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*For Technical Service visit our web site at http://www.darex.com

Or call Darex Corporation 800-547-0222

Or contact your Darex Distributor

The Darex Story

Darex Corporation began in 1973 in Beecher, Illinois. The D, A and R of Darex are the initials of three generations of the Bernard family; David, Arthur and Richard Bernard. David and his father Richard founded Darex. Grandfather Arthur Bernard, who earlier founded the Bernard Welding Company, contributed his energy and guidance to Darex. Art's inventions revolutionized the welding industry.

In 1978, Darex relocated to Ashland, Oregon. Grandson Dave and son Dick carry on Arthur's legacy of inventiveness. Darex grew to become the most recognized name in the cutting tool sharpening industry. Today, Darex is a world-leading manufacturer of precision cutting tool sharpeners.

Darex is proud to offer a complete line of quality precision cutting tool sharpeners at affordable prices. Before our first days, we at Darex had looked at our competitor's sharpeners and asked ourselves: "Must cutting tool sharpeners be complicated? Why must the choice be limited to cost prohibitive accuracy or low price inaccuracy?" Our sharpeners prove you can have it all: Simplicity, Accuracy, and Affordability.

We have always emphasized innovative product design and tested technology. The experienced personnel at our modern manufacturing facility use the latest production methods. The Darex marketing team knows first-hand the machines we sell and will guide you to the best machine for your needs. Our skilled technical service department is happy to answer your questions about our products or cutting tools.

The XT-3000 Sharpener

The Darex XT-3000 Xpandable Drill Sharpener sharpens standard and split point drills at any angle from 118 to 150 degrees. It sharpens drills sized from 3mm to 21mm. (.118 - .826) This sharpener is available with the choice of CBN wheels for HSS and cobalt or diamond wheels for carbide tools. The XT-3000 allows you to control each drill's point configuration including the relief and design of the split point. All adjustment and attachment changes are done without tools. To keep your Darex XT-3000 in top condition, please refer to the maintenance section of this manual.

Replacement wheels and parts are listed in the parts list on page 36. A schematic breakdown of the machine is on page 37 of the manual.

*Optional attachments allow you to sharpen other cutting tools including 90° spot drills, step drills, brad points, larger drills, Weldon and single flute countersinks.

Safety Instructions

FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING MACHINE!

Caution:

- **WE DO NOT RECOMMEND OPERATING MACHINE WITHOUT A VACUUM SYSTEM RUNNING**
- **GRINDING DUST INHALED/INGESTED CAN BE HARMFUL TO YOUR HEALTH.**
- **GRINDING PARTIALS WILL CAUSE DAMAGE TO THE INTERNAL COMPONENTS**

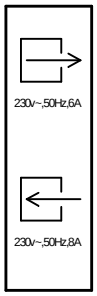
Caution:

WHEN USING ELECTRIC TOOLS, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO PREVENT THE RISK OF FIRE, ELECTRIC SHOCK AND PERSONAL INJURY, INCLUDING THE FOLLOWING:

- **WHEN MAINTENANCE OR MACHINE ADJUSTMENTS ARE PERFORMED ON SHARPENER ALWAYS:** Push the emergency stop button, unplug unit from power supply and use a "LOCK OUT" "TAG OUT" procedure.
- **FOLLOW INSTRUCTIONS ENTITLED "DAREX XT-3000 Maintenance"** in this Instruction Manual.
- **NEVER TOUCH INTERNAL PARTS OF THE SHARPENER WHEN THE SHARPENER IS ON** The rotating grinding wheel can cause injury.
- **USE CAUTION WHEN REPLACING THE GRINDING WHEEL** Follow instructions entitled "How to change a wheel", on page 21 of this Instruction Manual.

- **KEEP GUARDS IN PLACE** and in working order. See Decal at left.
- **REMOVE WRENCHES** Always check to see that any tools have been removed from sharpener before turning it on.
- **KEEP WORK AREA CLEAN** Cluttered areas and benches invite accidents.
- **DON'T USE IN DANGEROUS ENVIRONMENT** Do not use power tools in damp or wet locations, or expose them to rain. Do not use tools in the presence of flammable liquids or gases.
- **KEEP WORK AREA WELL LIT**
- **STORE EQUIPMENT** in a safe place when not in use.
- **DON'T FORCE TOOL** It will do the job better and safer at the rate for which it was designed.
- **USE THE RIGHT TOOL** Don't force tool or attachment to do a job it was not designed for.
- **ALWAYS USE SAFETY GLASSES** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistance lenses and they are **NOT** safety glasses. See Decal at left.

- **AVOID ACCIDENTAL STARTING** Make sure switch is in the "OFF" position before plugging it in.
- **USE RECOMMENDED ACCESSORIES** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards. See Decal at left.



- **CHECK FOR DAMAGED PARTS** Before further use of the tool, a guard or other part that is damaged should be carefully checked to assure that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- **NEVER LEAVE TOOL RUNNING UNATTENDED** Turn power off.
- **USE PROPER EXTENSION CORD** Make sure extension cord is in good condition. When using an extension cord be sure to use one heavy enough to carry the current the Drill Sharpener will draw. An undersize cord will cause a drop in line voltage, resulting in a loss of power and/or overheating.
- **DO NOT USE DAMAGED OR UNSHAPED WHEELS** Use grinding wheels suitable for speed of grinder.
- **THE CONTINUOUS A-WEIGHTED** sound pressure level at the operator's ear is not over 60dB (A).
- **RISK OF INJURY DUE TO ACCIDENTAL STARTING.** Do not use in an area where children may be present.
- **THE WEIGHTED ROOT MEAN SQUARE ACCELERATION VALUE** to which the arms are subjected to does not exceed 2.5 m/s2.

GROUNDING INSTRUCTIONS

- **FOR ALL GROUNDED CORD CONNECTED TOOLS:**
- In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided if it will not fit the outlet, have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation, having an outer surface that is green with or without yellow stripes, is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Repair or replace damaged or worn cord immediately.
- **GROUNDED, CORD-CONNECTED TOOLS INTENDED FOR USE ON A SUPPLY CIRCUIT HAVING A NOMINAL RATING LESS THAN 250 VOLTS:** See Table 1 for minimum gauge cords.

Table 1 Minimum Gauge Cords

Ampere Rating		Volts	Total length of cord (feet / meters)			
		120 V	25 / 7.5	50 / 15	100 / 30	150 / 45
		240 V	50 / 15	100 / 30	200 / 60	300 / 90
More than	Not more than	AWG				
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recommended	

Material Safety Data Sheet

US DEPARTMENT OF LABOR — Form Approved Occupational Safety and Health Administration 0MB No 44-Ri 367

MATERIAL SAFETY DATA SHEET

Required under USDL Safety & Health Regulations for Ship Repairing, Shipbuilding and Chip breaking
129 CFR 1915, 1916.19171

SECTION I

MANUFACTURERS NAME: Darex Industrial Corporation
EMERGENCY PHONE NO: (541) 488-2224
ADDRESS: 280 E. Hersey Street Building C, Ashland, Oregon 97520
CHEMICAL NAME & SYNONYMS Diazon-Electroplated Diamond/CBN Products, Diamond (uncoated)
Man-Made Diamond. RVG. MBG. MBS Product Families. Standard Series and 300 Series Diamond Micron Powder
TRADE NAME & SYNONYMS: Electroplated CBN Wheels, Electroplated Diamond Wheels
CHEMICAL FAMILY: Abrasive Any Grade
FORMULA: n/a

SECTION II COMPOSITION

CHEMICAL NAME	Nickel	Industrial Diamond
REGULATED	Yes	No
CAS#:	7440-02-0	7882-40-3
AGIH TLV	1 0 mgm3	10.0 mg m3 (PNOC)
CARCINOGEN	Yes	No

Materials are regulated by OSHA 29 CFR 1910.1200, Hazard Communication Standard

SECTION III - PHYSICAL AND CHEMICAL DATA

BOILING POINT (F)	n/a	MELTING POINT	n/a
SPECIFIC GRAVITY	n/a	VAPOR PRESSURE	n/a
VAPOR DENSITY	n/a	EVAPORATION RATE	n/a
SOLUBILITY IN WATER	n/a	SOLUBILITY IN ALCOHOL	n/a
		SOLUBILITY IN OTHER SOLVENT	n/a
		PERCENT VOLATILE BY VOLUME (%)	n/a

APPEARANCE AND ODOR Solid, Clear, White To Yellow To Dark Crystals Silver Color.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	n/a		
(METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
EXTINGUISHING MEDIA		n/a	
SPECIAL FIRE FIGHTING PROCEDURES:		n/a	
UNUSUAL FIRE AND EXPLOSION HAZARDS:		n/a	

SECTION V - HEALTH, FIRST AID AND MEDICAL DATA

PRIMARY ROUTE(S) OF ENTRY: Inhalation, Ingestion, Skin, Eye(s)

EFFECTS OF OVEREXPOSURE
INHALATION: Difficulty in breathing (Dust from wheel use).
INGESTION: If a dust, symptoms are variable.
SKIN: Irritation (especially if sensitive to Ni).
EYE(S): Irritation (from Ni or diamond particle).
FIRST AID AND MEDICAL INFORMATION:
INHALATION: Move to fresh air. Give oxygen if necessary
INGESTION: Obtain medical attention.
SKIN: Wash thoroughly with water Obtain medical help if necessary
EYE(S): Flush thoroughly with water. Obtain medical assistance

OTHER POTENTIAL HEALTH RISKS
Nickel (Ni) is listed as a carcinogen Avoid long exposure. Consult medical personnel for first aid and medical information

SECTION VI - CORROSIVELY AND REACTIVITY DATA

STABILITY:	Unstable ( )	Stable (x)
POLYMERIZATION:	May occur ( )	Will not occur (x)
INCOMPATIBILITY: (Materials to avoid)		n/a
HAZARDOUS COMPOSITIONS PRODUCTS:		n/a

CONDITIONS TO BE AVOIDED: Contact with strong acids/caustics, enclosed areas.

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Normal clean up procedure

WASTE DISPOSAL METHOD:
Waste will contain nickel. Dispose in accordance with all applicable Federal, state, and local regulations.

SECTION VIII – PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:
Respiratory protection as needed see OSHA-29 CFR 1910.134

VENTILATION: LOCAL EXHAUST: strongly preferred
MECHANICAL (GENERAL): Use only if adequate to maintain below TLV's.
PROTECTIVE GLOVES: As desired by user.
EYE PROTECTION: Recommended see OSHA29 CFR 11910.215
OTHER PROTECTIVE EQUIPMENT: Use standard precautions for grinding operations.

SECTION IX - STORAGE AND HANDLING PROCEDURES

NORMAL STORAGE AND HANDLING:
Store in clean, dry area, away from chemicals.
NORMAL USE: Use adequate ventilation (See Section VIII)

XT-3000
DRILL SHARPENER

XT-3000 Features

The XT-3000 was designed incorporating Versatility, Simplicity & Expandability. Optional attachments sharpen other cutting tools including step drills, brad points, larger drills, Weldon and single flute countersinks. This unit is an upgrade-able sharpener that grows with your needs. Simplicity will allow multiple users successful results with minimal training.

Specifications for 115V & 230V

· **Standard Grinding Wheels:**	180 Grit CBN - HSS, Cobalt & 180 Grit Diamond - Carbide	
· **Max Wheel Diameter:**	6.45 inch (164 mm)	
· **Arbor Size:**	1.25 inch (31.75 mm)	
· **Wheel Surface Speed:**	75 ft/sec (23m/sec) for 60 Hz	Model 115V
	95 ft/sec (29m/sec) for 50 Hz	Model 230V
· **Motor Specs:**	¼ hp - 2850 rpm – 60 Hz	Model 115V
	¼ hp - 3450 rpm – 50 Hz	Model 230V
· **Operating Time:**	Continuous Duty	
· **Voltage:**	115 VAC +/- 10% & 230 VAC +/- 5%	
· **Frequency:**	60 Hz +/- 5% -	Model 115V
	50 Hz +/- 5% -	Model 230V
· **Sharpener Current:**	2.5A Run / 40A Start	Model 115V
	1.6A Run / 25A Start	Model 230V
· **Accessory Current:**	6.0A Run Max.	
· **Operating Temperature:**	40° to 95° F ambient (4° to 35° C)	
. **Humidity:**	Non-condensing	
· **Machine Dimensions:**	16” W x 16” D x 10” H (41 x 41 x 26 cm)	
· **Machine Weight:**	54.3 lbs (25 Kg)	
· **Shipping Dimension:**	19” W x 19” D x 16” H (49 x 49 x 41 cm)	
· **Total Ship Weight:**	62 lbs (28 Kg)	

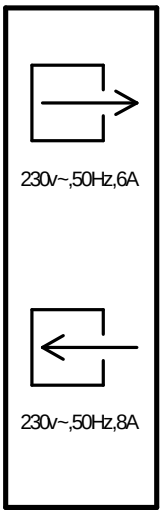
Capabilities & Performance

- **Drill Types:** Two fluted HSS, Cobalt or Carbide SAE & Metric twist drills
- **Drill Point Styles:** Standard Conic & Split Point
- **Split Point Styles:** Standard X split
- **Point Angles:** 118° - 150°
- **Drill Diameter:** 3 mm - 21 mm (.118 to .826)
- **Lip Height Accuracy:** ANSI B94.11, NAS 907 and ISO 10899 Standards

Decal Identifications

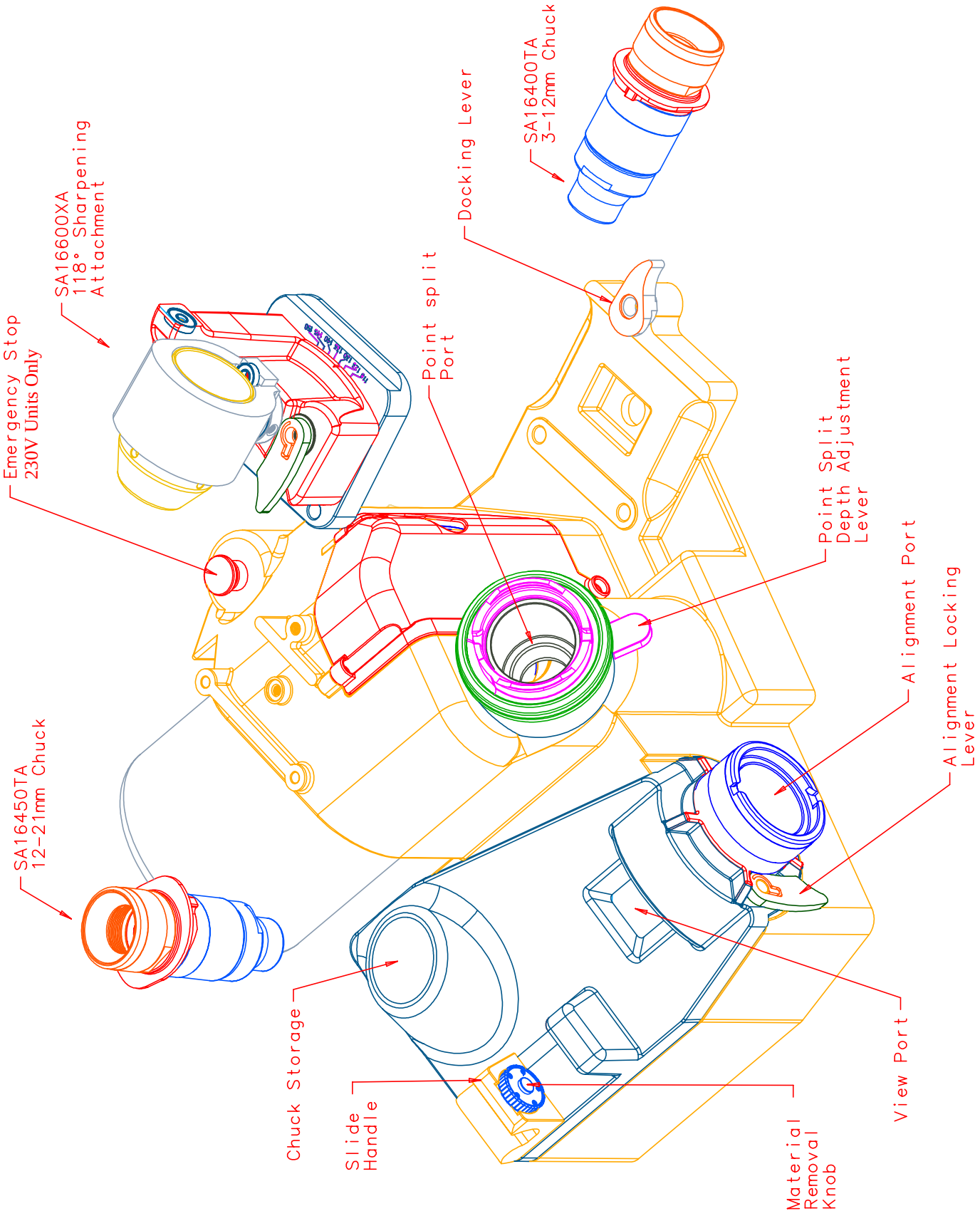
"Wear Safety Glasses" -

Accessory receptacle capacity -



"Do not operate without wheel guard cover" -

XT-3000 Reference Drawing

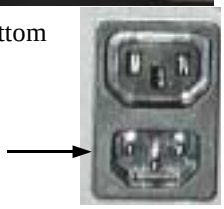


Setting up the XT3000

The XT-3000 comes equipped with grinding wheels, a sharpening fixture and 2 chucks, 1; 3mm – 12mm & 1; 12mm – 21mm.

1. Remove from shipping box and all packaging material before powering up the machine. **NOTE:** Due to the weight of the XT-3000, it is suggested that the lip of the casting, located above the motor ,can be used as a handle for lifting.
2. Located at the back and on the right side of the XT3000 is the power receptacle. Within that receptacle you will find a power inlet and accessory receptacle.

3. The power inlet is located at the bottom of the power receptacle.



Plug the power cord in to the power inlet and then in to the power outlet source.

4. The accessory receptacle is located at the top of the power receptacle and will allow you to use a dust extraction system in conjunction with the use of the XT3000. ***We highly recommend the use of a vacuum when the machine is in use. Darex offers a vacuum system compatible with your XT3000. Call Darex for more information.**

- **SA12075EA - 115V**
- **SA12072EA - 230V**

5. Make sure the grit tray is in place and secure.

6. Unbox the chucks.
7. Make sure sharpening fixture is secured to base. For more information on securing the sharpening fixture see page 15.
8. To power on the machine, push the rocker switch to the ON position to start the grinding wheel in motion.

9. To sharpen a drill follow steps in the next three sections; Align, Sharpen and Point Splitting.

Drill Alignment

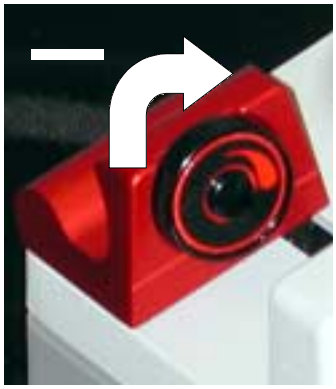
The alignment port is located on the left side of the XT-3000.

The first stage to sharpening a drill starts with the alignment process. In the alignment process, you will go through a few necessary steps prior to sharpening. Setting the material removal amount, adjusting the alignment tube to produce desired relief amount. Use athe Darex EZ align to set the drill to length and time the cutting edge.
To complete the alignment process, follow steps 1 – 8 listed below.

Setting Material Removal Amount

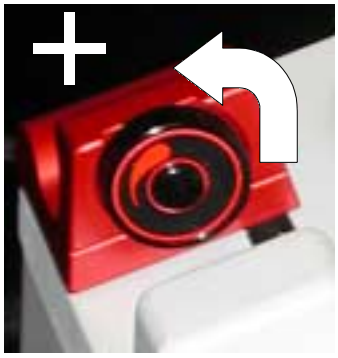
1. Rotate the material removal knob to adjust the amount of stock you want to remove from the end of the drill. Stock removal ranges from approximately .010 - .030. Remove more material if the drill is excessively worn or damaged. Remove less material if you are renewing the drill.

Rotate the material removal knob clockwise to decrease the amount of material removal

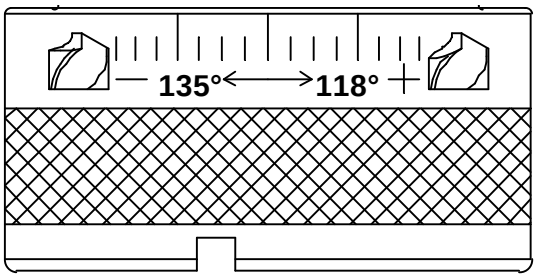


Tip:
Sharpen drills on Minimum MTO to achieve longer wheel life.

or counterclockwise to increase material removal.



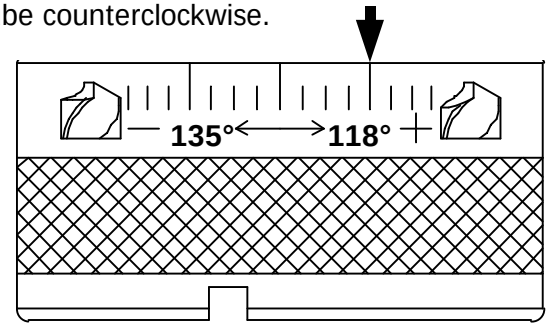
Setting Alignment Tube for Desired Heel Relief



2. To increase or decrease the amount of heel relief produced during sharpening, change the position of the alignment tube.

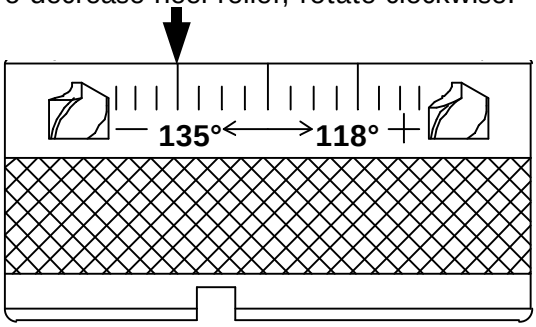
Lift the alignment locking lever.

This will allow you to rotate the alignment tube in either direction.
To increase heel relief, rotate the alignment tube counterclockwise.



Drill Alignment

To decrease heel relief, rotate clockwise.



To secure the alignment position, tighten locking lever.

Setting the drill to the proper length

3. Holding the chuck in a horizontal position insert the drill into the appropriate sized chuck. (Sizes are on the cam).

Allow the drill to protrude approximately 2 inches as shown.

4. Rotate the chuck knob clockwise, which closes the chuck jaws onto the drill. Then slightly loosen the chuck jaws by rotating the chuck knob counterclockwise, about ½ turn. To determine how tightly the drill should be held during the alignment process, the drill should slide freely and drop out when the chuck is held in a vertical position.

Timing the cutting edge

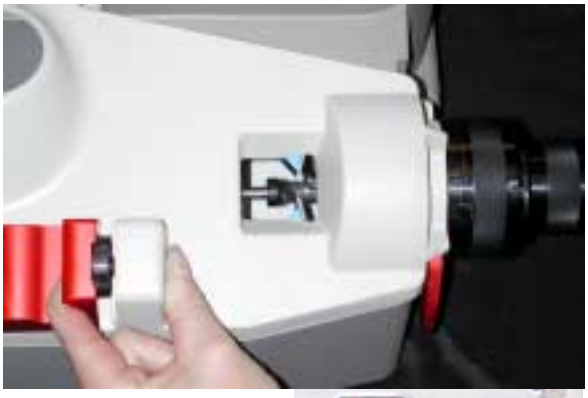
5. Insert the chuck and drill into the alignment tube.

Align the cam dogs with the slots.

The cam dogs should bottom out against the slots.

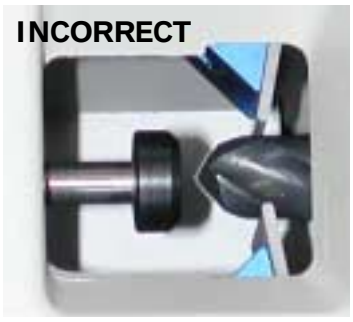
6. S-L-O-W-L-Y squeeze together the red slide handle until it touches casting. We emphasize slowly, because squeezing the handles too quickly pushes the drill too deeply into the chuck. **NOTE:** If this happens, the drill will not touch the wheel during the sharpening process.

7. With the handles held together, look through the viewing port and see if drill is positioned correctly.



- Drill point should be touching the end of the pusher shaft cap.

- The pawls should be seated in the helix of the drill. If incorrect, loosen chuck knob and repeat step 4. The jaws are most likely gripping the drill body too tightly and will not allow the drill to rotate into position.



8. Once the drill has been aligned correctly and without releasing the slide handle, tighten the chuck knob clockwise until the chuck jaws grip the drill securely. Release the slide handle and remove chuck from alignment tube.

Drill Sharpening

The Sharpening fixture is located on the right side of the machine.

Mounting the Sharpening fixture

1. Rotate the locking lever so the flat edge is at the top, horizontal and in a straight line with the base casting.

2. Position the sharpening fixture so that the 2 location holes on the base of the alignment fixture are aligned with the 3/8 dowel pins.

3. After sharpening fixture is in place, rotate the locking lever clockwise until snug. This will secure the fixture to the base.

Adjusting the Point Angle

You must loosen the sharpening fixture and slide the point angle indicator to the desired degree.

1. To loosen, pull the locking lever towards you.

2. Place fingers on each side of the sharpening pivot base casting.

3. Gently slide base casting in either direction to align the angle indicator with the desired point angle degree.

4. Secure the selected point angle position by pushing the locking lever away from you until it stops.

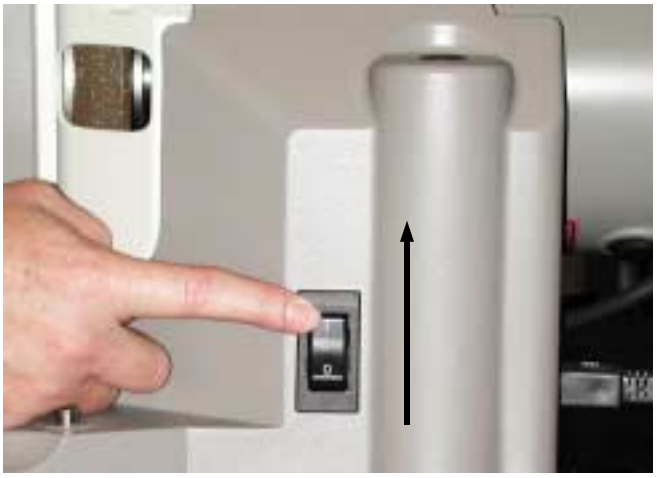
5. Before sharpening, make sure the sharpening fixture is secure and no longer slides in either direction.

Drill sharpening

WARNING: Make sure the Split Port Cover and eye shield are in place before grinding. (International Machines Only)

Power up machine

To turn the machine on, push the top of the rocker switch. The machine will power up and the grinding wheels will begin to rotate.



Sharpen

1. To make sure the drill clears the wheel, push the sharpening tube all the way to the left before inserting chuck.

2. Insert the chuck with the thickest part of the cam touching the swing bearing.

3. Release sharpening tube very slowly.

4. With slight pressure towards the grinding wheel, rotate the chuck 360 degrees, several times in a clockwise direction. To achieve an efficient and balanced sharpening on both cutting edges, avoid stopping when the drill is in the grind. Do not reposition your hand in mid-sharpening wait until the drill rotates off the wheel. Continue rotating the chuck in 360 degree rotations until the grinding noise is minimized to a near silence.

5. Before removing the chuck, push the sharpening tube to the left, remove chuck. Release sharpening tube slowly.

Drill Point Splitting

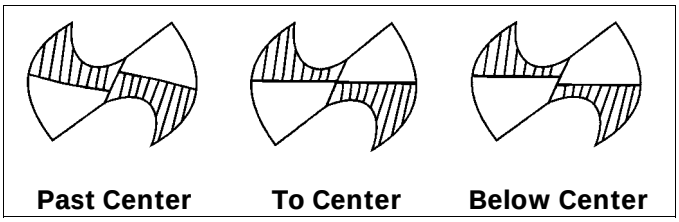
The Point Splitting Port is located in the center of the machine.

Approximately 3-7° rake is created, producing a drill with a self-centering point. Its advantages are the ability to reduce thrust and eliminate walking at the drill point. This is a distinct advantage where drill bushings/fixtures are not used.

Splitting

POINT SPLIT & RELIEF DIAGRAMS

DEPTH OF SPLIT DIAGRAM



Upon completion of the sharpening procedure, **Do Not** loosen the drill in the chuck. Insert the chuck into the point splitting port. Align the cam dogs with the slots on the point split tube. Let the weight of the chuck ease the drill down and onto the grinding wheel. With slight pressure, be sure the chuck stays seated in the point splitter.

When the grinding noise is reduced to near silence pull the chuck out about 1/2 way and rotate it 180 degrees to split the opposite side of the drill point.

NOTE: Do not force the chuck into the grinding wheel or damage to the drill or wheel may occur.

Adjusting the Depth of Split

The depth of split can vary from drill manufacturer to drill manufacturer. The point split depth adjustment feature designed on the XT-3000 makes it easy to mimic multiple split styles. The point split depth adjustment lever is attached to the point split chuck tube. As you move the lever, it backs the chuck tube away from the wheel or moves it closer into it.

1. Located on the underside of the point splitter is the point split depth adjustment lever.

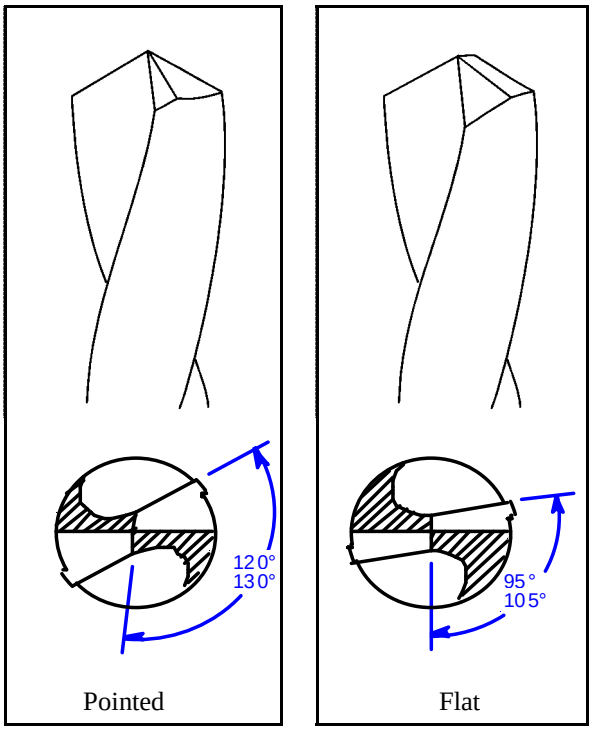
2. To increase the depth of split push lever to the left toward the + sign. This will allow the drill to travel deeper into the wheel, increasing the depth of split.

3. To decrease the depth of split push the lever to the right toward the – sign. This will back the drill away from the wheel.

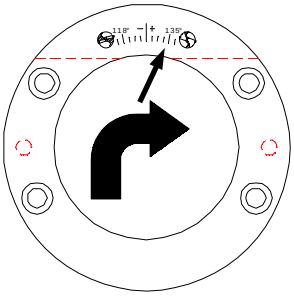
NOTE: To correct a drill that has been split deeper than desired, you will have to regrind the drill beyond the over split portion before splitting again.

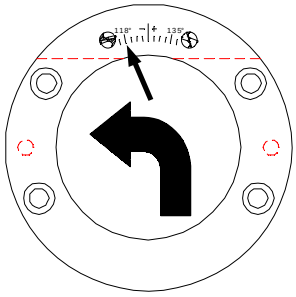
Drill Point Splitting

POINT SPLIT ANGLE DIAGRAM



drill more strength and durability. This added split angle creates a pointed profile at the very center of the drill, producing a self-centering effect and reduces drill point walking at the start of a hole.





1. Loosen the point split nut by rotating the nut counterclockwise.

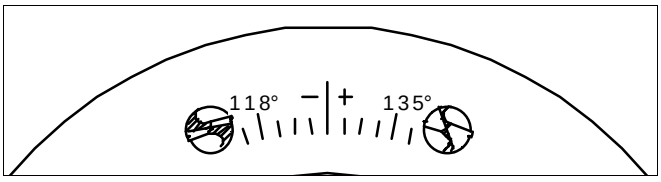
2. Rotate the point split angle adjuster clockwise to increase the split angle.

Adjusting the Split Angle Rotation

3.

Rotate the adjuster counter clockwise to decrease the split angle.

Typically the split angle of a drill is 120° - 130° from the cutting edge. By increasing the rotation of the split angle, the split portion of the drill meets the cutting lip at a greater angle, which will give the



4. Once split angle adjustment has been made, rotate the point split nut clockwise to retain the selected setting and secure the point split angle adjuster.

Chuck Information

A regular maintenance program should be set up for each chuck. Keeping your chuck clean and grit free will help maintain drill concentricity and lengthen the life of your chucks. For detailed cleaning instruction, See Maintenance page 25.

XT-3000 CHUCKS

The XT-3000 jaw chuck system was designed with accuracy and simplicity in mind. As a result, the XT-3000 chuck allows you to cover a large diameter range of drills without the aid of individual collets. You can quickly change from the largest drill diameter to the smallest in seconds. The accuracy of the chuck will produce drills that exceed ANSI, NAS 907 & & ISO 10899 standards. The various chucks and accessories have drill diameter capabilities that range from .125 – 1.1875 (3mm to 30mm).

Make sure large drills are secure after tightening the chuck.

Morse Taper drills:

To secure a Morse Taper drill in the chuck, it is necessary for the drill to have a minimum flute length of 4.000 inches. The taper will then be free from the grasp of the jaws, eliminating interference with the larger tapered shank. The other option for holding these types of drills is a split bushing. Bush the body of the drill up to or larger than the interfering diameter.

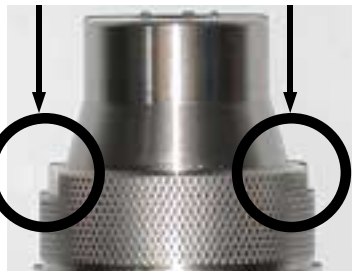
End Mill shank drills:

Typically, an end mill drill has a shank diameter larger than the body of the drill.
Some End Mill shank drills can be sharpened on the XT-3000, depending on the length of the flute verses the length of the shank.

CHUCK DISASSEMBLY & MAINTENANCE

The use of a dust extraction system while grinding will help reduce the amount of maintenance necessary, however, periodically the chuck assembly should be disassembled and cleaned. ***We recommend the Darex dust extraction system.***

1. Place flats of chuck body into a vice, do not over tighten.



2. Place chuck wrench, PP16480SF, (optional) on dogs of chuck knob assembly.

Rotate wrench counter-clockwise to remove chuck knob/jaw assembly from chuck body.

3. Using a 2.5 mm hex wrench remove set screw.

4. The internal pieces must remain keyed in order to remove the closing screw from the chuck knob assembly. Insert the 2.5 mm wrench into the set screw hole.

Chuck Information

5. Rotate chuck knob counter clockwise until the wrench reaches the top of the slot.

6. Remove wrench and reinsert into the set screw hole above the slot.

7. Rotate the chuck knob counterclockwise until the closing screw exits the knob assembly.

8. The chuck knob assembly does not come apart from this point.

TO REASSEMBLE:

Reassemble in reverse order.

CHUCK DESCRIPTIONS AND PART #'S

SA16400TA - 3-12 mm	Standard Chuck
SA16450TA - 12-21mm	Standard Chuck
SA16500TA - 21-30mm	Large Drill Chuck
SA16975TA - 3-12mm	Step Drill Chuck
SA16980TA - 12-21mm	Step Drill Chuck
SA16890TA - 3-12mm	90° Chuck
SA16880TA - 12-21mm	90° Chuck
SA16916TA - 3-12mm	Brad Point Chuck
SA16918TA - 12-21mm	Brad Point Chuck

XT-3000 WHEEL INFORMATION

The Darex XT-3000 comes equipped with electroplated CBN (Cubic Boron Nitride) OR Diamond grinding wheels. The wheel comes installed on your sharpener ready to sharpen drills.

Sharpening with an electroplated CBN (cubic boron nitride) or Diamond grinding wheel reduces grinding cost and improves quality of the finished product. These results are obtained because the grinding material is super abrasive. The CBN is second only to diamond in hardness. In fact, CBN has twice the hardness and four times the abrasion resistance of an aluminum oxide grinding wheel. The CBN and Diamond wheel last longer; the grinding process is faster and less grinding time is lost due to wheel breakdown & maintenance.

WHEEL MAINTENANCE

These wheels are maintenance free from truing and dressing but will need to be cleaned periodically. **Disconnect the power from the machine using a lock out tag out procedure.** After removing the wheel from the sharpener, saturate the wheel with any type of oil-less solvent, such as Automotive Brake Cleaner. It is helpful to use a soft bristle brush and lightly brush the saturated wheel, loosening the impacted grinding particles. Re-saturate the wheel to flush out any loosened debris. Do not use any type of dressing tool on these wheels. Damage to surface will occur and greatly shorten the wheel life.

NOTE: If after cleaning wheel, the drills still discolor or burn, the wheel life may be exhausted and the wheel will need to be replaced.

WHEEL DESCRIPTIONS AND PART#'S

- PP16050GF – 180-grit CBN grinding wheel
- PP16060GF – 100-grit CBN Point Split grinding wheel
- PP16052GF – 180-grit Diamond grinding wheel
- PP16062GF – 260-grit Diamond Point Split grinding wheel
- PP16070TF – Grind wheel retainer

Do not attempt to grind carbide drills with CBN wheels. Diamond wheels are available if carbide is to be sharpened on this machine.

WHEN TO REPLACE THE WHEEL?

Eventually, the long-life electroplated wheel in your XT-3000 will wear out. Indicators that a wheel change is necessary are: a drop in performance such as drill burning or excessively slow sharpening time. Inspect the wheel for abrasive quality. A worn wheel will appear smooth. If it is necessary, replace the worn wheel(s). New wheels will initially produce a coarser grind. However, this aggressiveness will disappear after the first one hundred or so drill sharpenings. You should experience many drill sharpenings from each new wheel.

*****Darex Corporation does not re-plate or recommend re-plating the grinding wheels. For replacement wheels, contact your Darex distributor or Darex Corporation.

HOW TO CHANGE A WHEEL

1. **Unplug unit from power supply and use a "LOCK OUT" "TAG OUT" procedure.**

2. Using a 3mm hex key, remove 3; 3mm socket head cap screws (PP12240FF) from wheel guard cover.

Wheel Information

3. Pull wheel guard cover away from wheel.

4. Using a 4 mm hex key, remove 3; 5mm socket head cap screws (PP16318FF)& split washer (PP08650FF) from grinding wheel retainer.

5. Remove the wheel retainer

6. Pull wheel toward you then to the right and out of the machine cavity.

7. Clean the machine cavity as well as the mounting hub and wheel before reinstalling.
8. Repeat steps in reverse to install new wheel.

NOTE: Because the Darex grinding wheel cannot be trued it is critical that the motor hub & wheel register be cleaned. Once wheel has been installed, rotate the wheel by hand to check that the wheels run true. If not, loosen the screws , reposition the wheel and tighten the screws.

Separating grinding wheel from point split wheel

The grinding and point split wheel are piggy backed and bolted together. To change any one of the wheels you must first separate them. You can access the bolts from the back side of the sharpening wheel.

1. Using a 5mm hex key, remove the 3; 6mm socket head cap screws (PP16348FF) & split washers. (PP10282FF)

2. The two wheels can now be separated.

Recalibrating Material Removal

After a wheel change, verify and/or recalibrate material removal.

Use a 3/8 HSS standard twist drill, measure the length of drill before sharpening.

1. Rotate material removal knob to maximum take off.

2. Align drill as though you intend to sharpen it. Follow Alignment steps on page 11.

3. Once drill is set to length, aligned and captured in

the chuck securely, remove from alignment port.

4. Measure the amount of drill protruding from the end of the chuck to the tip of the drill.

5. The length of the drill protruding from the top of the chuck should measure .970-.980 (24.63 mm - 24.89 mm)

Calibrating the Material removal knob

1. At the rear of the machine base there is a small access hole.

2. Insert a 3/16 Allen wrench into the access hole.

3. To advance the pusher shaft cap, reducing the amount of drill stick out, rotate the wrench clockwise.
4. To retract the pusher shaft cap, increasing the amount of drill stick out, rotate the wrench counterclockwise.

Each ¼ turn will adjust .010 (.25 mm) or one full turn will adjust .04 (1.0 mm) After adjusting the pusher shaft assembly, realign the drill and re-measure the amount of stick out. Repeat the steps 1-4 until the drill protrudes .970-.980 in length. (24.63 mm - 24.89 mm)

GENERAL MAINTENANCE

To extend the life of your sharpener, its recommend a routine maintenance program be put in place. Every 120-machine hrs is suggested, or more often if necessary.

WARNING: Remove the plug before carrying out any adjustment, servicing or maintenance.

Vacuum system:

Optional but recommended.

Using a dust extraction system can improve the sharpening life of the machine. Unplug vacuum from power source. Check filter or canister on a regular basis.

Wheel cleaning:

These wheels are maintenance free from truing and dressing but will need cleaning periodically. After removing the wheel from the unit, saturate the wheel with any type of oil-less solvent, such as Automotive Brake Cleaner. It is helpful to use a soft bristle brush and lightly brush the saturated wheel, loosening the impacted grinding particles. Re-saturate the wheel to flush out any loosened debris.

Always clean a brand new wheel before using.

If after cleaning wheel, the drills still discolor or burn, the wheel life may be exhausted and the wheel will need to be replaced.

Recalibrating Material Removal

After a wheel change, verify and/or recalibrate material removal.

Use a 3/8 HSS standard twist drill, measure the length of drill before sharpening.

1. Rotate material removal knob to maximum take off.

2. Align drill as though you intend to sharpen it. Follow Alignment steps on page 11.
3. Once drill is set to length, aligned and captured in the chuck, securely remove from alignment port.
4. Measure the amount of drill protruding from the end of the chuck to the tip of the drill.

5. The length of the drill protruding from the top of the chuck should measure .970-.980 (24.63 mm - 24.89 mm)

Calibrating the Material removal knob

1. Located at the rear of the machine base, you will find a small access hole.

2. Insert a 3/16 Allen wrench into the access hole.

3. To advance the pusher shaft cap, reducing the amount of drill stick out, rotate the wrench clockwise.
4. To retract the pusher shaft cap, increasing the amount of drill stick out, rotate the wrench counterclockwise.

Each ¼ turn will adjust .010 (.25 mm) or one full turn will adjust .04 (1.0 mm). After adjusting the pusher shaft assembly, realign the drill and re-measure the amount of stick out. Repeat the steps 1-4 until the drill protrudes .970-.980 in length. (24.63 mm - 24.89 mm)

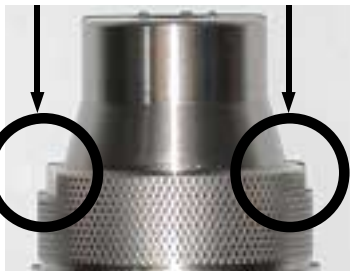
Chuck Maintenance

Chuck maintenance is very important. To sustain the life of your chucks and to maintain precision lip height concentricity, clean the chucks on a regular basis. Some tools are necessary to disassemble the chuck, You will need: Wrench PP16480SF **(Optional)**

Disassembly:

The use of a dust extraction system while grinding will help reduce the amount of maintenance necessary, however, periodically the chuck assembly should be disassembled and cleaned.

1. Place flats of chuck body into a vice.



2. Place chuck wrench on dogs of chuck knob assembly.

3. Rotate wrench clockwise to remove chuck knob/jaw assembly from chuck body.

4. Using a 2.5 mm hex wrench, remove set screw.

5. The internal pieces must remain keyed in order to remove the closing screw from the chuck knob assembly. Insert the 2.5 mm wrench, into the set screw hole.

6. Rotate chuck knob counterclockwise until the wrench reaches the top of the slot.

7. Remove wrench and reinsert into the set screw hole above the slot.

8. Rotate the chuck knob counterclockwise until the closing screw exits the knob assembly.

9. The chuck knob assembly does not come apart from this point.

Chuck Cleaning:
Once disassembled, clean all parts with a type of oil-less solvent such as Automotive Break Cleaner.

Chuck Reassembly:
Reassemble in reverse order.

Point Split Tube Cavity:
Routinely vacuum and using a dry cloth, wipe out the inside of the Point Split Tube. Removing grinding dust will help produce consistent split point drills by retaining the ID dimensions of the tube and reducing early wear.

Sharpening Tube Cavity:
Using a dry cloth, wipe out the inside of the brass tube, removing grinding dust. Over time it may be necessary to replace the sharpening tube. The sharpening tube is threaded into the housing using right-handed threads. To remove, rotate tube counterclockwise using a spanner wrench. Replace as needed.

Wheel Housing Cavity:
While grinding wheel is out of machine and before replacing wheel, vacuum out wheel housing and wipe around the hub area.

External Machine Castings:
Wipe down external machine castings with a mild household cleaner.

Grit Tray/Vacuum Port Connection:

Grit tray

At the back of the machine, located underneath the grinding motor is the grit tray. Drill grindings will accumulate inside the grit tray. The grit tray has a magnetic liner to attract and hold these dust particles. Do not let the tray become more than 1/3 full. To remove tray, unscrew brass thumb screw. Remove tray and dump contents. Wipe excess dust from the tray with a rag.

Vacuum Port Connector (Optional)

The grit tray has a knock out plug that can be removed by hand and replaced with the vacuum tube (SA16030TA). Use this port to connect a vacuum hose to the XT3000. This method of extracting dust particles from the machine will keep it cleaner and is recommended.

Oil Lubrication:
Never use an oil-based lubricant on any part of this machine! Oil-based lubricant will collect grinding dust particles. Powdered graphite may be applied to any sliding parts located on the machine.

Trouble Shooting XT-3000 Drill Sharpening

Symptom

Using ON/OFF switch does not work
Machine won't power up

Cause

- No power at outlet
- Make sure power cord is plugged in to machine and outlet
- Release e-stop (230v machine only)
- E-stop nut is loose and stuck down in the off position (230v machine only)
- On/off switch needs to be replaced
- Wiring lead disconnected

Symptom

Tip of drills burn or discolor

Cause

- Wheel needs to be cleaned
- Material take off too aggressive
- Wheel needs to be replaced

Symptom

After pressing the switch to the ON position, the grinding wheel does not start up

Cause

- On/Off switch needs to be replaced
- Grinding wheel obstructed and can't rotate
- Grinding motor bad
- Wiring loose

Symptom

Unable to secure drill in or release drill from chuck

Cause

- Tapered shank drill
- The drill may have a slight taper to the body
- Shank of drill larger than body
- Drill has multiple diameters that are interfering with jaws
- Incorrect drill diameter for that particular chuck
- Drill flutes are damaged or have burrs
- Chuck needs to be cleaned

Symptom

Drill incorrectly split

Cause

- Check settings on the split point fixture
- Did not align correctly
- Point Split Tube calibration is off

Symptom

Material take off varies

Cause

- Wheel not secure to motor hub
- Wheel calibration is off after new wheel change
- Cam dog not properly seated in alignment slot during alignment set up
- Drill is pushing back in the chuck during grinding
- Operator is not sparking drill out

Symptom

No material take off during grinding

Cause

- Drill loose in chuck
- Drill tip not touching the pusher shaft cap during alignment process

Symptom

Length of time drill is in the grind becomes excessive

Cause

- Material take off too excessive
- Grinding wheel needs to be cleaned
- Grinding wheel needs to be replaced

Symptom

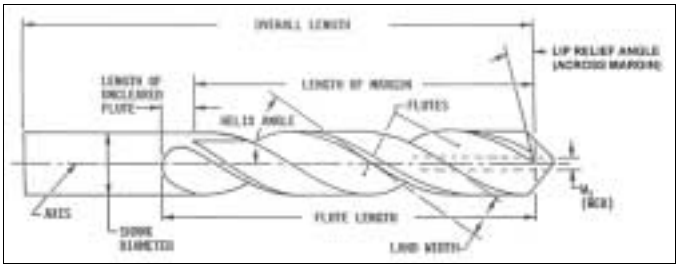
Lip height concentricity is out of tolerance

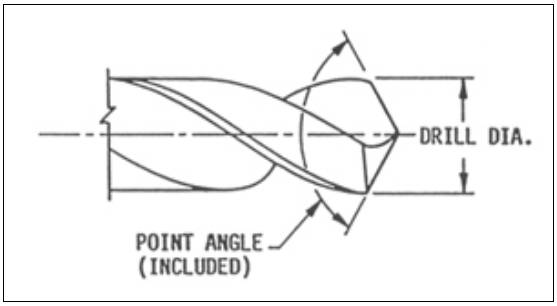
Cause

- Material take off too excessive
- Chuck needs to be cleaned
- Sharpening tube needs to be cleaned
- Chuck is worn out and needs to be replaced
- Sharpening tube is worn and needs to be replaced
- Wheel is not running true

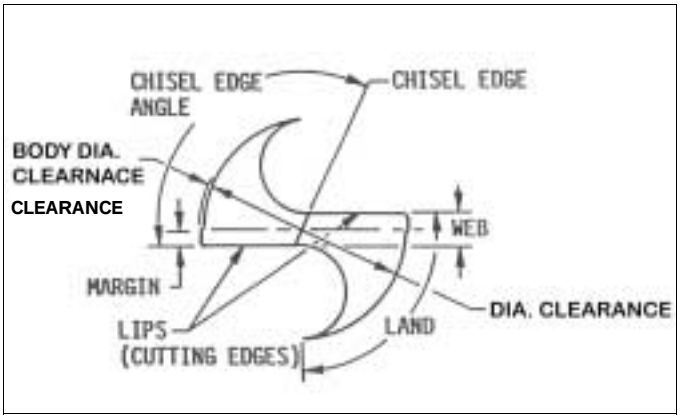
DRILL NOMENCLATURE

FACET & CONIC DRILL STYLE PICTURE AND NOMENCLATURE

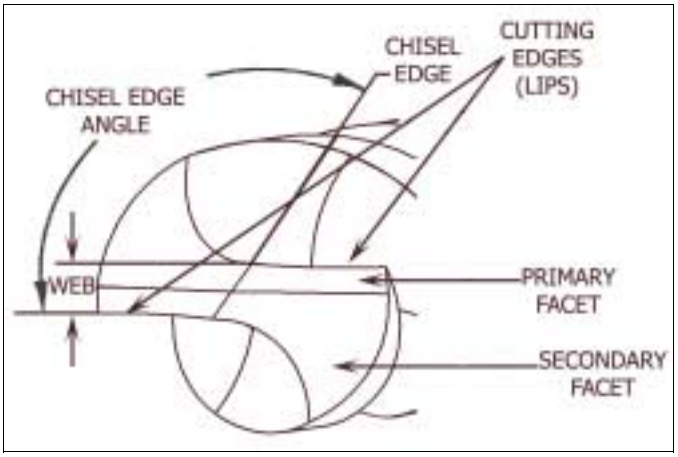




CONIC DRILL

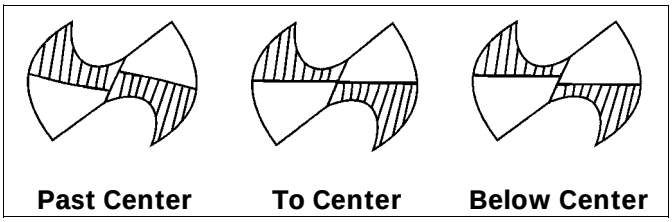


FACET DRILL

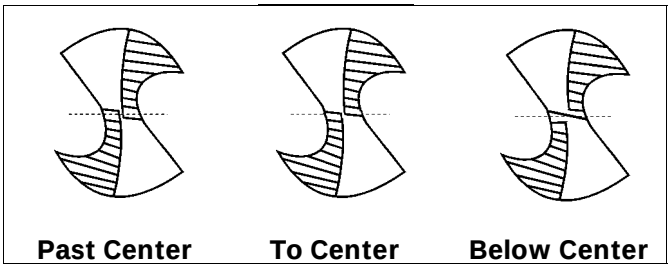


POINT SPLIT & RELIEF DIAGRAMS

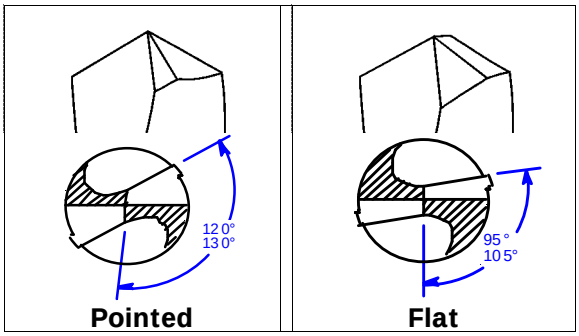
DEPTH OF SPLIT DIAGRAM



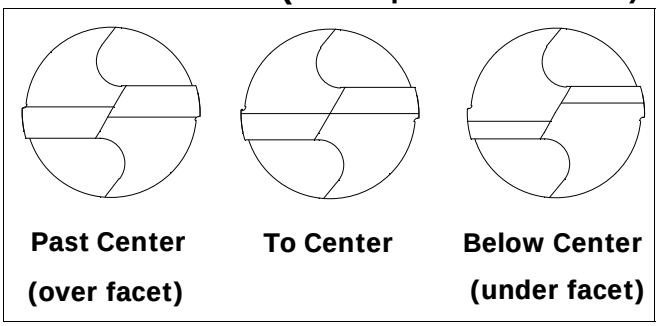
CENTER OF SPLIT DIAGRAM



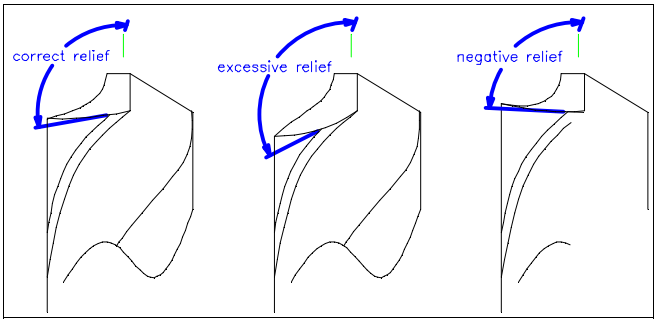
POINT SPLIT ANGLE DIAGRAM



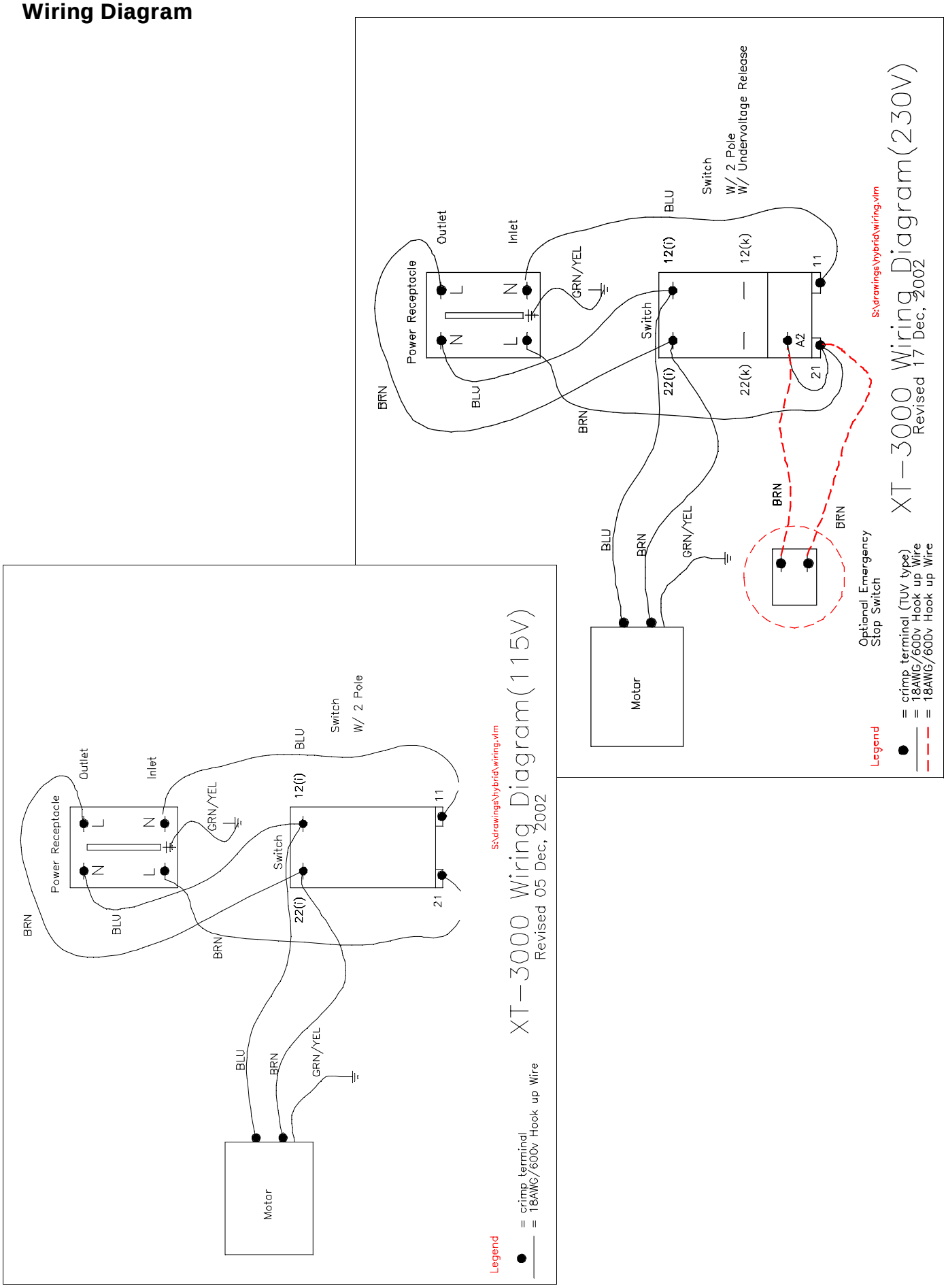
FACET DIAGRAM (re-sharpen on the XPS16)

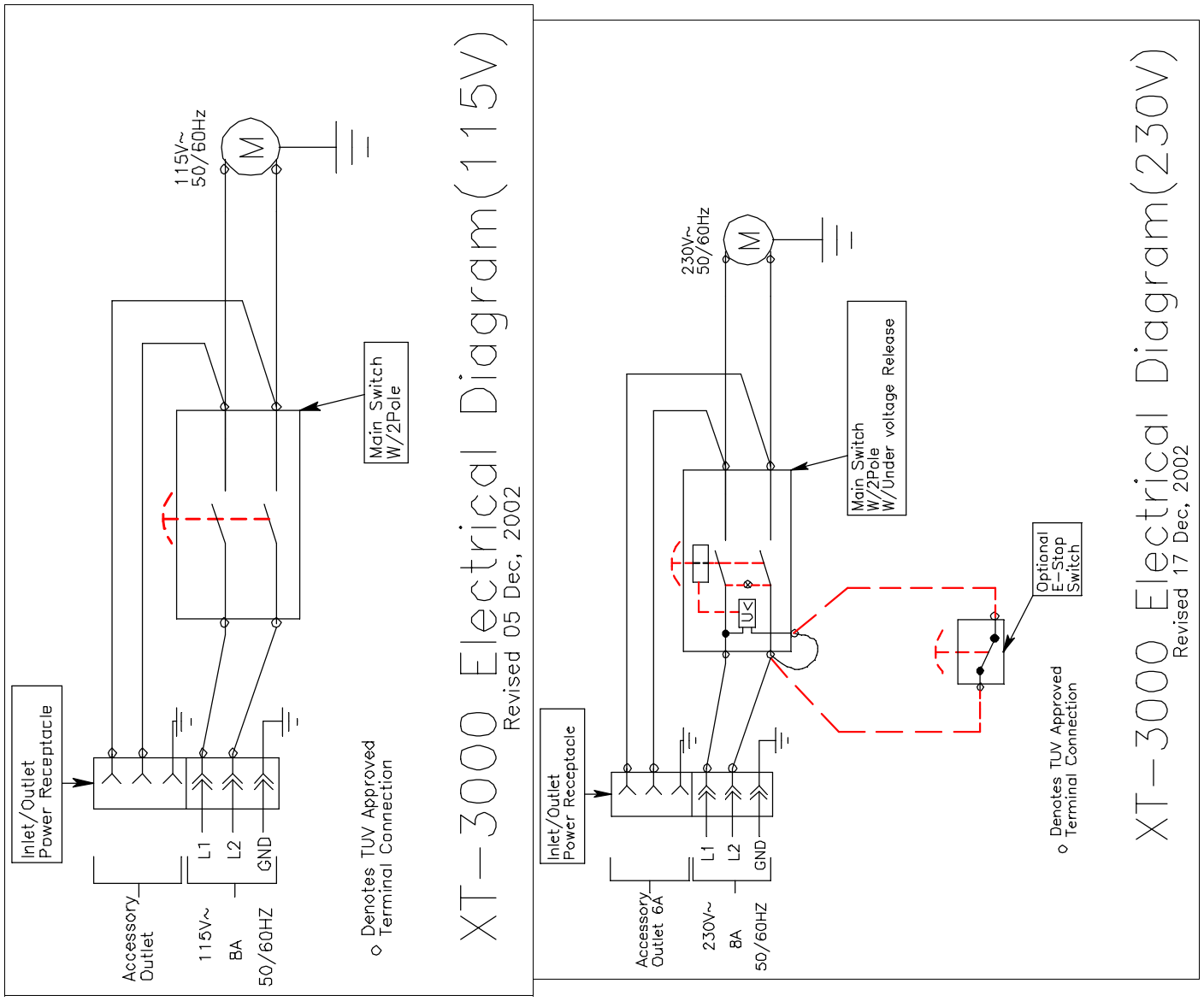


RELIEF DIAGRAM



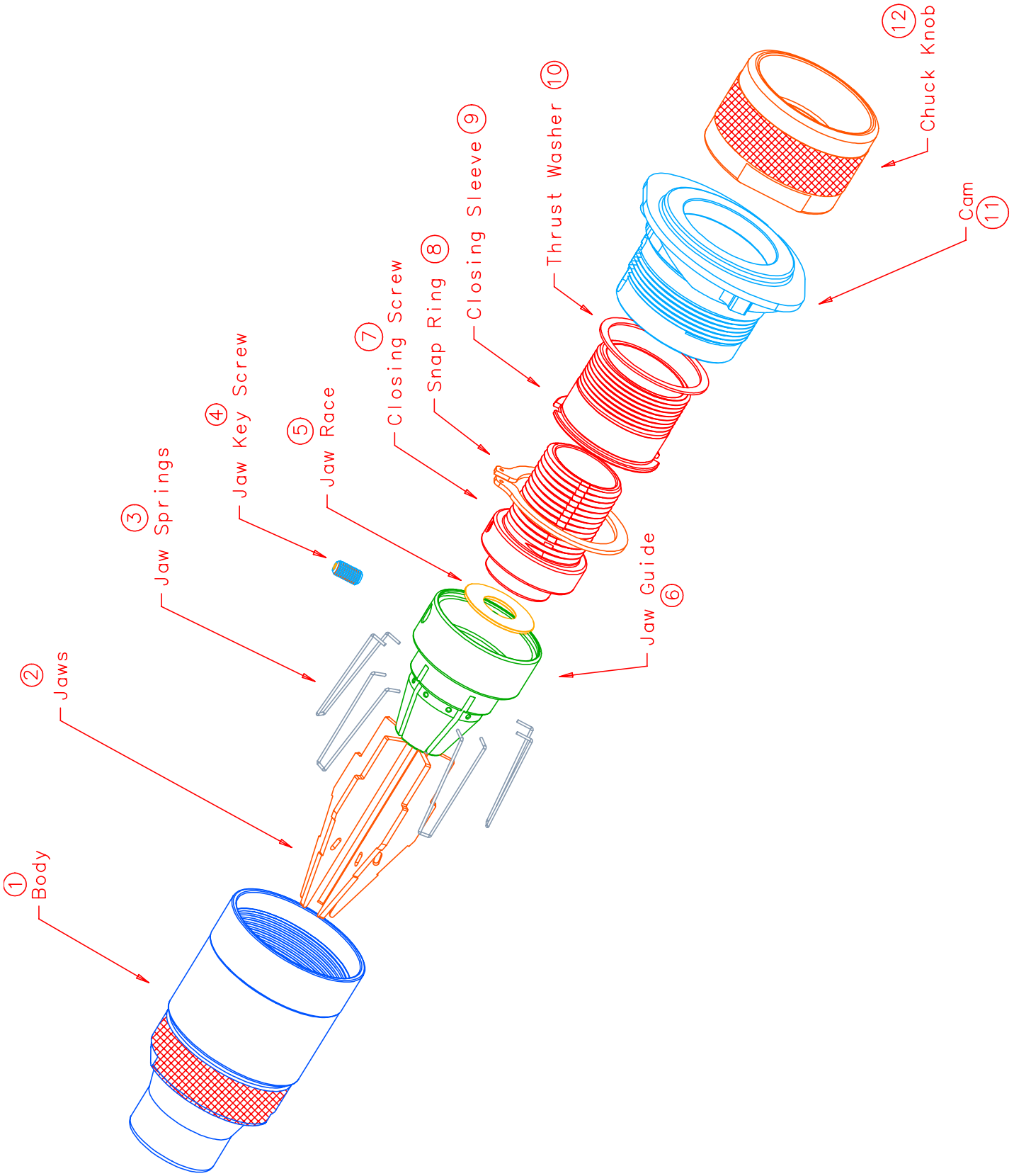
Wiring Diagram




XT-3000 Electrical Diagram(115V)
Revised 05 Dec, 2002
Inlet/Outlet
Power Receptacle
Accessory
Outlet
115V~
8A
50/60HZ
L1
L2
GND
115V~
50/60Hz
M
Main Switch
W/2Pole
Denotes TUV Approved
Terminal Connection
XT-3000 Electrical Diagram(230V)
Revised 17 Dec, 2002
Inlet/Outlet
Power Receptacle
Accessory
Outlet 6A
230V~
8A
50/60HZ
L1
L2
GND
230V~
50/60Hz
M
Main Switch
W/2Pole
W/Under voltage Release
U<
Optional
E-Stop
Switch
Denotes TUV Approved
Terminal Connection

5) - PP16430TF - CHUCK JAW GUIDE	**5) -** PP16430TF - CHUCK JAW GUIDE
6) - PP16435LF - CHUCK JAW RACE	**6) -** PP16435LF - CHUCK JAW RACE
7) - PP16420TF - CLOSING SCREW	**7) -** PP16420TF - CLOSING SCREW
8) - PP16415TF - CLOSING SLEEVE	**8) -** PP16415TF - CLOSING SLEEVE
9) - PP16442FF - SNAP RING	**9) -** PP16442FF - SNAP RING
10) - PP02404SF - THRUST WASHER	**10) -** PP02404SF - THRUST WASHER
11) - PP16405TF - CHUCK CAM	**11) -** PP16975TF - CHUCK CAM
12) - PP16410TF - CHUCK KNOB	**12) -** PP16410TF - CHUCK KNOB
SA16450TA - STANDARD CHUCK PARTS 12MM - 21MM	**SA16980TA - STEP DRILL CHUCK PARTS 12MM - 21MM**
1) - PP16450TF - CHUCK BODY	**1) -** PP16450TF - CHUCK BODY
2) - SA16427SA- (7 EA) CHUCK JAW	**2) -** SA16427SA- (7 EA) CHUCK JAW
3) - SA12567RA - (7 EA) CHUCK JAW SPRINGS	**3) -** SA12567RA - (7 EA) CHUCK JAW SPRINGS
4) - PP16440FF - CHUCK JAW KEY SCREW	**4) -** PP16440FF - CHUCK JAW KEY SCREW
5) - PP16465TF - CHUCK JAW GUIDE	**5) -** PP16465TF - CHUCK JAW GUIDE
6) - PP16470LF - CHUCK JAW RACE	**6) -** PP16470LF - CHUCK JAW RACE
7) - PP16418TF - CLOSING SCREW	**7) -** PP16418TF - CLOSING SCREW
8) - PP16415TF - CLOSING SLEEVE	**8) -** PP16415TF - CLOSING SLEEVE
9) - PP16442FF - SNAP RING	**9) -** PP16442FF - SNAP RING
10) - PP02404SF - THRUST WASHER	**10) -** PP02404SF - THRUST WASHER
11) - PP16422TF - CHUCK CAM	**11) -** PP16980TF - CHUCK CAM
12) - PP16410TF - CHUCK KNOB	**12) -** PP16410TF - CHUCK KNOB
SA16500TA - LARGE DRILL CHUCK PARTS 21MM - 30MM	**SA16890TA - 90° DRILL CHUCK PARTS 3MM - 12MM**
1) - PP16500TF - CHUCK BODY	**1) -** PP16400TF - CHUCK BODY
2) - SA16530SA- (9 EA) CHUCK JAW	**2) -** SA16425SA- (5 EA) CHUCK JAW
3) - SA12569RA - (9 EA) CHUCK JAW SPRINGS	**3) -** SA12565RA - (5 EA) CHUCK JAW SPRINGS
4) - PP16440FF - CHUCK JAW KEY SCREW	**4) -** PP16440FF - CHUCK JAW KEY SCREW
5) - PP16535TF - CHUCK JAW GUIDE	**5) -** PP16430TF - CHUCK JAW GUIDE
6) - PP16540LF - CHUCK JAW RACE	**6) -** PP16470LF - CHUCK JAW RACE
7) - PP16520TF - CLOSING SCREW	**7) -** PP16418TF - CLOSING SCREW
8) - PP16515TF - CLOSING SLEEVE	**8) -** PP16415TF - CLOSING SLEEVE
9) - PP16472FF - SNAP RING	**9) -** PP16442FF - SNAP RING
10) - PP16525NF - THRUST WASHER	**10) -** PP02404SF - THRUST WASHER
11) - PP16505TF - CHUCK CAM	**11) -** PP16890TF - CHUCK CAM
12) - PP16510TF - CHUCK KNOB	**12) -** PP16410TF - CHUCK KNOB
SA16919TA - BRAD POINT CHUCK PARTS 3 MM - 12MM	**SA16880TA - 90° DRILL CHUCK PARTS 12MM - 21MM**
1) - PP16450TF - CHUCK BODY	**1) -** PP16450TF - CHUCK BODY
2) - SA16427SA - (5 EA) CHUCK JAW	**2) -** SA16425SA- (7 EA) CHUCK JAW
3) - SA12567RA - (5 EA) CHUCK JAW SPRINGS	**3) -** SA12567RA - (7 EA) CHUCK JAW SPRINGS
4) - PP16440FF - CHUCK JAW KEY SCREW	**4) -** PP16440FF - CHUCK JAW KEY SCREW
5) - PP16465TF - CHUCK JAW GUIDE	**5) -** PP16465TF - CHUCK JAW GUIDE
6) - PP16470LF - CHUCK JAW RACE	**6) -** PP16470LF - CHUCK JAW RACE
7) - PP16418TF - CLOSING SCREW	**7) -** PP16418TF - CLOSING SCREW
8) - PP16515TF - CLOSING SLEEVE	**8) -** PP16415TF - CLOSING SLEEVE
9) - PP16442 - SNAP RING	**9) -** PP16442FF - SNAP RING
10) - PP02404SF - THRUST WASHER	**10) -** PP02404SF - THRUST WASHER
11) - PP16916TF - CHUCK CAM	**11) -** PP16880TF - CHUCK CAM
12) - PP16410TF - CHUCK KNOB	**12) -** PP16410TF - CHUCK KNOB
SA16918TA - BRAD POINT CHUCK PARTS 12 MM - 21MM	
1) - PP16450TF - CHUCK BODY	
2) - SA16427SA - (7 EA) CHUCK JAW	
3) - SA12567RA - (7 EA) CHUCK JAW SPRINGS	
4) - PP16440FF - CHUCK JAW KEY SCREW	
5) - PP16465TF - CHUCK JAW GUIDE	
6) - PP16470LF - CHUCK JAW RACE	
7) - PP16418TF - CLOSING SCREW	
8) - PP16515TF - CLOSING SLEEVE	
9) - PP16442 - SNAP RING	

Exploded View - Chuck



10) - PP02404SF - THRUST WASHER	
11) - PP16918TF - CHUCK CAM	
12) - PP16410TF - CHUCK KNOB	*REVISED* ***03-10-03***

XT-3000 PARTS LIST

LEX 900 - XT-3000 DRILL SHARPENER COMPLETE
Not Shown SA12072EA - 230V VACUUM ASSEMBLY COMPLETE
Not Shown SA12075EA - 115V VACUUM ASSEMBLY COMPLETE
Not Shown SA16400TA- 3MM - 12MM STANDARD CHUCK COMPLETE
Not Shown SA16450TA- 12MM - 21MM STANDARD CHUCK COMPLETE

Exploded View / Machine—page 37

Not Shown PP09090PF - MACHINE COVER
93) - PP16632SF - DOCKING LEVER
92) - PP16634TF - DOCKING LEVER BOLT
91) - PP16005TF - LOCATING PIN
90) - SA16077TA - 230v MOTOR/HUB ASSEMBLY
90) - SA16075TA - 115v MOTOR/HUB ASSEMBLY

89) - PP12040EF - 230v EMERGENCY STOP (INTERNATIONAL MACHINES ONLY)
88) - PP12065EF - ELECTRICAL RECEPTACLE
87) - PP16035EF - 115v SWITCH BREAKER
87) - PP16037EF - 230v SWITCH BREAKER
86) - SA08664PA - RUBBER FEET & 6MM X 16MM BHCS (4 EACH)
85) - SA16040EA - ELECTRICAL BOTTOM COVER W/ (4) 6-32 TYPE F

84) - PP12076TF- VACUUM TUBE ATTACHMENT NUT*
83) - PP16030TF - VACUUM TUBE*
-SA16030TA - VACUUM TUBE/NUT ASSEMBLY
82) - SA16020SA - GRIT TRAY ASSEMBLY*
81) - PP12240FF - WHEEL GRD CSTING 4 MM X 18MM SHCS (3 REQUIRED)
80) - PP16045CF - WHEEL GUARD CASTING
79) - SA16070TA - GRIND WHEEL RETAINER W/ 3 BOLTS

78) - PP16062GF - DIAMOND POINT SPLIT GRINDING WHEEL 260 GRIT
78) - PP16060GF - CBN POINT SPLIT GRINDING WHEEL 100 GRIT
77) - PP16052GF - DIAMOND GRINDING WHEEL 180 GRIT
77) - PP16050GF- CBN GRINDING WHEEL 180 GRIT
Not Shown PP16480SF - CHUCK WRENCH
76) - SA16945BA - POINT SPLIT ADJUSTING LEVER*
75) - PP16935TF - POINT SPLIT CHUCK TUBE*
74) - PP16340FF - 5 MM X 50 MM SHCS (4 REQUIRED)*
73) - PP16925TF - POINT SPLIT TUBE*
72) - PP16930TF - POINT SPLIT FAN ADJUSTER*
71) - PP16940TF - POINT SPLIT NUT*
70) - **SA16925TA - POINT SPLIT ASSEMBLY COMPLETE* (#76 - #71)**

Exploded View / Sharpening Fixture—page 39

61) - PP16610TF - SHARPNEING TUBE PIVOT SHAFT*
60) - SA16615SA - PIVOT LEVER ASSEMBLY*
59) - PP16640TF - PIVOT LOCK NUT*

57) - PP16650RF - RETURN SPRING*
56) - SA16645TA - SPRING TENSIONER ASSEMBLY*
55) - SA16652TA - FEED BEARING ASSEMBLY*
54) - SA16657TA - SWING BEARING ASSEMBLY*
53) - PP16100CF - PIVOT BASE CASTING*
52) - PP16600XF - SHARPENING TUBE*
51) - PP16605TF - SHARPENING TUBE LINER*
50) - **SA16600XA - 118° - 150° SHARPENING FIXTURE COMPLETE* (#61 - #51)**
Not Shown SA16936TA - PROTECTIVE EYE SHIELDS (INTERNATIONAL MACHINES ONLY)

Exploded View / Alignment Assembly—page 41

REVISED 11-11-02

41) - PP02022TF - PUSHER SHAFT CAP***
40) - PP16220XF - PUSHER WEDGE***
39) - PP02028RF - WEDGE RETURN SPRING***
38) - PP16230TF - PUSHER GUIDE TUBE***
37) - PP16225BF - PUSHER GUIDE TUBE SUPPORT***
36) - PP16235TF - PUSHER SHAFT***
35) - PP16237RF - PUSHER BAR RETURN SPRING***
34) - PP16240BF - MATERIAL ADJUST BRACKET***
33) - PP02030TF - PUSHER RETURN REAR SPRING GUIDE***
32) - PP16338FF - 3/32 X 3/8 DOWEL PIN***
31) - **SA16225BA - PUSHER SHAFT ASSEMBLY COMPLETE*** (#41 - #32)**

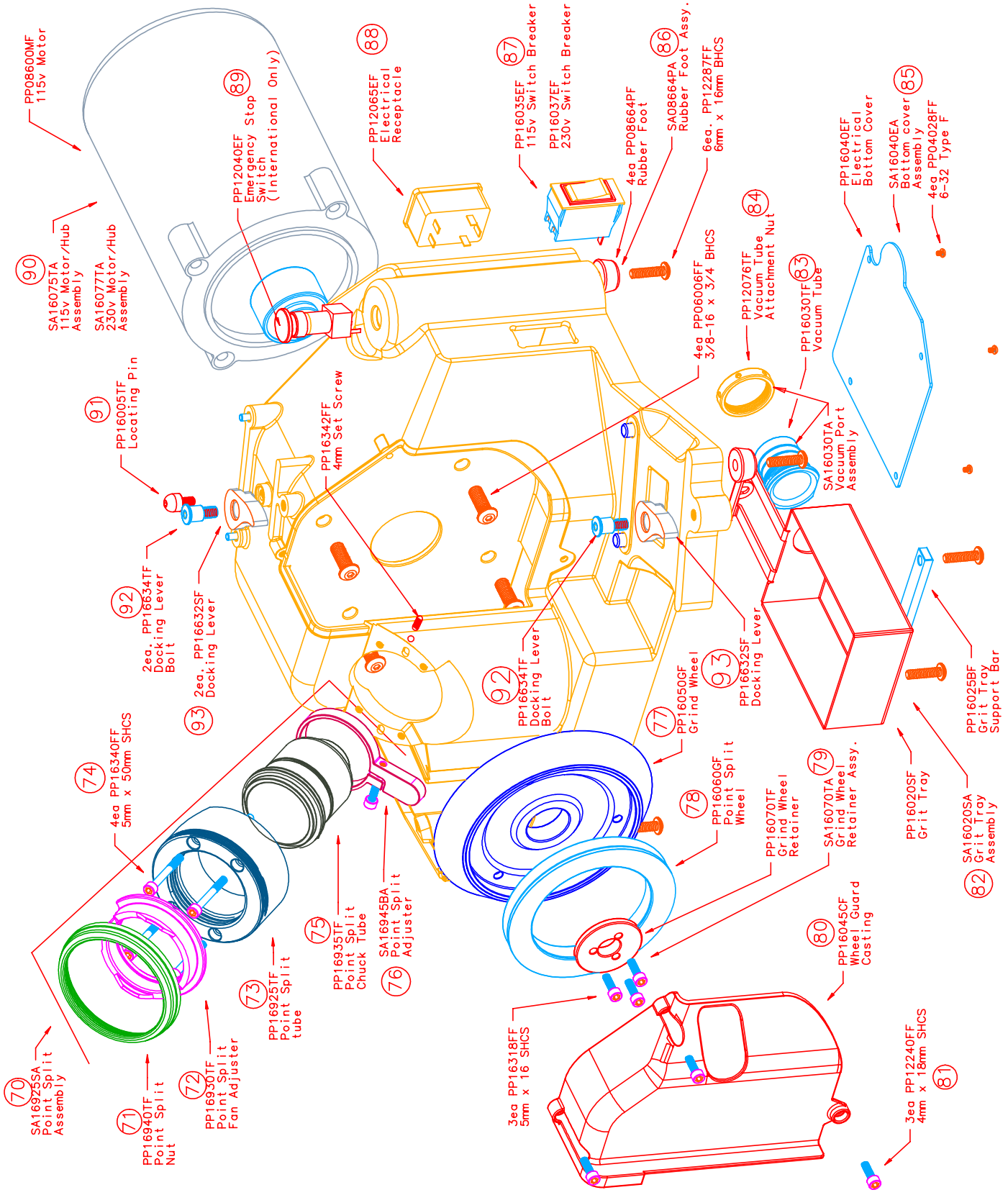
30) - **SA16215XA - PAWL ARM ASSEMBLY COMPLETE****
30) - PP02079TF - PAWL ARM BOLTS (2 REQUIRED)**
30) - PP02082RF- PAWL ARM RETURN SPRING**
30) - PP04219FF - 6-32 X 1/4 BHCS (2 REQUIRED)**
30) - PP02078NF - CARBIDE PAWLS (2 REQUIRED)**
30) - PP16215XF - PAWL ARMS (2 REQUIRED)**
29) - PP16283RF - MATERIAL LENGTH ADJUST SPRING*
28) - PP16285TF - MATERIAL LENGTH ADJUST SCREW*
27) - PP16334FF - 5MM X 22MM SHCS (4 REQUIRED)*
26) - PP16210BF - PUSHER BAR*
25) - SA08560LA - BEARING W/ 1/4 - 20 BHCS (SET OF 3)*
24) - PP16280TF - BRAKE STOP SET SCREW*
23) - PP16205SF - BRAKE BRACKET*
22) - SA16615SA - PIVOT LOCK LEVER ASSEMBLY*
21) - PP16245TF - ALIGNMENT TUBE*
20) - PP16275TF - ALIGNMENT TUBE LOCK BOLT*
19) - PP16250TF - ALIGNMENT TUBE NUT*
18) - PP16200CF - ALIGNMENT CASTING*
17) - SA16270XA - SLIDE HANDLE ASSEMBLY*
16) - PP16202TF - ALIGNMENT STORAGE LINER*
15) - **SA16200CA - ALIGNMENT ASSEMBLY COMPLETE* (#31 - #16) & (#41 - #32)**

Optional Accessories

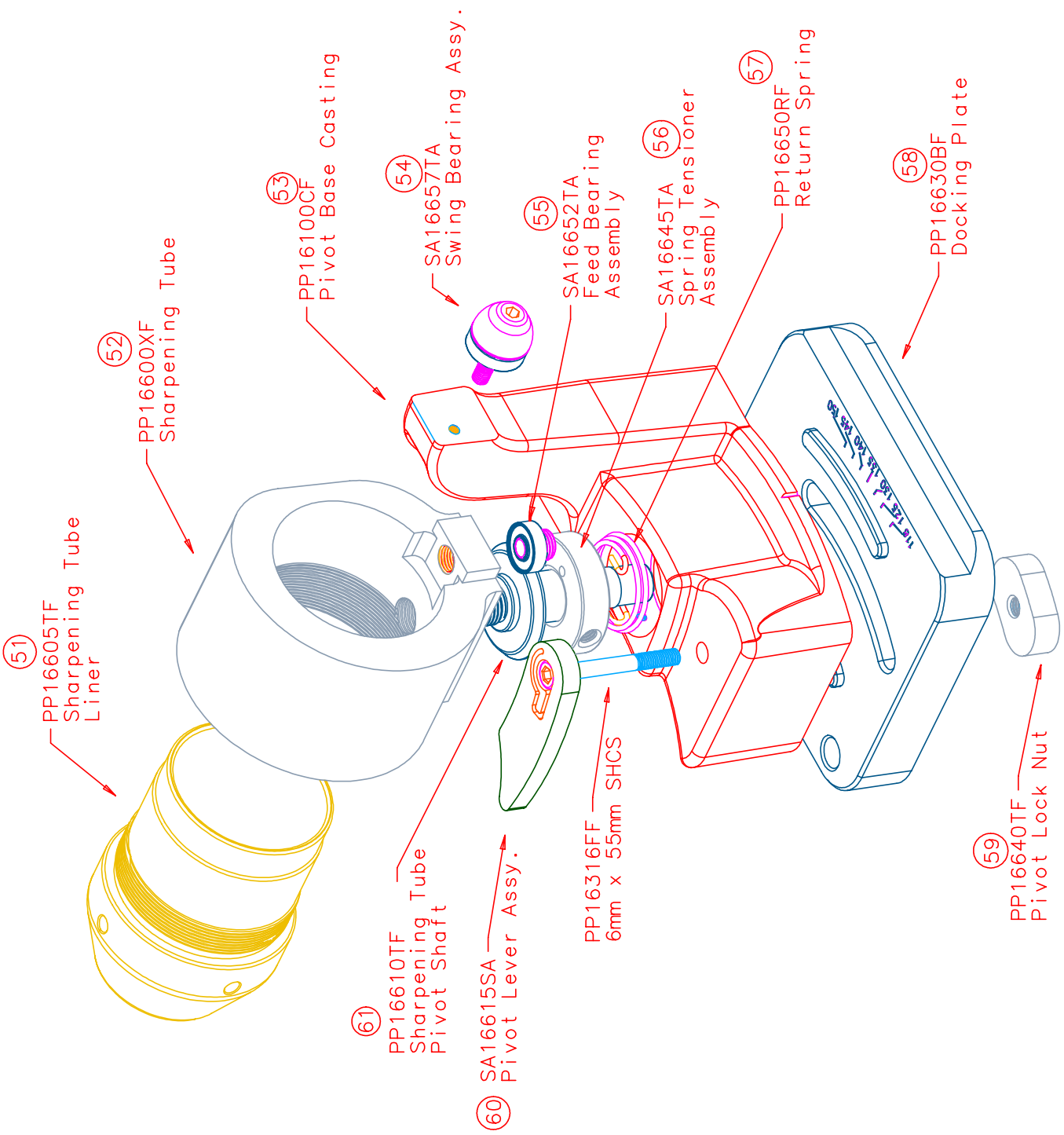
Not Shown LEX 050 - LARGE DRILL ATTACHMENT COMPLETE*
Not Shown SA16500TA - LARGE DRILL CHUCK 21MM - 30MM*
Not Shown - LARGE DRILL ALIGNMENT FIXTURE - 30MM*
Not Shown SA16580XA - LARGE DRILL SHARPENING FIXTURE - 30MM*

Not Shown LEX 100 - XY TABLE ATTACHMENT COMPLETE

Not Shown LEX150 - COUNTERSINK ATTACHMENT COMPLETE
Not Shown LEX 150INTL- COUNTERSINK ATTACHMENT (w/ metric collets)
Not Shown PP16862TF - PP16862TF - 3 FLUTE COUNTERSINK CAM (OPTIONAL)
Not Shown LEX 200 - BRAD POINT ATTACHMENT COMPLETE
Not Shown SA16916TA - BRAD POINT CHUCK 3MM - 12MM*
Not Shown SA16918TA - BRAD POINT CHUCK 12MM - 21MM (OPTIONAL)
Not Shown SA16950BA - LEX 250 - STEP DRILL ATTACHMENT COMPLETE*
Not Shown SA16975TA - STEP DRILL CHUCK 3MM - 12MM*
Not Shown SA16980TA - STEP DRILL CHUCK 12MM - 21MM (OPTIONAL)
Not Shown SA16970XA - STEP DRILL ALIGNMENT FIXTURE*
Not Shown SA16950BA - STEP DRILL SHARPENING FIXTURE*
Not Shown LEX 300 - 90° -120° POINT ATTACHMENT COMPLETE*
Not Shown SA16995XA - 90° - 120° SHARPENING FIXTURE
Not Shown SA16890TA - 90° POINT CHUCK 3MM - 12MM*
Not Shown SA16880TA - 90° POINT CHUCK 12MM - 21MM (OPTIONAL)


PP08600MF 115v Motor
SA16075TA 115v Motor/Hub Assembly
SA16077TA 230v Motor/Hub Assembly
PP12040EF Emergency Stop Switch (International Only)
PP12065EF Electrical Receptacle
PP16035EF 115v Switch Breaker
PP16037EF 230v Switch Breaker
4ea PP08664PF Rubber Foot
SA08664PA Rubber Foot Assy.
6ea. PP12287FF 6mm x 16mm BHCS
4ea PP06006FF 3/8-16 x 3/4 BHCS
PP12076TF Vacuum Tube Attachment Nut
PP16030TF Vacuum Tube
PP16040EF Electrical Bottom Cover
SA16040EA Bottom cover Assembly
4ea PP04028FF 6-32 Type F
PP16005TF Locating Pin
PP16342FF 4mm Set Screw
SA16030TA Vacuum Port Assembly
2ea. PP16634TF Docking Lever Bolt
2ea. PP16632SF Docking Lever
PP16634TF Docking Lever Bolt
PP16632SF Docking Lever
PP16050GF Grind Wheel
PP16025BF Grit Tray Support Bar
4ea PP16340FF 5mm x 50mm SHCS
PP16060GF Point Split Wheel
PP16070TF Grind Wheel Retainer
SA16070TA Grind Wheel Retainer Assy.
PP16020SF Grit Tray
SA16020SA Grit Tray Assembly
PP16045CF Wheel Guard Casting
3ea PP16318FF 5mm x 16 SHCS
3ea PP12240FF 4mm x 18mm SHCS
SA16925SA Point Split Assembly
PP16940TF Point Split Nut
PP16930TF Point Split Fan Adjuster
PP16925TF Point Split tube
PP16935TF Point Split Chuck Tube
SA16945BA Point Split Adjuster

EXPLODED VIEW SHARPENING FIXTURE 118-150



EXPLODED VIEW ALIGNMENT ASSEMBLY