular / Safe	100	1/2" x 0.023"	\$19.20 ea	\$17.60 ea
91-017	High Speed	100	7/8" x 0.023"	\$16.84 ea	\$15.16 ea
91-0177	High Speed	25	7/8" x 0.005"	\$13.60 ea	\$12.24 ea
91-017-VT	High Speed	100	7/8" x 0.015"	\$16.84 ea	\$15.16 ea
91-0185	High Speed	50	1" x 0.023"	\$16.84 ea	\$15.16 ea

### EC Moore's Sanding Discs & Mandrels



E.C. Moore's brass centered snap-on aluminum oxide, redbrown in color, glue-bonded sanding discs with paper back.



E.C. Moore's pinhole centered aluminum oxide, red-brown in color, glue-bonded sanding discs with paper back



E.C. Moore's brass centered snap-on white aluminum oxide, electrostatically bonded to a reinforced non-scratching plastic backing







ITEM #	TYPE	GRIT	BACK COLOR	DIAMETER	CENTER TYPE	QTY PER BOX	QTY 1-3	QTY 4+	
A 91-054-A-C	Adalox	Coarse	Red	7/8"	Brass	50	\$4.65 ea	\$4.19 ea	
A 91-054-A-M	Adalox	Medium	Yellow	7/8"	Brass	50	\$4.65 ea	\$4.19 ea	
A 91-054-A-F	Adalox	Fine	Green	7/8"	Brass	50	\$4.65 ea	\$4.19 ea	
B 91-055-A-C	Adalox	Coarse	Red	7/8"	Pinhole	50	\$4.65 ea	\$4.19 ea	
B 91-055-A-M	Adalox	Medium	Yellow	7/8"	Pinhole	50	\$4.65 ea	\$4.19 ea	
B 91-055-A-F	Adalox	Fine	Green	7/8"	Pinhole	50	\$4.65 ea	\$4.19 ea	
B 91-0541-1/2	Adalox	Coarse	Red	1/2"	Pinhole	100	\$4.65 ea	\$4.19 ea	
B 91-055-A-1/2	Adalox	Medium	Yellow	1/2"	Pinhole	100	\$4.65 ea	\$4.19 ea	
B 91-055-A1/2F	Adalox	Fine	Green	1/2"	Pinhole	100	\$4.65 ea	\$4.19 ea	
C 91-057-F	Sand	Fine	Clear	7/8"	Brass	50	\$5.80 ea	\$5.39 ea	
C 91-057-M	Sand	Medium	Clear	7/8"	Brass	50	\$5.80 ea	\$5.39 ea	
C 91-057-C	Sand	Coarse	Clear	7/8"	Brass	50	\$5.80 ea	\$5.39 ea	
D 91-056			Snap On Mano	drel 3/32" (2.3	38 mm) Shank	\$2.9	99 ea		
E 92-105		Screw Mandrel 3/32"(2.38 mm) Shank - 4.75mm Head - \$0.89 ea							

### Platinum Blue Pin Hole 7/8" Sanding Discs

Extremely fast-cutting abrasives, the blue resin bonded sanding discs are thin and flexible, and used for pre-polishing, semi-finishing, and blending. Excellent for platinum, palladium, as well as gold and silver. 100 discs per box.





ITEM #	DESCRIPTION	DIAMETER	CENTER TYPE	QTY 1-3	QTY 4+
91-055-A-CB	Zirconia Coarse	7/8"	Pinhole	\$7.09 ea	\$6.45 ea
91-055-A-CBM	Zirconia Medium	7/8"	Pinhole	\$7.09 ea	\$6.45 ea
91-055-A-CBF	Zirconia Fine	7/8"	Pinhole	\$7.09 ea	\$6.45 ea



# **FOREDOM**

**Quality and Service Since 1922** 

### Foredom H.52D Quick Change Hand Piece

The Foredom H.52D has a durable plastic barrel and grip, and pre-lubricated ball bearings that do not require any lubrication. It features a unique push/pull action on the handpiece body to change out 2.35mm (3/32") accessories.

71-125-F \$146.20

### Foredom H.8D Handpiece, Duplex General Purpose

The H.8D has the same specs as the H.8, except includes a duplex spring for added flexibility. It is a slim collet type handpiece with pre-lubricated ball bearings that require no maintenance. It has a chuck guard that slides back when changing burs. Comes with 3/32" (installed) and 1/8" collets and chuck wrenches for changing collets and accessories. For use only with 2.35mm (3/32") burs.

71-142 \$90.00

### Foredom H.15 Hammer Without Duplex Spring

Foredom H.15 Hammer Without Duplex Spring Handpiece has hammering rather than rotary action for use at low speed (0 RPM - 5,000 RPM) by jewelers for stone setting and decorative work. Comes with an anvil point. It requires periodic lubrication.

71-118 \$139.00

### Foredom H.15D HP Hammer With Duplex Spring

The H.15D Handpiece has hammering rather than rotary action for use at low speed (0RPM - 5,000RPM) by jewelers for stone setting and decorative work. Comes with an anvil point. It requires periodic lubrication.

71-119 \$154.50

### Badeco Swiss Hammer Handpiece #222 Duplex Spring

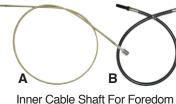
Badeco Swiss Hammer Handpieces are considered the highest quality hammer handpiece available. They are light weight, slightly delicate, but have strong hammer strength for setters.

71-120-SW *\$343.38* 

### **ACCESSORIES**



Foredom CC & Romanoff Series Brushes 71-100-BR *\$7.00* 



& Romanoff Flex Shafts A 71-154 - Inner - \$13.20 B 71-155 - Outer - \$13.52



Adjustable Flex Shaft Holder 71-150-ADJ *\$20.05* 



Foredom Flexible Shaft Lubricant 71-183 \$4.00



Adapter Drill Chucks / Mandrels : 0mm - 2.5mm (4 Collets)

89-491 *\$6.95* 



Foredom FCT Plastic Housing Foot Pedal - 110V 71-153 / 71-153A **\$32.50** 



Foredom SCT Cast Aluminum Foot Pedal - 110V 71-158 / 71-158A *\$32.50* 



Circuit Board Switch For SCT-1 Foot Pedal - 110V 71-158-TR *\$23.49* 

### Dormer Twist Drills 90-230

These high speed twist drills are precision ground to an exacting standard. Excellent for all metals. Each red tube contains 10 drills.



ITEM NUMBER	(MM) DRILL DIAMETER	1-4 PACKS	5-10 PACKS		ITEM NUMBER	(MM) DRILL DIAMETER	1-4 PACKS	5-10 PACKS
90-230-55	1.40	\$7.95	\$6.99		90-230-68	.79	\$7.95	\$6.99
90-230-56	1.18	\$7.95	\$6.99		90-230-69	.74	\$7.95	\$6.99
90-230-57	1.09	\$7.95	\$6.99	1	90-230-70	.71	\$7.95	\$6.99
90-230-58	1.06	\$7.95	\$6.99	١	90-230-71	.66	\$7.95	\$6.99
90-230-59	1.04	\$7.95	\$6.99	١	90-230-72	.64	\$7.95	\$6.99
90-230-60	1.00	\$7.95	\$6.99	١	90-230-73	.61	\$7.95	\$6.99
90-230-61	.99	\$7.95	\$6.99	١	90-230-74	.57	\$7.95	\$6.99
			7		90-230-75	.53	\$7.95	\$6.99
90-230-62	.97	\$7.95	\$6.99	۱	90-230-76	.51	\$7.95	\$6.99
90-230-63	.94	\$7.95	\$6.99	۱	90-230-77	.46	\$7.95	\$6.99
90-230-64	.91	\$7.95	\$6.99	۱	90-230-78	.41	\$7.95	\$6.99
90-230-65	.89	\$7.95	\$6.99	۱	90-230-79	.37	\$7.95	\$6.99
90-230-66	.884	\$7.95	\$6.99		90-230-80	.32	\$9.95	\$8.99

# Busch Twist Drills #077 A Punh

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

Each order is for a box of six burs.



ITEM Number	(MM) DRILL DIAMETER	6-30 PACKS	36+ PACKS
90-077-005	0.50	\$2.27	\$2.06
90-077-006	0.60	\$2.27	\$2.06
90-077-007	0.70	\$2.27	\$2.06
90-077-008	0.80	\$2.27	\$2.06
90-077-009	0.90	\$2.27	\$2.06
90-077-010	1.00	\$2.27	\$2.06
90-077-011	1.10	\$2.27	\$2.06
90-077-012	1.20	\$2.27	\$2.06
90-077-014	1.40	\$2.27	\$2.06
90-077-015	1.50	\$2.27	\$2.06
90-077-016	1.60	\$2.27	\$2.06
90-077-017	1.70	\$2.27	\$2.06
90-077-018	1.80	\$2.27	\$2.06
90-077-019	1.90	\$2.27	\$2.06

### Romanoff Optivisors

OptiVISOR is a precision binocular headband magnifier which permits unrestricted user efficiency while reducing eye strain — leaves both hands free and allows three dimensional vision. Used by anyone whose profession or craft requires close accurate work. Can be worn over prescription or safety eyeglasses.

- Optical Glass Prismatic Lenses Ground and polished to precision optical standards bevel edged and mounted in an interchangeable plastic frame.
- It Tilts Adjustable pivots allow the visor to be tilted out of the way when not needed and at your fingertips when you need magnification.
- Adjustable Headband Conforms to fit all head sizes fabricated from a special blend lightweight material. Comfortable when worn for long periods of time.
- High Impact Visor Provides a tough, durable, always-new appearance.
- Genuine Leather Comfort Band Padded orthopedic felt adds to comfort.

ITEM #	STYLE	POWER	FOCAL	PRICE	REPLACEMENT LENSES	PRICE
M3-120	DA-3	1.75X	14"	\$49.95 ea	M3-124	\$29.50
M3-125	DA-4	2X	10"	\$49.95 ea	M3-133-10"	\$29.50
M3-125-10"	DA-5	2.5X	8"	\$49.95 ea	M3-133	\$29.50
M3-130-6"	DA-10	3.5X	4"	\$49.95 ea	M3-1335	\$29.50



### Lighted Visor with 4 Different Lenses

This visor features a dial adjustment headband to fit any head and will fit over your eyeglasses. It also features an adjustable light mounted on the top of the headband for easy viewing. **Included Power Lenses: 1.5, 1.75, 2.5 and 3.5 lenses.** 

ITEM #	DESCRIPTION	PRICE
M3-119-R	Lighted Optivisor & 4 Lenses	\$36.50



### Romanoff Half-Frame Telesight Magnifier

Those who do not wear glasses will enjoy these high-quality prismatic lens in lightweight half-frames. All lenses are of optical quality. Frames are made of acrylic material with an abrasion resistant hard coating. Front lenses flip up when not needed. **Please note, the focal distance listed here refers to the "true" working distance from the frame.** 

ITEM#	STYLE	POWER	FOCUS	PRICE
M3-099	DA-3 / 43	1.75X	11"	\$38.00 ea
M3-101	DA-4 / 44	2X	7"	\$38.00 ea
M3-103	DA-5 / 46	2.5X	4"	\$38.00 ea
M3-104	DA-8 / 48	3X	3"	\$38.00 ea

### **Polishing Points**

These high-quality, long-lasting rods measure 1" (25mm) in length by 3mm diameter. These points can be shaped as needed, and are used for polishing and pre-finishing in hard to reach areas.

	ITEM #	COLOR	GRIT	# PER BOX	QTY 1-2	QTY 3+
Α	91-091-DKBR	Dark Brown	Coarse	25	\$13.20 ea	\$12.45 ea
Α	91-091-DB100	Dark Brown	Coarse	100	\$47.94 ea	\$44.39 ea
В	91-091-BROWN	Reddish Brown	Medium	25	\$13.20 ea	\$12.45 ea
В	91-091-BR100	Reddish Brown	Medium	100	\$47.94 ea	\$44.39 ea
С	91-091-GREEN	Green	Fine	25	\$13.20 ea	\$12.45 ea
С	91-091-GR100	Green	Fine	100	\$47.94 ea	\$44.39 ea

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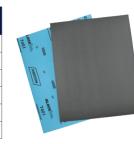
### **Small Shank Mandrels**

ITEM #		DESCRIPTION	SHANK DIMENSIONS	QTY 1-11	QTY 12+
Α	91-091-MMPM	Polishing point mandrel shank for 3mm dia. x 25mm rubber polishing points.	3/32" (2.38 mm)	\$4.30	\$3.90
В	91-091-CRSS	PUD Mandrel For Barrel Abrasives - 3 Pack	3/32" (2.38mm)	\$7.80	\$6.85
С	91-193	Long Cartridge Roll Mandrel	1/8" Shaft x 1.5"	\$2.39	\$2.19
D	92-106	Tapered Thread Mandrel	3/32" (2.38mm)	\$0.69	\$0.49
Е	92-040	Large Screw Mandrel - 8mm Head	3/32" (2.38mm)	\$1.19	\$1.08
F	92-105	Small Screw Mandrel - 4.75mm Head	3/32" (2.38mm)	\$0.89	\$0.80
G	92-039	Straight Split Mandrel For Emery Paper	3/32" (2.38 mm)	\$1.20	\$1.02
Н	91-056	Snap On Mandrel	3/32" (2.38 mm)	\$2.99	

### Norton Emery Polishing Paper

Used for any dry preparation of metal surfaces. Lightweight backing combined with emery abrasive. The finer grits, eg. 3/0, 2/0 are popular for pre-polishing platinum. Sized 9 x 13¾" and sold per piece or in a box of 50.

ITEM#	DIMENSIONS WXH	CODE	GRIT	QTY 1-49	QTY 50+
91-177	9" x 13-3/4"	#3/0	1000	\$1.29 ea	\$1.17 ea
91-178	9" x 13-3/4"	#2/0	600	\$1.29 ea	\$1.17 ea
91-179	9" x 13-3/4"	#1/0	400	\$1.29 ea	\$1.17 ea
91-180	9" x 13-3/4"	#1	280	\$1.29 ea	\$1.17 ea
91-181	9" x 13-3/4"	#2	240	\$1.29 ea	\$1.17 ea
91-182	9" x 13-3/4"	#3	180	\$1.29 ea	\$1.17 ea





Wheels are used with rouges or cutting compounds for polishing different shaped surfaces.

- A. **Knife-Edged**: Used as-is or sharpened to reach tight areas or grooves.
- B. Inside Ring Stick: Can be shaped for a specific job, such as polishing long insides of cyclinders.
- C. Cone: Used to polish round or cupshaped surfaces. Requires a 92-106 Tapered Screw Mandrel.
- D. **Square Edge**: Used for cutting and producing a high polish on flat surfaces.

### Felt Wheels

	ITEM#	STYLE	TYPE	SIZE	QTY 1-24	QTY 1-11
Α	89-475	Knife Edge Wheel	Hard	1" (25mm)	\$1.15	\$1.04
Α	89-477	Knife Edge Wheel	Hard	2" (50mm)	\$2.17	\$1.98
Α	89-478	Knife Edge Wheel	Hard	3" (76mm)	\$3.89	\$3.51
Α	89-480	Knife Edge Wheel	Rock Hard	1" (25mm)	\$1.46	\$1.29
Α	89-481	Knife Edge Wheel	Rock Hard	1.5" (38mm)	\$1.70	\$1.55
Α	89-482	Knife Edge Wheel	Rock Hard	2" (50mm)	\$2.50	\$2.15
Α	89-484	Knife Edge Wheel	Rock Hard	3" L (76mm)	\$5.50	\$4.95
Α	89-484-FH	Knife Edge Wheel	Flint Hard	3" L (76mm)	\$8.69	\$7.99
Α	89-485	Knife Edge Wheel	Rock Hard	4" (102mm)	\$5.09	\$4.39
В	89-510-HD	Unmounted Inside Ring Stick	Rock Hard	3" L (76mm)	\$3.25	\$2.77
С	89-486	Unmounted Cone	Hard	1" L x 1/2" W	\$1.45	\$1.24
D	89-0012-R	Square Edge Wheel	Hard	4" Dia x 1" W	\$20.22	



### Hart #446

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

Each order is for a package of six (6) burs.

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-446-010	010	1.00mm	\$15.24 ea	\$14.52 ea	\$13.80 ea
90-446-012	012	1.20mm	\$15.24 ea	\$14.52 ea	\$13.80 ea
90-446-014	014	1.40mm	\$15.24 ea	\$14.52 ea	\$13.80 ea
90-446-016	016	1.60mm	\$15.24 ea	\$14.52 ea	\$13.80 ea
90-446-018	018	1.80mm	\$15.24 ea	\$14.52 ea	\$13.80 ea
90-446-021	021	2.10mm	\$15.24 ea	\$14.52 ea	\$13.80 ea
90-446-023	023	2.30mm	\$15.24 ea	\$14.52 ea	\$13.80 ea
90-446-025	025	2.50mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-446-027	027	2.70mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-446-029	029	2.90mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-446-031	031	3.10mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-446-033	033	3.30mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-446-035	035	3.50mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-446-037	037	3.70mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-446-040	040	4.00mm	\$33.90 ea	\$32.28 ea	\$30.78 ea
90-446-042	042	4.20mm	\$33.90 ea	\$32.28 ea	\$30.78 ea
90-446-045	045	4.50mm	\$33.90 ea	\$32.28 ea	\$30.78 ea
90-446-047	047	4.70mm	\$33.90 ea	\$32.28 ea	\$30.78 ea
90-446-050	050	5.00mm	\$33.90 ea	\$32.28 ea	\$30.78 ea

### Crown Saw #231S

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

Each order is for a box of six burs.

				4
ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1 - 3	QUANTITY 4+
90-231S-023	023	0.23mm	\$13.62 ea	\$12.96 ea
90-231S-040	040	0.40mm	\$32.28 ea	\$30.30 ea
90-231S-050	050	0.50mm	\$32.28 ea	\$30.30 ea
90-231S-060	060	0.60mm	\$62.88 ea	\$59.04 ea
90-231S-080	080	0.80mm	\$70.80 ea	\$66.60 ea
90-231S-100	100	1.00mm	\$70.80 ea	\$66.60 ea

### Carbide Round #010-C

Each order is for a box of six burs.

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-001-004-C	004	0.40mm	\$32.52 ea	\$30.96 ea	\$29.46 ea
90-001-005-C	005	0.50mm	\$18.54 ea	\$17.64 ea	\$16.80 ea
90-001-006-C	006	0.60mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-007-C	007	0.70mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-008-C	008	0.80mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-009-C	009	0.90mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-010-C	010	1.00mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-012-C	012	1.20mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-014-C	014	1.40mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-016-C	016	1.60mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-018-C	018	1.80mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-021-C	021	2.10mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-023-C	023	2.30mm	\$16.14 ea	\$15.18 ea	\$13.92 ea
90-001-025-C	025	2.50mm	\$63.30 ea	\$59.52 ea	\$54.54 ea
90-001-027-C	027	2.70mm	\$63.30 ea	\$59.52 ea	\$54.54 ea

### Hart 90° #156C

Sandard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length. Each order is for a package of six (6) burs.

				ESS.	1000
ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-156C-007	007	0.70mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-008	800	0.80mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-009	009	0.90mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-010	010	1.00mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-012	012	1.20mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-014	014	1.40mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-015	015	1.50mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-016	016	1.60mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-018	018	1.80mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-020	020	2.00mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-021	021	2.10mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-022	022	2.20mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-023	023	2.30mm	\$15.30 ea	\$14.52 ea	\$13.80 ea
90-156C-024	024	2.40mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-156C-025	025	2.50mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-156C-026	026	2.60mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-156C-027	027	2.70mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-156C-029	029	2.90mm	\$22.62 ea	\$21.54 ea	\$20.52 ea
90-156C-031	031	3.10mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-156C-033	033	3.30mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-156C-035	035	3.50mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-156C-037	037	3.70mm	\$27.48 ea	\$26.16 ea	\$24.90 ea
90-156C-040	040	4.00mm	\$33.90 ea	\$32.28 ea	\$30.72 ea
90-156C-042	042	4.20mm	\$33.90 ea	\$32.28 ea	\$30.72 ea
90-156C-045	045	4.50mm	\$33.90 ea	\$32.28 ea	\$30.72 ea
90-156C-047	047	4.70mm	\$33.90 ea	\$32.28 ea	\$30.72 ea
90-156C-050	050	5.00mm	\$33.90 ea	\$32.28 ea	\$30.72 ea

### Bud Single Cut #006

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

Each order is for a box of six burs.

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+	
90-006-006	006	0.60mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-007	007	0.70mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-008	800	0.80mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-009	009	0.90mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-010	010	1.00mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-012	012	1.20mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-014	014	1.40mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-015	015	1.50mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-016	016	1.60mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-018	018	1.80mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-021	021	2.10mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-023	023	2.30mm	\$6.24 ea	\$5.88 ea	\$5.64 ea	
90-006-025	025	2.50mm	\$13.50 ea	\$12.78 ea	\$12.18 ea	
90-006-027	027	2.70mm	\$13.50 ea	\$12.78 ea	\$12.18 ea	
90-006-029	029	2.90mm	\$13.50 ea	\$12.78 ea	\$12.18 ea	
90-006-031	031	3.10mm	\$18.78 ea	\$17.88 ea	\$17.04 ea	
90-006-033	033	3.30mm	\$18.78 ea	\$17.88 ea	\$17.04 ea	
90-006-035	035	3.50mm	\$18.78 ea	\$17.88 ea	\$17.04 ea	
90-006-037	037	3.70mm	\$18.78 ea	\$17.88 ea	\$17.04 ea	
90-006-040	040	4.00mm	\$18.78 ea	\$17.88 ea	\$17.04 ea	
90-006-045	045	4.50mm	\$18.78 ea	\$17.88 ea	\$17.04 ea	

### Romanoff and Dazor Flourescent Lamps

The Romanoff and Dazor Flourescent Lamps emits soft and cool flourescent lighting from the 15 watt 18" bulbs which eliminates glare and reduces eye fatigue. The lamp can be mounted by the 4" opening clamp or screwed into your work table. The floating arm allows easy positioning of the light where needed.

	ITEM#	DESCRIPTION	QTY 1-2	QTY 3+
Α	80-228-2R	Romanoff Two Bulb Clamp Type Dove Gray 45" Reach 110V	\$98.15	\$86.50
В	80-228-2	Dazor Two Bulb Clamp Type Dove Gray 43" Reach 110V	\$249.00	\$236.90
В	80-228-3	Dazor Three Bulb Clamp Type Gray 43" Reach 110V	\$262.00	\$245.00
С	80-230-3	Dazor Fluorescent 45W Desk Base Task Light	\$396.00	
	80-228	Dazor Bench Lamp Replacement 18" Bulb - Only	\$6.95	\$6.26

### LED Dimmer Style Bench Lamp - 55 Watt

### Introducing the industry's most Innovative & Powerful LED Task Lamp!

Professional Lighting has taken their sleek and contemporary task lamp frame and incorporated the newest LED lighting technology.

- 44 LED Bulbs Provide 3200 Lumen Output
- 110V-230V
- Dimmable, Directional lighting allows for with no wasted light
- Produces Less Glare
- 6500K Perfect For Diamond Grading
- Fully positional articulating arm
- Dual mounting configuration standard
- Electronic ballast no humming
- Reduces eyestrain, headaches and tiredness important to jewelers task lamps
- Improves performance, and helps create a happier environment
- Colors can be seen accurately as they would be in natural light

80-235 LED Dimmer Style Bench Lamp \$269.99

### Monocular & Standard Loupes

	ITEM #	DESCRIPTION	POWER	QTY 1-2	QTY 3+
Α	M3-115	25mm Monocular Lens	10x	\$16.85	\$15.90
В	M3-128-15X	20.5 Loupe (Medium)	15x	\$19.50	\$18.70
С	M3-128	21mm Loupe (Large)	10x	\$17.85	\$16.50



### **Busch Twin Cut 411T Burs**

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

Each order is for a box of six burs.

QTY 6 +	QTY 1-5	(MM) DIAMETER	SIZE	ITEM #
\$17.76 ea	\$18.96 ea	0.80mm	800	90-411T-008
\$17.76 ea	\$18.96 ea	0.90mm	009	90-411T-009
\$17.76 ea	\$18.96 ea	1.00mm	010	90-411T-010
\$17.76 ea	\$18.96 ea	1.20mm	012	90-411T-012
\$17.76 ea	\$18.96 ea	1.40mm	014	90-411T-014
\$17.76 ea	\$18.96 ea	1.50mm	015	90-411T-015
\$17.76 ea	\$18.96 ea	1.60mm	016	90-411T-016
\$17.76 ea	\$18.96 ea	1.80mm	018	90-411T-018
\$17.76 ea	\$18.96 ea	2.00mm	020	90-411T-020
\$17.76 e \$17.76 e \$17.76 e \$17.76 e \$17.76 e \$17.76 e	\$18.96 ea \$18.96 ea \$18.96 ea \$18.96 ea \$18.96 ea \$18.96 ea \$18.96 ea	0.80mm 0.90mm 1.00mm 1.20mm 1.40mm 1.50mm 1.60mm	009 010 012 014 015 016 018	90-411T-009 90-411T-010 90-411T-012 90-411T-014 90-411T-015 90-411T-016 90-411T-018









Burch



### Inverted Cone Single Cut Bur #003

Standard 3/32" (2.38mm) diameter shank and approximately 1-3/4" (44.5mm) in length. Each order is for a package of six (6) burs.

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ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-003-006	006	0.60mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-007	007	0.70mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-008	800	0.80mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-009	009	0.90mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-010	010	1.00mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-012	012	1.20mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-014	014	1.40mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-015	015	1.50mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-016	016	1.60mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-018	018	1.80mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-021	021	2.10mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-023	023	2.30mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-003-025	025	2.50mm	\$11.70 ea	\$10.98 ea	\$10.32 ea

90-003-027 027 2.70mm \$11.70 ea \$10.98 ea \$10.32 ea

### Wheels Single Cut Bur #002

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

Each order is for a box of six burs.

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-002-006	006	0.60mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-007	007	0.70mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-008	800	0.80mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-009	009	0.90mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-010	010	1.00mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-012	012	1.20mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-014	014	1.40mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-016	016	1.60mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-018	018	1.80mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-021	021	2.10mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-023	023	2.30mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-002-025	025	2.50mm	\$11.70 ea	\$10.98 ea	\$10.08 ea
90-002-027	027	2.70mm	\$11.70 ea	\$10.98 ea	\$10.08 ea
90-002-029	029	2.90mm	\$11.70 ea	\$10.98 ea	\$10.08 ea

### Cup Bur #077B

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-077B-009	009	0.90mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-010	010	1.00mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-012	012	1.20mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-014	014	1.40mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-015	015	1.50mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-016	016	1.60mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-018	018	1.80mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-021	021	2.10mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-023	023	2.30mm	\$17.04 ea	\$16.02 ea	\$14.70 ea
90-077B-025	025	2.50mm	\$28.98 ea	\$27.18 ea	\$24.96 ea
90-077B-027	027	2.70mm	\$28.98 ea	\$27.18 ea	\$24.96 ea
90-077B-029	029	2.90mm	\$28.98 ea	\$27.18 ea	\$24.96 ea
90-077B-031	031	3.10mm	\$38.34 ea	\$35.88 ea	\$32.94 ea
90-077B-035	035	3.50mm	\$38.34 ea	\$35.88 ea	\$32.94 ea
90-077B-035	035	3.50mm	\$38.34 ea	\$35.88 ea	\$32.94 ea
90-077B-045	045	4.50mm	\$43.68 ea	\$41.58 ea	\$39.60 ea
90-077B-050	050	5.00mm	\$43.68 ea	\$41.58 ea	\$39.60 ea
90-077B-060	060	6.00mm	\$50.88 ea	\$48.54 ea	\$46.14 ea

### Busch Round Coarse Bur #001

They have a standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

Priced per pack of 6. Each order is for a package of six (6) burs.

90-001-003 003 0.30mm \$17.58 ea \$16.74 ea \$15.90 ea 90-001-0035 0035 0.35mm \$17.58 ea \$16.74 ea \$15.90 ea 90-001-004 004 0.40mm \$9.30 ea \$8.82 ea \$8.40 ea 90-001-005 005 0.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-006 006 0.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-007 007 0.70mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-009 009 0.90mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-000 009 0.90mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-010 010 1.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-012 012 1.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-013 013 1.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-014 014 1.40mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-012 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.80 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19	NUMBER	SIZE	DIAMETER	1-5	6-11	12+
90-001-004 004 0.40mm \$9.30 ea \$8.82 ea \$8.40 ea 90-001-005 005 0.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-006 006 0.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-007 007 0.70mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-008 008 0.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-009 009 0.90mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-010 010 1.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-010 010 1.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-012 012 1.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-013 013 1.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-014 014 1.40mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-018 018 1.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$7.22 ea \$16.38 ea \$15.60 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-034 044 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 e	90-001-003	003	0.30mm	\$17.58 ea	\$16.74 ea	\$15.90 ea
90-001-005         005         0.50mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-006         006         0.60mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-007         007         0.70mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-009         009         0.90mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-010         010         1.00mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-012         012         1.20mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-013         013         1.30mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-014         014         1.40mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-015         015         1.50mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-016         016         1.60mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-020         020         2.00mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-021         021         2.10mm         \$5.58 ea         \$5.22 ea         \$4.80 ea	90-001-0035	0035	0.35mm	\$17.58 ea	\$16.74 ea	\$15.90 ea
90-001-006         006         0.60mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-007         007         0.70mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-008         008         0.80mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-009         009         0.90mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-010         010         1.00mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-013         013         1.30mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-014         014         1.40mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-015         015         1.50mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-018         016         1.60mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-020         020         2.00mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-021         021         2.10mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-022         022         2.20mm         \$5.58 ea         \$5.22 ea         \$4.80 ea	90-001-004	004	0.40mm	\$9.30 ea	\$8.82 ea	\$8.40 ea
90-001-007         007         0.70mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-008         008         0.80mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-009         009         0.90mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-010         010         1.00mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-012         012         1.20mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-013         013         1.30mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-014         014         1.40mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-015         015         1.50mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-016         016         1.60mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-020         020         2.00mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-021         021         2.10mm         \$5.58 ea         \$5.22 ea         \$4.80 ea           90-001-022         022         2.20mm         \$5.58 ea         \$5.22 ea         \$4.80 ea	90-001-005	005	0.50mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-008 008 0.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-009 009 0.90mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-010 010 1.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-012 012 1.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-013 013 1.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-014 014 1.40mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-018 018 1.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-060 060 6.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-006	006	0.60mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-009 009 0.90mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-010 010 1.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-012 012 1.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-013 013 1.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-014 014 1.40mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-021 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-040 040 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-050 050 5.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-007	007	0.70mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-010 010 1.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-012 013 1.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-014 014 1.40mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-018 018 1.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$33.54 ea 90-00	90-001-008	800	0.80mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-012 012 1.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-014 014 1.40mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-018 018 1.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90	90-001-009	009	0.90mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-013 013 1.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-018 018 1.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-010	010	1.00mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-014 014 1.40mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-018 018 1.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$43.80 ea \$41.70 ea 90-001-070 070 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-012	012	1.20mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-015 015 1.50mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-016 016 1.60mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-018 018 1.80mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$43.80 ea \$41.70 ea 90-001-070 070 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-013	013	1.30mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-016	90-001-014	014	1.40mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-018	90-001-015	015	1.50mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-020 020 2.00mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$43.80 ea \$41.70 ea 90-001-070 080 88 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-016	016	1.60mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-021 021 2.10mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-018	018	1.80mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-022 022 2.20mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-020	020	2.00mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-023 023 2.30mm \$5.58 ea \$5.22 ea \$4.80 ea 90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-021	021	2.10mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-024 024 2.40mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-025 025 2.50mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-026 026 2.60mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-022	022	2.20mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-025	90-001-023	023	2.30mm	\$5.58 ea	\$5.22 ea	\$4.80 ea
90-001-026	90-001-024	024	2.40mm	\$11.28 ea	\$10.74 ea	\$10.26 ea
90-001-027 027 2.70mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-025	025	2.50mm	\$11.28 ea	\$10.74 ea	\$10.26 ea
90-001-029 029 2.90mm \$11.28 ea \$10.74 ea \$10.26 ea 90-001-031 031 3.10mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-026	026	2.60mm	\$11.28 ea	\$10.74 ea	\$10.26 ea
90-001-031	90-001-027	027	2.70mm	\$11.28 ea	\$10.74 ea	\$10.26 ea
90-001-033 033 3.30mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-035 035 3.50mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-029	029	2.90mm	\$11.28 ea	\$10.74 ea	\$10.26 ea
90-001-035	90-001-031	031	3.10mm	\$17.22 ea	\$16.38 ea	\$15.60 ea
90-001-037 037 3.70mm \$17.22 ea \$16.38 ea \$15.60 ea 90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-060 060 6.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-033	033	3.30mm	\$17.22 ea	\$16.38 ea	\$15.60 ea
90-001-040 040 4.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-035	035	3.50mm	\$17.22 ea	\$16.38 ea	\$15.60 ea
90-001-042 042 4.20mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-045 045 4.50mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-060 060 6.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-075 075 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-037	037	3.70mm	\$17.22 ea	\$16.38 ea	\$15.60 ea
90-001-045	90-001-040	040	4.00mm	\$21.84 ea	\$20.82 ea	\$19.80 ea
90-001-047 047 4.70mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-060 060 6.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-075 075 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-042	042	4.20mm	\$21.84 ea	\$20.82 ea	\$19.80 ea
90-001-050 050 5.00mm \$21.84 ea \$20.82 ea \$19.80 ea 90-001-055 055 5.50mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-060 060 6.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-075 075 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-045	045	4.50mm	\$21.84 ea	\$20.82 ea	\$19.80 ea
90-001-055	90-001-047	047	4.70mm	\$21.84 ea	\$20.82 ea	\$19.80 ea
90-001-060       060       6.00mm       \$36.96 ea       \$35.22 ea       \$33.54 ea         90-001-070       070       7.00mm       \$36.96 ea       \$35.22 ea       \$33.54 ea         90-001-075       075       7.50mm       \$45.96 ea       \$43.80 ea       \$41.70 ea         90-001-080       080       8.00mm       \$45.96 ea       \$43.80 ea       \$41.70 ea	90-001-050	050	5.00mm	\$21.84 ea	\$20.82 ea	\$19.80 ea
90-001-070 070 7.00mm \$36.96 ea \$35.22 ea \$33.54 ea 90-001-075 075 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-055	055	5.50mm	\$36.96 ea	\$35.22 ea	\$33.54 ea
90-001-075 075 7.50mm \$45.96 ea \$43.80 ea \$41.70 ea 90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-060	060	6.00mm	\$36.96 ea	\$35.22 ea	\$33.54 ea
90-001-080 080 8.00mm \$45.96 ea \$43.80 ea \$41.70 ea	90-001-070	070	7.00mm	\$36.96 ea	\$35.22 ea	\$33.54 ea
, , , , , , , , , , , , , , , , , , , ,	90-001-075	075	7.50mm	\$45.96 ea	\$43.80 ea	\$41.70 ea
90-001-085   085   8.50mm   \$45.96 ea   \$43.80 ea   \$41.70 ea	90-001-080	080	8.00mm	\$45.96 ea	\$43.80 ea	\$41.70 ea
	90-001-085	085	8.50mm	\$45.96 ea	\$43.80 ea	\$41.70 ea

(MM) QUANTITY QUANTITY QUANTITY

### Cup Bur #077B

Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length. Each order is for a box of six burs.



### \*Priced per pack of 6.

### Cylinder Square Single Cut #015

					AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN TRANSPORT OF THE PERSON NAMED IN COLUMN TWO IS NAMED IN TRANSPORT OF THE PERSON NAMED IN THE PERSON NAMED IN TRANSPORT NAMED IN T
ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-015-007	007	0.70mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-008	800	0.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-009	009	0.90mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-010	010	1.00mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-012	012	1.20mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-014	014	1.40mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-015	015	1.50mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-016	016	1.60mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-018	018	1.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-021	021	2.10mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-023	023	2.30mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-015-031	031	3.10mm	\$18.96 ea	\$18.06 ea	\$17.22 ea

### Cylinder Square Cross Cut #021

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+	
90-021-006	6	0.60mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-007	7	0.70mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-008	8	0.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-009	9	0.90mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-010	10	1.00mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-012	12	1.20mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-014	14	1.40mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-016	16	1.60mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-018	18	1.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-021	21	2.10mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-023	23	2.30mm	\$8.28 ea	\$7.86 ea	\$7.50 ea	
90-021-025	25	2.50mm	\$16.92 ea	\$16.14 ea	\$15.36 ea	
90-021-027	27	2.70mm	\$16.92 ea	\$16.14 ea	\$15.36 ea	
90-021-029	29	2.90mm	\$16.92 ea	\$16.14 ea	\$15.36 ea	
90-021-031	31	3.10mm	\$18.96 ea	\$18.06 ea	\$17.22 ea	

### Cone Square Cross Cut #023

				9	
ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-023-007	007	0.70mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-008	800	0.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-009	009	0.90mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-010	010	1.00mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-012	012	1.20mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-014	014	1.40mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-016	016	1.60mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-018	018	1.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-021	021	2.10mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-023	023	2.30mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-023-025	025	2.50mm	\$16.92 ea	\$16.14 ea	\$15.36 ea
90-023-027	027	2.70mm	\$16.92 ea	\$16.14 ea	\$15.36 ea
90-023-031	031	3.10mm	\$19.56 ea	\$18.42 ea	\$16.86 ea

## Cone Square Single Cut #017

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6-11	QUANTITY 12+
90-017-007	007	0.70mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-008	800	0.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-009	009	0.90mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-010	010	1.00mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-012	012	1.20mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-014	014	1.40mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-016	016	1.60mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-018	018	1.80mm	\$8.28 ea	\$7.86 ea	\$7.50 ea
90-017-021	021	2.10mm	\$8.28 ea	\$7.86 ea	\$7.50 ea

### Krause #256

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6+
90-256-010	010	0.10mm	\$18.54 ea	\$16.74 ea
90-256-012	012	0.12mm	\$18.54 ea	\$16.74 ea

### Reamer #115A

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-2	QUANTITY 3+
90-115A-018	18	0.18mm	\$42.30 ea	\$39.60 ea
90-115A-023	23	0.23mm	\$42.30 ea	\$39.60 ea

### Special Inlay #100A

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6+
90-100A-008	800	0.80mm	\$21.78 ea	\$20.46 ea
90-100A-009	009	0.90mm	\$21.78 ea	\$20.46 ea
90-100A-010	010	1.00mm	\$21.78 ea	\$20.46 ea
90-100A-012	012	1.20mm	\$21.78 ea	\$20.46 ea

### Riviters #452 \*Priced per piece

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-2	QUANTITY 3+
90-452-080	080	8.00mm	\$53.75 ea	\$51.60 ea

### Swiss Krause #256M

Maillefer Swiss made burs are precision engineered and calibrated to exacting standards in consistent adherence to ADA/ISO specifications. Produced from tungsten vanadium steel alloy, and offered at an economical price. Standard 3/32" (2.38mm) diameter shank and are approximately 1-3/4" (44.5mm) in length.

ITEM NUMBER	SIZE	(MM) DIAMETER	QUANTITY 1-5	QUANTITY 6+
90-256-010M	010	0.10mm	\$10.08 ea	\$9.48 ea
90-256-012M	012	0.12mm	\$10.08 ea	\$9.48 ea







<sup>\*</sup>Each order is for a package of six (6) burs.



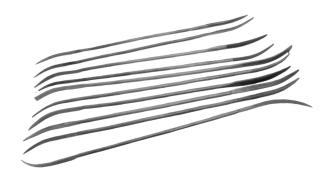
### Grobet Needle Files #2 Cut File Set

This 12 piece, 7.75" (20cm) Needle File set contains two Half-Round, Round, and Three-Square files, as well as one each of Barrette, Crossing, Equalling, Knife, Square, and Warding files.

### Grobet Escapement Files #2 Cut and #4 Cut File Set

Also known as Square Handle Needle Files, these precision file sets are available in three cuts. The Escapement File set includes the most popular file shapes. Overall length is 5.5" (14cm). Lenth of cut is 1 9/16" to 2 9/16", depending upon shape.

	ITEM#	DESCRIPTION	CUT	PRICE	QTY 2+
Α	F3-544	12pc Needle File Set	2	\$148.60	\$133.74
В	F3-820	12pc Escapement File Set	2	\$185.80	\$176.30
В	F3-830	12pc Escapement File Set	4	\$185.80	\$176.30



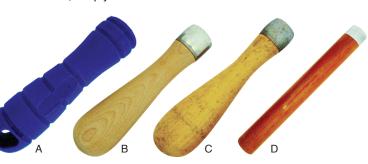
### **Grobet Riffler File Sets**

A full set of ten double ended riffler files contained in a vinyl pouch for your convenience. Riffler files are used in wax and metal working for filing odd shapes and for hard to reach areas. The rifflers are of medium cut and are 6" (152mm) long and are made of hardened tool steel.

ITEM #	DESCRIPTION	QTY 1-3	QTY 4+
F3-650	Double End 10pc Riffler File Set	\$35.20	\$28.70

### Plastic File Handle

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. Tang gripping insert is tempered metal, with two threaded sections of different diameters. This assures proper alignment and positive hold for files. Threaded metal insert allows handle to be reused, simply unscrew the file in use and insert a new one.



	ITEM#	DESCRIPTION	QTY 1-3	QTY 4+
Α	H3-114	Blue Handle, Size #4 For 6" HandFiles	\$4.40	\$3.85
В	H3-110	Wood Handle, Skrooz-On, 3/4" D x 4" L For 6" Hand Files	\$3.65	\$3.20
С	H3-100	Wood Handle, Skrooz-On 7/16" D x 3" L For Needle Files	\$2.60	\$2.10
D	H3-101	Wood Straight Push-On Handle, ½" D x 4" L For Escapement Files	\$2.45	\$1.95



### Romanoff File Cleaner

Steel wire bristles mounted on wood handles approximately 10" (25cm) long. For cleaning particles that are clogging teeth of file.

ITEM #	DESCRIPTION	QTY 1-3	QTY 4+
F3-900	Romanoff File Cleaner	\$6.90	\$6.10

### Hand Files are referred to as the larger file. The 6" represents the working area, or the "teeth".

### Barrette

Tapered in width and thickness, coming to a point. Only flat side is cut, providing safe edge and top.



Length	Width	Thickness	00 Cut	0 Cut	1 Cut	2 Cut	4 Cut
6" (152mm)	11/16" (18.3mm)	5/32" (4mm)	F3-470	F3-471	F3-472	F3-473	F3-474
	\$ Per Piece : 1 - 3		\$22.35	\$23.75	\$26.05	\$26.70	\$29.85
	\$ Per Piece : 4+		\$20.65	\$21.90	\$24.65	\$24.65	\$27.55

### Hand



Length	Width	Thickness	00 Cut	0 Cut	2 Cut	4 Cut
6" (152mm)	11/16" (18.3mm)	5/32" (4mm)	F3-490	F3-491	F3-492	F3-493
	\$ Per Piece : 1 - 3		\$16.55	\$17.50	\$18.90	\$21.95
	\$ Per Piece : 4+		\$15.30	\$16.15	\$17.45	\$20.30

### Half Round

Tapered in width and thickness, coming to a point. Cut on both sides.



Length Width Thickness	00 Cut	0 Cut	2 Cut	4 Cut
6" (152mm) 11/16" (18.3mm) 5/32" (4mm)	F3-450	F3-451	F3-452	F3-453
\$ Per Piece : 1 - 3	\$29.85	\$31.60	\$34.15	\$39.85
\$ Per Piece : 4+	\$27.55	\$29.20	\$31.50	\$36.80

### Half Round Ring

Tapered in width and thickness, coming to a point. Narrower than regular half-round so that it can be used for filing nside of rings. Cut on both sides.



Length	Width	Thickness	00 Cut	0 Cut	2 Cut	4 Cut	
6" (152mm)	11/16" (18.3mm)	5/32" (4mm)	F3-460	F3-461	F3-462	F3-463	
	\$ Per Piece : 1 - 3		\$31.50	\$33.35	\$35.10	\$42.05	
\$ Per Piece : 4+		\$29.10	\$30.90	\$33.20	\$38.85		

### Double End Vulcanite

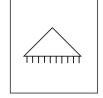
Open coarse teeth for filing plastics, waxes, and soft materials. One end is coarser than the other.



Item #	Length	\$ Per Piece : 1 - 3	\$ Per Piece : 4+	
F3-531	8" (152mm)	\$34.15	\$31.50	

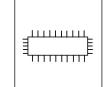
Needle Files are generally finer and narrower. Used for the final finish and smaller parts. Their overall lengths are 6.25" (16cm) and 7.75" (20cm).

### Barrette



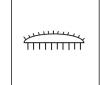
Length	Qty	00 Cut	0 Cut	2 Cut	4 Cut	6 Cut
6.25" (16cm)		F3-550	F3-551	F3-552	F3-553	F3-554
	1-3	\$12.30	\$12.30	\$12.30	\$12.97	\$14.80
	4+	\$11.75	\$11.75	\$11.75	\$11.35	\$13.98
7.75" (20cm)		N/A	F3-555	F3-556	F3-557	F3-558
	1-3	N/A	\$15.40	\$15.40	\$15.75	\$23.80
	4+	N/A	\$13.70	\$13.70	\$13.95	\$22.15

### Equalling



Length	Qty	00 Cut	0 Cut	2 Cut	4 Cut	6 Cut
6.25" (16cm)		F3-570	F3-571	F3-572	F3-573	F3-574
	1-3	\$12.30	\$12.30	\$12.30	\$12.97	\$14.80
	4+	\$11.75	\$11.75	\$11.75	\$11.35	\$13.98
7.75" (20cm)		N/A	F3-575	F3-576	F3-577	N/A
	1-3	N/A	\$15.40	\$15.40	\$15.75	N/A
	4+	N/A	\$13.70	\$13.70	\$13.95	N/A

### Half Round



Length	Qty	00 Cut	0 Cut	2 Cut	4 Cut	6 Cut
6.25" (16cm)		F3-580	F3-581	F3-582	F3-583	F3-584
	1-3	\$12.30	\$12.30	\$12.30	\$12.97	\$14.80
	4+	\$11.75	\$11.75	\$11.75	\$11.35	\$13.98
7.75" (20cm)		N/A	F3-585	F3-586	F3-587	N/A
	1-3	N/A	\$15.40	\$15.40	\$15.75	N/A
	4+	N/A	\$13.70	\$13.70	\$13.95	N/A

### Round



Length	Qty	00 Cut	0 Cut	2 Cut	4 Cut	6 Cut
6.25" (16cm)		F3-610	F3-611	F3-612	F3-613	F3-644
	1-3	\$8.30	\$8.30	\$8.30	\$8.97	\$11.80
	4+	\$7.75	\$7.75	\$7.75	\$8.35	\$10.98

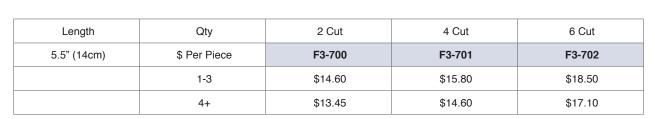
## Three-Square



Length	Qty	00 Cut	0 Cut	2 Cut	4 Cut	6 Cut
6.25" (16cm)		F3-640	F3-641	F3-642	F3-643	F3-584
	1-3	\$12.30	\$12.30	\$12.30	\$12.97	\$14.80
	4+	\$11.75	\$11.75	\$11.75	\$11.35	\$13.98
7.75" (20cm)		N/A	F3-645	F3-646	F3-647	F3-648
	1-3	N/A	\$15.40	\$15.40	\$15.75	N/A
	4+	N/A	\$13.70	\$13.70	\$13.95	N/A

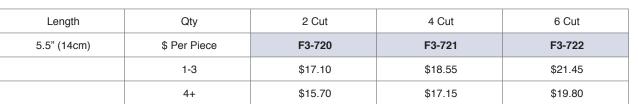
### **Escapement Files are the smallest production file used.** They are most commonly used for small, tight areas.

### Barrette





### Half Round





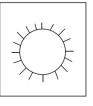
## Three Square

Length	Qty	2 Cut	4 Cut	6 Cut
5.5" (14cm)	\$ Per Piece	F3-730	F3-731	F3-732
	1-3	\$14.60	\$15.80	\$18.50
	4+	\$13.45	\$14.60	\$17.05



### Round

Length	Qty	2 Cut	4 Cut	6 Cut
5.5" (14cm)	\$ Per Piece	F3-760	F3-761	F3-762
	1-3	\$12.10	\$13.10	\$13.10
	4+	\$11.20	\$12.10	\$12.10



### **HSN Approved Ring Mandrel**

Romanoff "HSN"
Custom Steel Mandrel is hardened steel & chrome plated and always consistent in size. The sizes range from #2-15 and has an overall length of 13".



Item #		Item # Shape Description		Size	Price
Α	M3-201-R		"HSN" Custom Ring Mandrel	#2-15	\$47.65
В	M3-200	Standard Graduated Round Ring Mandrel		#1-15	\$25.90
С	M3-201	D	Standard Grooved & Graduated Round Ring Mandrel	#1-15	\$24.00

## Wedding Ring Sizer

The Romanoff Ring Sizer will reduce or enlarge wedding rings easily. Geared handle works on the downstroke, which means you can press down while operating. Can be bolted to the bench or used as a portable. This well-made sizer has a six spline mandrel for enlarging rings up to size 15 and an eight double sided reducing plate, smoothly polished to prevent marring. 16 lbs. Made in Italy.

Item #	Description	Price
83-011	Wedding Ring Sizer & Stretcher	\$328.00

### GXL-24 Digital Gold Tester

Accurately measures White, Yellow, Pink, Green Gold and Platinum. Measures from 6-18Kt + 20-24kt in gold. Reliable and accurate, elminates the use of messy acids! Uses 9 volt battery.



Item #	Description	Price
T3-506	GXL-24 Digital Gold Tester	\$398.00
T3-515G	GLXL-24 Gel Refill Tube	\$17.55

### Finger & Ring Gauges

All Romanoff ring and finger gauges are graduated in half-sizes #1-15 in US standard only. Numerical sizes are stamped on each ring for easy identification.



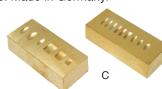


	Item #	Description	Qty 1-2	Qty 3+
Α	G3-110	Standard Finger & Ring Gauge	\$8.25	\$7.10
В	G3-111	Wide Finger & Ring Gauge	\$17.61	\$16.60

### Karat Stamps & Brass Block

Romanoff precious metal stamps are available in bent or straight shape and are made of hardened tool steel. Stamp size #2 is 1/32"/0.79mm wide. Made in Germany.





	Item #	Description	Karat	Qty 3+
Α	K5-221	Bent Stamp	10k	\$14.40
Α	K5-231	Bent Stamp	14k	\$14.40
Α	K5-241	Bent Stamp	18k	\$14.40
В	K6-221	Straight Stamp	10k	\$14.40
В	K6-231	Straight Stamp	14k	\$14.40
В	K5-241-STR	Straight Stamp	18k	\$14.40
С	55-600	Mens & Women's Brass Stamping Block		\$32.75

# Anti-Tarnish Roll Paper & Cutter Stand

All Romanoff ring and finger gauges are graduated in half-sizes #1-15 in US standard only. Numerical sizes are stamped on each ring for easy identification.



	Item #	Description	Qty	
Α	T3-151	Anti-Tarnish Roll Paper Cutter Stand (without paper)	\$14.80	
В	T3-550	Anti-Tarnish Roll Paper 7 3/8"	\$11.89	

### Piercing Saw Blades Size Chart

Size	8/0	7/0	6/0	5/0	4/0	3/0	2/0	1/0	1	2	3	4	5	6	7	8	10
Thickness	.18mm .0063"	.18mm .0067	.21mm .007"	.24mm .008"	.25mm .0095"	.32mm .0103"	.32mm .0103"	.34mm .0110"	.36mm .0120"	.42mm .0134"	.43mm .0140"	.45mm .0150"	.47mm .0158"	.50mm .0173"	.55mm .0189"	.58mm .0197"	.65mm .0215"
Width	.31mm .0126"	.31mm .013"	.35mm .014"	.37mm .0157"	.42mm .0175"	.45mm .019"	.50mm .0204"	.50mm .022"	.56mm .024"	.63mm .0276"	.74mm .029"	.75mm .031"	.78mm .033"	.83mm .037"	.92mm .04"	1.03mm .044"	1.25mm .051"
Teeth/Inch	96	96	84	76	68	64	64	56	56	52	48	45	44	40	38	30	24
Drill Size	80	80	79	78	77	76	75	73	71	70	68	67	65	59	57	55	51



### Swiss & German Saw Frames

Romanoff Saw Frames hold piercing & spiral saw blades. Aluminum inserts for easy loading. The German saw frame is made from flattened steel, with a hardwood handle and thumbscrews.

ITEM #		DESCRIPTION	PRICE
Α	95-105	Swiss 2.75" Adjustable Saw Frame	\$18.30 ea
В	95-100	German 3" Adjustable Saw Frame	\$19.15 ea
В	95-110	German 2.5" Adjustable Saw Frame	\$12.75 ea
В	95-113	German 3" Adjustable Saw Frame	\$13.25 ea
В	95-114	German 4" Adjustable Saw Frame	\$11.95 ea

### Hercules White Label Saw Blades

Hercules saw blades are known for their quality around the world. Their teeth are uniform in size, shape, and sharpness. The rounded back makes cutting curves easier. Made in Germany.

ITEM #	SIZE	<b>QUANTITY 1-3</b>	<b>QUANTITY 4+</b>
95-8/0	8/0	\$32.60 ea	\$30.90 ea
95-7/0	7/0	\$32.60 ea	\$30.90 ea
95-6/0	6/0	\$30.80 ea	\$28.40 ea
95-5/0	5/0	\$30.80 ea	\$28.40 ea
95-4/0	4/0	\$26.50 ea	\$23.90 ea
95-3/0	3/0	\$24.25 ea	\$21.90 ea
95-2/0	2/0	\$24.25 ea	\$21.90 ea
95-1/0	1/0	\$24.25 ea	\$21.90 ea
95-001	1	\$24.25 ea	\$21.90 ea
95-002	2	\$24.25 ea	\$21.90 ea
95-003	3	\$24.25 ea	\$21.90 ea
95-001	1	\$24.25 ea	\$21.90 ea
95-002	2	\$24.25 ea	\$21.90 ea
95-003	3	\$24.25 ea	\$21.90 ea
	-		

### Swiss Gold Label Saw Blades

Great for cutting metals and other hard materials.

The unique tempering process ensures consistent flexibility, uniformly set teeth reduce binding and breakage. Made of special alloy steel, making the blade last longer and stay sharper. Has rounded backs that make cutting curves easier. Made in Switzerland.

ITEM #	SIZE	QUANTITY 1-3	QUANTITY 4+
95-8/0-GL	8/0	\$29.40 ea	\$27.85 ea
95-6/0-GL	6/0	\$26.65 ea	\$24.80 ea
95-5/0-GL	5/0	\$25.40 ea	\$23.60 ea
95-4/0-GL	4/0	\$23.50 ea	\$21.55 ea
95-3/0-GL	3/0	\$23.50 ea	\$21.55 ea
95-2/0-GL	2/0	\$23.50 ea	\$21.55 ea
95-1/0-GL	1/0	\$23.50 ea	\$21.55 ea
95-001-GL	1	\$23.50 ea	\$21.55 ea
95-002-GL	2	\$23.50 ea	\$21.55 ea
95-003-GL	3	\$23.50 ea	\$21.55 ea
95-004-GL	4	\$25.40 ea	\$23.60 ea
95-005-GL	5	\$25.40 ea	\$23.60 ea
95-010-GL	10	\$24.95 ea	\$21.90 ea

### Antelope Blue Label Saw Blades

Romanoff Antelope "Blue Label" saw blades are German made, high quality piercing blades, with a rounded back. They will cut hard metals, pearls, and other hard materials. Made in Germany.

ITEM #	SIZE	<b>QUANTITY 1-3</b>	<b>QUANTITY 4+</b>
95-900-8/0	8/0 Blue	\$32.60 ea	\$30.90 ea
95-900-6/0	6/0 Blue	\$32.60 ea	\$30.90 ea
95-900-5/0	5/0 Blue	\$30.80 ea	\$28.40 ea
95-900-4/0	4/0 Blue	\$26.60 ea	\$23.90 ea
95-900-3/0	3/0 Blue	\$24.25 ea	\$21.90 ea
95-900-2/0	2/0 Blue	\$24.25 ea	\$21.90 ea
95-900-1/0	1/0 Blue	\$24.25 ea	\$21.90 ea
95-900-1	1 Blue	\$24.25 ea	\$21.90 ea
95-900-2	2 Blue	\$24.25 ea	\$21.90 ea
95-900-3	3 Blue	\$24.25 ea	\$21.90 ea



### Pneumatic Sprue Cutter With Foot Pedal The Highest Quality In The World

This unique, down stroke pneumatic sprue cutter is one of the highest quality in the world. The power of this unit is maximized by a short stroke piston. The cutting blades are made of high quality tool steel and may be re-sharpened, unlike many other blades! 79-062-G \$4,526.00







Made In Germany

### Niles #35 Pneumatic Sprue Cutter

An excellent pneumatic sprue cutter with exceptional flexibility. This cutter is light enough to be held by hand, but comes supplied with a base for permanent mounting and is operated by a foot pedal. Four styles of blade are available. This fine pneumatic sprue cutter is supplied with a standard flat blade, original hose and heavy duty foot pedal. Cutting capacity up to 4mm sprue in yellow gold. Made in Japan.





**#1 CHOICE CUTTER** 

This hardened steel blade is less likely to chip than carbide blades. \$129.65 Z16-533-4 Niles S7P Replacement Blade



Carbide blades stay sharper longer than hardened steel blades. \$289.60 Z16-533-6 Niles Z8P Replacement Blade



The pressure of this cutter is multiplied many times by the unique linkage that is built into the cutter. Imported from Switzerland, this is the finest cutter of its kind. What was once a time consuming job can now be done in seconds. 10.5" long (267mm) Cutting capacity up to 2.6mm sprue in yellow gold.

79-064 Bergeon Heavy-Duty Sprue Cutter \$162.94 79-064A Replacement 22mm Cutting Edge Blade \$129.00 79-064-SP Replacement Spring For Bergeon \$11.00

# Maxi-Shear Orange Super Flush Cutter



cut a human hair with a perfect flush cut. 5.8" long (148mm). Cutting capacity up to 2.1mm sprue in yellow gold. Made in USA.

P3-108-6R Maxi-Shear Orange Super Flush Cutter \$16.25

### 6-Gallon Silent Air Compressor

Unit includes a tank and line pressure gauge, line pressure regulator, moisture trap-filter-gauge, safety valve and air intake filter. This unit is quiet in operation with a simple automatic control. Oil-less operation. It is important to note, all air lines must be tight and leak free or the unit will run continuously and may eventually over-heat.



ITEM #	CAPACITY	WATTAGE	AIRFLOW	MAXIMUM PRESSURE	NOISE	DIMENSIONS	VOLTAGE	PRICE
81-0074-R	6 Gallon	600 Watts	118 Liters Per Minute	8 Bar	52 Decibels	16" x 16" x 21"	110 Volts	\$699.00



### **ABOUT THE BRAND**

Lindström has developed and produced high-precision cutters and pliers since 1856 - making us the oldest continuous producer of handtools in existence today. We have maintained our competitive edge through technical understanding, response to market needs, and commitment to advanced technology.

Some competitors have been able to implement one facet or another of the Lindström manufacturing process. Others have tried to copy the form, appearance and even the actual part numbers of Lindström tools. However, none has been able to successfully blend all the elements required to achieve the level of performance recognized as a true Lindström tool.

### Lindstrom Diagonal Cut Pliers #8140

This oval head, diagonal nose cutter #8140 is part of the 80 series of Lindstrom pliers/cutters.

### Lindstrom Micro-Bevel Pliers #8160

These short snipe nose plier with smooth jaws #7892 is part of the Supreme series of Lindstrom pliers.

### Lindstrom Micro-Bevel Pliers #8150

This precision diagonal cutter with an oval head #8150 is part of the Rx series of Lindstrom pliers/ cutters and is developed according to the scientific ERGO™ process.

P3-201 \$47.95

### Lindstrom Flush Cut Pliers: #8141

This oval head, diagonal nose cutter #8141 is part of the 80 series of Lindstrom pliers/cutters. P3-202 \$46.95

### Lindstrom Ultra Flush Pliers: #8142

This precision diagonal cutter #8142 is part of the 80 series of Lindstrom pliers/cutters.

### Lindstrom Supreme Micro-Bevel Flush Cutters #7190

This precision diagonal cutter #7190 has a micro-bevel, tapered head and is part of the Supreme series of Lindstrom pliers/cutters.

P3-214 \$51.49

### Lindstrom Supreme Long Chain Nose Pliers #7890

These short snipe nose plier with smooth jaws #7890 is part of the Supreme series of Lindstrom pliers P3-217 \$51.80

### Lindstrom Supreme Flat Nose Pliers #7490

These Flat nose pliers #7490 is part of the RX series of Lindstrom pliers. These pliers were developed according to the scientific ERGO™ process

P3-216 \$47.70

### Lindstrom RX Series Round Nose Pliers #RX7590

These precision round nose pliers #7590 is part of the RX series of Lindstrom pliers. These pliers were developed according to the scientific ERGO $^{\mathsf{TM}}$  process

P3-203 \$49.45

### Lindstrom RX Series Bent 60° Tip Smooth Jaw Pliers #RX7892

These short snipe nose plier with smooth jaws #RX7892 is part of the Supreme series of Lindstrom pliers

P3-209 \$51.80







### Stainless Steel Curved Nose Pliers

Made of high quality PVC and carbon steel for long time use. These pliers are well suited for repair jobs, computer maintenance, jewelry, and electronic components.

P3-103-R \$8.99



These chain nose pliers feature fine tips perfect for wire wrapping and metal forming.

### Stainless Steel Round Nose Pliers

The high carbon steel round nose pliers are great for wire wrapping, beading, jewelry watch repair and removing links from watch bands. Perfect for jewelers, beaders and crafters. It has foam grips and double leaf springs for ease of use.

P3-102-R \$8.99

### Side Cutter Pliers

These pliers are induction hardened and has a gentle coil-return spring. With semi-flush jaws it is excellent for fine cutting.

P3-002 \$8 99

### Slim Line Flat Nose German Pliers

These flat nose pliers have smooth jaws that taperat the tips. For holding and manipulating

P3-106 \$23.70

### Slim Line Flush End Cutters

Flush cutting edges for precision cutting of softer wire. Jaws are set at right angles for getting closer to work.

P3-108 \$31.80

### Stainless Steel Flat Nose Pliers

The perfect edge for creating sharp bends and right angles in wire; these pliers has prongs that grip flat objects and can also straighten bent wire.

P3-100-R \$8.99

### Flat Nose German Pliers

For straightening and holding, these pliers have straight, wide jaws.

P3-100 \$23.70

### Straight Nylon Jaw Pliers

No more rebuffing or refinishing surfaces on materials handled with these pliers. Made of polished stainless steel with PVC grips and box-joint construction for extra leverage.

P3-136 \$18.50

### **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.

P3-123 \$34.30



For closing and adjusting small bows, loops, rings, etc.

P3-125 \$60.30

### Heavy Duty Red Bench Cutter

Blades have been sharpened for better cutting. Cam action increases cutting power.

79-034 \$456.75

### Pliers / Cutters - Other

### Long Chain Nose Plier Serrated Jaw

These jaws are serrated, and taper at the tips. Ideal for bending, gripping, and manipulating wires.

P3-112 \$26.89

### Chain Nose Smooth Jaw Pliers

For straightening and holding, with smooth, wide jaws.

P3-101 \$23.70

### Chain Nose Pliers With Curved Tips

Comes complete with leaf springs, and jaws taper at the tips.

P3-103 \$23.70

### Round Nose Pliers

These round nose pliers have smooth jaws that taper to 1/32" (0.8mm).

P3-102 \$23.70

### Long Chain Nose Smooth Jaw Pliers

These smooth jaws taper at the tips, ideal for bending, gripping, and manipulating wires.

P3-111 \$23.70

### Wide Parallel Pliers

The jaws of parallel pliers open and close uniformly. They have a box joint movement, which is essential for closing prongs, channels, and any type of work evenly. Jaw Dimensions 1.2" x 0.24" 30mm x 6mm

P3-141 \$34.40

### Narrow Parallel Pliers

The jaws of parallel pliers open and close uniformly. They have a box joint movement, which is essential for closing prongs, channels, and any type of work evenly. Jaw Dimensions 1.2" x 0.075" 30mm x 2mm

P3-142 \$34.40

### Straight Blade Shears Without Spring

Made of ground and polished steel with PVC coated handles with no spring, these light-duty shears with fine tips are very practical for cutting thin gauge metal.

B8-400 \$19.45

### Bergeon Heavy-Duty Sprue Cutter

The pressure of this cutter is multiplied many times by the unique linkage that is built into the cutter

79-064 \$162.94

### Maxi-Shear Orange Super Flush Cutter

The Maxi Shear Flush Cutters feature a patented cutting action which means it is tough enough to cut sprues and precise enough to cut a human hair with a perfect flush cut.

P3-108-6R \$16.25

### Maxi-Shear Flush Cutter

The Maxi Shear Flush Cutters feature a patented cutting action which means it is tough enough to cut sprues and precise enough to cut a human hair with a perfect flush cut.

P3-224 \$12.25





















### **Polishing Stations**

Available in a variety of configurations, Romanoff offers several stand-up polishing stations. The double hood polishing system, single motor stations, combination polishing motor and split lap stations are available as well.

Made in USA. 110V or 220V Available.

	ITEM#	DIMENSIONS	CFM	POLISHING MOTOR	DUST COLLECTOR	PRICE
Α	87-008	48"W x 28"D x 56"H	1000	3/4 Horsepower	1 HP, 110V / 220V	\$2,345.00
В	87-009	24"W x 24"D x 48"H	400	3/4 Horsepower	3/4 HP 110V / 220V	\$1,457.89



### Romanoff E-Z View / E-Z Sand Blaster

The Romanoff manufactured E-Z View / E-Z Blaster features a one piece polymer cabinet which will never rust or leak, adjustable pressure regulator and gauge, will automatically recirculate blasting media, self-cleaning replaceable ceramic nozzle (extra's included), bright light for easy viewing, large access area & double filter bag to insure clean dust free working area, interior steel tray for laying your work out and a rubber stopper located at the bottom of the cabinet for fast and easy removal of the blasting media. 2 hand models are operated with a foot pedal.

Made in USA. Dimensions 14" H x 12" W x 14" D. Requires 80-90 psi.

	ITEM #	HANDS	VOLTAGE	PRICE
Α	48000-R	1	110V	\$389.85
Α	48010-R	1	220V	\$401.35
В	48000-R-2	2	110V	\$469.00
В	48010-R-2	2	220V	\$449.00



### Gold Saver Box

A unique item, the Gold Saver is equipped with a wire mesh rack allowing the grindings and fillings to fall into the sliding drawer below. A security lock and two keys are supplied with the unit to prevent pilferage. The exterior hood is finished in a blue hammertone.

ITEM#	DIMENSIONS	VOLTAGE	PRICE
87-029	16" H x 16" W x 16" D	110V	\$279.00



### Enclosed Hood Grinding & Polishing Box With Light

The Romanoff Grinding & Polishing Box is designed to be used with a hand-piece or polishing motor to trap all precious or harmful dust. The 3" rear hose inlet connects to a vacuum. The 12.5" x 8.5" flip-up window allows access to the lighted work chamber. The interior work chamber is illuminated by a light for optimal ease of use.

ITEM #	DIMENSIONS	VOLTAGE	PRICE
87-030	16" H x 14" W x 16" D	110V	\$289.00

### Donaldson Torit Vibra Shake Dust Collector

A self-cleaning collector for intermittent applications where high collection efficency is essential, such as reclaiming precious metals.

- Two-stage cartridge for high-efficiency filtration on both coarse and fine dusts.
- Compact, self-contained collector design allows placement flexibility and saves floor space.
- Preassembled for easy, low-cost installation no need for compressed air.
- Selection of inlet size and location for installation flexibility
- Recirculates filtered air saving heating and cooling costs.

## Vibra Shake cardridge filter features patented PleatlocTM corrugation that assures uniform pleat spacing for better self-cleaning and longer filter life.

- Filter screen captures coarse and fibrous particles.
- Submicron particulates pass through the filter screen and are trapped by the inner layer of media.
- Galvanized outer liner protects filter media.
- Easy filter changeout for quicker maintenance.

ITEM NUMBER	MODEL	NORMAL AIR FLOW	HORSE POWER	DIMENSIONS	NUMBER OF POLISHING HEADS
Z42-011	VS-550	550 CFM	1	24 3/4" X 30 3/4" X 52 1/4"	2
Z42-012	VS-1200	1200 CFM	3	24 3/4" X 30 3/4" X 62 1/4"	4 - 6
Z42-013	VS-1500	1500 CFM	5	24 3/4" X 30 3/4" X 68 1/4"	6 - 8
Z42-014	VS-3000	3000 CFM	7.5	51 3/8" X 33" X 75 1/4"	10 - 12



### **Table Top Dust Collectors**

Conveniently sized and surprisingly powerful, our table top dust collectors come in a variety of sizes. Choose from either a single spindle or double spindle design, both of which feature a 1/2HP motor. Large intake openings positioned behind the arbor shafts, so that even the largest size buff can be used. Dust, lint, polishing powders, filings, etc. are quickly removed from the air, thereby keeping your store or shop clean.

Made in USA. 110V or 220V Available.





F

ı	ITEM NUMBER	DIMENSIONS	CFM	POLISHING MOTOR	WEIGHT	PRICE
Α	87-004	13.25" x 18.5" x 9.75"	165	1/2 Horsepower	47lb	\$339.00
В	87-003B	32.5" x 22" x 12"	465	1/2 Horsepower	85lb	\$569.00



### **Enclosed Polishing Systems**

The Romanoff Single and Double Polishing System with 1/2 HP dust collector and silencer has an enclosed hood and 3/4 HP, 3,450 RPM polishing motor. 110V / 220V, 50/60 cycle.

ITEM#		DESCRIPTION	CFM	DIMENSIONS	PRICE
Α	87-024	Single Polishing System	400	24"W x 24"D x 48"H	\$1,795.00
В	87-025	Double Polishing System	400	48"W x 24"D x 48"H	\$1,979.00



## Cartridge Dust Collector

The Cartridge Dust Collector was designed to produce a strong suction and be placed into small spaces. These units have a round cartridge filter that can be easily removed and the filter has an extra outer spun filter to prolong it's life. These units can still produce suction up to 4-6 feet away with the proper hose. Both units have a built in muffler to reduce the



## Romanoff Bag Style **Dust Collectors**

Romanoff Bag Style Dust Collectors are reliable and low maintenance. They are available in 1 HP or 3 HP models. Each has a bag filtration system made of cotton sateen filters for maximum efficiency. All units have an upper silencer to minimize noise levels, built-in dust tray and manual foot pedal for filter cleaning.



## **Double Hood Polishing System**

Romanoff Deluxe Double Polishing System consists of a double spindle, 1/2 HP Polishing Motor with 1 HP Vacuum. This enclosed system captures particles down to 1/3 micron with 99% efficiency.

oise down to 59 Db.					7000. 101		.5.				
	ITEM#	HORSEF	POWER	CFM	AMPS	STATIONS	INLETS	DIMENSIONS (WxDxH)	APPROX. WEIGHT	VOLTAGE	PRICE
Α	87-012	1		830	12	1 - 2	2	14" x 28" x 16"	97lb	110V	\$1,395.00 ea
Α	87-0125	1		1100	15	3 - 4	4	18" x 29" x 21"	157lb	110V	\$1,522.00 ea
В	87-010 #60U	1/2	2	400	9	1 - 2	2	15" x 15" x 23.25"	80lb	110V	\$821.89 ea
В	87-010-220V	1/2	2	400	4.5	1 - 2	2	15" x 15" x 23.25"	80lb	220V	\$862.49 ea
С	Z42-009-H	1		1000	15	4 - 6	4	22.5" x 25" x 39"	280lb	110V	\$1,999.49 ea
С	Z42-009-R2	3		1300	20	4 - 6	6	28" x 28" x 61"	385lb	220V	\$2,879.00 ea
		мотор	\/AC					48" x 24" x 43"			
D	87-006	MOTOR 1/2	VAC.	1100	15			14" x 16" x 16" HOOD	247lb	110V	\$3,050.00 ea

## Replacement Filters, Bags and Hoses

		, 0		
ľ	TEM NUMBER	DESCRIPTION	DIMENSIONS	PRICE
Α	87-012-F	Romanoff 1HP, 830 CFM, Cartridge Filter	10.5" x 10"	\$206.56 ea
Α	87-0125-F	Romanoff 1HP, 1100 CFM, Cartridge Filter	10.5" x 10"	\$229.00 ea
В	Z42-011-1	Torit VS-550, 1 HP	16.6" x 10"	\$359.00 ea
В	Z42-012-1	Torit VS-1200, 3 HP	16.6" x 10"	\$462.90 ea
В	Z42-012-1R	Torit VS-1200 Generic, 3 HP	16" x 10"	\$274.80 ea
В	Z42-013-1	Torit VS-1500, 5 HP	16.6" x 26"	\$519.00 ea
В	Z42-013-1R	Torit VS-1500 Generic, 5 HP	16" x 26"	\$379.00 ea
В	Z42-012-RF	Torit Typhoon Universal, 3 HP, Cylinder Shape	17" x 18.5"	\$289.00 ea
	Z42-030-PF	Gold Tornado Filters, 3 HP & 7.5 HP Prefilter		\$194.70 ea
	Z42-030-1NF	Gold Tornado Filters, 3 HP Cone Shape	14" x 20" x 27.5"	\$583.70 ea

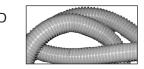
ľ	TEM NUMBER	DESCRIPTION	DIMENSIONS	QUANTITY	PRICE
С	Z42-366-1C	Torit #54, 1/2 HP	7 x 12"	24 Bags	\$316.40 ea
С	87-010A	Romanoff #60U, 1/2HP	12 x 6 1/4"	14 Bags	\$273.85 ea
С	Z42-009-1C	Romanoff & Torit #84, 3 HP	18 x 20"	30 Bags	\$528.70 ea
С	Z42-009-H2	Romanoff, 1 HP	19" x 9.5"	24 Bags	\$448.50 ea
	87-055-F	D/C Volkes RR6J, 5 HP	24 x 26"	18 Pockets	\$819.00 ea
	87-050F	Handler #101, 1 HP	17 1/4 x 11"	24 Bags	\$449.00 ea

ľ	TEM NUMBER	DESCRIPTION	PRICE
D	87-017	3" Grey Reinforced D/C Hose	\$10.30 each foot
	Z42-009-13	Dust Collector Filter Bag Insert Tool	\$54.61 ea











## Baldor Ramforce Polishing Motors

Known for their quality and heavy duty design. They require a tapered and threaded 5/8" spindle. The 3/4HP model is extremely powerful and runs at a low amperage. This heavyduty, high-base polishing motor is completely sealed and permanently lubricated for smooth, dependable operation over long hours of use. It has a rubber-mounted motor base and tapered and threaded shaft. Includes a tapered spindle that accommodates buffs from 4" to 8" in diameter. Spindle is not included.

## Right Hand 3/4HP Motor



\*Spindle not included



## 5/8" Right Hand Arbor & Flange, Screw-On Type

Used with rubber wheels and felt wheels with a 5/8" arbor hole.









ľ	ГЕМ #	DESCRIPTION	PRICE
Α	Z42-121	Baldor Right Hand ½HP Motor (110/220V,1PH)	\$489.00
Α	Z42-131	Baldor Right Hand ¾HP Motor (220/380V, 3PH)	\$439.00
Α	Z42-132	Baldor Left Hand ¾HP Motor (220/380V, 3PH)	\$439.00
В	Z42-121-R	Romanoff Right Hand ¾HP Motor (110/220V,1PH)	\$349.00
С	87-014A	5/8" Right Hand Arbor & Flange, Screw-On Type	\$33.95
D	87-0120	Adjustable Sta-Clean Shield/Fits any Hood, 6"W x 9"H x1/8"	\$26.95
Е	Z42-301	Romanoff Lighted Professional Polishing Hood 12 3/4"w x 16"d x 15"h - 110V	\$109.45
F	92-024	White Nylon MK Dental Brush Mandrel 3 3/8"L /85mm, Right Hand	\$10.55
G	92-113	Tapered Split Wood Mandrel for Sandpaper	\$2.07
Н	87-104R	5/8" Set Screw 4 1/4" / Tapered Right Hand Spindle	\$17.01
I	87-107R	5/8" Screw On 6" / Tapered Right Hand Spindle	\$20.25
I	87-107L	5/8" Screw On 6" / Tapered Left Hand Spindle	\$20.25

## Hi-Grade Platinum & Gold Polishing Compounds

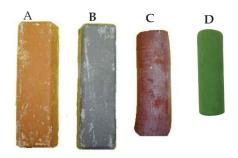


- A. Romanoff Platinum Greystar: Excellent for removing surface roughness and scratches during lapping. Can also be used as a mild tripoli platinum or stainless steel compound.
- B. Platinum First Cut: Considered the best compound for removing roughness and heavy
- C. White Gold First Cut: Unique tripoli style paste. It will quickly remove roughness and scratches from the metal surface and prepare it for the final polish.
- D. Platinum Lapping Compound: Absolutely the best lapping compound for platinum. Will not leave scratches.
- *E.* **Platinum Medium Cut:** Has an effect similar to what white diamond does for gold, which is to remove light scratches and blemishes from platinum.
- F. Romanoff Fine Cut: A finer cutting compound to remove hairline scratch marks and swirls. G. Romanoff Super Fine Polish: Guaranteed to out perform any other platinum polish on
- the market. Will not leave scrathches when used when used with a clean romanoff blue buff. Leaves a deep, high polish on your platinum pieces.
- H. Blue Picasso: Extremely popular polsihing compound used for the final polish on platinum
- I. White Gold Super Shine Compound: Excellent polishing compound that offers the highest luster on white gold. This paste will leave a deep rhodium finish without any scratches.
- J. Romanoff Wasabi: A new and unique polishing compound which produceds an excellent reflective surface on platinum, stainless steel, and titanium.
- K. Blue Magic: A safe and non-abrasive cream for all metal surfaces. It can be used with buffers and polishers to remove tarnish and oxidation and provide a lasting protective coating on brass, copper, silver aluminum, stainless steel, or gold
- L. SunKiss: The finest polishing compound available for removing scratches and producing a mirror finish on all precious metals with minimum effort.

	Item #	Description	Cut	Size	Qty 1-4	Qty 5+
Α	93-019-GREY	Platinum Greystar	500	350g	\$19.25	\$16.50
В	93-019-800	Platinum First Cut	800	420g	\$26.25	\$23.65
С	93-019-800W	White Gold First Cut	700	800g	\$18.90	\$17.05
D	93-019-1500	Platinum Lapping Compound	1500	420g	\$31.20	\$27.90
Е	93-019-2000	Platinum Medium Cut	2000	400g	\$32.50	\$29.25
F	93-019-4000	Platinum Medium / Fine Cut	4000	390g	\$32.50	\$29.25
G	93-019-8000	Platinum Super Shine Polish	8000	450g	\$33.60	\$30.20
Н	93-019-8000B	Platinum Blue Picasso Final Polish	8000	350g	\$17.80	\$16.10
I	93-019-8000W	White Gold Super Shine Polish	8000	350g	\$21.25	\$19.20
J	93-019-8000GP	Wasabi Green High Shine	9000	350g	\$28.19	\$26.25
K	93-020-BM1	Metal Polishing Compound	400	100g	\$11.50	\$9.75
L	93-019-8000SK	New Sunkiss Polishing Compound	8000	100g	\$26.25	\$24.20

### Water Soluble Polishing Compounds

New! Sunkiss!



All wazzter soluble polishing compounds are a water based material designed for easy breakdown and removal during ultrasonic and washout cycles. Sold Per Bar.

	Item #	Description	Size	Qty 1-4	Qty 5+
Α	93-002-WS	Tripoli	1 lb	\$2.89	\$2.61
В	93-004-WS	Greystar	1 lb	\$5.29	\$4.77
С	93-006-WS	Red Rouge	1 lb	\$5.94	\$5.35
D	93-011-WS	Green Rouge	1/4 lb	\$2.65	\$2.36

- A. Tripoli: An aggressive cuting compound to remove scratches and marks from all soft metals
- B. Greystar: Is a somewhat greasy compound, popular for lapping and surface cutting.
- C. Red Rouge: Used to produce a final high polish in yellow gold.
- D. Green Rouge: A chromium-based compound most commonly used for light cutting and final polishing of silver, white gold, stainless steel, palladium, and platinum.

#### Cocker Weber Brushes

Cocker Weber Brushes are made of pure Chungking bristle and a hard wood hub. They are offered in two qualities: Standard (red/green) and Superior (blue) A USA-made industry standard.

























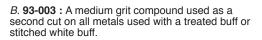


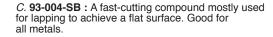
Item #	Quality	Style	Trim Hair	Rows	Hub Diameter	Qty 1-24	Qty 25-143	Qty 144+
89-113-BL	Red/Green	1C	3/8" (9.5mm)	1	1-7/8"	\$1.39	\$1.19	\$0.98
89-113	Blue	1C	3/8" (9.5mm)	1	1-7/8"	\$1.89	\$1.69	\$1.49
89-114-BL	Red/Green	1B	1/2" (12.7mm)	1	1-7/8"	\$1.39	\$1.19	\$0.98
89-114	Blue	1B	1/2" (12.7mm)	1	1-7/8"	\$1.89	\$1.69	\$1.49
89-115-BL	Red/Green	1A	5/8" (15.9mm)	1	1-7/8"	\$1.39	\$1.19	\$0.98
89-115	Blue	1A	5/8" (15.9mm)	1	1-7/8"	\$1.89	\$1.69	\$1.49
89-116-BL	Red/Green	2C	3/8" (9.5mm)	2	1-7/8"	\$1.69	\$1.19	\$1.35
89-116	Blue	2C	3/8" (9.5mm)	2	1-7/8"	\$2.49	\$1.69	\$1.99
89-117-BL	Red/Green	2B	1/2" (12.7mm)	2	1-7/8"	\$1.69	\$1.49	\$1.35
89-117	Blue	2B	1/2" (12.7mm)	2	1-7/8"	\$2.49	\$2.25	\$1.99
89-118-BL	Red/Green	2A	5/8" (15.9mm)	2	1-7/8"	\$1.89	\$1.69	\$1.49
89-118	Blue	2A	5/8" (15.9mm)	2	1-7/8"	\$2.89	\$2.49	\$2.19
89-1116	Blue	7A	5/8" (15.9mm)	3	1-1/4"	\$2.59	\$2.34	\$2.11
89-110	Blue	3A	5/8" (15.9mm)	3	1-7/8"	\$4.16	\$3.75	\$3.39
89-112	Blue	6A	5/8" (15.9mm)	2	1-1/4"	\$2.09	\$1.89	\$1.59
89-111	Blue	6C	3/8" (9.5mm)	2	1-1/4"	\$1.96	\$1.77	\$1.59
89-109	Blue	5C	3/8" (9.5mm)	1	1-1/4"	\$1.79	\$1.62	\$1.46

## Traditional Polishing Compounds

			BAR	PF	ICE PER B	AR
	ITEM #	DESCRIPTION	SIZE	1-9 LBS	10-49 LBS	50+ LBS
Α	93-002	Tripoli, 1st Cut	1 lb	\$3.59	\$3.25	\$2.95
В	93-003	White Diamond, 2nd Cut	1 lb	\$3.29	\$2.96	\$2.75
С	93-004-SB	GreyStar, 2nd Cut	1 lb	\$4.90	\$4.39	\$4.09
D	93-009-RND	Yellow Rouge, Final Polish	1/2 lb	\$2.59	\$2.45	\$2.30
Е	93-006-RND	Red Rouge, Final Polish	1 lb	\$6.00	\$5.80	\$5.29
F	93-011	Green Rouge, Final Polish	1/4 lb	\$2.94	\$2.69	\$2.45
F	93-011-1	Green Rouge, Final Polish	1 lb	\$12.00	\$11.40	\$10.85
G	93-005	Lea-C Compound	2 lb	\$15.10	\$13.79	\$12.50
Н	93-007	Fabulustre	1 lb	\$7.90	\$7.49	\$7.19
I	93-0120	Blue Rouge	2 lb	\$17.94	\$15.95	\$15.09

A. 93-002: Aggressive cutting action on all metals. The brown compound removes scratches and smoothes the surface. Used with a treated yellow buff or brush.





D. 93-009-RND: A slightly abrasive polishing compound designed to give a high lustre finish on all

E. 93-006-RND: Most popular rouge used for the final finish on gold, silver, brass, and all precious metals. F. 93-011-1: A chromium base compound

designed to give an extremely high lustre on gold, silver, chrome, stainless steel, white gold, and platinum. G. 93-005 : A moist compound

containing a fine grit to produce a satin finish, very popular for costume jewelry and gold plated jewelry.

H. 93-007: Designed to leave a high-lustre finish on all metals. Can also be used to remove scratches in plastic and fiberglass.

I. 93-0120: A excellent compound for light to medium scratch removal, as well as a high lustre on silver jewelry.



















#### **Yellow Muslin Buffs**

Yellow Buffs have been specially treated so that they are stiffer and will last two to three times longer than their white counterparts. They are well suited for first stage polishing with cutting compounds such as tripoli, white diamond, and greystar. They are an 80/86 weave with a leather center.

ITEM NUMBER	PLY	DIAMETER	ROWS OF STITCHING	QTY 1-5	QTY 6+
89-451-Y	16	1"	1	\$0.89 ea	\$0.85 ea
89-0844	30	4"	3	\$3.06 ea	\$2.95 ea
89-094	50	4"	3	\$3.84 ea	\$3.65 ea
89-095	50	5"	3	\$5.10 ea	\$4.86 ea
89-0953	60	5"	3	\$5.70 ea	\$5.42 ea
89-0955	30	5"	3	\$3.73 ea	\$3.55 ea
89-0954	20	5"	3	\$3.45 ea	\$3.25 ea
89-096	30	6"	4	\$5.25 ea	\$4.99 ea
89-097	50	6"	4	\$6.90 ea	\$6.55 ea
89-098	60	6"	4	\$7.74 ea	\$7.36 ea
89-100	60	7"	4	\$11.54 ea	\$11.00 ea



#### **White Muslin Buffs**

White Muslin Buffs are made of the finest quality cotton material. They have an 80/80 weave and leather center. They are most commonly used for final polishing with red, green, and other final finish polishing compounds.

ITEM NUMBER	PLY	DIAMETER	ROWS OF STITCHING	QTY 1-5	QTY 6+
89-450	16	7/8"	1	\$0.83 ea	\$0.79 ea
89-451	16	1"	1	\$0.89 ea	\$0.85 ea
89-451-2	16	1"	2	\$0.93 ea	\$0.89 ea
89-452	16	1-1/4"	3	\$0.97 ea	\$0.92 ea
89-454	16	2"	4	\$1.35 ea	\$1.29 ea
89-049	30	4"	1	\$2.30 ea	\$2.19 ea
89-050	30	4"	3	\$2.79 ea	\$2.66 ea
89-052	40	4"	3	\$3.09 ea	\$2.94 ea
89-053	50	4"	1	\$3.89 ea	\$3.70 ea
89-054	50	4"	3	\$3.15 ea	\$3.00 ea
89-056	60	4"	3	\$3.65 ea	\$3.47 ea
89-058	30	5"	3	\$3.90 ea	\$3.71 ea
89-059	40	5"	3	\$3.98 ea	\$3.79 ea
89-061	50	5"	3	\$4.65 ea	\$4.42 ea
89-062	60	5"	3	\$5.90 ea	\$5.61 ea
89-064	30	6"	3	\$4.89 ea	\$4.65 ea
89-067	50	6"	1	\$5.89 ea	\$5.60 ea
89-068	50	6"	4	\$5.19 ea	\$4.94 ea
89-070	60	6"	4	\$6.09 ea	\$5.79 ea



## Super Impregnated Buffs

Super Shine Blue Buffs are impregnated with polishing compound to ensure the highest possible luster on all metals especially platinum, silver and white gold. 3 rows of stitching.

ITEM NUMBER	DIAMETER	PLY	QTY 1-3	QTY 4+
89-064-BI	6"	25	\$27. 90	\$24.95



#### **Razor Edge Buffs**

The Romanoff Long Lasting Blue Buff is specially treated to give a uniform high shine on all metals, especially Platinum, White Gold, and Silver. The Yellow Buff is for the first cut and removal of the outer rough surface, prior to the final Polish. The White Buff is soft for the final finish. All razor edge buffs are 16 ply, stitched, and with a leather center.

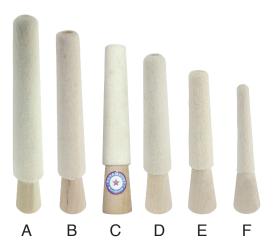
ITEM NUMBER	COLOR	DIAMETER	QTY 1-5	QTY 6+
89-084-B	Blue	6"	\$5.98 ea	\$5.09 ea
89-103-B	Blue	8"	\$10.89 ea	\$9.81 ea
89-078	White	4"	\$3.39 ea	\$3.22 ea
89-079	White	5"	\$3.49 ea	\$3.29 ea
89-080	White	6"	\$3.89 ea	\$3.54 ea
89-082	Yellow	4"	\$3.89 ea	\$3.54 ea
89-083	Yellow	5"	\$4.89 ea	\$4.54 ea
89-084	Yellow	6"	\$5.89 ea	\$5.50 ea



**Blue Hi-Shine Platinum Buffs** 

Romanoff's Blue Hi-Shine Buffs are specially treated to give a uniformly high shine on any metal, especially platinum and white gold. They will not leave drag marks or fine scratches. Since these buffs have been introduced, polishers can now easily achieve a finer polish in less time. All blue buffs are stitched with a leather shellac center.

ITEM NUMBER	PLY	DIAMETER	ROWS OF STITCHING	QTY 1-5	QTY 6+
89-054-B	50	4"	3	\$5.49 ea	\$5.09 ea
89-061-B	50	5"	3	\$7.09 ea	\$6.79 ea
89-064-B	30	6"	4	\$7.49 ea	\$6.90 ea
89-068-B	50	6"	4	\$7.89 ea	\$7.19 ea
89-070-B	60	6"	4	\$9.55 ea	\$8.90 ea



## Felt Inside Ring Buffs

Romanoff felt sticks are made from high grade wool felt, which is permanently mounted to a tapered wood mandrel. They can be used for cutting and polishing the inside of rings and curved surfaces with various polishing compounds. Felt sticks are placed onto a tapered spindle from a polishing motor.

	ITEM #	DIAMETER	LENGTH (FELT AREA ONLY)	FINGER SIZE	QTY 1-5	QTY 6+
Α	89-560	3/4" x 1-1/16"	6"	9 - 20	\$5.90 ea	\$5.19 ea
В	89-550	11/16" x 1"	5"	8 -17	\$4.35 ea	\$4.09 ea
С	89-530-P	5/8" x 7/8"	4" (Medium)	8 - 11	\$4.32 ea	\$4.09 ea
D	89-530	5/8" x 7/8"	4" (Firm)	8 - 11	\$3.05 ea	\$2.89 ea
Е	89-510	9/16" x 3/4"	3"	5 - 10	\$3.17 ea	\$2.97 ea
F	89-500	5/16" x 9/16"	3"	1 - 5	\$3.33 ea	\$3.09z ea



## Original MK Dental Brushes

Highest quality metal hub brushes provide you with the perfect brush for cleaning or polishing in hard-to-reach areas. Available in different hardness's to offer the ideal polishing application for your production needs. **Sold by the gross only, 144 pieces per box.** 

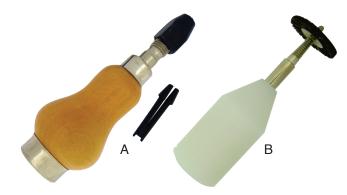
	ITEM #	DIAMETER	HARDNESS	TRIM LENGTH	QUANTITY 1-2	QUANTITY 3+
Α	89-147	1"	Soft	1/4"	\$87.70 ea	\$82.45 ea
В	89-146	3/4"	Soft	3/16"	\$73.55 ea	\$69.20 ea
С	89-145	5/8"	Soft	1/8"	\$81.19 ea	\$76.35 ea
D	89-151	1"	Medium	1/4"	\$82.40 ea	\$77.49 ea
Е	89-150	3/4"	Medium	3/16"	\$71.25 ea	\$66.98 ea
F	89-149	5/8"	Medium	1/8"	\$71.09 ea	\$66.85 ea
G	89-155	1"	Hard	1/4"	\$82.40 ea	\$77.49 ea
Н	89-154	3/4"	Hard	3/16"	\$71.09 ea	\$66.85 ea
I	89-153	5/8"	Hard	1/8"	\$71.09 ea	\$66.85 ea



#### Romanoff 2" Dental Brush

This 2" tightly packed bristle brush features a lead center, so that it will thread securely onto a tapered spindle. Unlike other dental brushes, this item is sold individually.

ITEM #	DIAMETER	HARDNESS	<b>QUANTITY 1-4</b>	QUANTITY 5+
89-174	2"	Hard	\$10.19	\$8.35



## Wooden Handy Chuck and MK Spindle

Base which attaches to polishing motor spindle.

ITE	M NUMBER	DESCRIPTION	PRICE
A	89-490	Handy Chuck with 2 Collets	\$5.09
В	92-024	Romanoff MK Right Hand Spindle	\$10.55

## Original MK End Brushes

Base which attaches to polishing motor spindle.



ı	ITEM NUMBER	BRISTLE	BRISTLE LENGTH	DIAMETER	PRICE
Α	89-124	ME-864 Hard	1/4"	3/16"	\$1.34 ea
В	89-125	ME-860 Hard	3/8"	3/16"	\$1.08 ea
С	89-126	ME-860 Hard	1/2"	3/16"	\$1.15 ea
D	89-127	ME-860 Hard	1/4"	5/32"	\$0.89 ea
Е	89-128	ME-860 Hard	3/8"	1/4"	\$2.63 ea
F	89-131	ME-961 Hard	9/16"	3/16"	\$2.73 ea
G	89-132	ME-860 Soft	1/4"	5/32"	\$2.09 ea
Н	89-133	ME-860 Soft	3/8"	1/4"	\$2.70 ea

## Paramount Split Lap Wheels

These high-quality split and beveled lapping wheels are the standard of excellence in split lap performance. Extra care in the manufacture of these wheels provides extra special results in quality polishing and in long lasting performance. Each wheel is balanced to ensure smooth performance. During manufacture, the felt is steamed to shrink and thicken the fibers, and then it is pressed into a specific hardness.



ITEM #	GRIT	# PER BOX	QUANT. 1-2	QUANT. 3+
89-0265	4" x 1/2"	Hard	\$32.40 ea	\$30.90 ea
89-0262	5" x 1/2"	Medium	\$48.50 ea	\$47.05 ea
89-026-5	5" x 1/2"	Hard	\$37.70 ea	\$35.85 ea
89-026-R	5" x 1/2"	Rock Hard	\$39.19 ea	\$37.25 ea
89-027	6" x 1/2"	Medium	\$35.10 ea	\$33.60 ea
89-028	6" x 1/2"	Hard	\$35.10 ea	\$33.60 ea
89-029	6" x 1/2"	Rock Hard	\$41.05 ea	\$38.95 ea
89-030	6" x 1/2"	Flint Hard	\$48.75 ea	\$46.80 ea

IT	EM#	GRIT	# PER BOX	QUANT. 1-2	QUANT. 3+
89-	-031	7" x 1/2"	Medium	\$44.25 ea	\$42.05 ea
89-	-032	7" x 1/2"	Hard	\$51.90 ea	\$49.85 ea
89-	-033	7" x 1/2"	Rock Hard	\$54.75 ea	\$53.40 ea
89-	-034	7" x 1/2"	Flint Hard	\$65.77 ea	\$63.35 ea
89-	-035	8" x 1/2"	Medium	\$51.50 ea	\$49.50 ea
89-	-036	8" x 1/2"	Hard	\$58.88 ea	\$56.90 ea
89-	-037	8" x 1/2"	Rock Hard	\$66.80 ea	\$66.10 ea
89-	-038	8" x 1/2"	Flint Hard	\$77.15 ea	\$74.10 ea

#### Paramount Blind Felt Wheels & GFX Wheels

**A. Felt Wheels:** Made of the finest wool felt available and tightly compressed. Holdstripoli or rouge for polishing and buffing 1/8" PH arbor hole.

**B. GFX Wheels:** Aluminum oxide abrasives combined with a blend of fiber and rubber bonding. These are used for grinding and cutting felt split laps.

**C. GFX Wheels:** Split and beveled for your split lapping needs. Because of the blended abrasives and fibers, it is popular for sprue grinding and fast cutting.





	ITEM #	COLOR	GRIT	# PER BOX	QTY 1-2	QTY 3+
Α	89-001	952	4"x 1/2"	Soft	\$10.45 ea	\$9.69 ea
Α	89-005	953	4"x 1/2"	Medium	\$15.15 ea	\$14.39 ea
Α	89-009	954	4" x 1/2"	Hard	\$16.70 ea	\$14.90 ea
Α	89-002	955	6"x 1/2"	Medium	\$21.70 ea	\$18.95 ea
Α	89-006	E	6"x 1/2"	Hard	\$33.15 ea	\$31.50 ea
Α	89-010	F	6"x 1/2"	Rock Hard	\$35.40 ea	\$33.65 ea
В	91-119-180	G	6"x 1/4" x 1/2"	180 Grit	\$34.90 ea	\$32.90 ea
С	91-119-80SB	Н	6"x 1/4" x 1/2"	80 Grit	\$40.35 ea	\$36.35 ea

#### Staonal Black Markers

Staonal Black Markers are used for blackening the top of split laps, therefore allowing the light to pass through easier and eliminating all reflection. Sold in box of 6.

ITEM #	DESCRIPTION	QTY. 1	QTY. 2+
89-000	Romanoff Black Marker	\$8.50 ea	\$7.65 ea

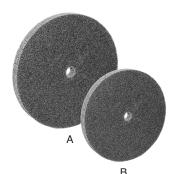


## Romanoff Split Lap Station

Split lapping is the best method for achieving a flat surface when polishing. The open grooves on the mounted split laps will allow light to passthrough, while the polisher is "lapping" the sides of te metal part. This 3450 RPM 1/2 horsepower ball bearing motor is built for professional use in a variety of tough applications. Features rugged iron base, on/off switch, 3" inlet for connection to dust collector, heavy duty steel hood, adjustable light socket and tapered spindle.

ITEM #	DESCRIPTION	PRICE
87-0265	110V Split Lap Station	\$395.00
87-0265A	220V Split Lap Station	\$419.00
87-104L-2	5/8" Set Screw, 6" Tapered Left Hand Spindle	\$18.83





## 3M Uinitized Deburring Wheels

This flap wheel is excellent for lite contouring satin finishes. Use the extra fine grade for removing oxides and creating patina, and popular for watchbands.

ITEM #	DENSITY	GRIT	DIMENSIONS	QTY BOX	QTY 1-2	QTY 3+
A 91-0567	2 SFN	Medium	6" x 1/2" x 1/2"	1 Each	\$39.40	\$37.10
A 91-0569	2 A	Med / Hard	6" x 1/2" x 1/2"	1 Each	\$39.40	\$37.10
B 91-0565-1	2 SFN	Medium	3" x 1/2" x 1/4"	1 Each	\$12.50	\$11.65
B 91-0565	2 SFN	Medium	3" x 1/2" x 1/4"	20 Per Box	\$211.25	\$190.13
C 91-311-VEN	2 SFN	Medium	1" x 1/2" x 1/16"	1 Each	\$3.90	\$3.44
D 91-0564	2 SFN	Medium	1" x 1/4" x 1/16"	100 Per Box	\$158.50	\$146.50





## 3M Lite Deburring & Finishing Wheels

3M Lite Deburring Wheels are long-lasting and will always give you a consistent finishing result. These wheels can be used for all precious metals, white metals, and zinc. They are used for cutting down of sprues, gates and flashing, and will give you excellent results in pre-finishing. 3M lite deburring wheels are a flexible open-web abrasive, impregnated with silicon carbide.

	ITEM#	DENSITY	GRIT	DESCRIPTION	QUANT. 1-2	QUANT. 3+
Α	91-0566-6S	6S	Coarse	3M Lite Deburring Wheel 6" x 1" x 1"	\$71.30	\$66.50
Α	91-0566-7S	7SFIN	Fine	3M Lite Deburring Wheel 6" x 1" x 1"	\$71.30	\$66.50
Α	91-0566-9S	8AMED	Coarse	3M Lite Deburring Wheel 6" x 1" x 1"	\$71.30	\$66.50
В	91-0566-ADP	N/A	N/A	Arbor Adapter Set	\$8.81	\$8.29



#### Cone-Loc Drum Sander and Metalite Cloth Rolls

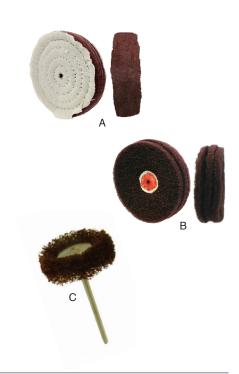
Cone-Loc Drum Sanders are heavy-duty aluminum wheels designed to hold abrasive emery cloth rolls. It measures 6" in diameter by 1-1/2" thick. It has a rubber cushion attached to the outer rim. It is an economical method for grinding and sanding metal. Norton Metalite Cloth Rolls are a longlasting abrasive cloth glue bonded with aluminum oxide. It measures 1-1/2" by 50 yards.

	ITEM #	DESCRIPTION	SIZE	QUANT. 1-2	QUANT. 3+
Α	87-013	Cone-Loc Drum Sander	6" x 1.5" W	\$204.50	\$197.65
В	91-007-60X	60 Grit Metalite Cloth Roll	1.5" x 50yds	\$42.85	\$38.60
В	91-029	80 Grit Metalite Cloth Roll	1.5" x 50yds	\$42.85	\$38.60
В	91-007-100J	100 Grit Metalite Cloth Roll	1.5" x 50yds	\$42.85	\$38.60
В	91-007-120	120 Grit Metalite Cloth Roll	1.5" x 50yds	\$42.85	\$38.60
В	91-007-180J	180 Grit Metalite Cloth Roll	1.5" x 50yds	\$42.85	\$38.60
В	91-007-240J	240 Grit Metalite Cloth Roll	1.5" x 50yds	\$42.85	\$38.60
С	87-014A	Arbor & Flange, 5/8" Screw-On, Right Hand 6	6" x 5/8" ID	\$33.95	\$29.80

#### Satin Wheels

These aluminum oxide fiber buffs are composed of a stiff, non-woven material. They will give you a rich satin finish. Popular on all metals. Available with leather center, stitched with and without cloth outer covering for longer life, or mounted onto 3/32" shank for handpieces.

	ITEM #	DESCRIPTION	SIZE	QUANT. 1-2	QUANT. 3+
Α	91-302	Satin Cloth Buff, Fine	4" x 2 ply	\$8.65	\$7.85
Α	91-301	Satin Cloth Buff, Medium	4" x 2 ply	\$8.65	\$7.85
Α	91-300	Satin Cloth Buff, Coarse	4" x 2 ply	\$8.65	\$7.85
В	91-302-S3	Satin Buff, Leather Center, Fine	4" x 3 ply	\$7.15	\$6.75
В	91-301-LC	Satin Buff, Leather Center, Medium	4" x 3 ply	\$7.15	\$6.75
В	91-299	Satin Buff, Leather Center, Medium	3" x 3 ply	\$7.15	\$6.75
С	91-301-MTD	Satin Buff, Mounted, 3/32" Shank, Fine		\$1.30	\$1.19



## Satin Finish Flap Wheels

This flap wheel is excellent for lite contouring satin finishes. Use the extra fine grade for removing oxides and creating patina, and popular for watchbands.

ITEM#	DIMENSIONS	GRADE	GRIT	QUANT. 1-2	QUANT. 3+
91-315	4" x 1" x 1/4"	Fine	180 - 220	\$18.30	\$16.70



#### **Cratex Rubber Abrasive Wheels**

Cratex rubberized abrasives are used for light deburring, smoothing and polishing with your flex shaft machine. They can be used on a wide range of materials such as metal, plastic, glass, and porcelain.

ITEM #	DIMENSIONS	GRIT	COLOR	QUANT. 1-2	QUANT. 3+
91-079-M	4" x 1/2" x 1/2"	Medium	Brown	\$31.30	\$28.17



#### **Dedeco Abrasive Wheels**

Dedeco's line of rubber flexies are popular for grinding and polishing gold, silver, and platinum. They have a 1/16" arbor hole. Maximum operating speed is 20,000 RPM.

DESCRIPTION		ТҮРЕ	QTY. 1-3	QTY 4+
91-091-5004	Blue 7/8" x 1/8" Square Edge	High Glazed Polishing and Finishing	\$26.65	\$24.75
91-091-5001	Green 7/8" x 1/8" Square Edge	Scratch Removal and Pre-Polishing	\$26.65	\$24.75
91-091-5000	Black 7/8" x 1/8" Square Edge	Polishing Hard Surface Metals	\$26.65	\$24.75
91-091-5029	White 5/8" x 1/16" Square Edge	Ultra Fine Polish, Soft & Flexible	\$33.35	\$30.95
91-091-5009	White 7/8" x 1/8" Square Edge	Ultra Fine Polish, Soft & Flexible	\$33.35	\$30.95
91-091-4980	White 7/8" Knife Edge	Ultra Fine Polish, Soft & Flexible	\$35.95	\$33.50
91-091-5007	Red 7/8" x 1/8" Square Edge	Soft & Flexible for Fine Polishing	\$31.80	\$30.90



#### Leather Finger Guards

The leather finger guard offers the best protection against heat, compounds and abrasives. Romanoff offers two styles of leather finger quards, open end as well as closed end. The leather finger guard features a flexible cloth back that grips as well as offers a comfortable fit.



Item #	Description	Qty 1-23	Qty 24+
92-029	Open End Leather Finger	\$0.79	\$0.72
92-030	030 Closed End Leather Finger		\$0.77

## Finger Guard Tape

Finger guard tape protects fingers, hands and wrists from the hazards of polishing, sharp edges, heat and abrasive materials. It is ideal for using in buffing, grinding and all types of benchwork when wearing gloves might prove awkward. Made of green surgical grade gauze coated with latex rubber, this finger guard tape is dry to the

touch and self-adhering (but only to itself, not to skin, hair or clothing). It is easy to use, lightweight, and comfortable. Each roll has OO' of O/A" wide tone

Finger Guard Tape

9	0 01 3/4	wide tape.			
	Item #	Description	Size	Qty 1-3	Qty 4+

## Inspection Gloves

80-170

These thin, 100% cotton inspection gloves are ideal for handling finished jewelry and preventing fingerprints or smudges after polishing. Available in two sizes. Sold per pair.





16 Rolls \$26.80 \$24.75

Item #	Description	Qty 1-71	Qty 72-143	Qty 144+
89-200	Ladies Inspection Gloves	\$0.59	\$0.56	\$0.47
89-201	Mens Inspection Gloves	\$0.62	\$0.59	\$0.49

## Safety Glasses

One piece polycarbonate lens, full side shield and full top shields offer protection sufficient for liquids and grinding dust particles.



Item #	Description	Qty 1-3	Qty 4+
Z42-815	Safety Glasses	\$4.35	\$3.95

## Leather Finger Cots

Protect your fingers during polishing with these form fitting, one-size-fits-all leather finger cots. Made from soft leather for a comfortable fit.



Item #	Description	Qty	Qty 1-2	Qty 3+
80-165	Leather Finger Cots	10/pk	\$7.22	\$6.60

## **Rubber Finger Guards**

These ventilated rubber finger guards provide a sure grip while protecting your fingers from heat, sharp objects, and abrasion during polishing or grinding. Available in four sizes. Sold per dozen.



Item #	Description	Qty 1-3	Qty 4+
80-160	Size 11 Small	\$5.51	\$4.69
80-161	Size 12 Medium	\$5.51	\$4.69
80-162	Size 13 Large	\$5.51	\$4.69
80-163	Size 14 Extra Large	\$5.51	\$4.69

#### Nitrile & Latex Gloves

Blue Nitrile Gloves are heavy-duty and long lasting, non-latex gloves (for latex sensitivity). Along with our beige latex gloves (powder free), both are resistant to most substances, provide support, conform to the users hand, and reduce hand fatigue. 100/box.



	Item #	Description	Qty 1-3	Qty 4+
Α	80-102-S	Small Beige Latex Gloves	16.50	14.65
В	89-102-MN	Medium Blue Nitrile Gloves	18.50	16.65
В	80-102-N	Large Blue Nitrile Gloves	18.50	16.65

## 2 Hour Epoxy Ronded Glue

This two-p gems and will harder

Lpoxy borided Gide	330
part clear glue is used to bond I pearls to metal findings and In in two hours	330 mm
II III two Hours	

Item # Description		Qty 1-2	Qty 3+
C3-100-EPOXY	Clear Epoxy 1/2 oz	\$6.50	\$5.85

## 5 Minute Epoxy

This epoxy adhesive is a high-stress, two-part glue, which works well on metal, wood, glass, and ceramics. Will produce a high quality bond in five minutes. Sold in two half ounce tubes.



Item #	Description	Qty 1-2	Qty 3+
C3-100-5MIN	5 Minute Epoxy	\$5.95	\$5.29

## **Plating Accessories**



Qty 1-2 Qty 3+

\$668.33

\$23.75

\$164.50

\$56.05

\$24.70

\$46.55

\$14.25

\$34.20

\$20.90

\$57.35

\$47.50

\$689.00

\$173.35

\$25.85

\$59.95

\$26.00

\$49.00

\$14.95

\$36.76

\$21.99

\$60.35

## Pen Plating Felt Tips

Pen plating tips can be used with all concentrated pen solutions. Their solid, compact fiber material can be used as-is or shaped for each application.

	_		
Α	80-015	Blunt Felt Tip - 5 Pack	\$3.95
В	80-016T	Pointed Felt Tip - 3 Pack	\$3.29
С	80-016T-MA	Deluxe Orange Tip with Superior Absorption - 3 Pack	\$4.39



Copper Wire - 1lb Roll

В

Item #	Gauge	Millimeter	Price
80-058-6	6 ga.	4.12	\$19.85
80-058-8	8 ga.	3.20	\$19.85
80-058-14	14 ga.	1.63	\$19.85
80-058-16	16 ga.	1.20	\$19.85
80-058-18	18 ga.	1.02	\$19.85
80-058-20	20 ga.	0.81	\$19.85
80-058-22	22 ga.	0.64	\$19.85
80-058-24	24 ga.	0.51	\$19.85
80-058-26	26 ga.	0.40	\$19.85
80-058-28	28 ga.	0.32	\$19.85



Item #

A 80-014

B 80-104-J

C 80-014-PEN

D 80-014-BLK

E 80-014-BC

F 80-016-R

G 80-0560

H 80-014-R

I 80-0875-ELEC

K Z49-735-13X

J 80-202-ELECTRIC

Stainless Steel Plating Tanks & Stainless Steel Covers

Description

Weiland Rhodinette Kit 110/220V

Weiland Rhodinette Kit - 1.5oz Jar

Weiland Rhodinette - Red Pen

Weiland Rhodinette - Black Clip

Tiva Clean Electro-Cleaner - 1lb Jar

Oakite #90 Electro-Cleaner - 5lb Can

Circular Rhodium Paper 12" Dia. - 100Box \$49.95

Rhodinette Black Clip Pen

Blue Stop-Off Plating Pen

Single Electric Burner - 110V

Red Rhodium Pen

Tank #	Diameter	Capacity	Price	Cover #	Price
80-039	4-9/16" x 5-3/4"	1.25 qts	\$19.30 ea	80-039A	\$2.30 ea
80-040	5-3/8" x 6-5/8"	2 qts	\$23.60 ea	80-040A	\$2.79 ea
80-041	6-1/2" x 7"	3.25 qts	\$24.20 ea	80-041A	\$3.09 ea
80-042	7-3/8" x 7-7/8"	4.75 qts	\$29.81 ea	80-042A	\$3.89 ea
80-043	8" x 8-3/4"	6.125 qts	\$36.40 ea	80-043A	\$3.15 ea
80-045	9-5/8"x11"	12 qts	\$54.10 ea	80-045A	\$3.90 ea



**Pyrex Beakers** 

Capacity	Price
600 ml	\$14.90
1,000 ml	\$22.95
2,000 ml	\$55.24
3,000 ml	\$66.10
	600 ml 1,000 ml 2,000 ml



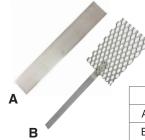




## **Plating Solutions**

Romanoff bath plating solutions are carefully formulated to give you consistent results in your plating efforts. Plating solutions are generally used in stainless steel or Pyrex containers. Out Plating solutions are available in concentrate pen, bath and RTU (1 quart = 0.95L). Our rhodium plating solutions (2 grams of rhodium) will produce a brilliant white, tarnish-resistant, hard metal coating. Our European-produced bath rhodium has a high deposition capacity, good covering speed, and is abrasion resistant. Our gold electroplating solutions contain one (1) pennyweight of pure gold per quart and leaves a bright gold electroplate finish.

80-001	24kt Yellow Gold Bath Plating Solutions (RTU)	1 Quart	\$153.00
80-003-DG	Double Green Plating Solution (RTU)	1 Quart	\$179.00
80-005	14kt Yellow Gold Bath Plating Solutions (RTU)	1 Quart	\$179.00
80-005-P	14kt Rose Gold Bath Plating Solutions (RTU)	1 Quart	\$179.00
80-006	18kt Yellow Gold Bath Plating Solutions (RTU)	1 Quart	\$179.00
80-012	Bright Nickel Bath Plating Solutions (RTU)	1 Quart	\$39.50
Z49-677-2	Rhodium Bath Plating Solution (RTU)	1 Quart	\$179.00
Z49-667-2	Rhodium Bath Plating Starter Concentrate - 2 Gr.	4 oz.	\$179.00
Z49-674-2	Rhodium Bath Plating Replenisher Concentrate - 2 Gr.	4 oz.	\$179.00
Z49-674-2	Rhodium Bath Replenisher Concentrate - 2 Gr.	4 oz.	\$179.00
Z49-673-2C	Rhodium Pen Plating Solution (RTU) - 2 Gr.	4 oz.	\$179.00
Z49-674-EURO	European Rhodium Bath Plating Concentrate - 2 Gr.	4 oz.	\$389.00
	80-003-DG 80-005 80-005-P 80-006 80-012 Z49-677-2 Z49-667-2 Z49-674-2 Z49-674-2 Z49-673-2C	80-003-DG Double Green Plating Solution (RTU) 80-005 14kt Yellow Gold Bath Plating Solutions (RTU) 80-005-P 14kt Rose Gold Bath Plating Solutions (RTU) 80-006 18kt Yellow Gold Bath Plating Solutions (RTU) 80-012 Bright Nickel Bath Plating Solutions (RTU) Z49-677-2 Rhodium Bath Plating Solution (RTU) Z49-667-2 Rhodium Bath Plating Starter Concentrate - 2 Gr. Z49-674-2 Rhodium Bath Plating Replenisher Concentrate - 2 Gr. Z49-674-2 Rhodium Bath Replenisher Concentrate - 2 Gr. Rhodium Bath Replenisher Concentrate - 2 Gr. Rhodium Pen Plating Solution (RTU) - 2 Gr.	80-003-DGDouble Green Plating Solution (RTU)1 Quart80-00514kt Yellow Gold Bath Plating Solutions (RTU)1 Quart80-005-P14kt Rose Gold Bath Plating Solutions (RTU)1 Quart80-00618kt Yellow Gold Bath Plating Solutions (RTU)1 Quart80-012Bright Nickel Bath Plating Solutions (RTU)1 QuartZ49-677-2Rhodium Bath Plating Solution (RTU)1 QuartZ49-667-2Rhodium Bath Plating Starter Concentrate - 2 Gr.4 oz.Z49-674-2Rhodium Bath Plating Replenisher Concentrate - 2 Gr.4 oz.Z49-674-2Rhodium Bath Replenisher Concentrate - 2 Gr.4 oz.Z49-673-2CRhodium Pen Plating Solution (RTU) - 2 Gr.4 oz.



## Romanoff Plating Anodes

Stainless steel insoluble anodes are used for gold plating. Platinized titanium soluble anodes are used for rhodium plating applications and assist in replenishing the working solution.

	Item #	Anode Type	Size	Application	Price
Α	80-216	Stainless Steel	1" x 4"	Gold	\$19.00
В	80-220	Platinized Titanium	2" x 3"	Rhodium	\$94.50



## Instant Silver Dip Cleaner

Quality cleaner used to remove tarnish from silver surfaces can be treayed with a cloth or brush, and then rinsed immediately under running water and dried.

80-021	Instant Silver Dip	\$14.95
00-021	Cleaner, 16 Fl. oz.	φ14.95



# Liver of Sulpher

When dissolved in warm water, this product will permanently plate an antique, dark finish on silver and copper surfaces. The solution can be used in Pyrex beakers or stainless steel containers and will turn silver from brown to blue to green to light gray and then finally black depending on how long the item is left in the solution. The outside raised surfaces can be buffed for a bright shine while leaving the recessed background a dark antique look.

80-021	Liver of Sulpher, 8 oz. Jar	\$24.00
80-021	Liver of Sulpher, 8 oz. Jar	\$24.00



## Heavy Duty Plater & Stripper

The Romanoff heavy-duty rectifiers are designed to give a steady, direct current to your plating, stripping and electroplating applications. Includes cables.

Item #	Description	Specs	Price
80-024	Heavy Duty Rectifier	110 V / 30 Amp	\$387.78
80-212	Set Of 4' Rectifier Plating Cables	3 ft	\$22.38



## Bringing you high quality capabilities with the Roma series.

The Roma plater series is capable of all sorts of plating such as gold, silver, rhodium, nickel, copper, and electrolytic degreasing.

Each model comes with a built in rectifier and heater. The medium and large units have a lighted exhaust filter attatched directly above the plating area. Large comes with an adjustable agitator.



B. Medium Roma-Plater 80-520

C. Large Roma-Plater 80-525

	ITEM#	PLATING VOLTS	PLATING AMPS	# OF TANKS	TANK SIZE	VOLTAGE	MACHINE DIMENSIONS (WXDXH)	PRICE
Α.	80-515	1.5 - 12	5	3	0.6 Liters	110V	220mm x 320mm x 220mm	\$799.95
В.	80-520	0 -15	10	3	1 Liter	110V	350mm x 350mm x 700mm	\$1,595.00
C.	80-525	0 -15	15	4	2 Liters	110V	650mm x 370mm x 400mm	\$1,995.00

#### **ROMANOFF MAGNETIC TUMBLERS**

SMALL, MEDIUM AND LARGE - THE SIZE YOU NEED

Romanoff Magnetic Tumblers eliminate the use of harmful bombing chemicals, remove oxidation, and will brighten and polish your pieces in less time than other conventional tumblers. Magnetic tumbling reduces finishing time without removing metal. It's a must for stone-in-place castings, filigree, and other impossible to reach places. 220V available Made in USA.

## BONUS KIT: INCLUDED WITH ALL TUMBLERS



- Stainless Steel Pins
- Magic Blue Liquid Soap
  Tumbling Powder Soap
- Acrylic Bowl

ITEM NUMBER	BOWL CAPACITY	<b>BOWL DIAMETER</b>	OVERALL DIMENSIONS	WEIGHT
82-268-USA	5 - 10 Rings	5.25"	7" x 7" x 10.5"	19 lbs
82-270-USA	85 - 100 Rings	8.5"	12" x 12" x 15.5"	61 lbs
82-277-USA	250 - 300 Rings	11"	16" x 16" x 15"	91 lbs

## Mini-Magnetic Tumber



Mini-Magnetic Tumber

82-268-USA *\$695.00* 82-268A-USA *\$719.00* 

A little workhorse. It features a 60 minute timer, variable speed control up to 2,000 RPM, a power indicator light, and protective fuse.

## ROMANOFF Medium-Magnetic Tumber



Medium-Magnetic Tumbler

82-270-USA *\$1,595.00* 82-270A-USA *\$1,709.00* 

Designed for the busy jewelry store or small manufacturer. It features a 60 minute timer, single speed of 2,800 RPM, a power indicator light, and protective fuse.

## ROMANOFF Large - Magnetic tumber



Large - Magnetic tumber

82-277-USA **\$2,895.00** 82-277A-USA **\$2,985.00** 

A heavy-duty, well-built tumbler. It is designed to produce a high polish in a short period of time. It features an automatic auto-reverse function, useful when tumbling large quantities to ensure a uniform finish on both sides of the product. Features a 60 minute timer, variable speed control up to 3,200 RPM, a power indicator light, and protective fuse.



#### Magnetic Media Separator Extra Large Barrel Design

This separator eliminates the tedious separation of parts from media. This separator can even be placed into water to separate parts. There is no need to drain the water, as the separator will not rust. It's so easy to use, just place the head piece over the pins to pick them up and then pull the trigger to release them.

82-273-G1 Magnetic Media Separator \$127.95



## Magnetic Tumbling Pins

Our magnetic pins and spheres are made of the highest quality stainless steel. Our pins have polished ends as opposed to lower priced cut wire which will scratch the surfaces of jewelry. They are produced in Japan and will outlast all other similar media. *Sold in 250g Bottle*.

ITEM NUMBER	SIZE	PRICE
82-273	0.5mm X 5mm	\$49.00
82-2733-4	0.4mm X 5mm	\$54.50
82-2733	0.3mm X 5mm	\$63.00
82-2733-2	0.2mm X 5mm	\$159.60
82-2733-3	2.3 mm Spheres	\$159.60

## Pro Evo Table Top Laser

#### The Most Advanced Bench Top Lazer Welding Systems To Match Any Pocket Book

The Romanoff line of Table Top Lasers, are the most cost effective lasers available. They out perform larger welders and are simple to operate with it's "Plug & Go Styling". With little effort, superior laser welds on gold, platinum, titanium, stainless steel and silver are easily achievable. Leica optics and a maintenance free stereo microscope, simple joystick control. The EVO 120 Joule is recommended for continuous silver welding applications.

#### What Is Laser Welding?

Laser Welding is the fusing of metals using light as the energy source. Laser is the acronym meaning "Light Amplification by the Stimulated Emission of Radiation." Use of a beam of light (1064 nm wavelength) will fuse metals together, almost instantaneously.



#### What Are The Benefits Of Laser Welding?

Laser welders allow the user to assemble or repair jewelry, or any metal items, quickly, and efficiently. The heat zone is very minute, allowing you to apply heat in areas you normally wouldn't with a torch, near gemstones, springs, enamels, antiques, etc. The weld is three times stronger than solder, and there is no fire scale, boraxing or pickling. Preparation of work is minimal and clean up can be done with a rubber wheel and an ultrasonic. Jewelers are at least 50% more productive with a laser welder.

	Pro Evo Table Top Laser LZ-5500	Pro Evo Table Top Laser LZ-5125	Pro Evo Laser With Camera LZ-5130	Pro Evo Laser With Camera 79-500-d3
Power Supply	Power Supply Single Phase 115 - 230 V-15A		Single Phase 115 - 230 V-15A	Single Phase 115 - 230 V-15A
Max Pulse Power	100j / 20mS	125j / 25mS	100j / 20mS	125j / 25mS
Peak Pulse Power	4.8KW	5KW	4.8KW	5KW
Average Power	Average Power 55W		55W	60W
Frequency Range 0.5Hz - 15Hz		0.5Hz - 15Hz	0.5Hz - 15Hz	0.5Hz - 15Hz
Spot Size	0.3mm - 1.5mm	0.3mm - 1.5mm	0.3mm - 1.5mm	0.3mm - 1.5mm
Memory Stations	32	32	32	32
Preset Pulse Shaping	5	5	5	5
Optics	Leica 10X Stereo Microscope	Leica 10X Stereo Microscope	Leica 10X Stereo Microscope	Leica 10X Stereo Microscope
Dimensions (WxDxH)	20" x 27" x 14"	20" x 27" x 14"	20" x 27" x 14"	20" x 27" x 14"
Weight	32Kg	32Kg	32Kg	32Kg
Warranty	1 Year / 2,000,000 Shot	1 Year / 2,000,000 Shot	1 Year / 2,000,000 Shot	1 Year / 2,000,000 Shot



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#### HydroFlux Welder Torch System

The HydroFlux Welder is an oxygen-hydrogen generator that operates by converting distilled water into fueled gas. The HydroFlux Welder creates gas on a demand basis. The eight hypodermic needles will produce a pinpoint flame to a broad flame for different soldering applications. The pure high heat of up to 4850°F (2677°C) can solder platinum easily. Can be used with two torches simultaneously. Popular for locations that do not permit bottled gas. Made in USA. 220v Available.

System Includes: Torch, 8 pc needle torch tip set, flux, electolyte solution and cotton.

\$1,285.00

\$109.00

\$49.95

\$33.50

T0-102 Hydroflux Welder Torch System - 110v T0-103-AT Optional Second Torch with 4ft Hose T0-103-F Blue Alcohol Flux Solution - 1L T0-103-EL Clear Electrolyte Solution - 1L



## Smith Little Torch Starter Kit Ideal for Jewelry Repair and Manufacturing

The Smith Little Torch has unmatched flexibility that produces a pin-point flame from the size of a pin-head to a flame large enough to cast up to 3 ounces of gold or silver. Oxygen and Natural gas. Made in USA.

T0-107 Smith Little Torch Starter Kit Includes: 5 different size copper tips and 8 ft of hose. *\$144.95* 





This style torch has convenient finger tip control valves and a selection of tips, allowing the jeweler to select a pinpoint or a large brush flame. Overall length is 9" and requires a 1/4" hose.

	ITEM #	GAS TYPE	TIPS	PRICE
Α	T0-100	Oxygen & Natural Gas	3	\$42.50
Α	T0-101	Oxygen & LP Gas	4	\$42.50
В	T0-105	Hoke Adapter Kits	6	\$22.30
	Z28-506-1	#1 Hoke Tip (Small)	1	\$4.90
	Z28-506-2	#2 Hoke Tip (Medium)	1	\$4.90
	Z28-506-3	#3 Hoke Tip (Large)	1	\$4.90

#### ROMANOFF

## Pickle-Safe Compound



Romanoff Pickle-Safe is a dry compound for cleaning and removing surface oxidation from gold, silver, copper, and other non-ferrous metals. Produces a clean, bright surface without affecting the tolerance of the metal. Works well at room temperature, and best at 140°F

80-099 5lb. Canister - Pickle-Safe Compound *\$11.50* 

80-099D 50lb. Box - Pickle-Safe Compound *\$95.00* 

#### ROMANOFE

#### Third Hand Tweezers With Base

Third hand tweezers, which are mounted onto a heavy base, allow the jeweler more flexibility when soldering. The convenient cross locking 6.5" tweezers will close when released.

ITEM NUMBER	DESCRIPTION	PRICE	QTY 2+
H4 -1105	Round Base w/ Tweezer	\$9.50	\$8.29



#### ROMANOFF

#### Pickle Pots

Pickle pots are used to safely heat pickle solutions. The heated solutions are used for removing fire scale and oxidation from gold, silver, brass, and most non-ferrous metals. The units include a plastic basket for holding pieces and have a red indicator power light. It has a preset temperature of 140°F (60°C). to prevent damage to your pickle pot, never use the unit with less than 80% liquid capacity. 110v Made in USA.

ITEM NUMBER POT DIM. ID X DEPTH		CAPACITY PRICE		REPLACEMENT BASKET	PRICE
80-150	3" x 4"	12 oz.	\$194.20	80-150B	\$17.50



Oxygen generators are a safe and reliable 1-part system for producing oxygen for soldering, melting, and brazing without the need of compressed air tanks. The AirSep system will separate oxygen and nitrogen from the atmosphere as compressed air is passed through a system of filters, allowing oxygen to pass through. Equipped with their own air compressors, these generators require no special installation. Simply connect the oxygen outlet to your oxygendistribution system and the power cord to a grounded electrical outlet. Just turn the unit on and setyour oxygen delivery flow gauge, and the unit will generate up to 93% nominal purity of oxygen.

#### AirSep Onyx Oxygen Generators ONYX SERIES - ONYX, ONYX PLUS, & ONYX ULTRA

Specifically designed for reliability, energy efficiency, and ease-of-use, there are thousands of Onyx PSA Oxygen Generators currently in use throughout the world.

#### FEATURES...

- Low noise level
- Delivers up to a 95.5% oxygen concentration
- Self-contained (internal air compressor)

High-impact polystyrene enclosure

- Transportable roller base design
- Advanced Engineering
- Easy to install and maintain
- Low operating cost
- Time-proven reliability



ITEM NUMBER	OPERATORS W/ HOKE #3 TIPS	OXYGEN FLOW	OXYGEN PRESSURE	LBS	DIMENSIONS	PRICE
79-017-ONYX	3	6 LPM (12 SCFH)	9 PSI (62 kPa)	51	16" x 15" x 29"	\$1,379.00
79-017-ONYX+	6	8 LPM (17 SCFH)	20 PSI (138 kPa)	54	16" x 15" x 29"	\$2,087.00
79-017-ONYXULTRA	9	10 LPM (21 SCFH)	20 PSI (138 kPa)	56	16" x 15" x 29"	\$2,193.00

## AirSep Topaz Oxygen Generators (Wall Mounted)

Specifically designed for reliability, energy efficiency, and ease-of-use, there are thousands of Topaz PSA Oxygen Generators currently in use throughout the world. The Topaz's ability to deliver up to 95.5% oxygen concentration make it a great fit for a wide range of commercial applications.

#### FEATURES...

- Self-contained (includes air compressor)
- Heavy duty metal enclosure
- Wall or rack-mount design
- Advanced Engineering
- Ozone/high temperature process tubing
   Outlet release fittings for ages of maintenance
- Quick release fittings for ease of maintenance
- Optional oxygen concentration monitor



ITEM NUMBER	OPERATORS W/ HOKE #3 TIPS	OXYGEN FLOW	OXYGEN PRESSURE	LBS	DIMENSIONS	PRICE
79-017-12	3	6 LPM (12 SCFH)	9 PSI (62 kPa)	53	19" x 10" x 27"	\$1,956.00

#### **AirSep Dual Topaz Plus**

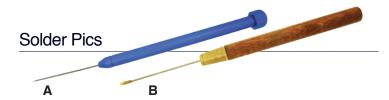
Specifically designed for reliability, energy efficiency, and ease-of-use, there are thousands of Topaz PSA Oxygen Generators currently in use throughout the world. Generating up to 18 LPM (38 SCFH) in a compact package, at up to 95.5% oxygen concentration, the Dual Topaz Plus is a great fit for a wide range of commercial applications.

#### FEATURES...

- Self-contained (includes air compressors)
- Heavy duty metal enclosure
- Tank-mount design
- Advanced engineering
- Ozone/high temperature process tubing
- Quick release fittings for ease of maintenance



ITEM NUMBER	OPERATORS W/ HOKE #3 TIPS	OXYGEN FLOW	OXYGEN PRESSURE	LBS	DIMENSIONS	PRICE
79-017-DPLUS	30	18 LPM (38 SCFH)	20 PSI (138 kPa)	265	40" x 19" x 27"	\$7,819.00



Item #		Size	Description	Price
A	H4-135	6 1/2"	Non-sticking tungsten and titanium tips are used to prevent solder from adhering. Will not contaminate gold or silver	\$7.00
В	H4-136	6 1/2"	Tungsten Solder Pic For Platinum, Palladium, & Stainless Steel	\$7.00

#### Charcoal Solder Block

Chemically prepared for soldering. When under flame, the charcoal glows and reflects heat back to the work, making the flame more effective. Easily punctured to hold work.



Item #	Size	Price	
42-250	4 3/4" x 3" x 1 1/2"	\$12.60	
42-251	7" x 4" x 1 1/2"	\$23.95	

#### **Transite Solder Board**

This soldering board is durable smooth, heat reflective, and so hard that it will not flake. Will withstand temperatures up to 2,500°F (1,371°C).



Item # Size		Price
42-257	6" x 12" x 1/2"	\$19.00
42-258-TR	12" x 12" x 1/2"	\$35.60

#### Ceramic Solder Board With Feet

These soldering boards are flat with rubber feet to prevent sliding on the bench. Cleaned easily with water. Can be used up to 2500°F (1371°C).



Item #	Size	Price
42-501	6" x 6" x 1/2"	\$11.15
42-258	6" x 12" x 1/2"	\$16.95
42-502	12" x 12" x 1/2"	\$23.90

## Soldering Safety Glasses

The high-quality cobalt-blue lens platinum flip-up glasses will protect your eyes from the glare during soldering. Prescription lenses can easily be installed into the eyeglass frame.

Item # Description		Price
G3-304	Platinum Flip Up Eye Glasses	\$89.00

## HoneyComb Solder Board

A ceramic block with fine pores to accelerate the heat loss from parts being soldered. The holes may be used to retain fine parts, or used as interpoints. Will withstand temperatures up to 2,000°F (1,093°C)



Item #	Size	Price	
42-252	3 3/4" x 5 1/2" x 1/2"	\$7.95	
42-253	5 1/2" x 7 3/4" x 1/2"	\$15.59	

#### Ceramic Solder Board & Grooves

Flat on one side with grooves on the opposite side. Grooves are great for separating small parts, positioning chains, and holding other long objects. Will withstand temperatures up to 2000°F / 1093°C.



Item # Description		Price
42-258-TR	7 1/2" x 7 1/4" x 1"	\$29.60

#### Platinum Solder Board

Great for high temperature soldering, free of any contaminants, and can be used up to 2,642°F (1,450°C).

Item #	Size	Price
42-313	4" x 4" x 1/2"	\$25.55
42-313-WESGO	4" x 4" x 3/8"	\$106.50

#### Romarite Soft Solder Board

Firm enough for strength and heat resistant, but also soft enough to push pins in.

Item #	Description	Price
42-500-R	12" x 6" x 1/2"	\$14.75

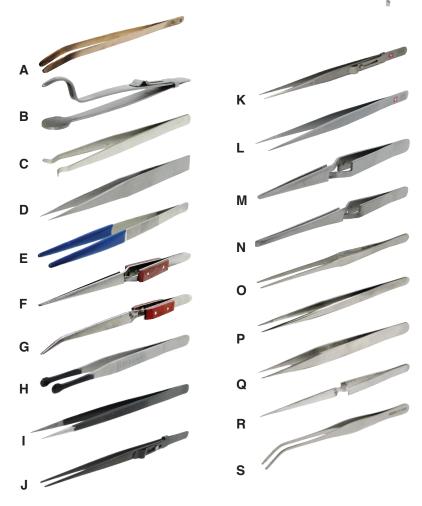
### **Tweezers**

- A. T3-128 Copper Tongs: Designed with curved tips for lifting objects from pickling and other acid-type solutions.
- B. T3-398 Head & Shank Tweezers: These locking tweezers enable you to position the ring shank and settings for soldering. The curved jaw has a groove to hold the shank secure, while the flat jaw is serrated to prevent movement.
- C. T3-108 Ring Set Soldering Tweezers : Are used for soldering ring shanks together from the inside quickly and easily.
- D. T3-121 AA Small Parts Tweezers: One of the most common tweezers found on the jeweler's bench, popular for assembly, inspection, sorting, soldering, etc.
- E. 80-226-HD Rubber Coated Steam Tweezers : Used for holding jewelry while steaming and rinsing in an ultrasonic without marring the surface.
- F. T3-100 Straight Locking Tweezers: These tweezers have heat resistant grips and self-locking jaws. The long tapered shank tips have plain, blunt
- G. T3-101 Curved Cross-Locking Tweezers : These tweezers has heat resistant grips and curved self locking serrated teeth for holding small parts while soldering.
- H. T3-107 Pearl Holding Tweezers : Featuring Teflon coated (cupped) ends, these tweezers hold pearls without scratching.
- / & J. T3-190/ T3-191 Black Diamond Tweezers : Economically priced, these steel tweezers have a black finish for optimum visibility when working with diamonds, and serrated pointed tips for sure grip.
- K. T3-105 Swiss Slide-Lock Tweezers: High Quality chromium plated stainless steel tweezers with serrated points and locking device.
- L. T3-106 Swiss Diamond Tweezers : Featuring a special groove on both inside faces of each tip, these high quality tweezers prevent stones from turning or
- *M & N.* T3-125/ T3-126 Cross-Locking Tweezers : Self-locking jaws and made of nickle plated steel.
- O. T3-125/ T3-126 Nickle Plated Steel Tweezers: Long tweezers with straight serrated points, and serrated finger grips.

#### P. T3-104 Slender Serrated Tweezers:

The shape makes them lighter in weight, and the very fine points are for picking up smaller objects

- Q. T3-122 MM Stainless Steel Tweezers: Similar to pattern AA, but heavier. The shanks are slightly longer and the corners of the handle have been rounded.
- R. T3-127 Narrow Point Cross-Locking Tweezers : Long, cross-locking tweezers with narrow points.
- S. T3-129 Curved Nickle-Plated Steel Tweezers : Needle curved point nickel-plated. Great for professionals, craftspeople and hobbyists.



ITI	EM	DESCRIPTION	LENGTH	PRIC
Α	T3-128	Copper Pickling Tweezers	9"	\$7.90
В	T3-398	Head & Shank Locking Tweezers	5-3/4"	\$8.40
С	T3-108	Ring Set Soldering Tweezers	4-1/2"	\$5.90
D	T3-121	AA Stainless Steel Tweezers	4-3/4"	\$3.85
Е	80-225	Rubber Coated Steam Tweezers	8"	\$5.90
Е	80-226-HD	Rubber Coated Steam Tweezers	10"	\$11.9
Е	80-227	Rubber Coated Steam Tweezers	12"	\$9.00
F	T3-100	Straight Locking Tweezers (Fiber Grips)	6-1/2"	\$4.75
G	T3-101	Curved Cross-Lock Tweezers (Fiber Grips)	6-1/2"	\$4.75
Н	T3-107	Pearl Holding Tweezers	5-3/4"	\$9.50
I	T3-190	Black Diamond Tweezers	6"	\$4.75
J	T3-191	Black Diamond Slide-Lock Tweezers	6"	\$5.94
K	T3-105	Swiss Slide-Lock Tweezers	5-1/2"	\$29.6
L	T3-106	Swiss Diamond Tweezers	4-5/8"	\$22.7
М	T3-125	Short Cross-Locking Tweezers	4-3/4"	\$4.75
Ν	T3-126	Wide Tip Cross-Locking Tweezers	6-1/2"	\$4.90
0	T3-102	Nickle Plated Steel Tweezers	7"	\$5.95
Р	T3-104	Slender Serrated Tweezers	5.5"	\$5.95
Q	T3-122	MM Stainless Steel Tweezers	5.5"	\$3.50
R	T3-127	Narrow Point Cross-Locking Tweezers	6.5"	\$3.20
S	T3-129	Curved Nickle-Plated Steel Tweezers	6.5"	\$3.75

#### Super EMP Finishing System

#### The New Romanoff EMP System Using Electro-Magnetic Propulsion

The main difference between EMP technology and traditional rotational energy found commonly with magnetic tumblers is EMP technology utilizes concentrated electromagnetism and propulsion to thoroughly and uniformly mix the stainless steel media and parts in a vertical motion at an accelerated speed. Whereas rotational energy, commonly found with today's magnetic tumblers only occurs at the base of the barrel at a significantly reduced speed.

- Produce a high polish in only 10 20 minutes.
- Burnishing all metal surfaces, including stainless steel and chrome cobalt to a high polish.
- Casters can now load full casted trees into the processing chamber to remove fire scale, investment powder and oxidation from the metal surfaces, which allows the metal to be re-casted and reduce refining costs.
- Container diameter 175 x 398mm
- 99 minute timer with automatic forward and reverse motion
- Dimensions are 650W x 740D x 920H
- Weight 485 lbs.
- 240v / 3ph (1ph step up phase converter is available)



#### **Before**







## Magnetic Tumbling Powder Soap Concentrate



Our magnetic powder soap works well by itself or can be mixed with our magic blue soap. This powder is slightly abrasive, and will brighten and smooth semi-rough surfaces.

80-0975 5 lbs Can Magnetic Tumbling Powder Soap Concetrate \$43.70







## Magic Blue Concentrated Cleaner

A popular liquid concentrate, commonly used in combination with our magnetic powder soap to produce a high polish. It has a high concentration of 10:1 and can also be used as an ultrasonic solution.



80-0985-GL 1 Gallon Magic Blue Concentrate \$38.50



#### **BCR Plus Ultrasonic Solution**

Cleaning Solution: Jewelry industry standard for removal of buffing compounds such as rouge and tripoli. Works well with gold, silver, platinum, stainless steel, brass, etc. May also be used as a heated soak cleaner up to 140°F (60°C). 8 to 1 mix ratio.

ITEM NUMBER	SIZE	PRICE
80-098	1 Gallon	\$21.10
80-098-4GL	4 Gallon	\$74.76
80-098-19	19 Gallons	\$325.19
80-098-BCR	51 Gallons	\$881.91

#### Hoffman Steam Machines

Our steam machines are very efficient, reliable, and operate by electronic foot pedal and solenoid. Both units are UL, CUL, and ASME approved. They feature outer stainless steel cabinets to eliminate rust, automatic low water cutoff, energy efficient heating elements, adjustable thermostat, safety valve, and water level sight glass. These units will produce 70lb to 90lb of consistent steam pressure. The 6 gallon model will automatically replenish the boiling system to ensure consistent steam pressure throughout the work day. Made in USA.

ITEM#	DESCRIPTION	SIZE	POWER	PRICE
81-002-R	2 Gallon Steam Cleaner Machine	14" x 14" x 14"	110V, 50/60 Hz	\$1,375.00
81-002-RA	2 Gallon Steam Cleaner Machine	14" x 14" x 14"	220V	\$1,565.00
81-004-B	6 Gallon Automatic Steam Unit - 9KW Heating Element	24" x 36" x 23"	220V, 3-phase, 60Hz	\$4,499.00
81-004-C	6 Gallon Automatic Steam Unit - 9KW Heating Element	24" x 36" x 23"	220V, 1-phase, 60Hz	\$4,539.00



#### Reliable Steam Cleaners

Available in three different models, each machine features a adjustable nozzle and foot pedal. The four safety systems include a pressure switch, probe safety thermostat on the heating element, safetry cap with safety valve, and an automatic low water shut-off. Users will enjoy it's attractive stainless steel design. Each unit comes with a one year manufacturer's warranty and a lifetime warranty on the tanks.

Made in Italy. 220V Available



ITEM NUMBER	STEAM TIME	TANK CAPACITY	MAX PSI	WORKING TIME	DIMENSIONS
81-012-JR	2 hours - 3 hours	2.5 Liters	50 PSI	10 minutes - 15 minutes	14" x 8.75" x 11"
81-012	4 hours - 5 hours	4.7 Liters	65 PSI	15 minutes - 20 minutes	13" x 8.75" x 15"
81-013	8 hours	9 Liters	70 PSI	30 minutes - 45 minutes	12.5" x 14.25" x 20.5"

## **ELMA ULTRASONICS**

- Electronic diode display for time and temperature
- Auto-start temperature control / temperature selection
- Permanent sweep for an improved cleaning performance
- Brushed stainless steel cavitation-resistant tanks with calibrated fill level
- Micro-processor controlled 37 Khz transducer power, self-regulating generator
- Ceramic heating elements tested and absolutely dry run proof
- Safety switch/off
- Available in 220V by special order

LIQUID CAPACITY	INSIDE TANK SIZE	OVERALL DIM.	WEIGHT
28 liters / 30 quarts	19.88 x 11.75 x 8	22.38 x 13.38 x 12.63	24.25 lbs
18 liters / 20 quarts	12.88 x 11.75 x 8	15.38 x 13.38 x 12.63	18.75 lbs
9.50 liters / 10 quarts	11.75 x 9.5 x 5.9	14.38 x 11 x 10.38	13 lbs
5.75 liters / 6 quarts	11.75 x 5.9 x 5.9	14.38 x 11 x 10.63	11.25 lbs
2.75 liters / 3 quarts	9.5 x 5.38 x 4	11.75 x 7 x 8.63	7.25 lbs
	28 liters / 30 quarts 18 liters / 20 quarts 9.50 liters / 10 quarts 5.75 liters / 6 quarts	28 liters / 30 quarts	28 liters / 30 quarts





## Branson Heavy-Duty Ultrasonics

These industrial strength machines feature a seperate tank and generator, very heavy gauge stainless steel construction, solid state transistorized circuitry, replaceable transducers, and variable temperature control. These units are for the medium to large sized manufacturers. The powerful action of these units results in more efficent and quicker cleaning than with any other ultrasonic cleaning machines.

ITEM#	MODEL#	INSIDE TANK	OUTSIDE TANK	GENERATOR DIMENSIONS	PRICE
Z49-032-1	5-gallon Tank 110v	10 x 12 x 10"D (254x305x254mm)	14 x 14 x 14"H (356x356x356mm)	15 x 14 x 7"H (381x356x178mm)	\$3,494.00
Z49-032-2	Generator 8300 110v	10 x 12 x 10"D (254x305x254mm)	14 x 14 x 14"H (356x356x356mm)	15 x 14 x 7"H (381x356x178mm)	\$2,479.00
Z49-028-1	10-gallon Tank 220v	12 x 16 x 12"D (305x407x305mm)	16 x 18 x 16"H (407x458x407mm)	20.5 x 14 x 7"H (521x356x178mm)	
Z49-028-2	Generator 40KZ 220v	12 x 16 x 12"D (305x407x305mm)	16 x 18 x 16"H (407x458x407mm)	20.5 x 14 x 7"H (521x356x178mm)	

#### Elma Rubber Coated Steam Tweezers



Used for holding jewelry while steaming and rinsing in an ultrasonic without marring the surface.

ITEM NUMBER	SIZE	PRICE
80-225	8"	\$5.90
80-226-HD	10"	\$11.95
80-227	12"	\$9.00



#### Elma Ultrasonic Racks

Heavy-duty, vinyl-covered racks has twenty hooks for holding jewelry for ultrasonic cleaning to be cleaned.

Z49-101 Ultrasonic Rack With 14" Adjustable Height Handle \$71.40

Z49-102 Modular Ultrasonic Rack Add-On \$65.55

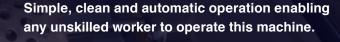


\*Enclosed system that helps to contain

silica vapors for safer facilities\*

# AUTOMATIC INVESTMENT REMOVAL MACHINE

Z50-006 \$15,899.00



The complete cleaning process takes only 1-2 minutes depending upon the size of the tree.

Investment breaking and cleaning of casted trees with preset stones is carried out without any damage stainless steel construction and very heavy-duty components will ensure many years of productivity.

ADD ON:



CASCADE STAINLESS STEEL SEPARATOR

Z50-006-OPT \$995.00

#### Features

Max Length of Casting Tree: 280mm

Max Length of Flask 280mm

Water Consumption: 10 liter per minute

Requires Water Connection

Dimensions:

850(W) x 650(D) x 1250(H) mm

Net Weight: 308lbs

Gross Weight: 456lbs



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