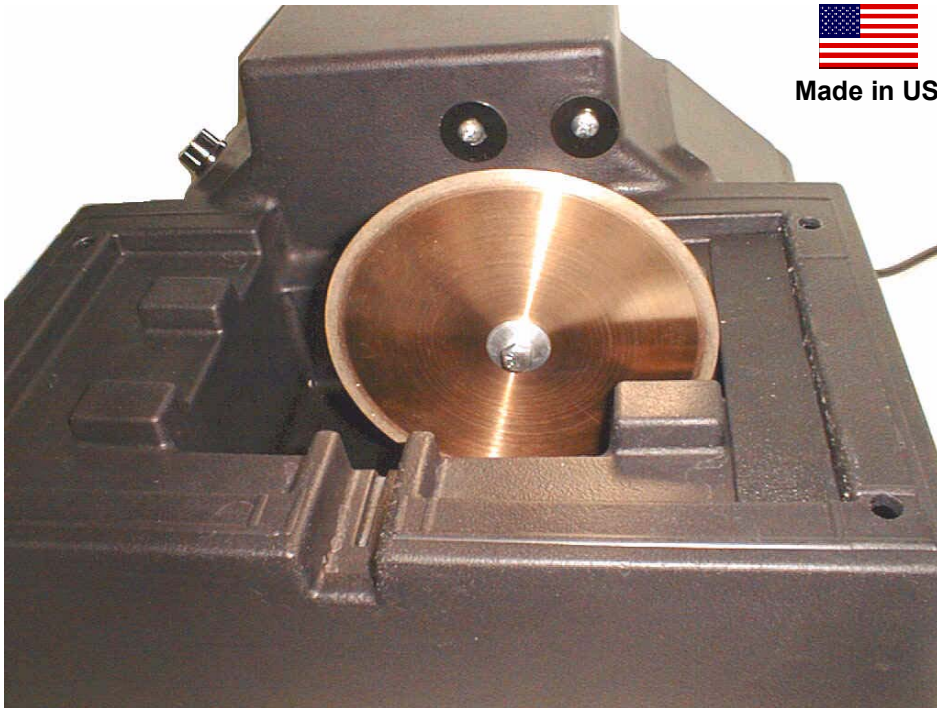




**UKAM Industrial Superhard Tools** Division of LEL Diamond Tools International, Inc.  
28231 Avenue Crocker, Unit 80 Valencia, CA 91355 USA  
Phone: (661) 257-2288 Fax: (661) 257-3833 www.ukam.com

## **SMART CUT 6001 Precision Sectioning Saw**

*SMART CUT 6001 is a Manual / Semi Automatic Sectioning Saw. Providing Precision, Productivity and Versatility like Fully Automatic Diamond Wafering Saws, at affordable price. Perfect for Manufacturing and R & D facilities on a Budget. This saw is able to withstand more exploitation, requires less maintenance, & much easier to use than Fully Automatic Wafering Saws. Compare to any Brand Name Sectioning / Wafering Saw.*



Made in USA

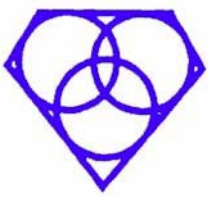
*Table shown below may easily be removed, cleaned and adjusted. Blade guard may be adjusted and raised to accommodate larger samples & better fit any particular diamond wafering or abrasive cut off blade. Coolant is stored below and applied to material / sample by rotating the blade. It's straight forward design allows the operator to concentrate on sectioning samples, not operating the machine.*

**Most Widely Used & Affordable Diamond Sectioning Saw on the market today**



**SMART CUT 6001 Sectioning Saw Complete with Vice Assembly & Weight Gravity Feed & Plexiglas Cover.**

**SMART CUT™ 6001** is designed for **Fast & Precision** sectioning of PCB Boards, ceramic substrates, electronic packages, Copper Lead Frames, Silicon Wafers, Optical Glass, Ferrite Chunks, and many other materials. Coolant is stored below and applied to sample by rotating the blade. Saw table has a **large working area** measuring **15" x 9"**. The durable housing is made from unbreakable cross-linked polyethylene which cannot rust. Housing and all plastic parts are guaranteed for life. This unit is equipped with a heavy duty direct drive permanent magnet 1/4 Hp motor with sealed ball bearing. RPM's range from 400 to 3,400. Allowing for most samples/materials to be sectioned in just few seconds/minutes, with minimum material structure deformation. **Made in U.S.A.**



## SPECIFICATIONS:

### Cutting Action:

Linear blade feeds into work piece. Material is slowly feed into the rotating blade.

**Motor Power:** 1/4 HP

**RPM's (Variable Speed)**

400-3,000 RPM

**Blades SMART CUT 6001**

**can accommodate:**

**Wafering Blade Diameters:**

4" to 6" (100mm to 150mm)

**Abrasive Blade Diameters:**

4" to 6" (100mm to 150mm)

**Blade Thickness:** .006" to .075"

**Can be used with:**

- SMART CUT Diamond Wafering Blades
- Other manufacturers
- Diamond Wafering Blades
- Abrasive Cut Off blades.

**Coolant Capacity:** ¼

**Arbor:** ½" (12.7mm)

**Slot for blade:** 0.124" (3.15mm)

**Arbor Size Diameter:** 1.0"

**Dimensions:** 18" x 18" x 12"

**Shipping Weight:** 22 lb



## ADVANTAGES:

- Variable Speed: from 400 to 3,400 RPM. Allows operator to easily change speeds during operation. Even most delicate samples can be sectioned without deformation
- Removable Cutting Table for easy coolant & blade changes
- Adjustable blade guard accepts 4", 5", and 6" Blades
- Largest Working Surface area of saw in its class. 15" x 9" for sectioning oversize samples.
- More Powerful 1/4 Hp motor. Designed for cutting ultra hard to soft specimens / materials
- Unbreakable cross-linked polyethylene prevents corrosion
- Minimal Blade Load
- Largest surface work area available
- Very Easy to Use & Maintain
- Best performance & price per cut
- Universal Application / Adjusts to fit almost any application
- **Perfect for Manufacturing and R & D Organizations on a Budget**

## WAFERING BLADES:

**Sintered (Metal Bond), CBN, HYBRIND BOND (between metal & resin bond)**

4" x .012" x ½" ID

5" x .014" x ½" ID

5" x .020" x ½" ID

5" x .025" x ½" ID

6" x .014" x ½" ID

6" x .020" x ½" ID

6" x .032" x ½" ID

**Electroplated (nickel bond) Continuous & Interrupted Coating**

5" x .010" x ½" or 5/8" ID

5" x .016" x ½" or 5/8" ID

5" x .024" x ½" or 5/8" ID

6" x .009" x ½" or 5/8" ID

6" x .016" x ½" or 5/8" ID

6" x .024" x ½" or 5/8" ID

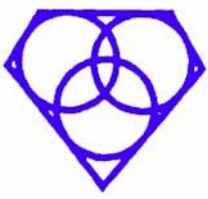
6" x .032" x ½" or 5/8" ID

6" x .045" x ½" or 5/8" ID

*All wafering blades are available from stock in different diamond concentrations, grit sizes, and bond harnesses to fit your specific application. Blades can be used with plain water, water soluble coolant, or oil. Other thickness are available upon request.*

**We will help you select the Right Diamond Wafering Blade for your application.**





## TYPICAL APPLICATIONS:

### Ferrous & Non-Ferrous Metals:

- Plain Carbon Steels Electronic Packages
- Stainless Steels Plastics
- Tool Steels Fasteners
- Aluminum Refractories
- Copper Base Alloys Integrated Circuits
- Magnesium Thermal Spray Coatings
- Titanium Metal Matrix Composites
- Biomedical Wafers
- PCB.s Ceramics
- Petrographic

### Precision Longitudinal Cuts and Slot Cutting on Long Samples:

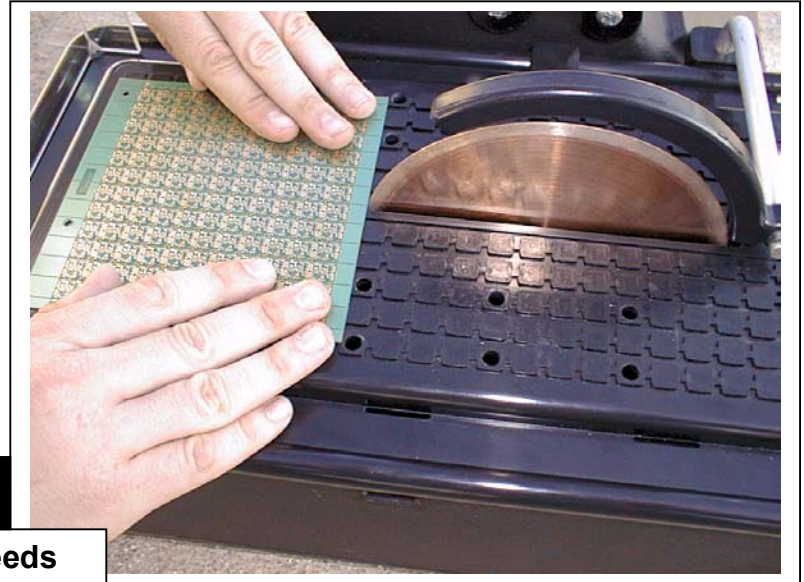
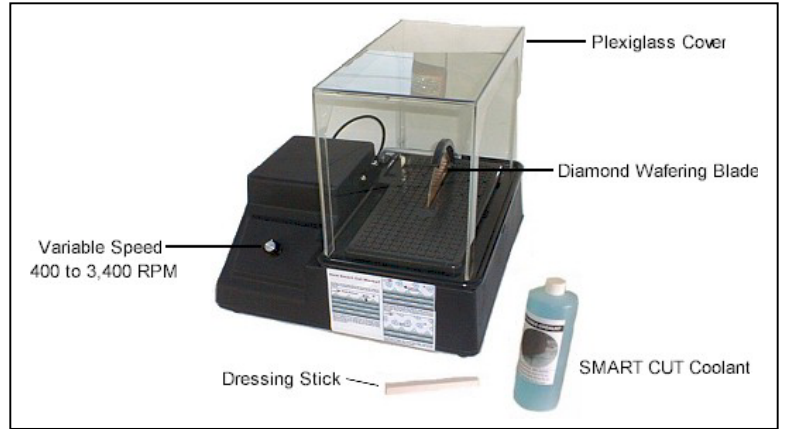
- Implants Bones
- Tubing Aircraft Fasteners
- Turbine Blades
- Cutting and Notching Ceramic and Plastic Specimens

### INDUSTRIES USED IN:

- Advanced Ceramics
- Composites
- Glass
- Quartz
- Medical Devices
- Metallography
- Photonics / Optics
- Semiconductor
- Many Others

### BENEFITS:

- + Improve cutting speeds
- + Minimize material structure damage
- + Improve surface finish quality
- + Reduce material loss
- + Obtain more accurate tolerances



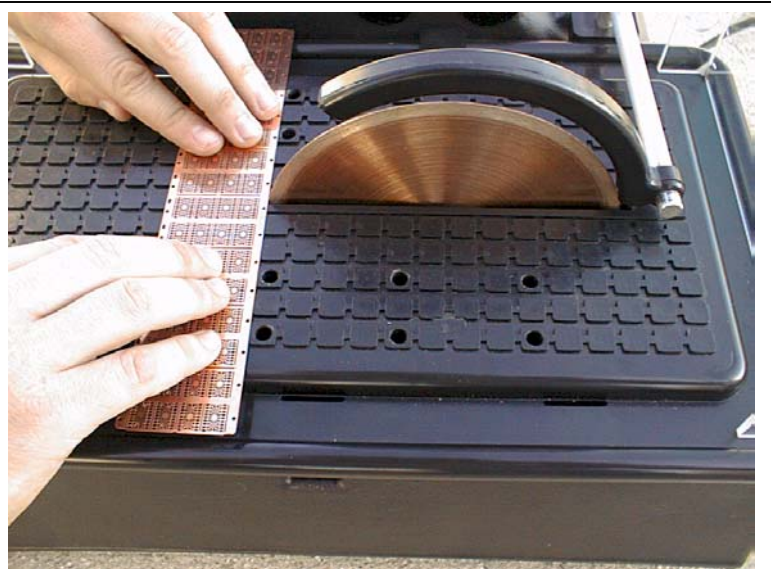
**= SUPERIOR RESULTS**

### ACCESSORIES:

- Vice Assembly
- Plexiglass Cover
- Gravity Feed
- Rip Fence Attachment
- Dressing Sticks of all sizes and configurations
- Replacement Wafering Blades

**SMART CUT** coolant or mineral oils available in:

- Quart
- Gallon
- 5 Gallon
- 55 Gallon Drums





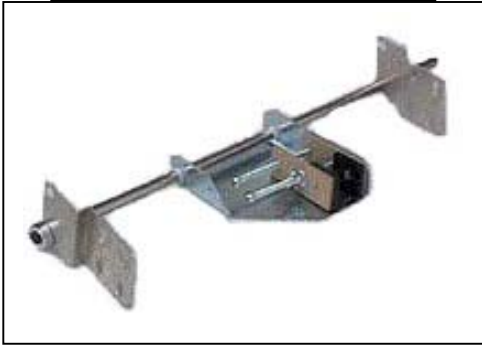
# UKAM Industrial Superhard Tools

Division of LEL Diamond Tools International, Inc.

28231 Ave Crocker, Unit 80 Valencia, CA 91355 USA

Phone: (661) 257-2288 Fax: (661) 257-3833 www.ukam.com

## WISE ASSEMBLY



**SMART CUT 6001** Vise Assembly is an adjustable guide that allows for accurate precision cuts. Wing nuts are tightened to clamp the work piece securely in place. The carriage advances slowly to feed material evenly into the blade. Easily installed by bolting into place. samples can be accurately positioned in vice.

Vise can be easily adjusted to accommodate a large variety of material sizes, thickness, shapes, and configurations. SMART CUT 6001 vises to hold longer samples for applications such as slot cutting and cutting samples on angle.

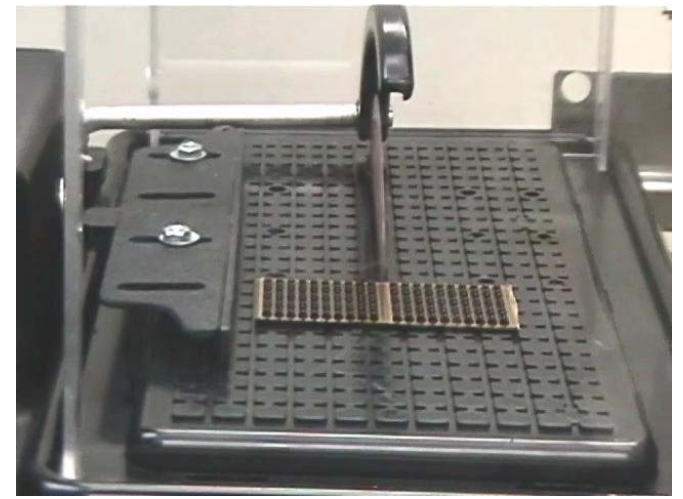
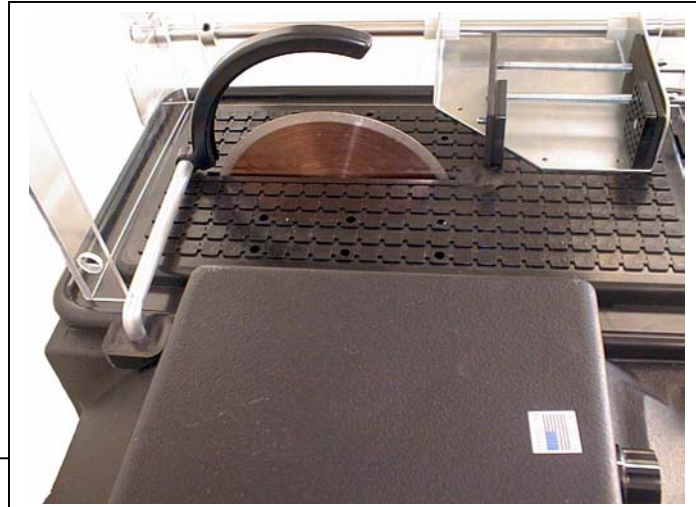
## Gravity Weight Feed

Allows samples/material to be sectioned unattended (without operator presence). Gravity weight feed propels material / sample firmly positioned in vice assembly into rotating blade. Weight can be adjusted depending on material diameter, hardness, & density. As well as users objectives for sectioning speed in correlation quality of cut, and surface finish.

## SMART CUT™ Synthetic Water Soluble Coolant

Stream of SMART CUT™ coolant added to deionized (DI) water reduces material thermal stress, edge damage, & internal cracking, assuring long-term integrity of material being cut. Since SMART CUT™ KOOL is a coolant and lubricant, both the diamond blade and material benefit.

- **Improve Sectioning Speed and Efficiency**
- **Increase Blade Life**
- **Improve Material Surface Finish**
- **Reduce Chipping**
- **Reduce Material Cracking & Preserve Material Structure**



***For best results, we recommend using SMART CUT™ Diamond Blades. Contact: UKAM Industrial Superhard Tools for the right diamond wafering blade for your application. The diamond wafering blade itself is the most important part/factor of your sawing operation.***

## SMART CUT™ LP Grinder / Polisher



Perfect companion to SMART CUT™ 6001 Precision Sectioning Saw.

Grind & Polish samples sectioned with this sectioning saw fast & easy.

**BUY BOTH & SAVE**





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**SMART CUT™** precision Diamond Wafering Blades are designed and specially selected to provide the maximum possible blade life for your desired cut quality, and speed.



**UKAM Industrial Superhard Tools** is one of the leading manufacturers of high Precision Diamond Wafering Blades in the world. From 0.5" to 72" OD, starting .001" TH and up. With over 50 years of experience in manufacturing, research, and development. Following the belief that there is always room for improvement. We continue to raise standards for the whole industry. In addition to manufacturing diamond wafering / sectioning blades for our own SMART CUT series Precision Diamond Saws. We manufacture many Diamond Wafering Blades used on other well know sectioning / wafering saws.

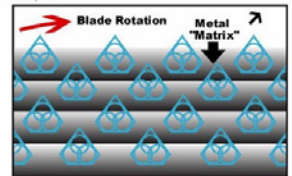
We recognize that the **Diamond Wafering / Sectioning Blade by itself is perhaps the most important factor in your sectioning / precision diamond sawing operation.** The diamonds impregnated inside the bond matrix of the wafering blade, are what actually participate in cutting action. **No matter how precision or well made your wafering saw. You will not be able to obtain the material surface finish, and precision tolerances you need, if the blade you are using is not right for your application**

UKAM Industrial Superhard Tools proprietary blade chemistry, precision manufacturing methods, modern quality control methods, allow us to control and regulate the dozens of variables that affect blade life, quality of cut, surface finish. Reducing and often eliminating additional steps often required after sectioning. All blades are manufactured to fit your specific material, application, and surface finish requirements. We will work with you to determine your needs, and develop the right bond formulation, concentration, and grit sizes.

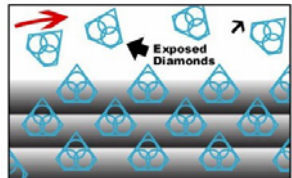
UKAM Industrial Superhard Tools has one of the **Largest Inventory of Precision Diamond Wafering Blades in the U.S.** With over 4,000 diamond wafering blades in stock, available in **different sizes, thickness. arbor sizes. diamond concentrations. diamond mesh sizes. and bond hardness's.**

**You are sure to find the Right Diamond Wafering Blade for your application in stock and ready for same day delivery. If you are not using these blades, you are paying too much.**

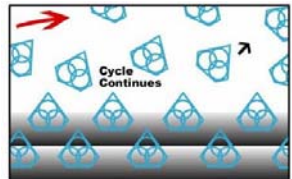
The sharpest and finest quality DeBeers diamonds that go into a Smart Cut Diamond Bond, immediately penetrate into the material, grinding and polishing as they cut.



Diamonds are activated only at the exposed layer. As diamonds layer begin to wear out, diamonds in a new diamond layer are immediately activated, substituting the already used-up diamond layer. The Smart Cut Diamond Bond makes sure every diamond is in the right place and at the right time, working where you need it most.

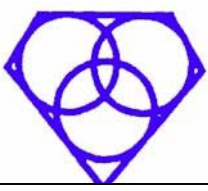


The newly exposed diamonds don't affect diamonds already working on the material. Unlike many other diamond bonds, diamonds in a Smart Cut remain sharp and grow sharper with each cut. Prolonging product life and consistent performance.



This advanced formulated open diamond bond design insures minimal chipping, fast cut, constant speed of cut, minimal cutting noise, and most important of all minimal loss of precious material.

**SMART CUT™**  
**technology.**  
**Advanced**  
**technology that**  
**redefines the**  
**standard in**  
**cutting.**



## SELECTING THE RIGHT DIAMOND BLADE & BOND FOR YOUR APPLICATION

*M = Sintered (Metal Bond). R = Resin Bond. H = Hybrid Bond. E = Electroplated (Nickel Bond). MCBN = Metal Bond Cubic Boron Nitride. RCBN = Resin Bond Cubic Boron Nitride. HCBN = Hybrid Cubic Boron Nitride*

Acrylic Glass	E
Agate	M
Al-Ni-Co	RCBN
Alumina (fused)	M
Aramit Fibre Plastics	M
Barium Titanate	R/H
Boron Carbide	M
Brake Lining	E
Cemented Carbide	M/R

### CERAMICS

Oxide ceramics, sintered	
Al <sub>2</sub> O <sub>3</sub> (aluminium oxide)	M
Al <sub>2</sub> O <sub>3</sub> (tubes)	R/H
Al <sub>2</sub> O <sub>3</sub> (electronic resistors)	E/M
Al <sub>2</sub> O <sub>3</sub> (seals)	M
Carbide Ceramics	R/H
TiC (titanium carbide)	M

### NITRIDE CERAMICS

Si <sub>3</sub> N <sub>4</sub> (HPSN) silicon nitride	R/H
Ceramic Tiles	M
Ceramics Unfired	E
Chrome Nickel (10% Cr, 90% Ni)	RCBN/HCBN
CRP (carbon reinforced plastic)	M
Epoxy Resin Boards	E
Epoxy Copper-Clad with circuits	E
Eternite (asbestos-free)	E/M
Formica (nameplates)	E
Germanium (semiconductor)	M
GGG (semiconductor)	E/R/H
Glass Optical	M
Glass Fibres (bundeled)	E/R
Glass Sheet	M
Glass Ceramics	M/R
Glass Hard Laminate (cast epoxy)	E
Glass Fibre Reinforced	E
Glass Laminates (safety/bullet proof glass)	M/H
Glass (quartz glass tubes)	R/H
Glass Wool	E
Glass (pyrostop)	M/H
Glass (thick optics)	M/H
Glass Technical	M
Glass Fibre Rod	E
Glass Hard Laminate	R/H
Granite	M
Graphite	E/M
GRP (window sections)	E
GRP (constructional sections)	M

GRP (internal thermoplastic ring)	E
Helopal Panels (plastic)	E
Hematite	M
HSS Punches	RCBN
HSS Hardened	RCBN
Insulators Ceramic	M
Lapis Lazuli	M

### MAGNETIC MATERIALS

Ferrites Sintered	M/R
Ferrites Cast	MCBN
Rare Earth Magnetic Materials	R/H
Samarium Cobalt	M/R
Malachite	M
Marble	M/E
Melamine Resin	E
Metal Coated Ceramics	E/M
Moybdenum	RCBN/H
Mycalex (cast stone)	M/E
Ni Hard Rods	RCBN
Piezoceramics	M
Polycarbonate (glass reinforced)	E
Polystyrene Sheets	E
Printed Circuit Boards	E/M
PVC Hard	E/M
Quartz (fusible)	M/R
Quartz (synthetic)	M
Rhodochrosite	M
Rose Quartz	M
Sapphire	M/R/H
Sendust	E
Silicon (polycrystalline)	E
Silicon Carbide (pressed & crushed)	M
Silicon (monocrystalline)	M
Silicon (semiconductor)	M
Silicon Nitride	R/H
Silicon Carbide (ReSiC)	R/H
Steatite	M/R/MCBN
Stellite	M
Tiger's Eye	M
Titanium	M/R/H
Titanium Carbide	M
Titanium Zirconate	M
Topaz	M
Tungsten	M/R/E
Tungsten Wires	M
Uranium Dioxide	M
Uranium	M
Zirconium	M



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## HOW TO ORDER



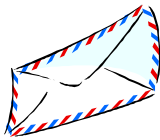
### Order by Phone:

Call: (661) 257-2288 Monday through Friday 8:30 a.m. to 5:30 p.m.



### Order by Fax:

Fax: (661) 257-3833, available 24 hours a day.



### Order by Mail:

send your orders to: 28231 Avenue Crocker, Unit 80 Valencia, CA 91355 U.S.A.

please include product item number, description, and payment.

### Accepted forms of payment



We accept Visa, MasterCard, and American Express. Organizations located in State of California add 8.25% sales tax. Net 30 terms on approved credit. Credit terms are only available to eligible organizations in USA and Canada.

Pre Payment is requested from all customers outside North America. Payment by wire transfer is preferred. If paying by wire transfer, please add \$35.00 USD to total. This is how much our bank charges us for each incoming wire transfer.