



BUEHLER

IsoMet[®] 1000 Precision Saw



Declaration of Conformity



Manufacturer: **BUEHLER, Ltd.**
Of: **41 Waukegan Road**
Lake Bluff, Illinois 60044

Declares the following product: ***IsoMet® 1000 Precision Saw***

To be in accordance with EC Directive(s);

Safety of Machinery:

89/392/EEC and 91/368/EEC and 93/44/EEC
according to the following standards:

EN 292 PART 1 1991
EN 292 PART 2 1991
EN 60204 PART 1 1993

EMC Directive:

89/336/EEC and 92/231/EEC according to the
following standards:

EN 50081-2: 1998

Position: Engineering Manager

Name: Boyd Schindler

Signature: *Boyd Schindler*

Date: 6/27/2005

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OPERATION AND MAINTENANCE INSTRUCTIONS

BUEHLER®

IsoMet® 1000 Precision Saw



Table of Contents

IsoMet® 1000 Precision Saw	5
Warranty	5
Unpacking	5
Safety Information.....	7
Machine Use and Care	7
Installation.....	8
Electrical Installation	8
Activating the IsoMet® 1000 Precision Saw	9
Blade Installation.....	9
Gang Sawing	10
Flanges	10
Blade Dressing	10
Lubrication	11
Operation	12
IsoMet® 1000 Front Control Panel	13
Sample Arm	14
Loading the Saw	15
End of Cut Adjustment	16
Cutting a Sample.....	16
Maintenance	18
Trouble Shooting Chart.....	18
IsoMet® 1000 Accessories.....	19
Chucks	19
Flanges	19
Other	19
Wafering Blades.....	20

IsoMet[®] 1000 Precision Saw

The IsoMet[®] 1000 Precision Saw offers increased speed, load, and blade size that enables a wide variety of specimen samples to be cut quickly and with low deformation.

The IsoMet[®] 1000 cutting compartment is fully enclosed and can be removed and replaced with the accessory Table Saw Attachment for sectioning larger samples. The coolant tray can be easily removed from the front of the machine for fast cleaning and for easy retrieval of cut samples.

With a 7-inch diamond blade capacity and a wide selection of accessories, the IsoMet[®] 1000 Precision Saw offers increased versatility and power for sectioning today's advance materials.

Warranty

This unit is guaranteed against defective material and workmanship for a period of two (2) years / 2000 hours from the date of receipt by the customer. The warranty is void if inspection shows evidence of abuse, misuse, unsafe use, or unauthorized repair. This warranty covers all Buehler costs associated with the replacement of defective materials (e.g., parts, labor, and travel).

If for any reason this unit must be returned to Buehler Ltd. for warranty service, please apply for prior authorization with shipping instructions. Please include the following information:

- Customer Purchase Order Number
- Buehler Invoice Number and Date
- Serial Number
- Reason for return

Unpacking

The IsoMet[®] 1000 Precision Saw has been carefully packaged to protect it during transit from the factory to your location. Carefully unpack and check the contents. If any components are missing or damaged, save the packing list and materials and advise the carrier and Buehler, Ltd. of the discrepancy.

Carefully unpack and check that the following items have been received:

- 11-1184 Bar and Tube Stock Chuck
- 11-1185 Irregular Specimen Chuck
- 11-1186 Wafering Chuck
- 11-1187 Small Single Saddle Chuck
- Pint IsoCut[®] Fluid
- Series 15LC 6-inch Diamond Wafering Blade
- 2 3-inch Flanges
- Hex Wrench $\frac{1}{8}$ inch
- Hex Wrench $\frac{3}{32}$ inch
- Hex Wrench $\frac{5}{32}$ inch
- Hex Wrench $\frac{5}{64}$ inch
- Open End Hex $\frac{1}{2}$ - $\frac{5}{8}$ inch



WARNING! Equipment Damage. The IsoMet[®] 1000 Precision Saw weighs 75 lbs (34 kg) and two persons are required to safely lift the unit from the shipping carton.

The IsoMet[®] 1000 Precision Saw is bolted to a wood base for protection during shipping. Open areas are provided at the corners of the base for ease of lifting. Lift IsoMet[®] 1000 Precision Saw out of the carton and position it on a table so it overhangs on the edge. Remove the bolts securing the IsoMet[®] 1000 Precision Saw to the wood base.

Note: Do not remove the four bolts securing the motor to the IsoMet[®] 1000 housing (see **Figure 1**).

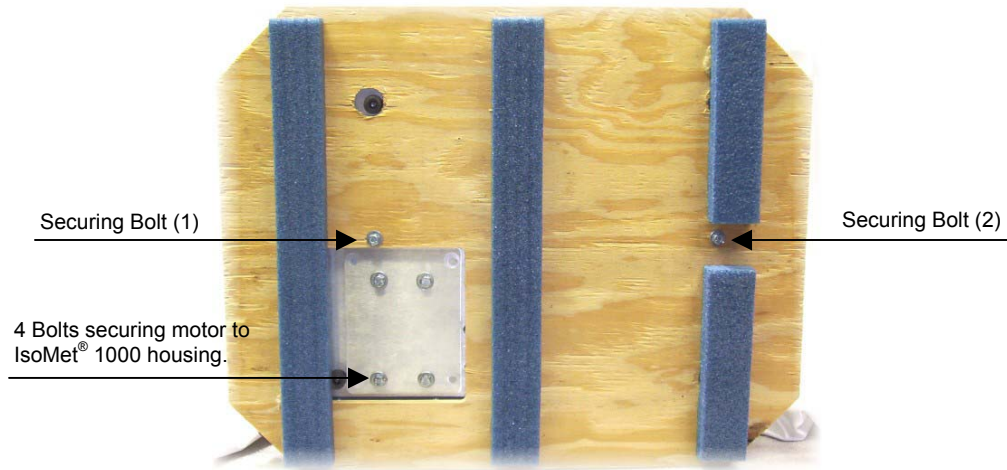


Figure 1 IsoMet[®] 1000 Wood Base

Safety Information

The IsoMet[®] 1000 Precision Saw is designed to section metallurgical and petrographic materials with recommended cutting wheels.

For safe installation and operation of this equipment, carefully read and understand the contents of this manual. Improper operation, handling, or maintenance can result in equipment damage and personal injury.

The IsoMet[®] 1000 Precision Saw is designed for use in dry, indoor laboratory and workshop environments away from strong electromagnetic fields and with normal temperature ranges (41° F to 104° F / 5° C to 40° C) and non-condensing humidity ranges (30-90%).

Machine Use and Care

Dress properly. Do not wear loose clothing or jewelry and contain long hair. They can be caught in moving parts and can result in severe personal injury. Protective equipment should be worn to handle samples, which may be sharp or hot.

Do not operate machine in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Sparks may ignite the dust or fumes.

Always use safety glasses. Flying debris and liquids can cause severe eye injury.

Maintain the IsoMet[®] 1000 Precision Saw with care. Properly maintained machines are less likely to bind and are easier to control. Any alteration or modification is a misuse and may result in a dangerous situation.

Maintain machine guards and interlocks. Do not attempt to enter the cutting bay when the IsoMet[®] 1000 Precision Saw is in use.

Only qualified repair personnel must perform machine service. Service or maintenance performed by unqualified personnel could result in a risk of injury.

Replace damaged or defective parts immediately and use only identical replacement parts. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electrical shock or injury.

Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the machine operation. If damaged, have the machine serviced before using. Poorly maintained machines cause many accidents.

Do not abuse the power cord. Never use the cord to cart the machine or pull the plug from an outlet. Keep the cord away from heat, oil, sharp edges, or moving parts. Replace damage cords immediately. Damage cords increase the risk of electrical shock.

Use of extension cords is not recommended for Buehler machines and equipment.

Machine coolant can present a biological hazard if not maintained correctly. Change the coolant regularly in accordance with local regulations and safety practices.

- Coolant must be suitable for grinding cut-off use and protect against electrolytic action between sample material and machine.

Installation



CAUTION! Equipment Damage. Follow all locally approved procedures and safety practices when lifting and installing this machine. Improper lifting can result in machine damage.

Select a location for your IsoMet® 1000 Precision Saw that provides an adequate working space and a power source.

The IsoMet® 1000 Precision Saw is 15 ½ inches (394 mm) wide, 21 inches (533 mm) deep, and 12 inches (305 mm) high. Placement of the IsoMet® 1000 Precision Saw should be on a sturdy, level bench. Buehler TECH-MET® tables are highly recommended.

Allow 6 inches (150 mm) of space at the back of the IsoMet® 1000 Precision Saw for raising the hood. Make sure to leave sufficient space on both sides for sectioning long bars.

Electrical Installation



WARNING! Electrical Shock Hazard. Do not change the power plug in any way. Buehler machines are equipped with a polarized plug (one blade is wider than the other) and a ground pin. Polarized plugs reduce the risk of electrical shock. This plug will fit in a polarized outlet only one way.

Check that Specification Plate values for voltage, current, and power consumption are compatible with the intended electrical supply before installation.

The IsoMet® 1000 Precision Saw can be plugged into an outlet rated for the voltage and frequency listed on the Specification Plate.



WARNING! Electrical Shock Hazard. A qualified electrical technician should perform electrical maintenance.

- ***Disconnect the power supply before making any electrical adjustments.***
- ***Capacitors inside the machine may retain a charge even if the machine is disconnected from the power supply.***
- Installation of the IsoMet® 1000 Precision Saw must comply with local electrical standards or codes of practice.

IsoMet® 1000 Precision Saw	Voltage / Frequency
11-2180	85 – 264 Volts / 50 – 60 Hz

Table 1 IsoMet® 1000 Electrical Data

Activating the IsoMet® 1000 Precision Saw

To activate power to the IsoMet® 1000 Precision Saw flip the power switch on the back of the machine to the UP position.

The IsoMet® 1000 power switch is also a two-pole circuit breaker that will provide protection for the machine in the event of an overload.

If at any time the Front Control Panel buttons or the motor does not operate, reset the IsoMet® 1000 by flipping the power switch to the DOWN position then back to the UP position.

Blade Installation

1. Remove the thumbscrew, end cap bushing, and outer flange from the arbor shaft (see **Figure 2**).
2. Install the blade on the arbor shaft against the inner flange.
3. Slide the outer flange, the end cap bushing, and the thumbscrew on to the arbor shaft.
4. Hand tightened the thumbscrew to secure the blade.

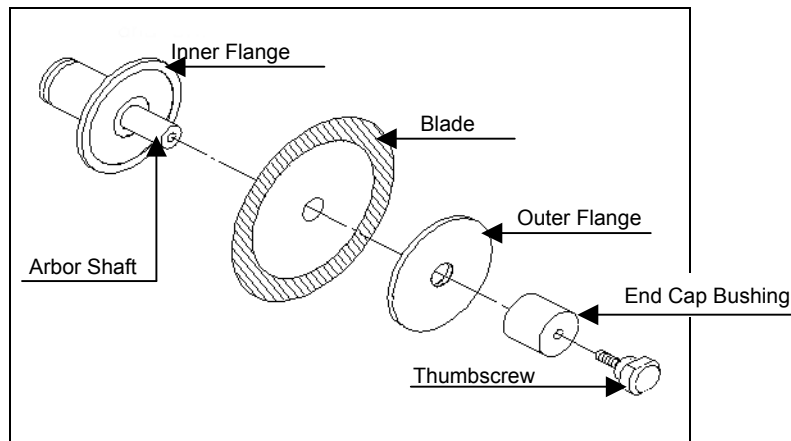


Figure 2 Blade Installation

Gang Sawing

Several blades can be installed to the IsoMet[®] 1000 for gang sawing.

1. Install the blades with the appropriate spacers.
2. Slide the outer flange, the end cap bushing, and the thumbscrew on to the arbor shaft.
3. Hand tightened the thumbscrew to secure the blades.

Flanges



CAUTION! Equipment Damage. Flanges provide support for wafering blades. Failure to provide adequate flange support can result in curved cuts and damaged blades.

Always select the maximum flange diameter to correspond with the sample size.

Before re-installing a wafering blade, clean the flanges, end cap bushing, and thumbscrew. This will help prevent misalignment of the blade and prevent poor quality cuts.

Blade Dressing

New wafering blades (including the original equipment blade) must be dressed before making any cuts.

Blade dressing removes built up matrix metal and exposes the abrasive grain to provide clean, aggressive cutting. New wafering blades should be dressed several times and older blades should be dressed as required.

Note: When cutting metal, it may be necessary to dress the blade after each cut.

To dress a wafering blade:

1. Position the dressing stick in the dressing chuck.
 - From the front of the machine, pull the lubricant tank straight out until the blade makes contact with the back of the tank. The dressing chuck will now be exposed.
 - Position the dressing stick as needed.
 - Close the lubricant tank.
2. Close the hood.
3. Press the SAW button to activate the saw.
4. Rotate the Dressing Stick Feed Control knob clockwise to feed the dressing stick into the wafering blade (see **Figure 3**).

5. Make as many cross cuts through the dressing stick as needed to dress the blade. Three to five crosscuts usually work well.

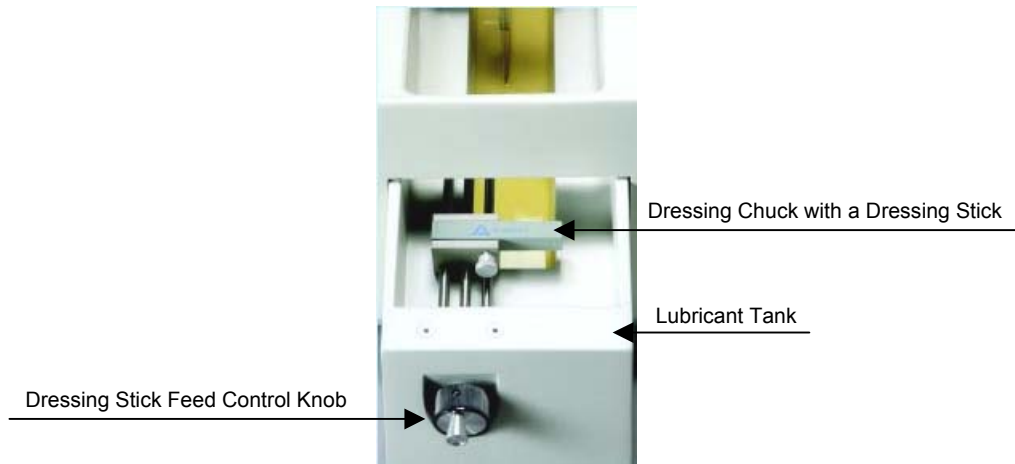


Figure 3 Dressing Chuck inside the Lubricant Tank



WARNING! Personal Injury. Feeding the dressing stick or any specimen sample into the blade by hand can result in severe personal injury and equipment damage.

Lubrication

The IsoMet[®] 1000 Precision Saw uses the drag principle of lubrication. The lubricant is carried to the sample on the edge of the rotating blade.

IsoCut[®] Plus Fluid reduces cutting time and produces superior cuts. IsoCut[®] Plus Fluid is best for most metals and many non-metals. The use of IsoCut[®] Plus Fluid promotes effective lubrication enables diamond particles to cut cleanly and minimizes loading of the blade.

- Fill the IsoMet[®] 1000 lubricant tank with IsoCut[®] Plus Fluid to a level that will immerse the blade approximately ¼-inch.
- Discard the lubricant when becomes contaminated with sludge.
 - a. Remove the sample tray, wafering blade, and flanges from the arbor shaft.
 - b. From the front of the machine, pull the lubricant tank straight out.
 - c. Discard the lubricant in a safe and approved manner.
 - d. Clean the lubricant tank.
 - e. Reinstall the lubricant tank.
 - f. Refill the lubricant tank with fresh, clean lubricant.
 - g. Reinstall the wafering blade, flanges, and sample tray.

Operation

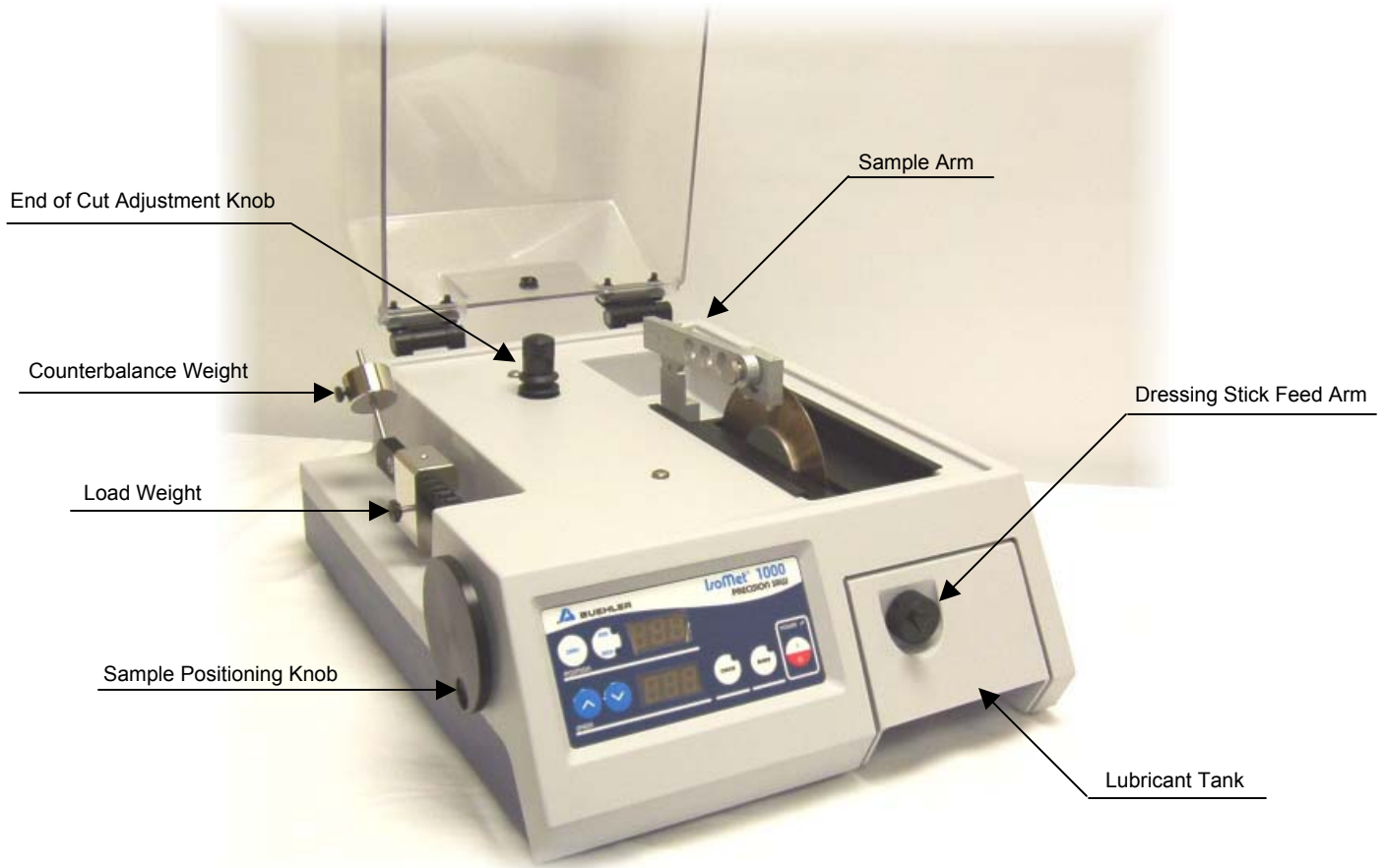


Figure 4 IsoMet® 1000 Precision Saw Components

IsoMet® 1000 Front Control Panel

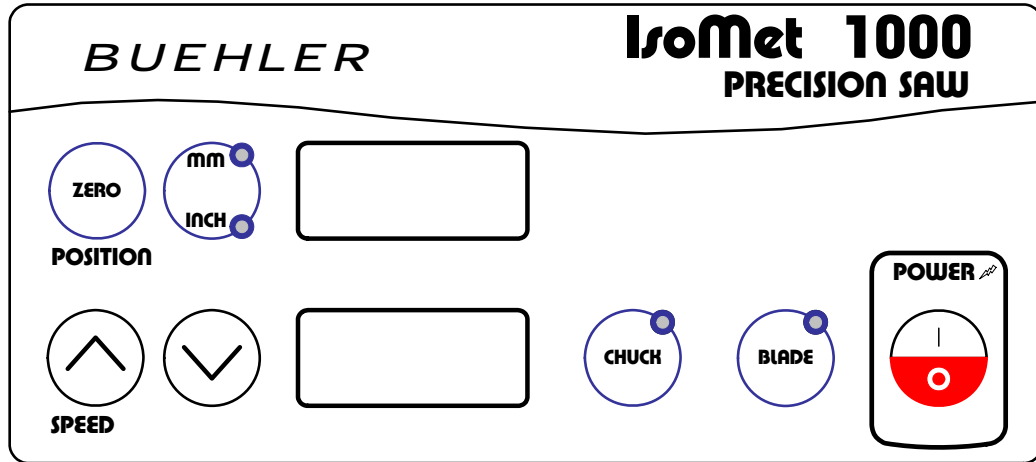


Figure 5 IsoMet® 1000 Front Control Panel



POSITION (ZERO) Resets the blade position to zero. The POSITION LCD will display 00.0.



UNITS (MM / INCH) Displays either millimeters or inches as the unit of measurement in the POSITION LCD.

The default unit of measurement is inches. The indicator light will light up for the unit of measure selected.

POSITION FIELD

Displays the distance of the blade from the set ZERO position.



INCREASE

Increases the blade speed in increments of 25 rpms. Press and hold the INCREASE button for rapid speed selection.



DECREASE

Decreases the blade speed in increments of 25 rpms. Press and hold the DECREASE button for rapid speed selection.

SPEED FIELD

Displays the blade speed in rpms. The minimum blade speed is 100 rpms. The maximum blade speed is 950 rpms.

Note: The IsoMet® 1000 will retain to the last selected speed.



CHUCK

Only used with the Rotating Chuck accessory. Activates and deactivates the Rotating Chuck. The indicator light will light up when the chuck is activated.



BLADE

Activates and deactivates the blade. The indicator light will light up when the blade is running.



POWER

Activates and deactivates power to the IsoMet® 1000.

Sample Arm

The Sample Arm has three positions to select from (see **Figure 6**). The position selected depends on the diameter of the wafering blade (4-inch to 7-inch) and the angle of engagement between the blade and the sample.

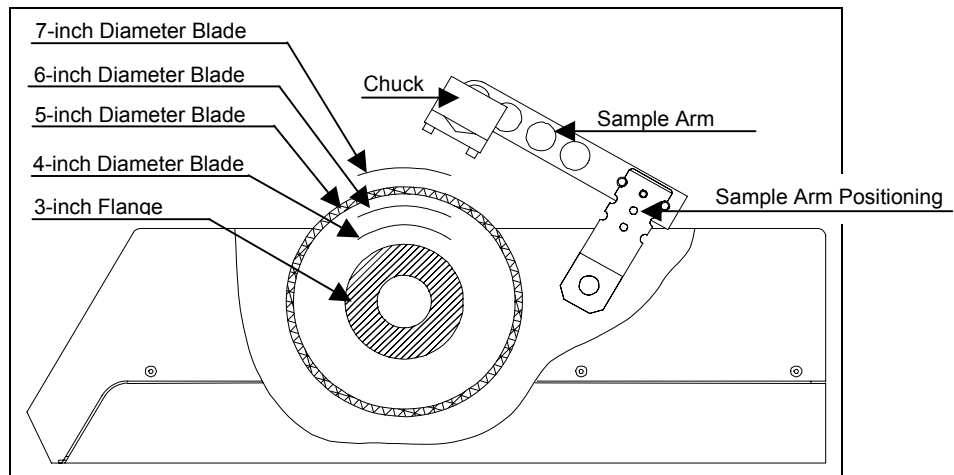


Figure 6 Sample Arm Positioning

Loading the Saw

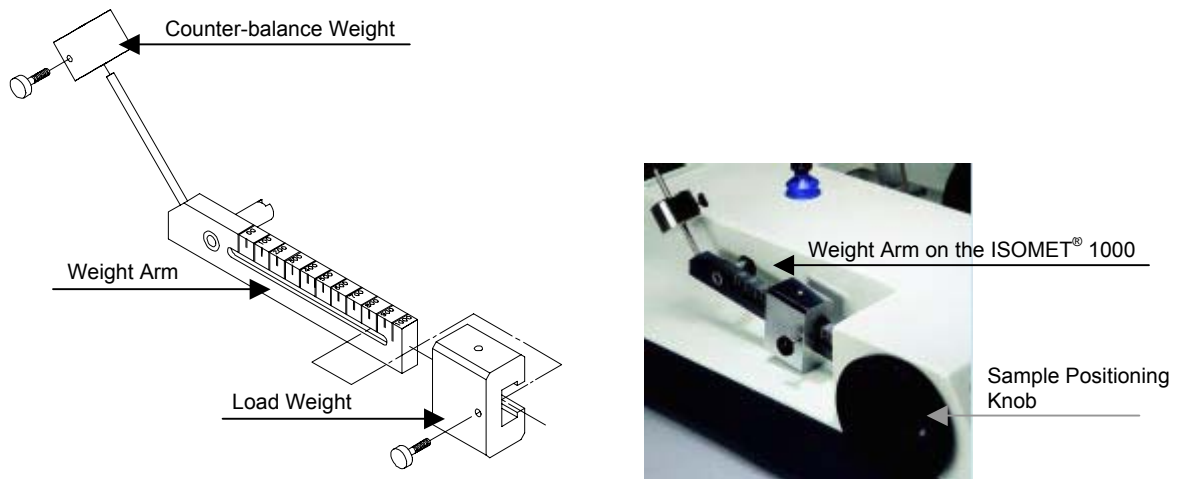


Figure 7 Weight Arm

1. On the left side of the IsoMet® 1000 is the Weight Arm. Lift the Weight Arm to the locked position.
2. Loosen the thumbscrew on the Load Weight.
3. Slide the weight to the zero setting.
4. Select the proper chuck for the application and clamp the sample in the chuck.
 - To clamp odd or irregular samples, it may be necessary to sandwich metal strips between the sample and the chuck.
5. Attach the sample loaded chuck to the Sample Arm with the supplied screw (a socket head cap).
6. Once the chuck is secure, rotate the Sample Positioning knob to move the Sample Arm to the far left.
7. Lower the Weight Arm so it lays horizontal.
8. Slide the counter-balance weight up or down until a balance is achieved.
9. Tighten the thumbscrew on the counter-balance weight to secure the weight.
 - If a large chuck or a heavy sample is used, a balance may not be achieved.
 - If the sample is load sensitive, deduct the unbalanced weight from the Load Weight setting.
10. Set the Load Weight to the desired load as marked on the Weight Arm.
 - The Weight Arm is calibrated from zero (0) to 500 grams. 300 grams of additional weight can be added with the optional weight kit.
 - Lighter weights are recommended since heavier loads can cause greater surface damage to the sample.

End of Cut Adjustment

The End of Cut Adjustment knob is located under the hood on the IsoMet® 1000 housing (see **Figure 8**).

The End of Cut Adjustment knob sets the total travel of the Sample Arm and stops the blade when the travel is complete. This End of Cut feature can also be used to cut a sample to a certain depth.

The arm travel can be set to stop the saw either just before a cut is complete or when a cut is complete. By setting the End of Cut feature to deactivate the saw just before a cut is complete reduces the weight on the sample and prevents the possible burring or cleavage of fragile materials near the end of a cut.

An alternative for minimizing burring and to prevent cleavage of fragile materials is to use a double saddle chuck.

Note: The End of Cut feature must be positioned and set to prevent the sample and/or chuck from riding on the blade flanges after the cut is complete.

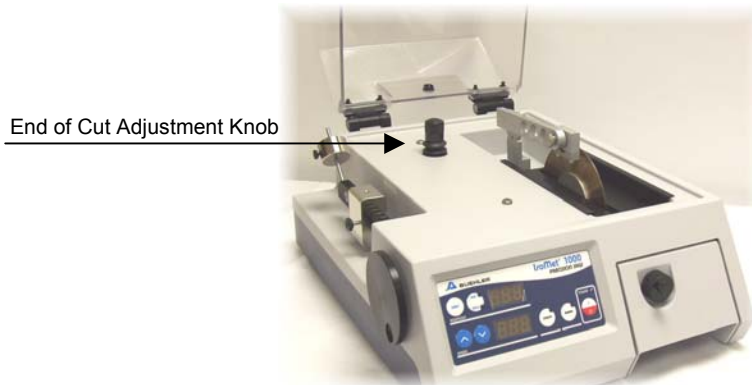


Figure 8 IsoMet® 1000

Cutting a Sample

1. Using the appropriate chuck, load the sample and chuck on to the Sample Arm.
Note: Do not scratch the blade or drop a sample on the wafering blade's edge.
2. Raise the Sample Arm to adjust the position of the sample.
3. Rotate the Sample Positioning knob to move the sample left or right.
 - The Front Control Panel will display the numerical movement of the sample.
4. Lower and hold the Sample Arm with the sample just above the wafering blade.
5. Rotate the Sample Positioning knob until the sample touches the side of the wafering blade.
6. Press the DISPLAY (ZERO) button to reset the POSITION LCD to zero (00.0).

7. Raise the Sample Arm to the locked position.
8. Press the UNITS button to display millimeters or inches.
9. Advance the sample as required.
10. Close the hood.
11. Press the SAW (RUN/STOP) button to activate the blade.
12. Press the INCREASE or DECREASE buttons to set the blade speed.
Note: Faster speeds (and heavier weights) tend to damage the sample surface.
13. The cut cycle will begin.
14. If the End of Cut Adjustment has been set, the blade will automatically stop when the cut is complete.

Maintenance

The IsoMet[®] 1000 Precision Saw will continue to perform at optimum levels with proper care, daily cleaning, and general maintenance.

The protective hood and touch-panel control pad should be cleaned using mild soap and water applied with a soft cloth. **Do not** use ammonia-based cleaners, i.e. Windex[®]. Cloudiness and cracking can occur.

Exterior painted surfaces, including the cutting chamber, should be cleaned with a non-abrasive household cleaner.

Note: When the IsoMet[™] is used in a Hot Cell or Glove Box, the inert atmosphere may cause excessive motor brush wear. Brushes may need to be replaced monthly. This replacement is not covered under the warranty

Trouble Shooting Chart

Problem	Possible Cause	Correction
The IsoMet [®] does not power on.	The unit is not plugged in.	Check the power cord connection.
	The unit is not powered on.	Check the rear power switch.
The blade keeps pinching.	Wrong blade for the material.	Replace with correct blade.
	Improper sample fixture (primary cause).	Use correct sample fixture.
	Blade may need to be dressed.	Dress blade.
The bed has rust on it.	Improper coolant mixture.	Check the coolant for proper mixture.
	The hood has been closed too long with moisture build up.	Open hood and keep hood open when not in use.
The Rotating Chuck does not work.	Cable is disconnected.	Check the cable connection.
	Rotating chuck is not powered on.	Make certain the Rotating Chuck is turned on.
Coolant leaks from the IsoMet [®] .	Table or unit is not level.	Make certain the table is level.
	Coolant level too high.	Check the volume of cutting fluid.

IsoMet[®] 1000 Precision Saw Accessories

IsoMet[®] 1000 Accessories

Catalog No.	Description
Chucks	
11-1183 Chuck	Double Saddle Type
11-1184 Chuck	For Bar and Tube Stock
11-1185 Chuck	For Irregular Shaped Specimens
11-1186 Chuck	For Wafers Single Crystals and Thin Sections
11-1187 Chuck	For Long Samples, Single Saddle Type
11-1188 Chuck	For Petrographic and Ceramographic Thin Sections
11-1189 Chuck	For 1-inch or 1 ½-inch Diameter Specimens (Requires the use of 11-1192 Recessed Flanges)
11-2482 Fastener Chuck	For Longitudinal Sectioning of Fasteners, Tubes, and Solid Cylinders
11-2489 Specimen Chuck	For 1 ½-inch and 40 mm Mounted Samples
11-2483 Double Saddle Chuck.....	1-inch Diameter Capacity
11-2484 Glass Slide Chuck.....	27 mm x 46 mm Glass Slide for Thin Sections
11-2488 Glass Slide Chuck.....	2-inch x 3-inch Glass Slide for Thin Sections
11-2496 Chuck Padding	Applied to Chucks for Holding Brittle or Friable Specimens
Flanges	
11-1191 Flange.....	1 ½-inch Diameter, Recessed
11-1192 Flange.....	1 ⅜-inch Diameter, Recessed (For use with 11-1188 Chuck and 11-1189 Chuck)
11-2282 Flange.....	3-inch Diameter
11-2283 Flange.....	4-inch Diameter
11-2284 Flange.....	5-inch Diameter
Other	
11-1190 Dressing Stick	For Dressing Series 15 and 20 Wafering Blades
11-1290 Dressing Stick	For Dressing Series 5 and 10 Wafering Blades
11-2181 Rotating Chuck Accessory	For Holding and Rotating Samples up to 2-inch in Diameter
11-2182 Table Saw Attachment	For Hand-Cutting Long or Irregular Specimens
11-2186 Splash Shield	For use with the 11-2182 Table Saw Attachment
11-2183 Accessory Weight Set	For Increasing Cutting Load to 800 gm
11-2185 IsoMet [®] 1000 Goniometer	For Sectioning Crystals
11-2293-016 IsoCut [®] Cutting Fluid	1 Pint (.48 liter)

IsoMet® 1000 Precision Saw Accessories

Wafering Blades

Blade Series	Diameter and Thickness				
	3" x 0.006" (75 x 0.2 mm)	4" x 0.012" (100 x 0.3 mm)	5" x 0.015" (125 x 0.4 mm)	6" x 0.020" (150 x 0.5mm)	7" x 0.025" (180 x 0.6mm)
30 HC			11-4239**		11-4241**
For use with plastics, polymers, and rubber					
20 HC			11-4215*		11-4237
For aggressive general sectioning of ferrous and non-ferrous materials					
15 HC	11-4243	11-4244	11-4245	11-4246	11-4247
For routine use, metal matrix composites, PC boards, and thermal spray coatings					
20 LC			11-4225*		11-4227
For use with hard/tough materials, structural ceramics, boron carbide, boron nitride, silicon nitride					
15 LC	11-4253	11-4254	11-4255	11-4276	11-4277
For use with hard/brittle materials, structural ceramics, electronic substrates, alumina, zirconia, silicon carbide					
10 LC	11-4283		11-4285		11-4287
For use with medium to soft ceramics, electronic packages, GaAs, AlN, and glass fiber reinforced composites					
5 LC	11-4289		11-4295		
For use with soft friable ceramics, composites with fine reinforcing media, CaF ₂ , MgF ₂ , and carbon composites					
ISOCUT	11-4263	11-4264	11-4265	11-4266	11-4267
Wafering Blades: For iron and cobalt based alloys, nickel base super alloys, and lead base alloys					

****Alternate Blade Thickness of 0.020" (0.5 mm)**

***Alternate Blade Thickness of 0.030" (0.8 mm)**

IsoMet® 1000 Precision Saw Drawings

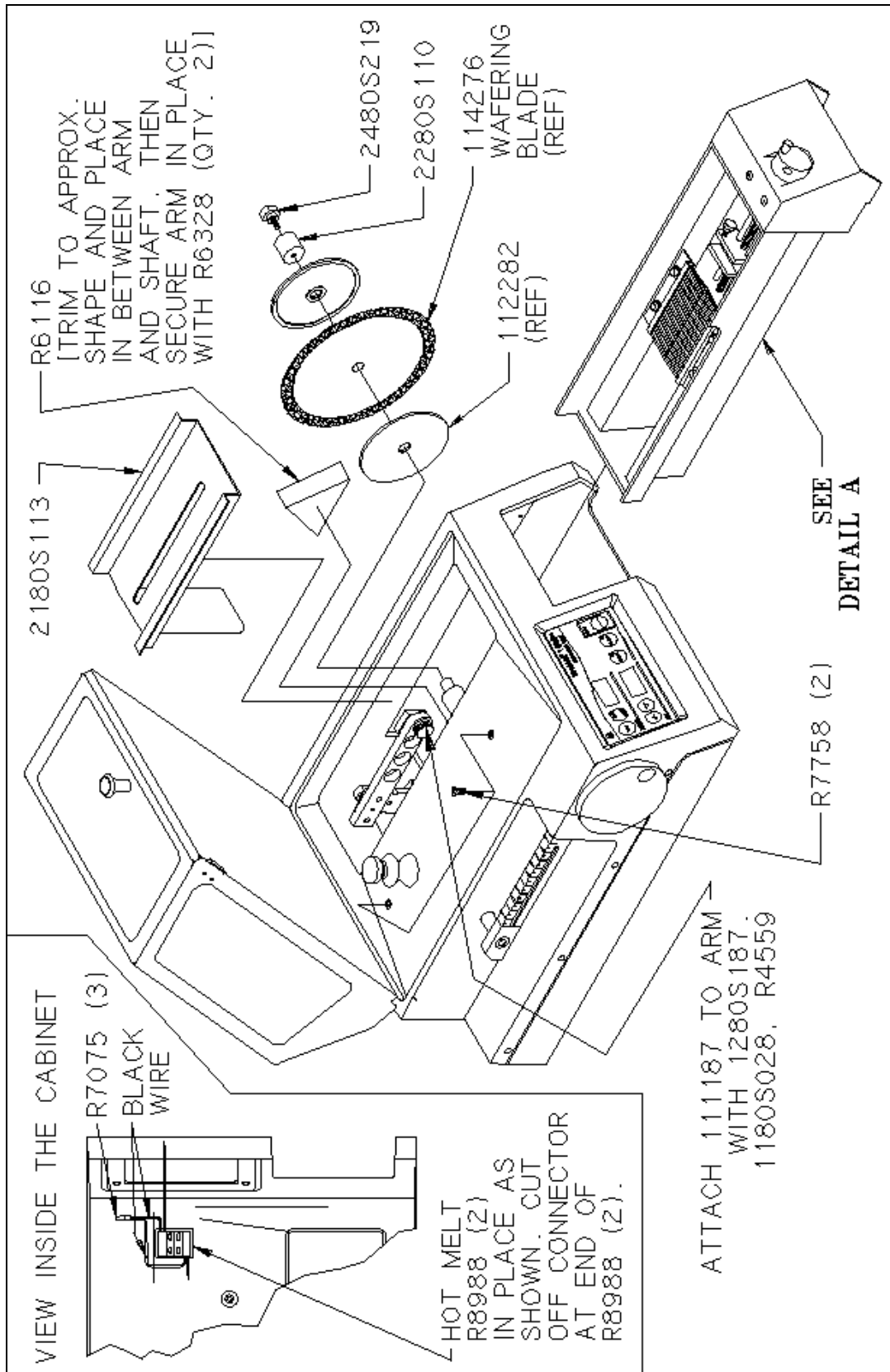


Figure 9 IsoMet® 1000 Assembly Diagram

IsoMet® 1000 Precision Saw Drawings

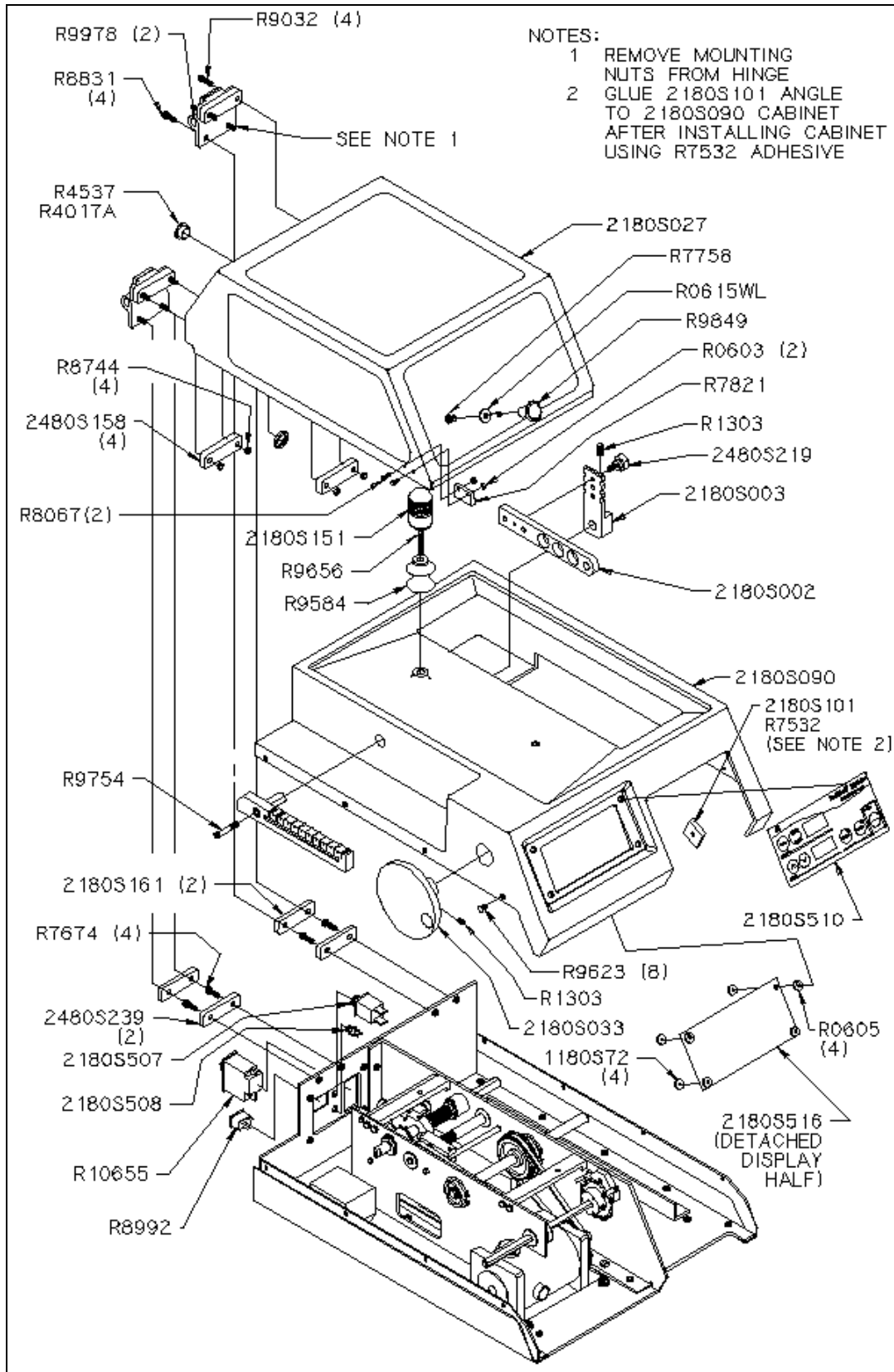


Figure 10 IsoMet® 1000 Assembly Diagram

IsoMet® 1000 Precision Saw Drawings

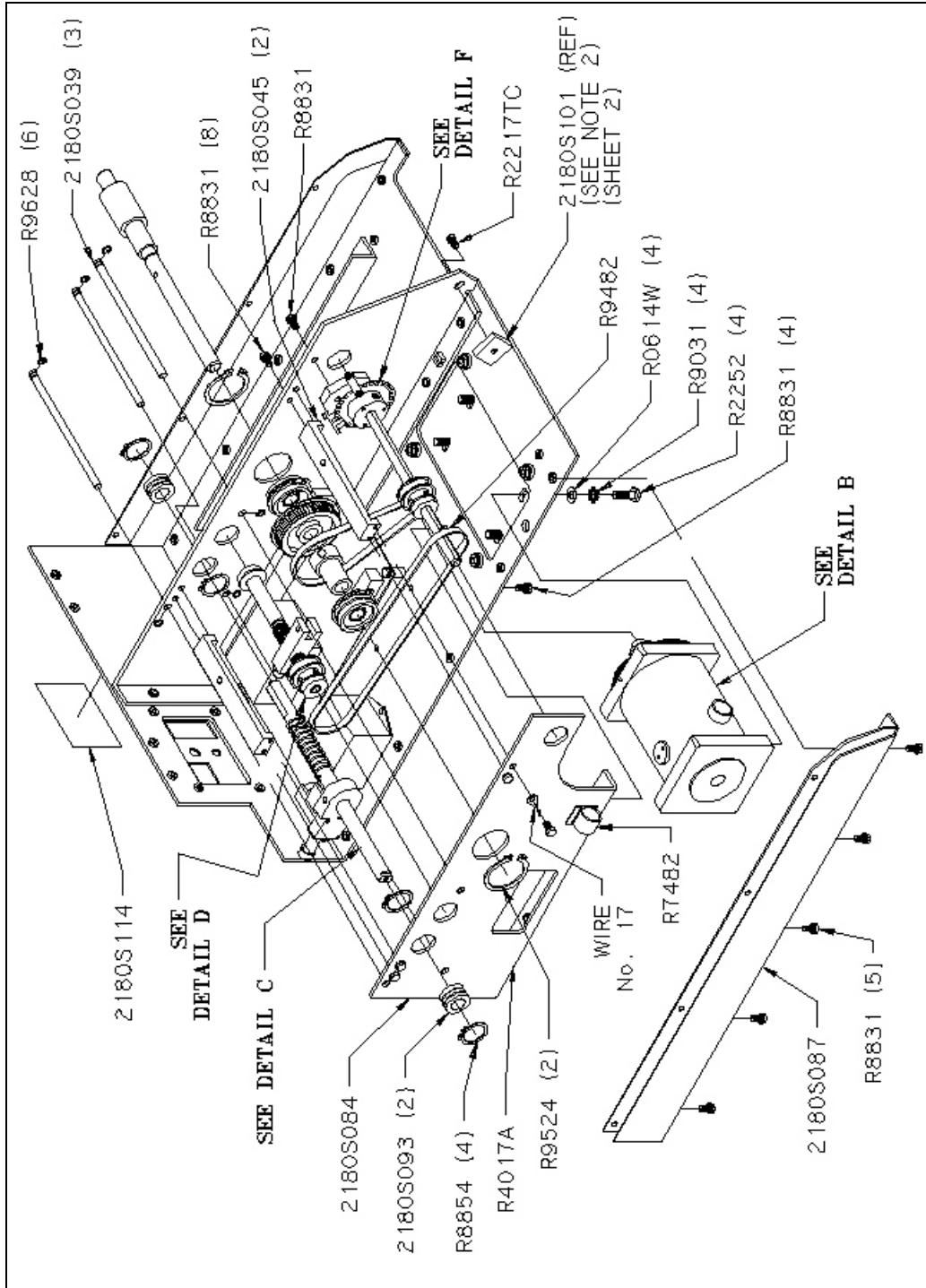


Figure 11 IsoMet® 1000 Assembly Diagram

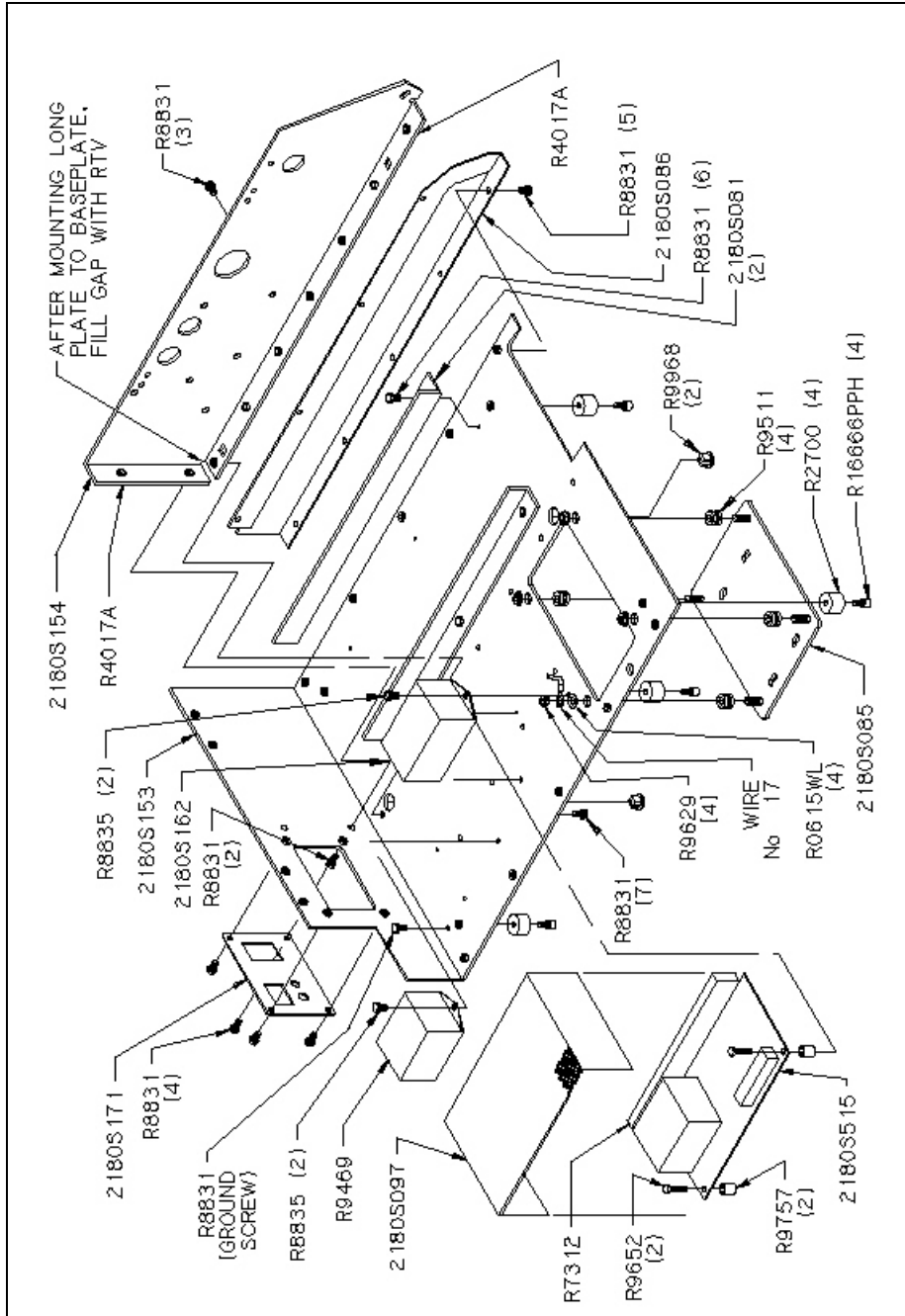


Figure 12 IsoMet® 1000 Assembly Diagram

IsoMet® 1000 Precision Saw Drawings

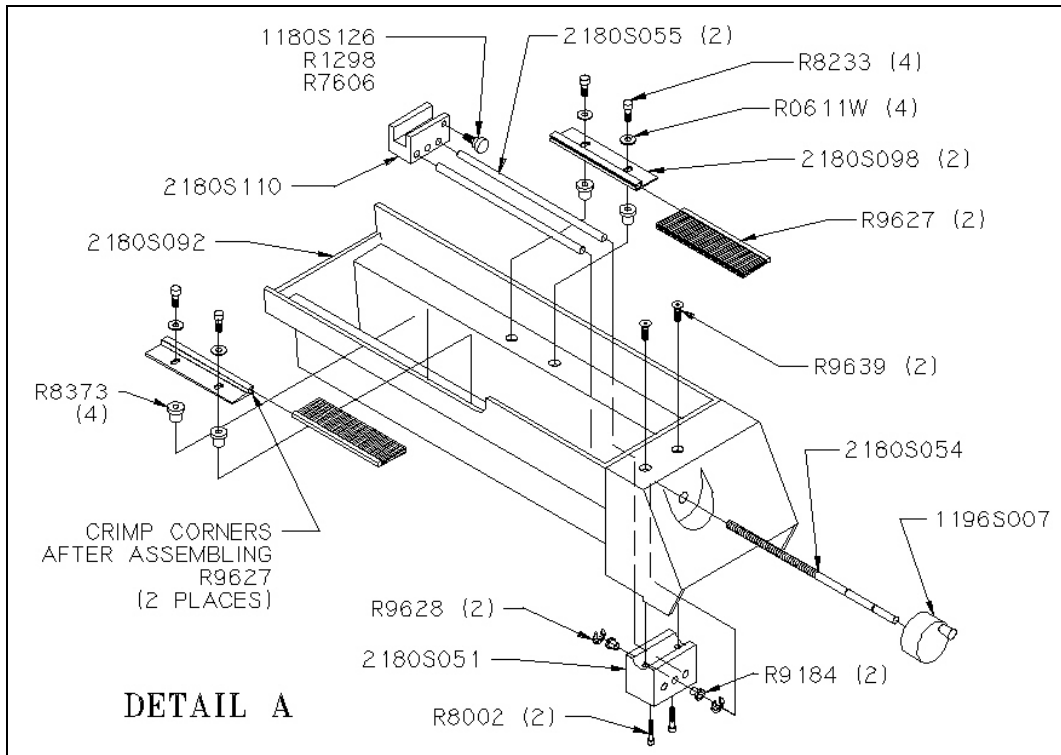


Figure 13 IsoMet® 1000 Lubricant Tray Assembly Diagram

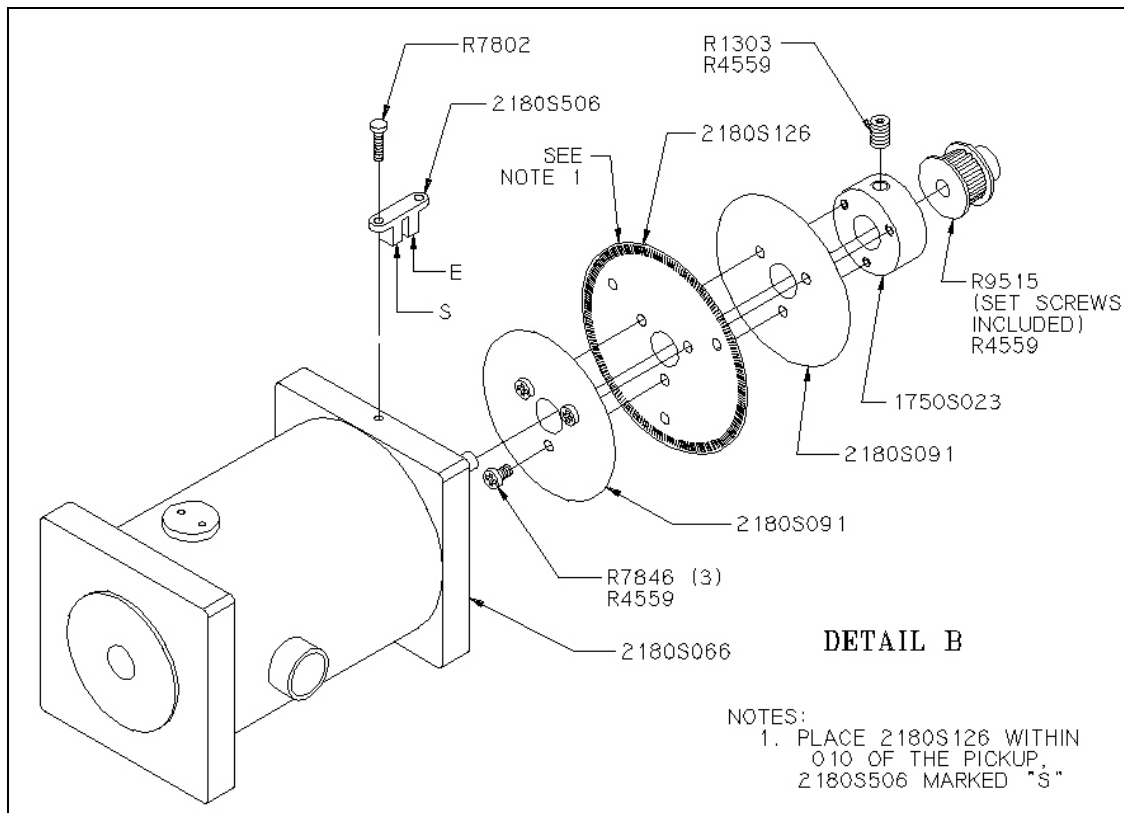


Figure 14 IsoMet® 1000 Motor Assembly Diagram

IsoMet[®] 1000 Precision Saw Drawings

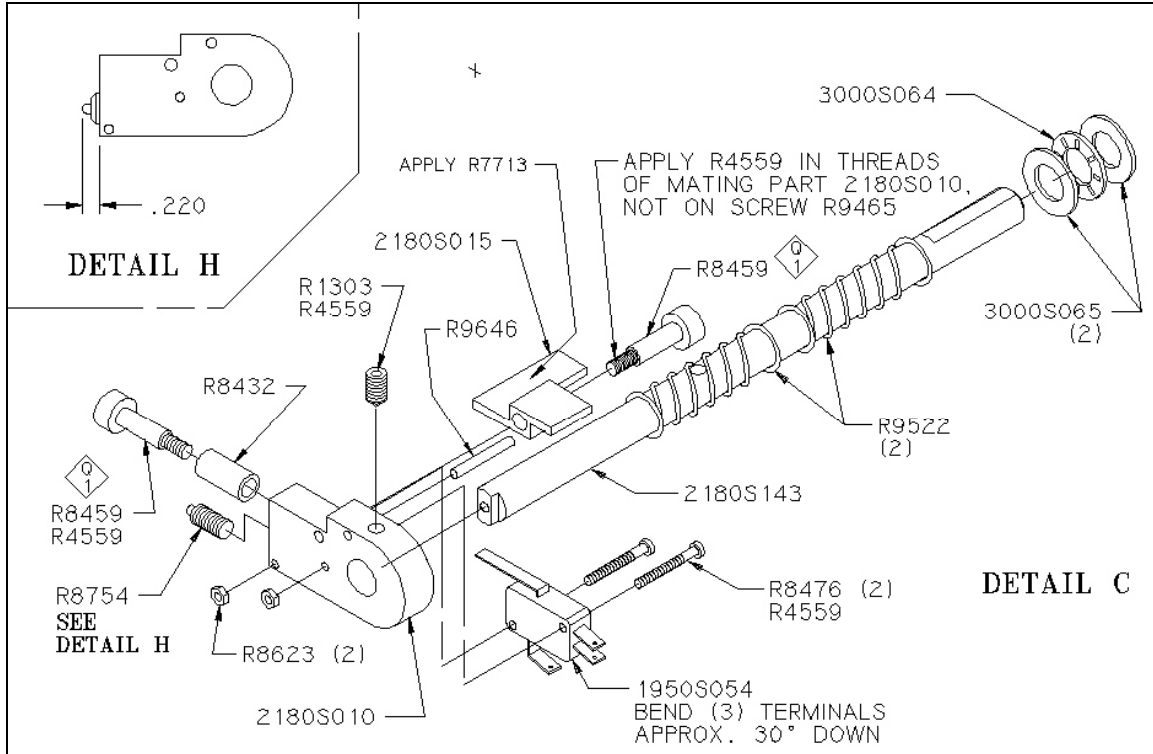


Figure 15 IsoMet[®] 1000 Weight Arm Support Shaft Assembly Diagram

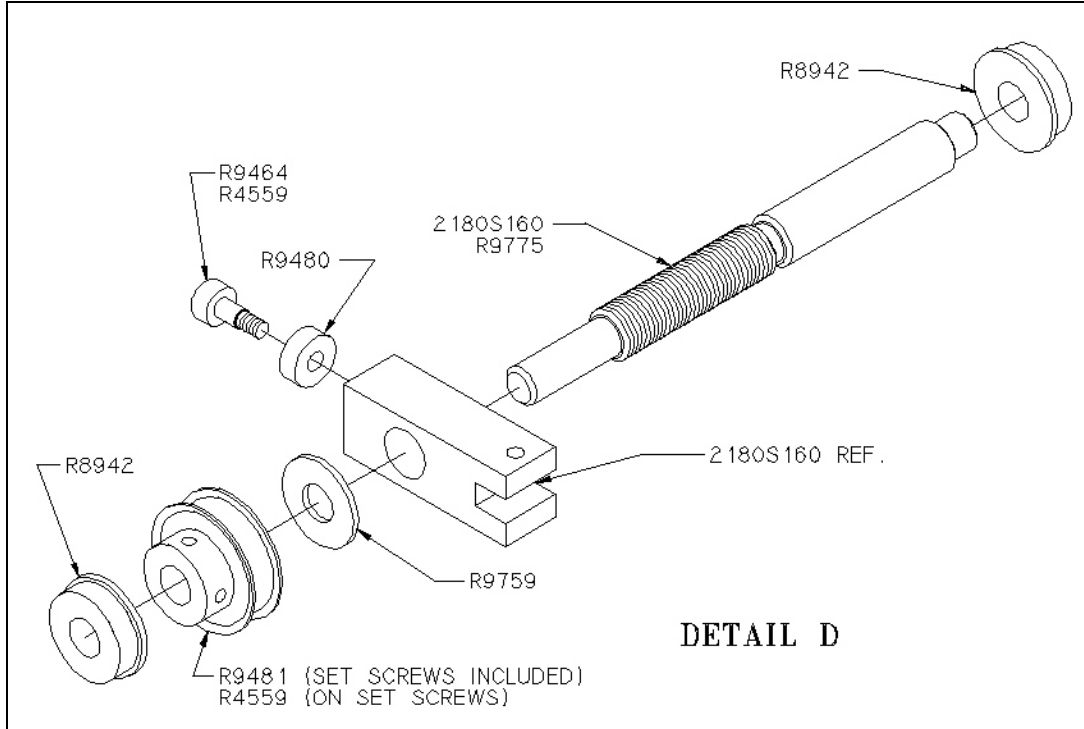


Figure 16 IsoMet[®] 1000 Sample Arm Support Shaft Assembly Diagram

IsoMet® 1000 Precision Saw Drawings

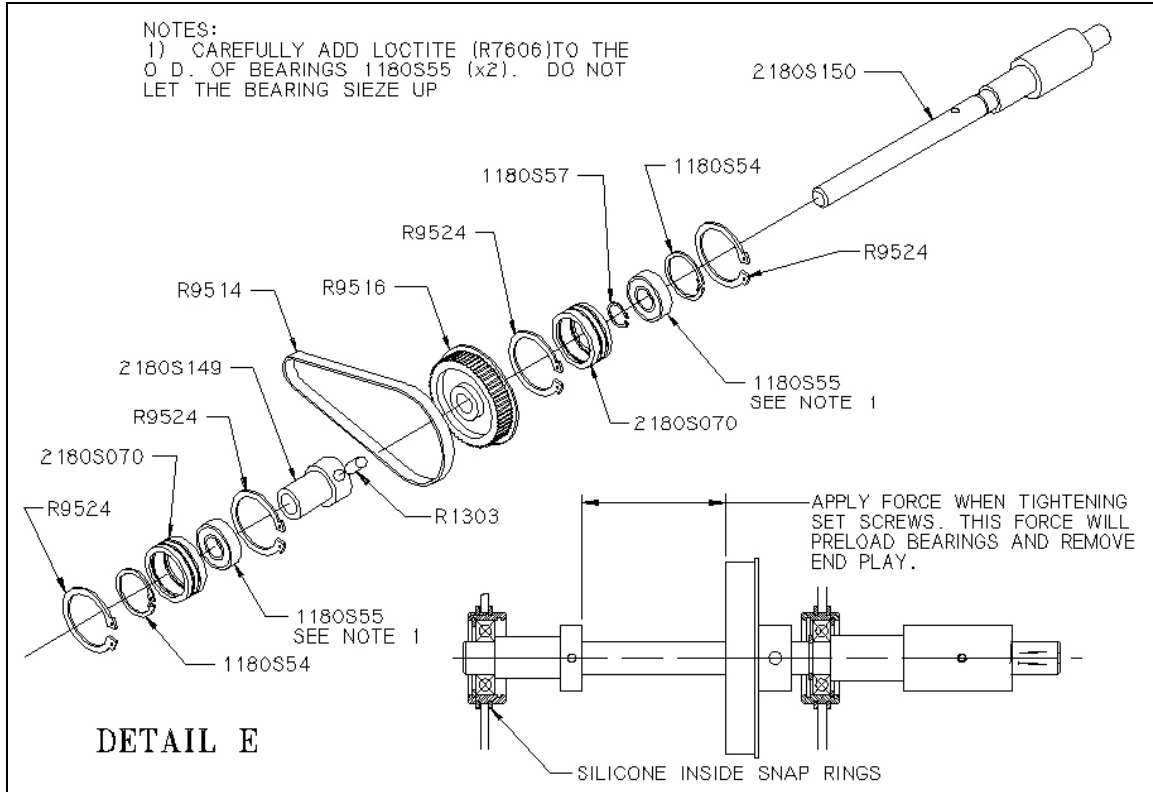


Figure 17 IsoMet® 1000 Motor Shaft Assembly Diagram

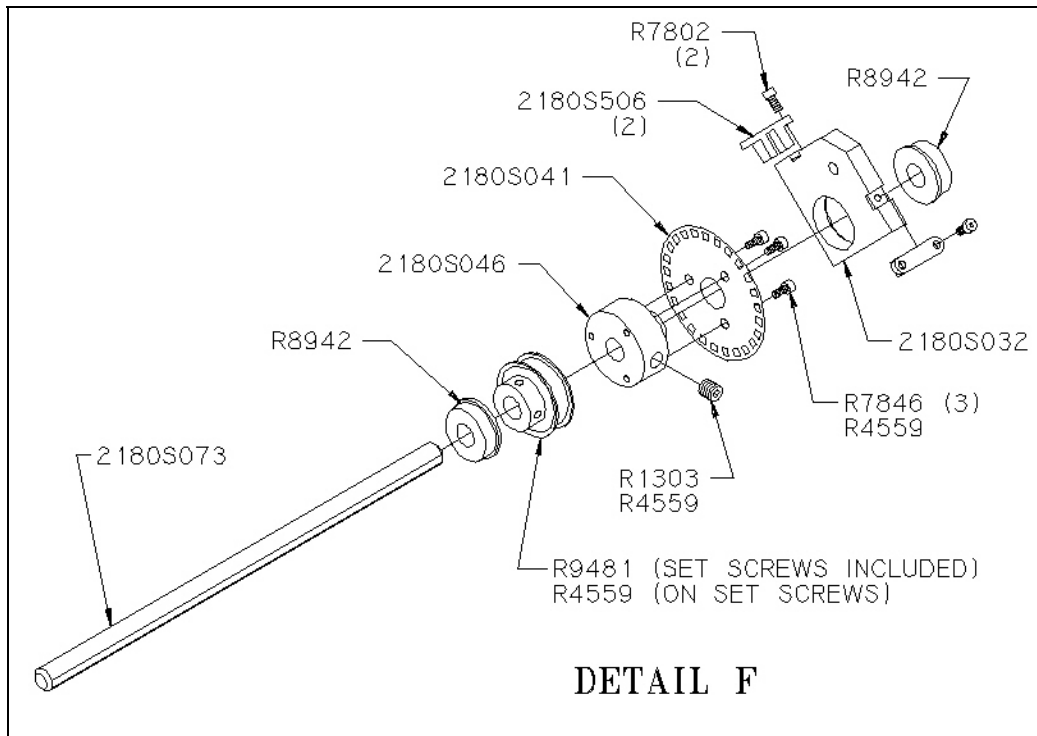


Figure 18 IsoMet® 1000 Sample Positioning Knob Shaft Assembly Diagram

IsoMet[®] 1000 Precision Saw Drawings

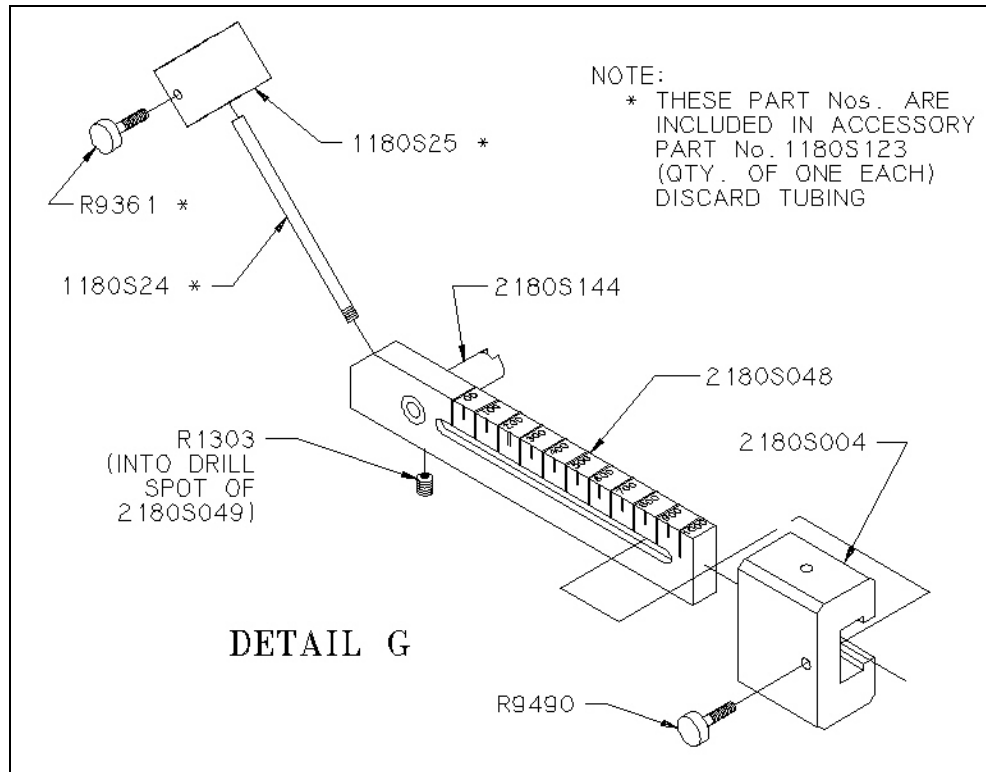


Figure 19 IsoMet[®] 1000 Weight Arm Assembly Diagram

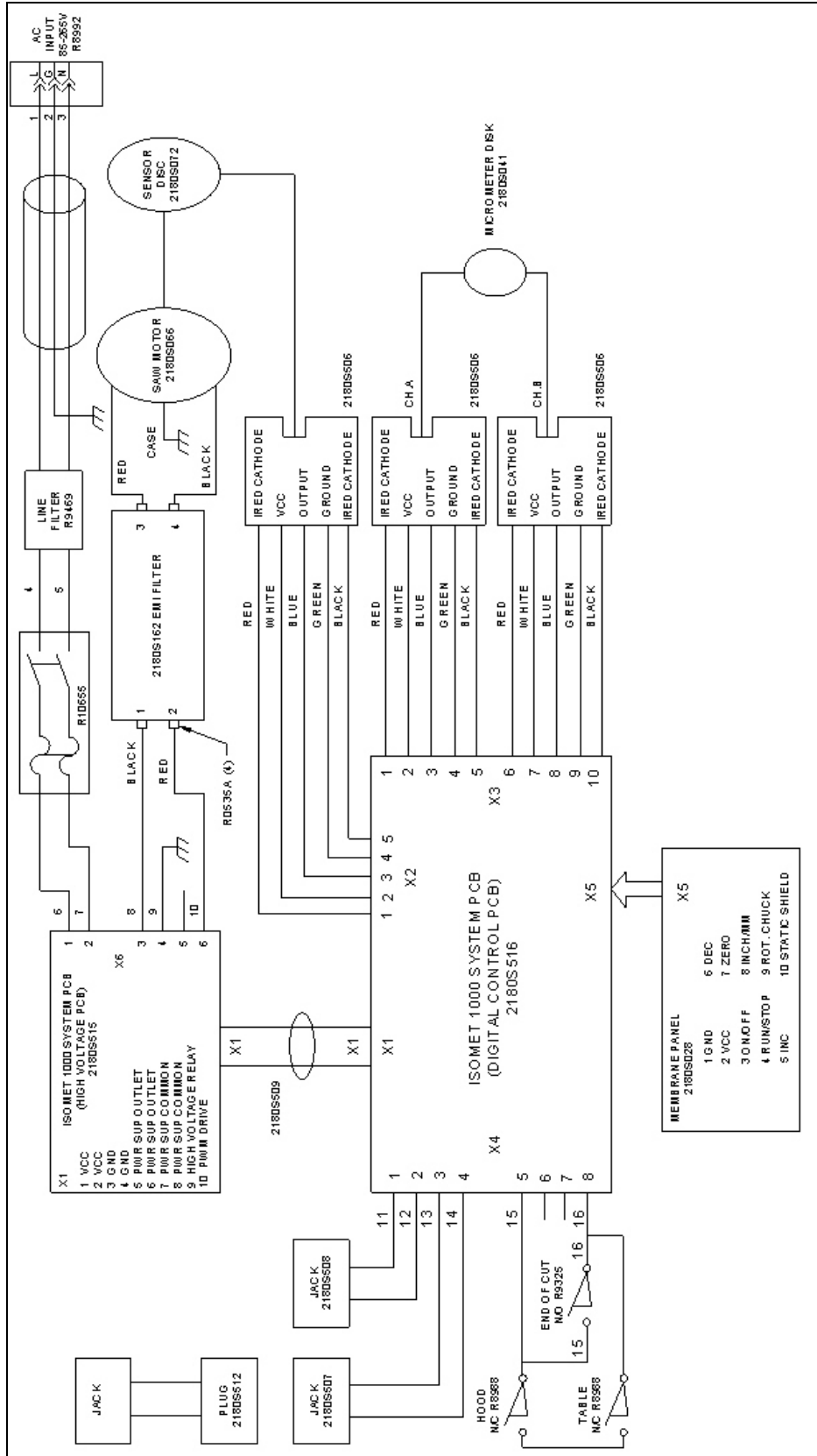


Figure 20 IsoMet® 1000 Electrical Diagram

IsoMet® 1000 Precision Saw Parts List

Part Number	Description	Qty	U/M
MA112180	IsoMet 1000 INSTRUCTION MANUAL	1.00	EA
R0545	TERMINAL #8 BLACK SPADE 16-14 FI	4.00	EA
R0535A	TERMINAL #6 BLACK SPADE 22-16 FI	4.00	EA
R0603	HEX NUT 4-40 STAINLESS STEEL	2.00	EA
R0605	HEX NUT 6-32 STEEL CAD	4.00	EA
R0609LW	WASHER SPLK #8	.00	EA
R0611W	WASHER #10 FLAT	4.00	EA
R0612LWE	LOCK WASHER EXTERNAL #10 STAINLESS STEEL	4.00	EA
R0612W	WASHER #10 FLAT STAINLESS STEEL	1.00	EA
R0614W	WASHER 1/4 INCH	4.00	EA
R10031	EPOXY 5 MIN.	1.00	EA
R10655	CIRCUIT BREAKER 5 AMP	1.00	EA
R1298	SET SCREW 10-32 X 3/4 STAINLESS STEEL	1.00	EA
R1303	SET SCREW 1/4-20 X 1/4 STAINLESS STEEL	7.00	EA
R16666PPH	SCREW 10-32 X 1/2 PHILLIPS PAN STAINLESS STEEL	4.00	EA
R2217TC	SCREW 10-16 X 3/8 PHILLIPS PAN STAINLESS STEEL	1.00	EA
R2252	HEX SCREW 1/4-20 X 1/2 STEEL ZINC	4.00	EA
R2700	RUBBER BUMPER 3/4 DIAMETER X 9/16 BLACK	4.00	EA
R4017A	CLEAR ADHESIVE SEAL RTV 11 OZ.	0.00	TB
R4537	HOLE PLUG .625 DIAMETER BLACK	1.00	EA
R4559	ANAEROBIC ADHESIVE-THREAD GR.	0.00	EA
R7075	STAKON WIRE JOINTS	3.00	EA
R7312	THERMAL COMPOUND	0.00	LB
R7482	COMPONENT CLIP 1/2 DIAMETER	1.00	EA
R7532	CYANO ACRYLATE ADHESIVE	.01	BT
R7606	HIGH TEMP ADHESIVE	1.00	ML
R7713	VACUUM GREASE	.01	EA
R7758	SCREW 1/4-20 X 3/8 PAN PH STAINLESS STEEL	3.00	EA
R7802	SCREW 4-40 X 5/16 PAN PHIL STAINLESS STEEL	3.00	EA
R7821	REEDS WITCH MAGNET	1.00	EA
R7846	SCREW 6-32 X 1/4 PAN PHIL HD STAINLESS STEEL	6.00	EA
R8002	SCREW 6-32 X 1/2 SOCKET HEAD	2.00	EA
R8067	SCREW 4-40 X 3/8 FLAT PHIL STAINLESS STEEL	2.00	EA
R8233	SCREW 10-24 X 7/8 SOCKET STAINLESS STEEL	4.00	EA
R8373	NUT WELL 10-24	4.00	EA
R8432	POLYURETHANE TUBING 1/4 INCH ID	0.083	FT
R8459	SCREW SHOULDER 10-24 SOCKET HEAD	2.00	EA
R8476	SCREW 4-40 X 1-1/8 ROUND PHILLIPS	2.00	EA
R8623	KEPS NUT 4-40 ZINC PLATE STEEL	2.00	EA
R8678	SCREW 10-32 X 1 LARGE PAN HEAD	4.00	EA
R8744	HEX NUT 1/4-20 HEAVY NYLON BLACK	4.00	EA
R8754	SPRING PLUNGER 3/8-16 X .625 ST	1.00	EA
R8831	SCREW 10-32 X 3/8 PHILLIPS W/W ST CD	45.00	EA
R8835	SCREW 8-32 X 3/8 PHILLIPS W/W STEEL CD	2.00	EA

IsoMet® 1000 Precision Saw Parts List

Part Number	Description	Qty	U/M
R8854	RETAINING RING C CLIP .875 DIAMETER	4.00	EA
R8942	BALL BEARING 3/8 ID FLANGED	4.00	EA
R8988	MAGNETIC REED SWITCH	2.00	EA
R8992	SNAP-IN IEC POWER INLET	1.00	EA
R9008A-D	IEC POWER CORD – COUNTRY OF USE	0.00	EA
R9031	WASHER EXT 1/4 X .50 X .03 STAINLESS STEEL	4.00	EA
R9032	NYLON SCREW 1/4-20 X 1 ROUND HEAD BLACK	4.00	EA
R9184	NYLON BEARING, .25 ID X .25	2.00	EA
R9408	SPEED SENSOR	2.00	EA
R9464	SCREW SHOULDER 8-32 X 3/8 STNL STEEL	1.00	EA
R9469	INPUT LINE FILTER	1.00	EA
R9480	BALL BEARING.187 X .50 X .156	1.00	EA
R9481	TIMING PULLEY 3 MM HTD X 3/8 BORE	2.00	EA
R9482	TIMING BELT 3 MM P HTD X 171 T	1.00	EA
R9490	THUMB SCREW 10-32 X 1.00 STAINLESS STEEL	1.00	EA
R9511	HOLE GROMMET .26 ID X .62 OD	4.00	EA
R9514	HTD TIMING BELT 3 MM P X 128 T	1.00	EA
R9515	HTD PULLEY 3 MM P X 20 T-.25 BORE	1.00	EA
R9516	HTD PULLEY 3 MM P X 60 T-.50 BORE	1.00	EA
R9522	COMPRESSION SPRING .594 OD X .040	2.00	EA
R9524	RETAINING RING EXT. 1-3/8 X .056	4.00	EA
R9584	SYNTHETIC RUBBER BELLOW 1.26 OD	1.00	EA
R9623	SCREW 6-32 X 3/8 SOCKET FLAT STNL STEEL PLATE	8.00	EA
R9627	LARGE BRUSH 1.60 X 4 IN ISO 1000	2.00	EA
R9628	RETAINING RING E-STYLE .210 GR	8.00	EA
R9629	HEX NUT 1/4-20 NYLOK STEEL ZINC	4.00	EA
R9639	SCREW 10-32 X 1/2 SOCKET FLAT HEAD STNL STEEL	2.00	EA
R9646	ROLL PIN 1/8 DIAMETER X 1.00 STNL STEEL	1.00	EA
R9652	SCREW 8-32 X 3/4 SLOT BIND NY	2.00	EA
R9656	THREAD ROD 1/4-20 X 2.75 STNL STEEL	1.00	EA
R9700	SPEC CE APPROVED PLATE	1.00	EA
R9754	SCREW 8-32 X 1-1/4 SOCKET STNL STEEL SPEC	1.00	EA
R9757	SPACER .17 ID X .38 OD X .50 NY	2.00	EA
R9775	ANTI-SEIZE COPPER LUBRICANT	.01	CN
R9759	WASHER .37 X .87 X .06 TEFLON	1.00	EA
R9849	KNOB, 3/4D X 3/4L 1/4-20 UNC-2B	1.00	EA
R9968	SCREW INSERT	2.00	EA
1180S123	COUNTER-BALANCE WEIGHT ASSEMBLY	1.00	EA
1180S54	RETAINING RING INT 1.125 ID	2.00	EA
1180S55	BALL BEARING .5000 ID 1.1250 OD	2.00	EA
1180S57	RETAINING RING EXT .500	1.00	EA
1180S72	KEPS NUT 6-32	4.00	EA
1196S007	SPINNER TYPE KNOB	1.00	EA
1280S187	THUMB SCREW 10-32 X .6	1.00	EA

IsoMet® 1000 Precision Saw Parts List

Part Number	Description	Qty	U/M
1750S023	HUB SHAFT 1/2-INCH	1.00	EA
1950S054	TOP LIMIT SWITCH	1.00	EA
2180S002	IsoMet 1000 ARM	1.00	EA
2180S004	IsoMet 1000 WEIGHT	1.00	EA
2180S010	RIDER BLOCK	1.00	EA
2180S015	SWITCH ACTIVATOR	1.00	EA
2180S027	IsoMet 1000 HOOD	1.00	EA
2180S032	HANDLE MOUNT SHAFT	1.00	EA
2180S033	IsoMet 1000 HAND WHEEL	1.00	EA
2180S039	SHORT SHAFT	3.00	EA
2180S041	SENSOR DISK, 25 HOLE	1.00	EA
2180S045	IsoMet 1000 BAR	1.00	EA
2180S046	SENSOR HUB	1.00	EA
2180S048	WEIGHT ARM	1.00	EA
2180S051	DRESSING CHUCK MOUNT BLOCK	1.00	EA
2180S054	DRESSING CHUCK SCREW	1.00	EA
2180S055	DRESSING CHUCK SHAFT	2.00	EA
2180S066	MOTOR, 48 VOLT DC 3000 RPM	1.00	EA
2180S070	BEARING MOUNT	2.00	EA
2180S086	LOWER RIGHT SIDE	1.00	EA
2180S087	LOWER LEFT SIDE	1.00	EA
2180S090	IsoMet 1000 CABINET	1.00	EA
2180S091	SENSOR DISC FLANGE	2.00	EA
2180S092	COOLANT TANK	1.00	EA
2180S093	BEARING .500 ID X .875 OD TEFLON	2.00	EA
2180S098	IsoMet 1000 BRUSH MOUNT	2.00	EA
2180S101	CABINET BRACKET	1.00	EA
2180S110	IsoMet 1000 DRESSING CHUCK	1.00	EA
2180S126	SENSOR DISK .200 DIAMETER HOLES	1.00	EA
2180S143	PIVOT SHAFT	1.00	EA
2180S144	PIVOT EXTENDER SHAFT	1.00	EA
2180S150	SHAFT ARBOR	1.00	EA
2180S153	IsoMet 1000 ALUMINUM BASE	1.00	EA
2180S159	IsoMet 1000 PARTS KIT	1.00	EA
2180S160	MICROMETER SCREW / NUT SET	1.00	EA
2180S162	IsoMet 1000 EMI FILTER	1.00	EA
2180S506	SPEED SENSOR ASSEMBLY	1.00	EA
2180S507	MOTOR JACK ASSEMBLY	1.00	EA
2180S508	POWER JACK ASSEMBLY	1.00	EA
2180S509	RIBBON CABLE, 10-PIN X 24-INCH	1.00	EA
2180S510	IsoMet 1000 NAME PLATE	1.00	EA
2180S513	IsoMet 1000 HARNESS	1.00	EA
2180S515	IsoMet 1000 PCB POWER	1.00	EA
2180S516	IsoMet 1000 LOGIC PCB	1.00	EA

IsoMet® 1000 Precision Saw Parts List

Part Number	Description	Qty	U/M
2180S999	IsoMet 1000 COMMON COMPONENTS	1.00	EA
2280S110	SHAFT BUSHING END ANODIZED	1.00	EA
2480S158	HINGE SPACER	4.00	EA
2480S219	THUMB SCREW 10-32 X .63	2.00	EA
3000S064	THRUST BEARING 1/2 INCH	1.00	EA
3000S065	THRUST WASHER 1/2 INCH	2.00	EA

IsoMet® 1000 Precision Saw Packaging

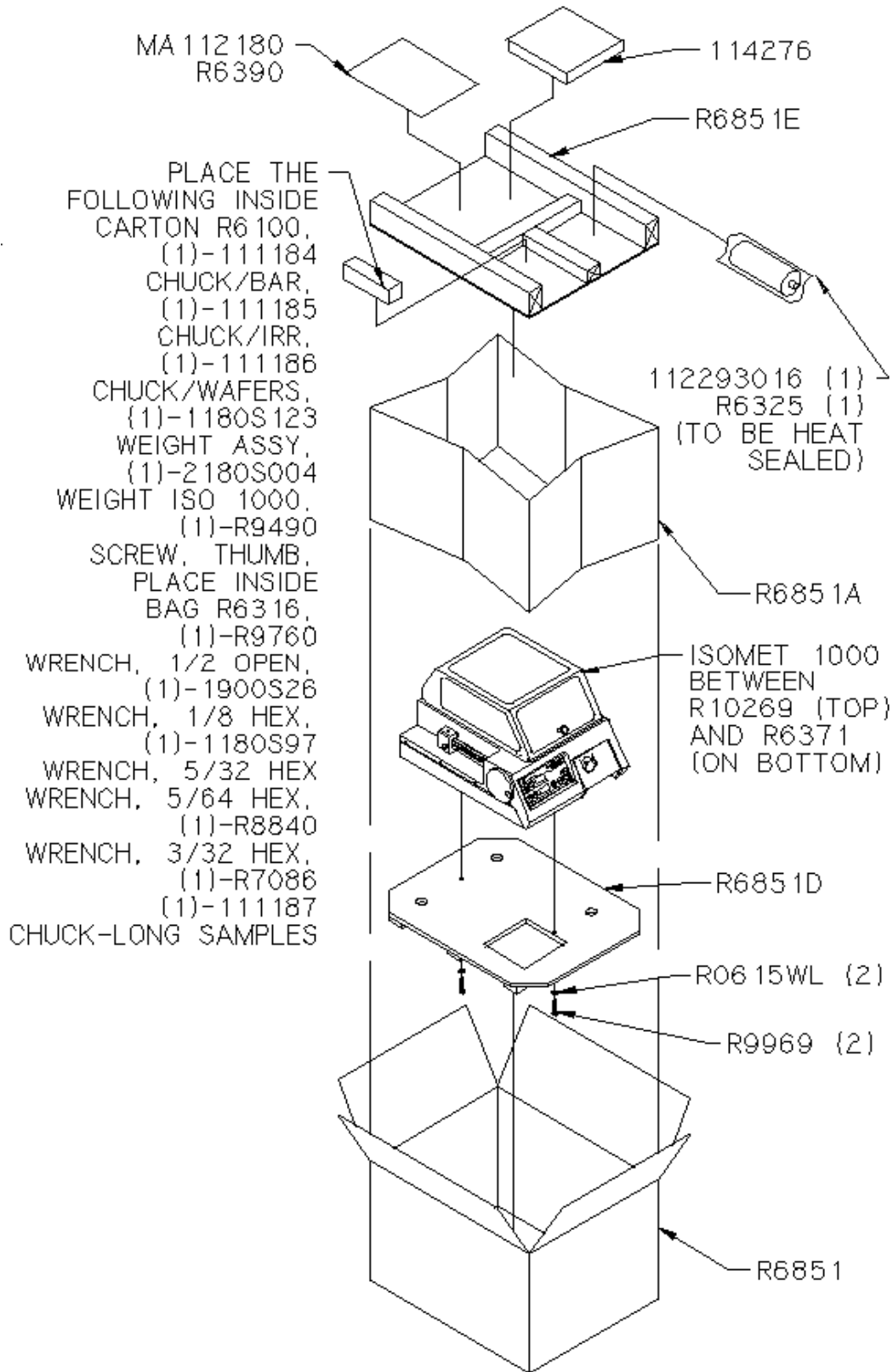


Figure 21 IsoMet® 1000 Packaging Diagram

IsoMet® 1000 Precision Saw Packaging Parts List

Part Number	Description	Qty	U/M
R0615WL	WASHER LARGE STAINLESS STEEL 1/4 INCH	200	EA
R10269	POLY SHEET 48 X 72 - 2 MIL	1.00	EA
R6100	CARTON 7X2X2	1.00	EA
R6371	POLY SHEET 36 X 48-2 MIL	1.00	EA
R6851	CARTON, 25 1/8 X 20 1/8 X 17 3/4	1.00	EA
R6851A	TAPED TUBE	1.00	EA
R6851D	PLYWOOD BASE	1.00	EA
R6851E	HOLD DOWN TOP	1.00	EA
R6316	POLY BAG 4 X 6-4 MIL	1.00	EA
R6325	POLY BAG 8 X 10-4 MIL	1.00	EA
R6390	ENVELOPE, WARRANTY-9 X 14 X 4 MIL	1.00	EA
R7086	HEX WRENCH SHORT ARM 1/32	1.00	EA
R8840	HEX WRENCH SHORT ARM 5/64	1.00	EA
R9760	OPEN END WRENCH 1/2 - 5/8 INCH	1.00	EA
R9969	LAG SCREW 1/4 X 1-1/2 ST ZINC	2.00	EA
111184	BAR & TUBE STOCK CHUCK	1.00	EA
111185	IRREGULAR SAMPLES CHUCK	1.00	EA
111186	WAFERS CHUCK	1.00	EA
111187	LONG SAMPLES CHUCK	1.00	EA
112282	FLANGE SET 3-INCH OF 2	1.00	EA
112293-016	ISOCUT PLUS FLUID - PINT	1.00	EA
114276	WAFERING BLADE 6 X .020 X 1/2 15 LC SERIES	1.00	EA
1180S97	HEX WRENCH 5/32 STEEL CD PL	1.00	EA
1900S26	HEX WRENCH 1/8	1.00	EA
2180S911	IsoMet 1000 SAW BASE UNIT ASSEMBLY	1.00	EA

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Notes
