

DAREX[®]

WORLD'S BEST SELLING INDUSTRIAL DRILL SHARPENERS

XT•3000

Expandable Tool Sharpener



Operating Instructions

⚠ CAUTION: To reduce the risk of injury, the user must read and understand this instruction manual before using this product. Save these instructions for future reference.

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

Or call Darex 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 comes standard with CBN wheels for sharpening HSS and cobalt drills. Diamond wheels for sharpening carbide drills are available as an option. 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 30. Schematic breakdowns begin on page 31 of the manual.

*Optional accessories allow you to sharpen other cutting tools; including 90° spot drills, step drills, brad points, larger drills, Weldon, single flute, 3 flute, 6 flute countersinks and left hand drills.

Safety Instructions

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

⚠ Caution:

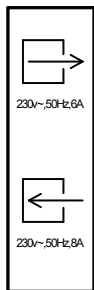
- **WE DO NOT RECOMMEND OPERATING MACHINE WITHOUT A VACUUM SYSTEM RUNNING**
- **GRINDING DUST INHALED/INGESTED CAN BE HARMFUL TO YOUR HEALTH.**
- **GRINDING PARTIALS WILL CAUSE DAMAGE TO THE INTERNAL COMPONENTS**

⚠ 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 18 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.
- **TO MINIMIZE THE RISK OF INJURY, ALWAYS USE PROPER EYE AND RESPIRATORY PROTECTION:** Everyday eyeglasses only have impact resistance lenses and they are NOT safety glasses. (See Decal at left.) Use appropriate respiratory face or dust mask.
- **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.
- **WARNING:** This product contains a chemical known to the State of California to cause cancer. Some dust created by power sanding and grinding as well as contents from the machine may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



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

		Volts	Total length of cord (feet / meters)			
		120 V	25 / 7.5	50 / 15	100 / 30	150 / 45
Ampere Rating		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	

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

Capabilities & Performance

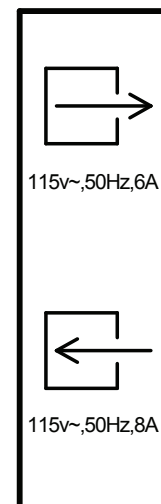
- **Drill Types:** Two fluted HSS, Cobalt or Carbide SAE & Metric twist drills
- **Drill Point Styles:** Standard Conic & Split Point
- **Split Point Styles:** Standard X split
- **Point Angles:** 118° - 150°
- **Drill Diameter:** 3 mm - 21 mm (.118 to .826)
- **Lip Height Accuracy:** ANSI B94.11, NAS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

Decal Identifications

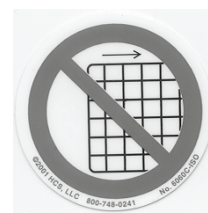
"Wear Safety Glasses" -



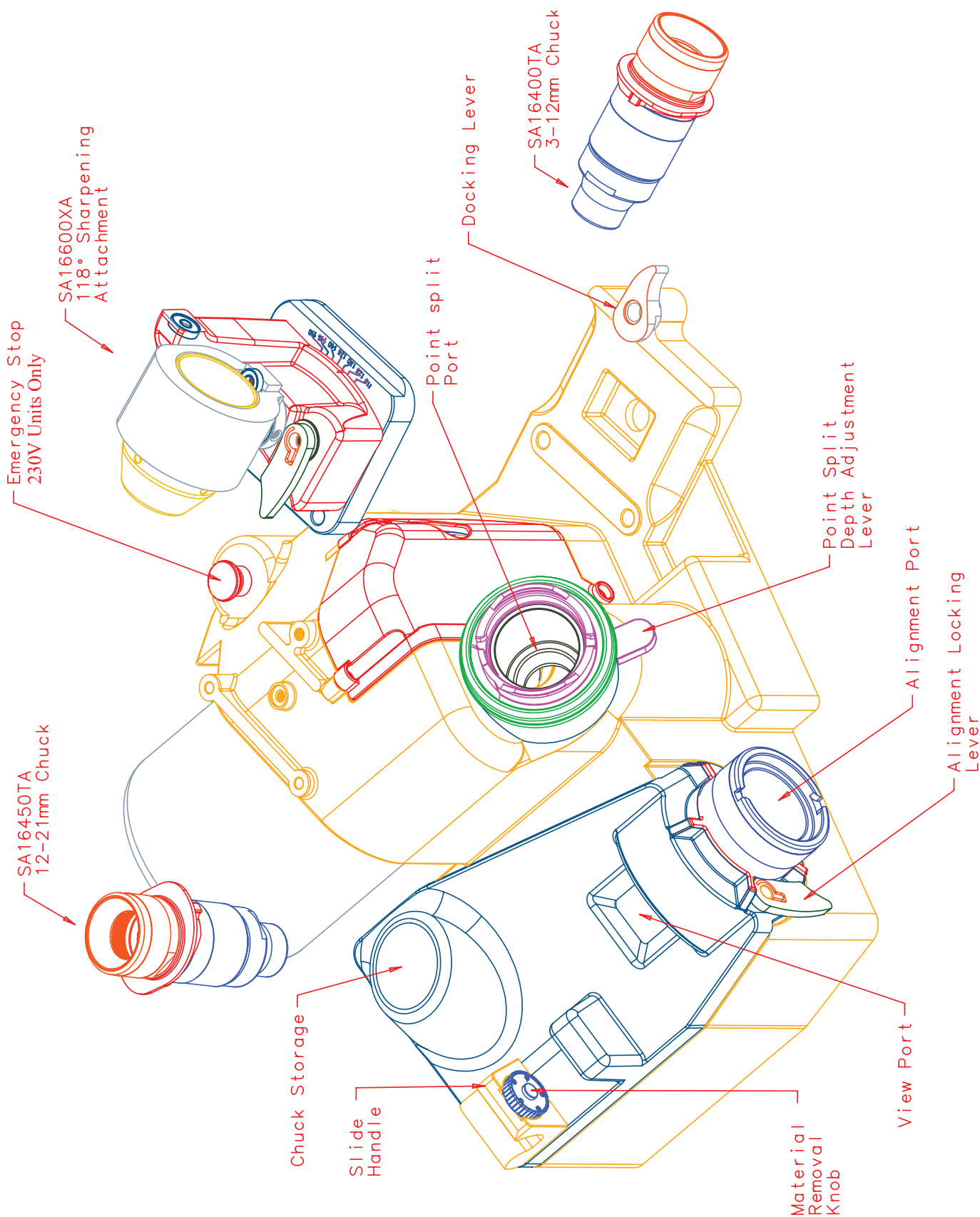
Accessory receptacle capacity -



"Do not operate without wheel guard cover" -



XT-3000 Reference Drawing



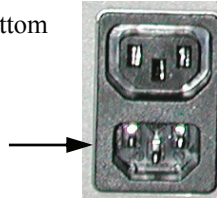
Setting up the XT3000

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.



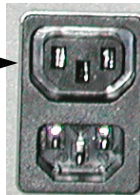
3. The power inlet is located at the bottom of the power receptacle.



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

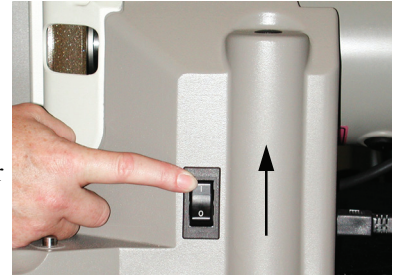
5. Make sure the grit tray is in place and secure.



6. Un-box the chucks.

7. Make sure sharpening fixture is secured to base. For more information on mounting the sharpening fixture. See page 12.

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 the Darex easy align to set the drill to length and time the cutting edge.



Setting Material Removal Amount

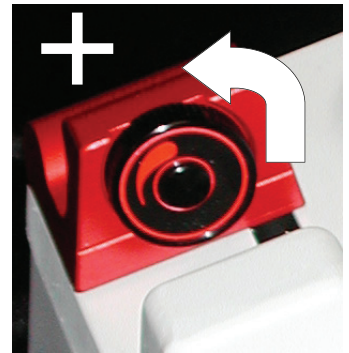
1. Rotate the material removal knob to adjust the amount of stock you want to remove from the end of the drill. Stock removal ranges from approximately .010 - .030. Remove more material if the drill is excessively worn or damaged. Remove less material if you are renewing the drill.

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

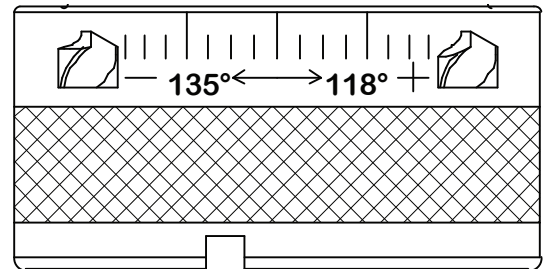
Tip:
Sharpen drills on Minimum MTO to achieve longer wheel life.



or counterclockwise to increase material removal.



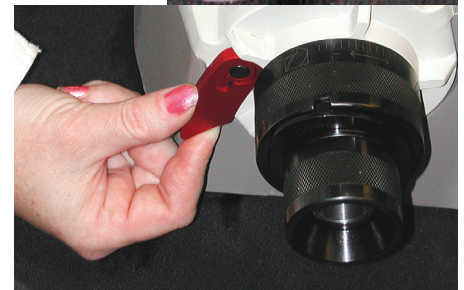
Setting Alignment Tube for Desired Heel Relief



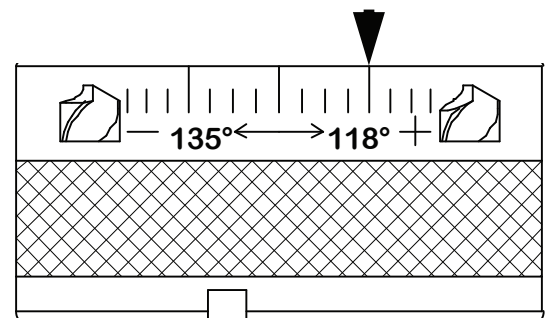
To increase or decrease the amount of heel relief produced during sharpening, change the position of the alignment tube.



1. Lift the alignment locking lever.

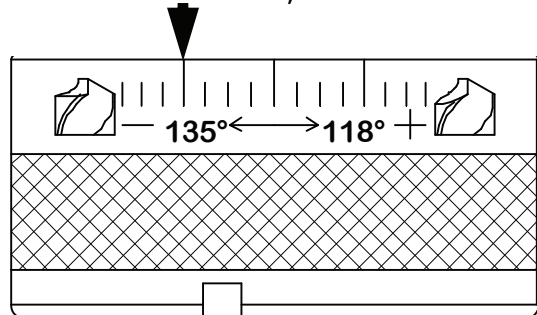


This will allow you to rotate the alignment tube in either direction.
2. To increase heel relief, rotate the alignment tube counterclockwise.



Drill Alignment

To decrease heel relief, rotate clockwise.



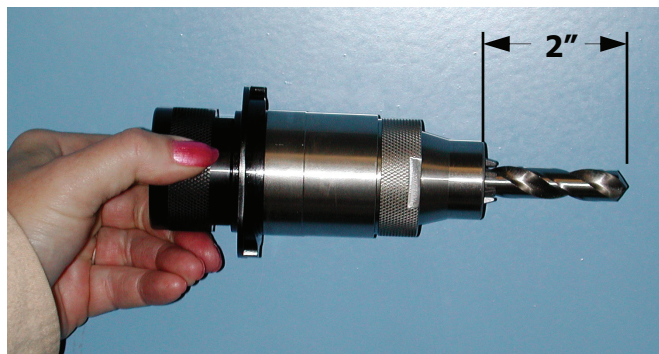
3. To secure the alignment position, tighten locking lever.

Setting the drill to the proper length

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



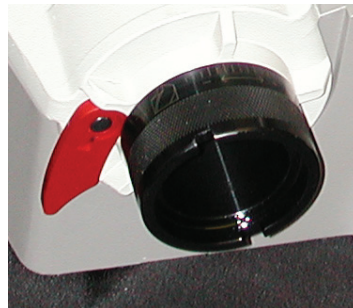
Allow the drill to protrude approximately 2 inches as shown.



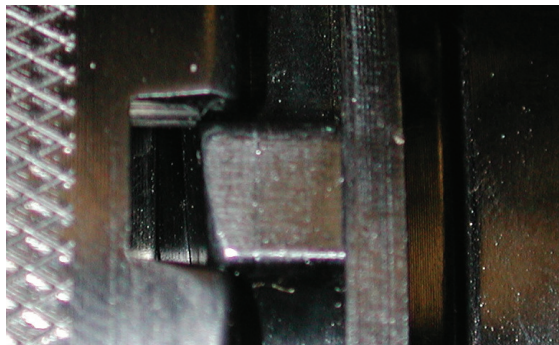
2. Rotate the chuck knob clockwise, which closes the chuck jaws onto the drill. Then slightly loosen the chuck jaws by rotating the chuck knob counterclockwise, about 1/2 turn. To determine how tightly the drill should be held during the alignment process, the drill should slide freely and drop out when the chuck is held in a vertical position.

Timing the cutting edge

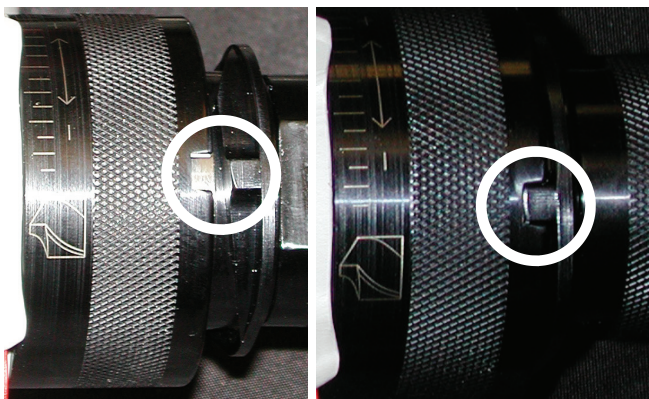
3. Insert the chuck and drill into the alignment tube.



Align the cam dogs with the slots.



The cam dogs should bottom out against the slots.



Drill Alignment

4. 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.

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

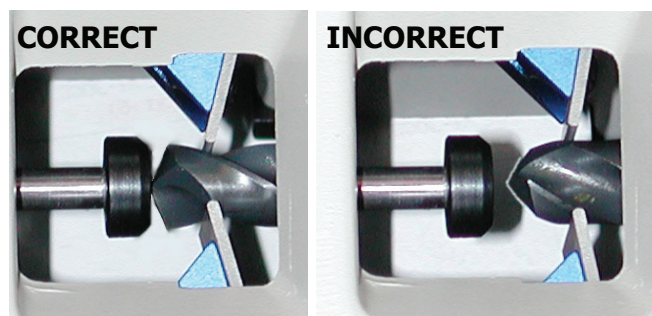


positioned correctly.

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.



6. 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

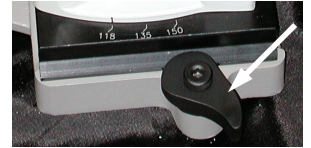
1. Rotate the locking lever so the flat edge is at the top, horizontal and in a straight line with the base casting.



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.

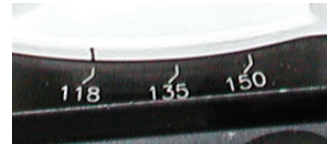


3. After sharpening fixture is in place, rotate the locking lever clockwise until snug. This will secure the fixture to the base.



Adjusting the Point Angle

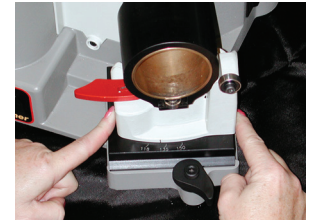
You must loosen the sharpening fixture and slide the point angle indicator to the desired degree.



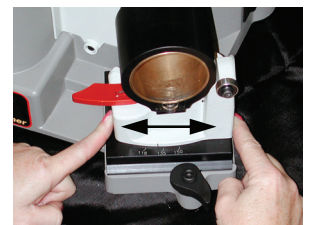
1. To loosen, pull the locking lever towards you.



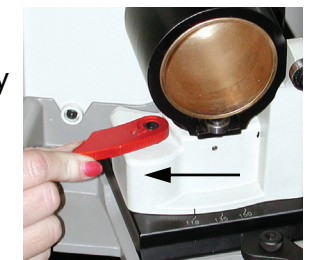
2. Place fingers on each side of the sharpening pivot base casting.



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 Split Port Cover and Eye Shield are in place before sharpening. (International Models 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.

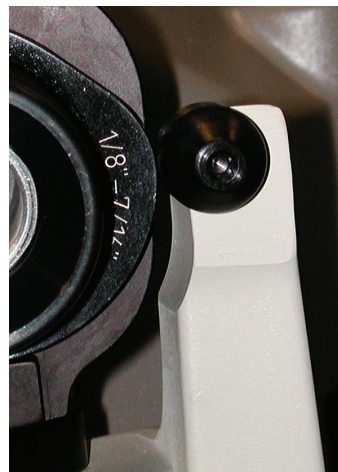


Sharpen

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.

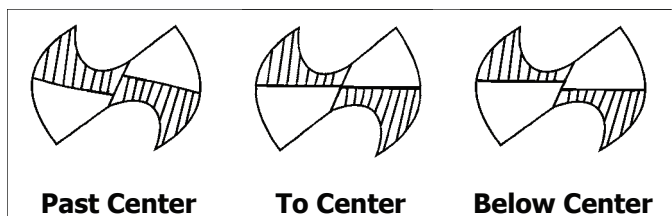


Approximately 3-7° rake is created, producing a drill with a self-centering point. Its advantages are the ability to reduce thrust and eliminate walking at the drill point. This is a distinct advantage where drill bushings/fixtures are not used.

Splitting

POINT SPLIT 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.

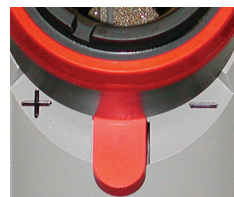
NOTE: Do not force the chuck into the grinding wheel or damage to the drill or wheel may occur.

Adjusting the Depth of Split

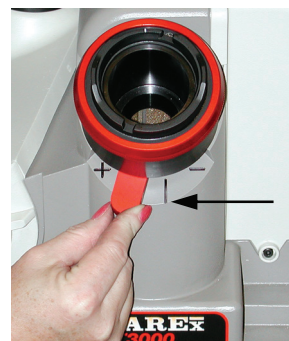
The depth of split can vary from drill manufacturer to drill manufacturer. The point split depth adjustment feature designed on the XT-3000 makes it easy to mimic multiple split styles. The point split depth adjustment lever is attached to the point split chuck tube. As you move the lever, it backs the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



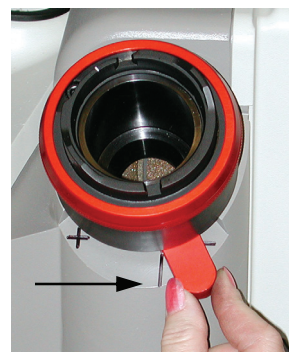
1. Located on the underside of the point splitter is the point split depth adjustment lever.



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.



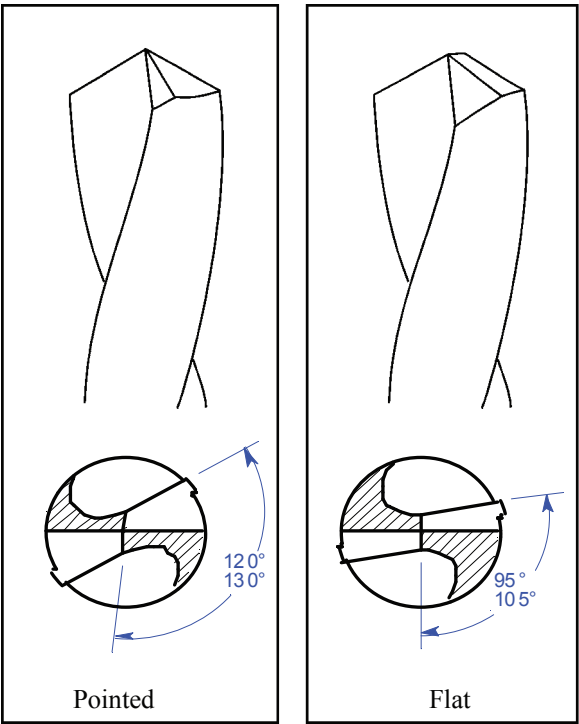
3. To decrease the depth of split, push the lever to the right toward the - sign. This will back the drill away from the wheel.



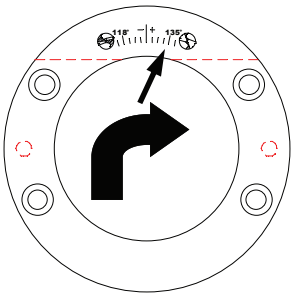
NOTE: To correct a drill that has been split deeper than desired, you will have to regrind the drill beyond the over split portion before splitting again.

Drill Point Splitting

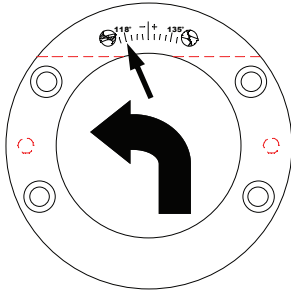
POINT SPLIT ANGLE
DIAGRAM



split angle adjuster
clockwise to
increase the split
angle.



3. Rotate the adjuster
counter clockwise
to decrease the
split angle.



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.



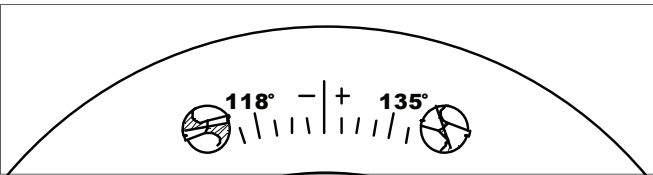
Adjusting the Split Angle Rotation

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 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



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 22.

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 .059" – 1.1875" (1.5mm 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:

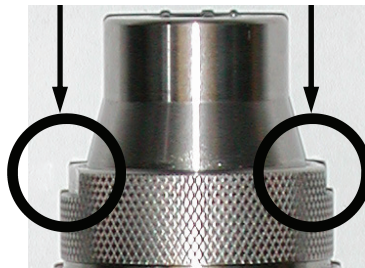
Typically, an end mill drill has a shank diameter larger than the body of the drill. Some End Mill shank drills can be sharpened on the XT-3000, depending on the length of the flute verses the length of the shank.

CHUCK DISASSEMBLY & MAINTENANCE



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

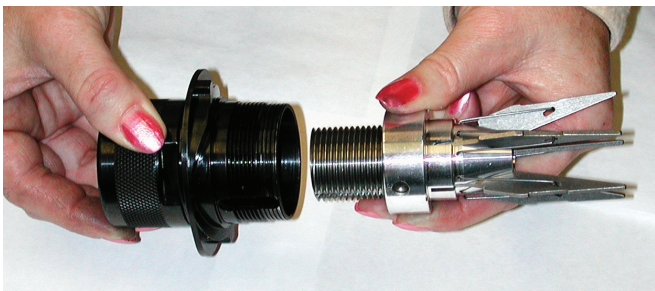
5. Rotate chuck knob counter clockwise until the wrench reaches the top of the slot.



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
SA16484TA - 3-12mm	Left Hand Chuck
SA16488TA - 12-21mm	Left Hand Chuck
SA16401TA - 1.5-7mm	1.5-7mm Chuck
SA17010TA - 3-12mm	Auto Geared Chuck 3-12mm
SA17025TA - 12-21mm	Auto Geared Chuck 12-21mm

XT-3000 WHEEL INFORMATION

The Darex XT-3000 comes equipped with electroplated CBN (Cubic Boron Nitride). Optional Diamond wheels are available. 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 approximately the first one hundred drill sharpenings. Under normal use, you should experience 4-6 thousand drill sharpenings from each new wheel.

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

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.

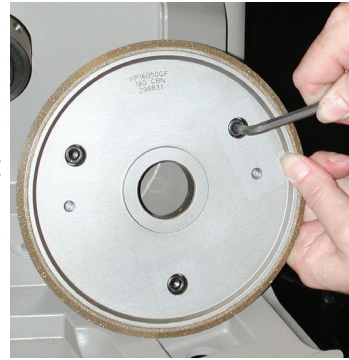
6. Pull wheel toward you then to the right and out of the machine cavity.

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.(PP07013FF)



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 9.

3. Once drill is set to length, aligned and captured in the chuck securely, remove from alignment port.



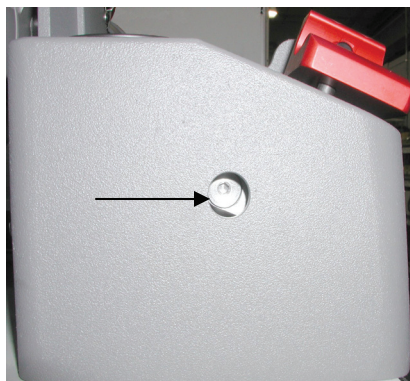
Wheel Information

At the Minimum material removal setting, approximately .005 (.127mm) should be removed from the end of the drill.

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 $\frac{1}{4}$ 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, we 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 cleaned 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 9.
3. Once drill is set to



length, aligned and captured in the chuck, securely remove from alignment port.

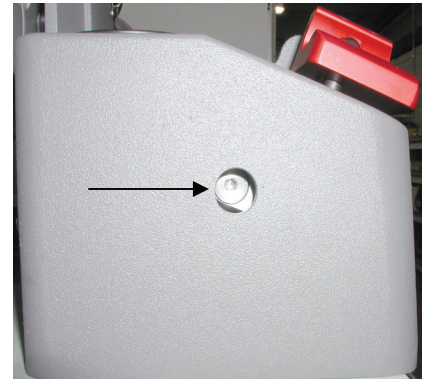
4. Measure the amount of drill protruding from the end of the chuck to the tip of the drill, before sharpening.



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 1/4 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

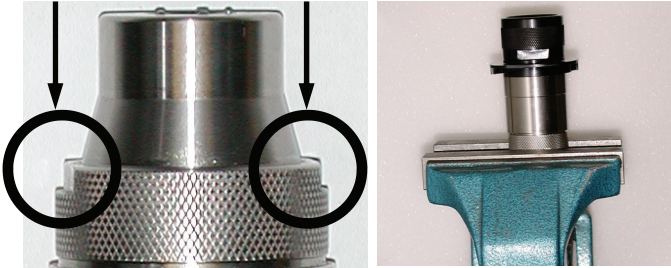
Chuck Maintenance

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 counterclockwise 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.

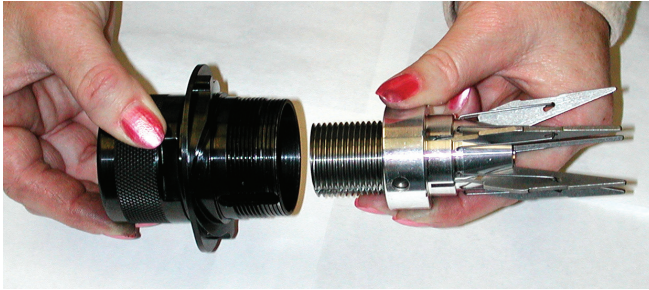


7. Remove wrench and reinsert into the set screw hole above the slot.



General Maintenance

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 Re-assembly:

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.

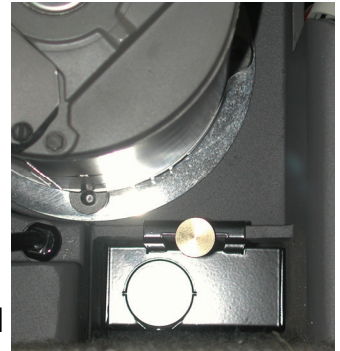
External Machine Castings:

Wipe down external machine castings with a mild household cleaner.

Grit Tray/Vacuum Port Connection:

Grit tray

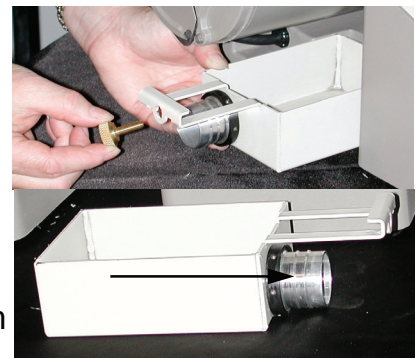
At the back of the machine, located underneath the grinding motor is the grit tray. Drill grindings will accumulate inside the grit tray. The grit tray has a magnetic liner to attract and hold these dust particles. Do



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
- Grinding wheel obstructed and can't rotate
- Grinding motor bad

Symptom

Tip of drills burn or discolor

Cause

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

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

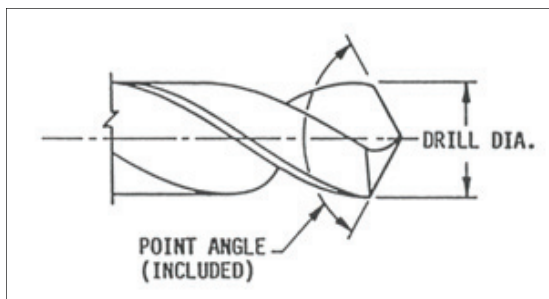
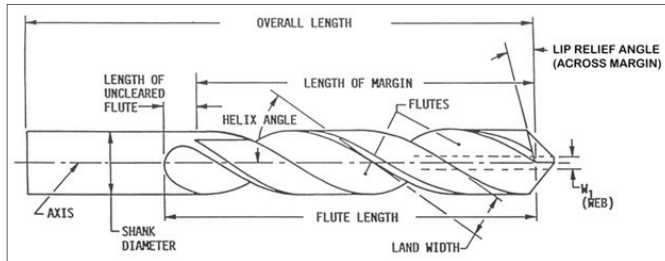
Lip height concentricity is out of tolerance

Cause

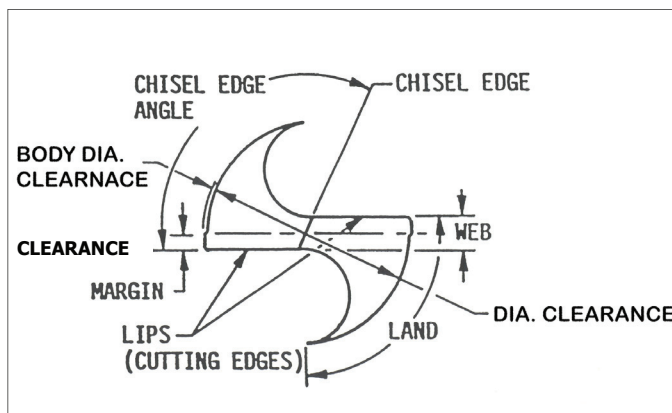
- Material take off too excessive
- Chuck needs to be cleaned
- Sharpening tube needs to be cleaned
- Chuck is worn out and needs to be replaced
- Sharpening tube is worn and needs to be replaced
- Wheel is not running true

DRILL NOMENCLATURE

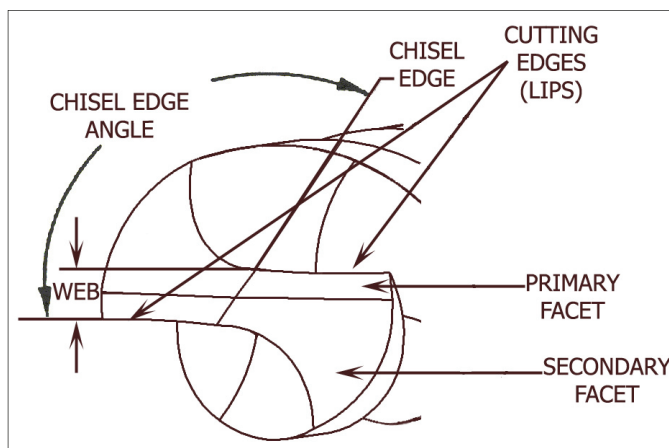
FACET & CONIC DRILL STYLE PICTURE AND NOMENCLATURE



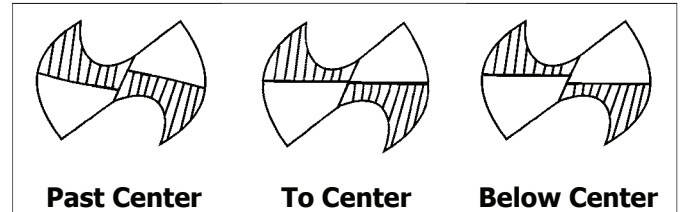
CONIC DRILL



FACET DRILL



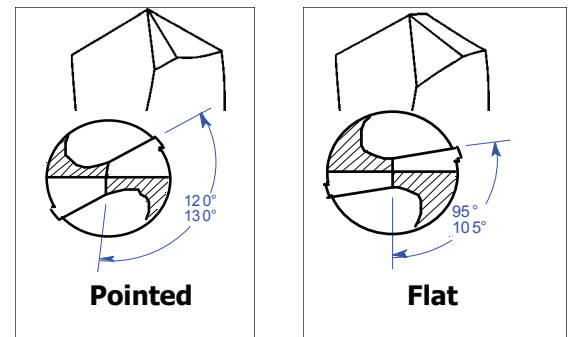
POINT SPLIT DEPTH OF SPLIT DIAGRAM



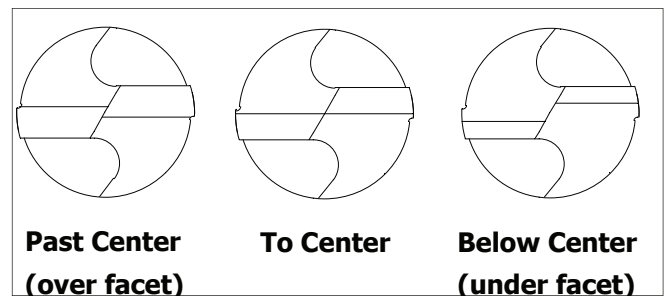
CENTER OF SPLIT DIAGRAM



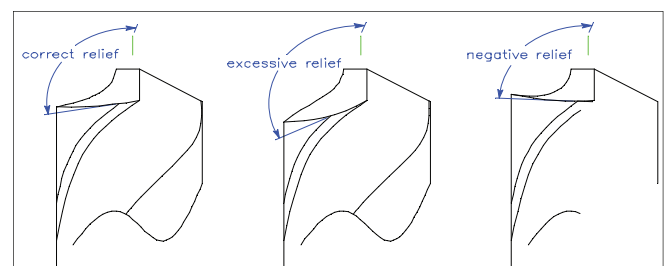
POINT SPLIT ANGLE DIAGRAM



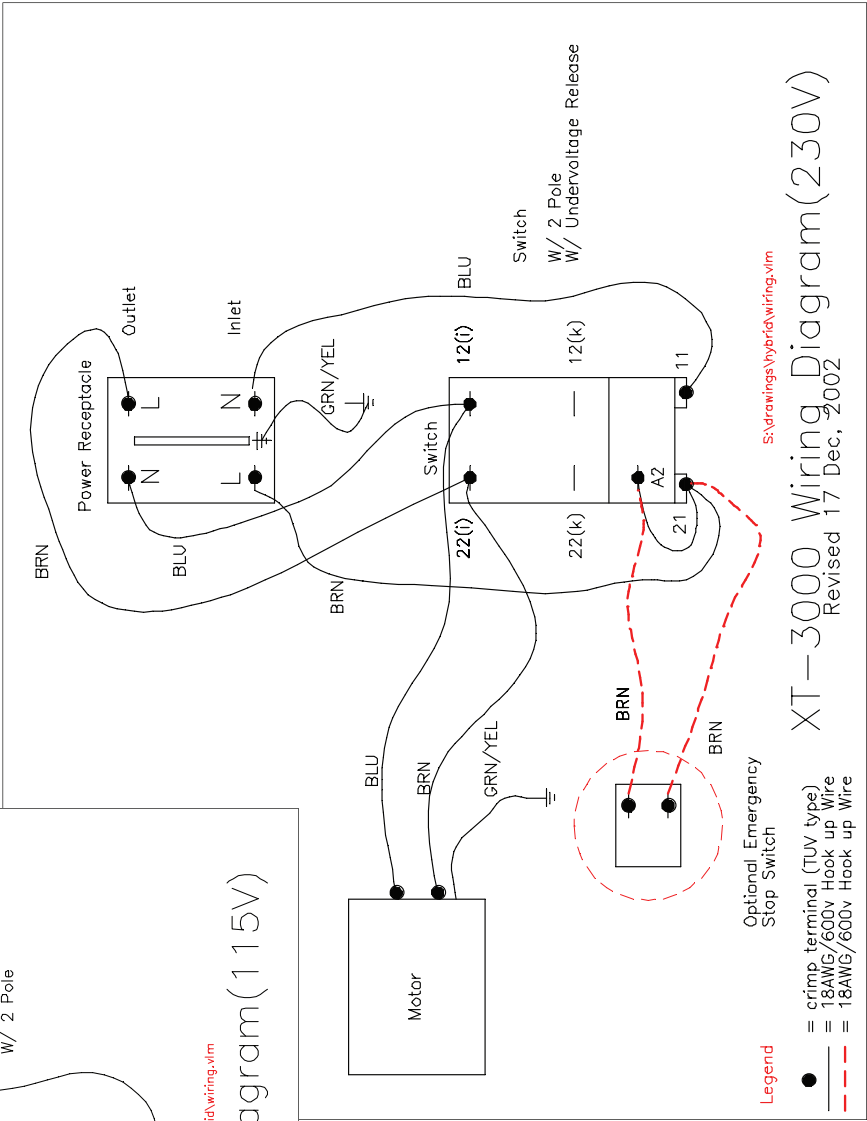
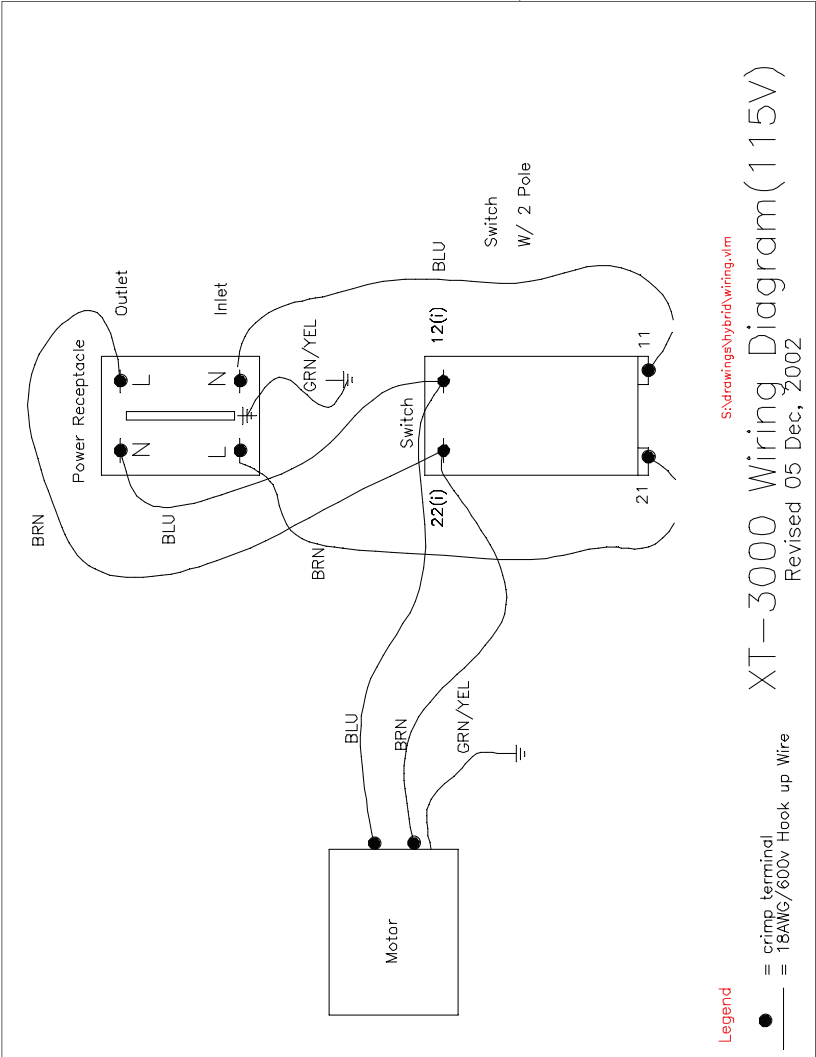
Facet Diagram (re-sharpen on the XPS16)

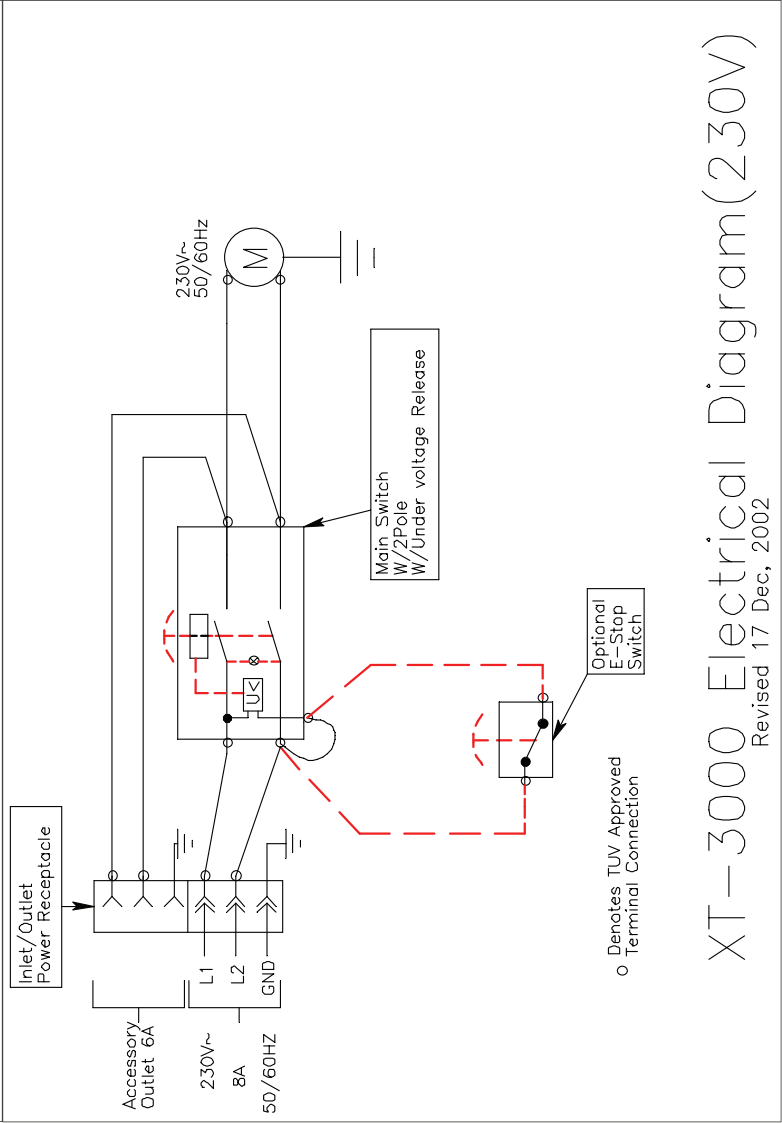
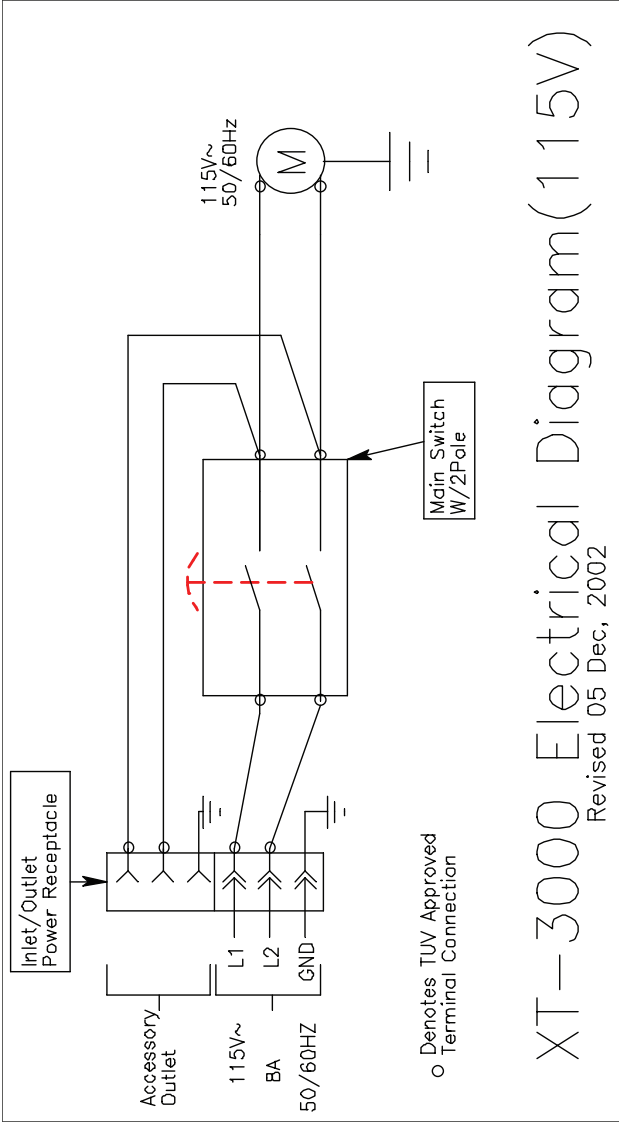


RELIEF



Wiring Diagram





Chuck Parts List

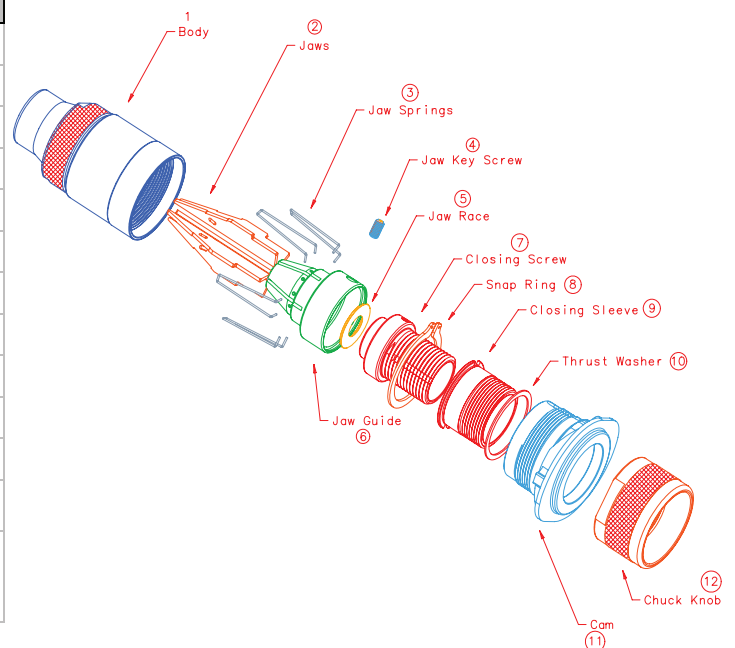
ITEM	ITEM_DESC	ITEM	ITEM_DESC
SA16400TA	3-12MM CHUCK	SA16975TA	3-12MM STEP DRILL CHUCK (STANDARD)
PP16400TF	3-12MM CHUCK BODY (B BP S N)	PP16400TF	3-12MM CHUCK BODY (B BP S N)
SA16425SA	JAW SET (5 PIECES)	SA16425SA	JAW SET (5 PIECES)
SA12565RA	CHUCK JAW SPRINGS (5 PIECES)	SA12565RA	CHUCK JAW SPRINGS (5 PIECES)
PP16440FF	5MM X .8MM X 10MM SSS	PP16440FF	5MM X .8MM X 10MM SSS
PP16430TF	3-12MM JAW GUIDE (B BP S N)	PP16430TF	3-12MM JAW GUIDE (B BP S N)
PP16435LF	3-12MM JAW RACE	PP16435LF	3-12MM JAW RACE
PP16420TF	3-12MM CLOSING SCREW (B BP S N)	PP16420TF	3-12MM CLOSING SCREW (B BP S N)
PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)	PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)
PP16442FF	3-21MM SNAP RING	PP16442FF	3-21MM SNAP RING
PP02404SF	1/4 5/8 & 1 THRUST WASHER	PP02404SF	1/4 5/8 & 1 THRUST WASHER
PP16405TF	3-12MM CAM (B)	PP16975TF	3-12MM STEP DRILL CAM
PP16410TF	3-21MM CHUCK KNOB (B BP S N)	PP16410TF	3-21MM CHUCK KNOB (B BP S N)
ITEM	ITEM_DESC	ITEM	ITEM_DESC
SA16450TA	12-21MM CHUCK	SA16980TA	12-21MM STEP DRILL CHUCK (OPTIONAL)
PP16450TF	12-21MM CHUCK BODY (B BP S N)	PP16450TF	12-21MM CHUCK BODY (B BP S N)
SA16427SA	JAW SET (7 PIECES)	SA16427SA	JAW SET (7 PIECES)
SA12567RA	CHUCK JAW SPRINGS (7 PIECES)	SA12567RA	CHUCK JAW SPRINGS (7 PIECES)
PP16440FF	5MM X .8MM X 10MM SSS	PP16440FF	5MM X .8MM X 10MM SSS
PP16465TF	12-21MM JAW GUIDE (B BP S N)	PP16465TF	12-21MM JAW GUIDE (B BP S N)
PP16470LF	12-21MM JAW RACE	PP16470LF	12-21MM JAW RACE
PP16418TF	12-21MM CLOSING SCREW (B BP S N)	PP16418TF	12-21MM CLOSING SCREW (B BP S N)
PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)	PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)
PP16442FF	3-21MM SNAP RING	PP16442FF	3-21MM SNAP RING
PP02404SF	1/4 5/8 & 1 THRUST WASHER	PP02404SF	1/4 5/8 & 1 THRUST WASHER
PP16422TF	12-21MM CAM (B)	PP16980TF	12-21MM STEP DRILL CAM
PP16410TF	3-21MM CHUCK KNOB (B BP S N)	PP16410TF	3-21MM CHUCK KNOB (B BP S N)
ITEM	ITEM_DESC	ITEM	ITEM_DESC
SA16500TA	21-30MM CHUCK	SA16890TA	90 DEGREE 3-12MM CHUCK (STANDARD)
PP16500TF	21-30MM CHUCK BODY	PP16400TF	3-12MM CHUCK BODY (B BP S N)
SA16530SA	21-30MM CHUCK JAWS (9 PIECES)	SA16425SA	JAW SET (5 PIECES)
SA12569RA	CHUCK JAW SPRINGS (9 PIECES)	SA12565RA	CHUCK JAW SPRINGS (5 PIECES)
PP16440FF	5MM X .8MM X 10MM SSS	PP16440FF	5MM X .8MM X 10MM SSS
PP16535TF	21-30MM JAW GUIDE	PP16430TF	3-12MM JAW GUIDE (B BP S N)
PP16540LF	JAW RACE	PP16435LF	3-12MM JAW RACE
PP16520TF	21-30MM CLOSING SCREW	PP16420TF	3-12MM CLOSING SCREW (B BP S N)
PP16515TF	21-30MM CLOSING SLEEVE	PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)
PP16472FF	21-30MM SNAP RING	PP16442FF	3-21MM SNAP RING
PP16525NF	30MM THRUST WASHER	PP02404SF	1/4 5/8 & 1 THRUST WASHER
PP16505TF	21-30MM CHUCK CAM	PP16890TF	90 DEGREE 3-12MM CHUCK CAM
PP16510TF	21-30MM CHUCK KNOB	PP16410TF	3-21MM CHUCK KNOB (B BP S N)

Exploded View - Chuck

ITEM	ITEM_DESC	ITEM	ITEM_DESC
SA16916TA	3-12MM BRAD POINT CHUCK (STANDARD)	SA16880TA	90 DEGREE 12-21MM CHUCK (OPTIONAL)
PP16400TF	3-12MM CHUCK BODY (B BP S N)	PP16450TF	12-21MM CHUCK BODY (B BP S N)
SA16425SA	JAW SET (5 PIECES)	SA16427SA	JAW SET (7 PIECES)
SA12565RA	CHUCK JAW SPRINGS (5 PIECES)	SA12567RA	CHUCK JAW SPRINGS (7 PIECES)
PP16440FF	5MM X .8MM X 10MM SSS	PP16440FF	5MM X .8MM X 10MM SSS
PP16430TF	3-12MM JAW GUIDE (B BP S N)	PP16465TF	12-21MM JAW GUIDE (B BP S N)
PP16435LF	3-12MM JAW RACE	PP16470LF	12-21MM JAW RACE
PP16420TF	3-12MM CLOSING SCREW (B BP S N)	PP16418TF	12-21MM CLOSING SCREW (B BP S N)
PP16515TF	21-30MM CLOSING SLEEVE	PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)
PP16442FF	3-21MM SNAP RING	PP16442FF	3-21MM SNAP RING
PP02404SF	1/4 5/8 & 1 THRUST WASHER	PP02404SF	1/4 5/8 & 1 THRUST WASHER
PP16916TF	3-12MM BRAD PT CHUCK CAM	PP16880TF	90 DEGREE 12-21 CAM
PP16410TF	3-21MM CHUCK KNOB (B BP S N)	PP16410TF	3-21MM CHUCK KNOB (B BP S N)

ITEM	ITEM_DESC	ITEM	ITEM_DESC
SA16918TA	12-21MM BRAD POINT CHUCK (OPTIONAL)	SA16484TA	LEFT HAND 3-12MM CHUCK (OPTIONAL)
PP16450TF	12-21MM CHUCK BODY (B BP S N)	PP16400TF	3-12MM CHUCK BODY (B BP S N)
SA16427SA	JAW SET (7 PIECES)	SA16425SA	JAW SET (5 PIECES)
SA12567RA	CHUCK JAW SPRINGS (7 PIECES)	SA12565RA	CHUCK JAW SPRINGS (5 PIECES)
PP16440FF	5MM X .8MM X 10MM SSS	PP16440FF	5MM X .8MM X 10MM SSS
PP16465TF	12-21MM JAW GUIDE (B BP S N)	PP16430TF	3-12MM JAW GUIDE (B BP S N)
PP16470LF	12-21MM JAW RACE	PP16435LF	3-12MM JAW RACE
PP16418TF	12-21MM CLOSING SCREW (B BP S N)	PP16420TF	3-12MM CLOSING SCREW (B BP S N)
PP16515TF	21-30MM CLOSING SLEEVE	PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)
PP16442FF	3-21MM SNAP RING	PP16442FF	3-21MM SNAP RING
PP02404SF	1/4 5/8 & 1 THRUST WASHER	PP02404SF	1/4 5/8 & 1 THRUST WASHER
PP16918TF	12-21MM BRAD PT CHUCK CAM	PP16484TF	LEFT HAND 3-12MM CAM (B)
PP16410TF	3-21MM CHUCK KNOB (B BP S N)	PP16410TF	3-21MM CHUCK KNOB (B BP S N)

ITEM	ITEM_DESC
SA16488TA	LEFT HAND 12-21MM CHUCK (OPTIONAL)
PP16450TF	12-21MM CHUCK BODY (B BP S N)
SA16427SA	JAW SET (7 PIECES)
SA12567RA	CHUCK JAW SPRINGS (7 PIECES)
PP16440FF	5MM X .8MM X 10MM SSS
PP16465TF	12-21MM JAW GUIDE (B BP S N)
PP16470LF	12-21MM JAW RACE
PP16418TF	12-21MM CLOSING SCREW (B BP S N)
PP16415TF	3-21MM CLOSING SLEEVE (B BP S N)
PP16442FF	3-21MM SNAP RING
PP02404SF	1/4 5/8 & 1 THRUST WASHER
PP16488TF	LEFT HAND 12-21MM CAM (B)
PP16410TF	3-21MM CHUCK KNOB (B BP S N)



Machine Parts List-Beginning Serial # 5015 Rev B

XT-3000 Exploded View Rev B-page 37

Not Shown PP09090PF - MACHINE COVER

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

Not Shown PP16480SF - CHUCK WRENCH

Not Shown SA16936TA - PROTECTIVE EYE SHIELDS (220V MACHINES ONLY)

Not Shown SA16937TA - POINT SPLIT PLUG/LEASH ASSEMBLY (220V MACHINES ONLY)

95) - PP16934PF - 3/8 DOME PLUG (115V MACHINES ONLY)

95) - SA16936TA - EYESHIELD ASSEMBLY (220V MACHINES ONLY)

93) - PP16632SF - DOCKING LEVER

92) - PP16634TF - DOCKING LEVER BOLT

91) - PP03923FF - LOCATING PIN 1/4x1/2

90) - SA16075TA - 115v MOTOR/HUB ASSEMBLY

90) - SA16077TA - 220v MOTOR/HUB ASSEMBLY

89) - PP02674PF - DOME PLUG (115V MACHINES ONLY)

89) - PP12040EF - 220v EMERGENCY STOP (220V MACHINES ONLY)

88) - SA16001CA - 115v BASE CASTING ASSEMBLY (REV B)

88) - SA16003CA - 220V BASE CASTING ASSEMBLY (REV B)

87) - PP16035EF - 115v SWITCH BREAKER

87) - PP16037EF - 220v SWITCH BREAKER

86) - PP12065EF - ELECTRICAL RECEPTACLE

85) - PP16009SF - RECEPTACLE PLATE

84) - PP16042EF - ELECTRICAL BOTTOM COVER

83) - -SA16030TA - VACUUM TUBE/NUT ASSEMBLY

82) - SA16020SA - GRIT TRAY ASSEMBLY*

81) - SA08664PA - RUBBER FEET & 6MM X 16MM BHCS (4 EACH)

80) - PP16043SF - WHEEL GUARD COVER

79) - SA16070TA - GRIND WHEEL RETAINER W/ LOCK WASHER & SHCS (3 EACH)

78) - PP16060GF - CBN POINT SPLIT GRINDING WHEEL 100 GRIT

78) - PP16062GF - DIAMOND POINT SPLIT GRINDING WHEEL 260 GRIT (OPTIONAL)

77) - PP16050GF - CBN GRINDING WHEEL 180 GRIT

77) - PP16052GF - DIAMOND GRINDING WHEEL 180 GRIT (OPTIONAL)

76) - SA16945BA - POINT SPLIT DEPTH ASSEMBLY*

75) - PP16935TF - POINT SPLIT CHUCK TUBE*

73) - PP16925TF - POINT SPLIT TUBE*

73) - PP16922TF - OSG POINT SPLIT TUBE

72) - PP16930TF - POINT SPLIT FAN ADJUSTER*

72) - PP16932TF - OSG POINT SPLIT FAN ADJUSTER

71) - PP16940TF - POINT SPLIT NUT*

70) - **SA16925TA - POINT SPLIT ASSEMBLY COMPLETE* (#76 - #71)**

Exploded View / Sharpening Fixture All Models-page38

60) - SA16615SA - PIVOT LEVER ASSEMBLY*

61) - PP16610TF - SHARPNEING TUBE PIVOT SHAFT*

59) - PP16640TF - PIVOT LOCK NUT*

58) - PP16630BF - DOCKING PLATE

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* (#60 - #51)**

Exploded View / Alignment Rev B-page 39

41) - PP02022TF - PUSHER SHAFT CAP***

40) - PP16220XF - PUSHER WEDGE***

39) - PP02028RF - WEDGE RETURN SPRING***

38) - PP16230TF - PUSHER GUIDE TUBE***

37) - PP16227BF - 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) - **SA16227BA - PUSHER SHAFT ASSEMBLY COMPLETE*****

30) - **SA16215XA - PAWL ARM ASSEMBLY COMPLETE****

29) - PP16283RF - MATERIAL LENGTH ADJUST SPRING*

28) - PP16285TF - MATERIAL LENGTH ADJUST SCREW*

27) - PP16385FF - 5MM X .8X 45MM SHCS (4 REQUIRED)*

26) - PP16212BF - 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*

21) - PP16242TF - OSG ALIGNMENT TUBE*

20) - PP16275TF - ALIGNMENT TUBE LOCK BOLT*

19) - PP16250TF - ALIGNMENT TUBE NUT*

17) - SA16271XA - SLIDE HANDLE ASSEMBLY*

16) - PP16202TF - ALIGNMENT STORAGE LINER*

Optional Accessories

Not Shown SA16500TA - LARGE DRILL CHUCK 21MM - 30MM*

Not Shown SA16565XA - 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 PP16864TF - PP16864TF - 6 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)

Not Shown SA16484TA - LEFT HAND CHUCK 3MM - 12MM* (OPTIONAL)

Not Shown SA16488TA - LEFT HAND CHUCK 12MM - 21MM (OPTIONAL)

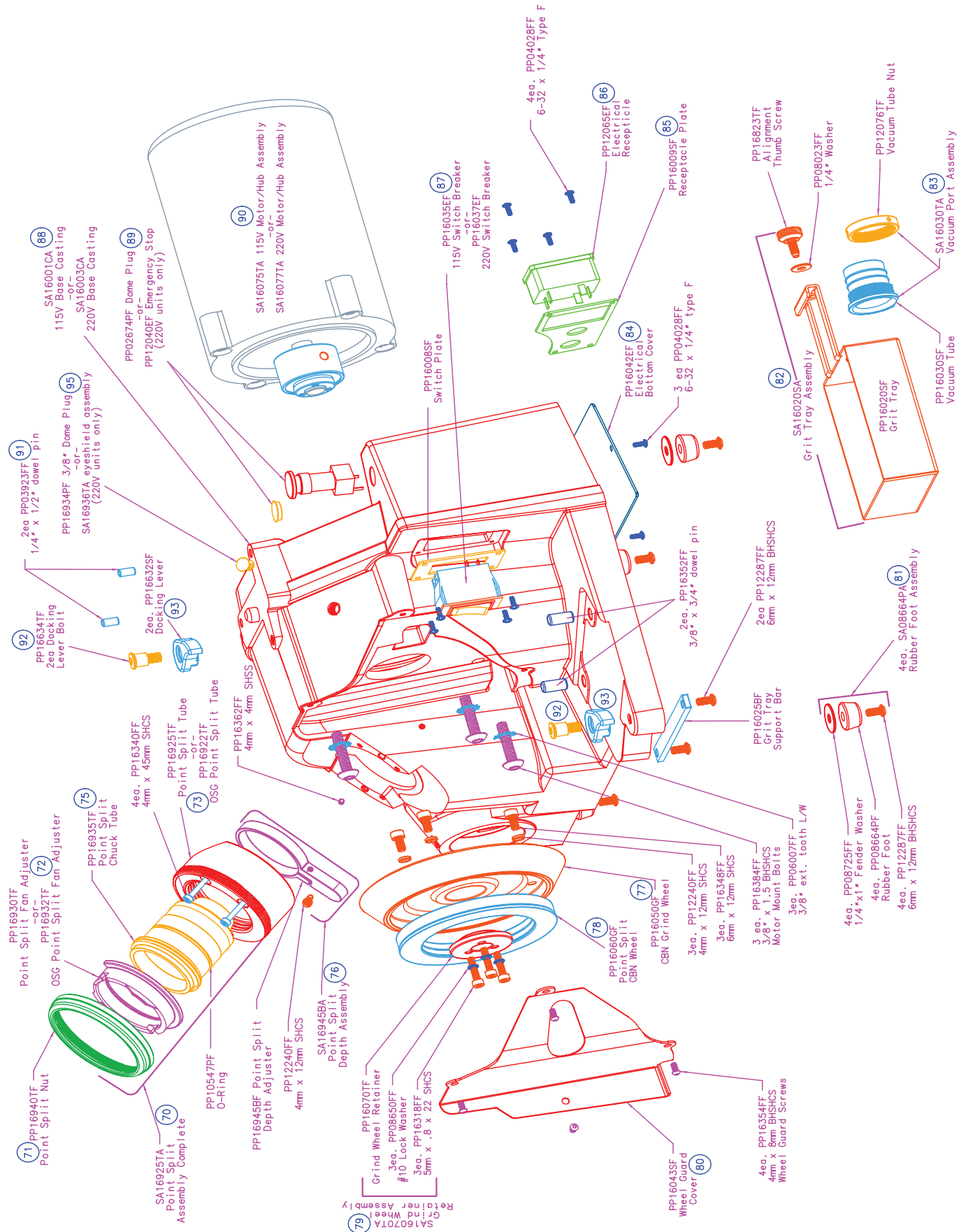
Not Shown LEX350 - MINIATURE DRILL CHUCK ATTACHMENT (OPTIONAL)

Not Shown LEX400 - AUTO SHARPENING ATTACHMENT 3 - 12MM (OPTIONAL)

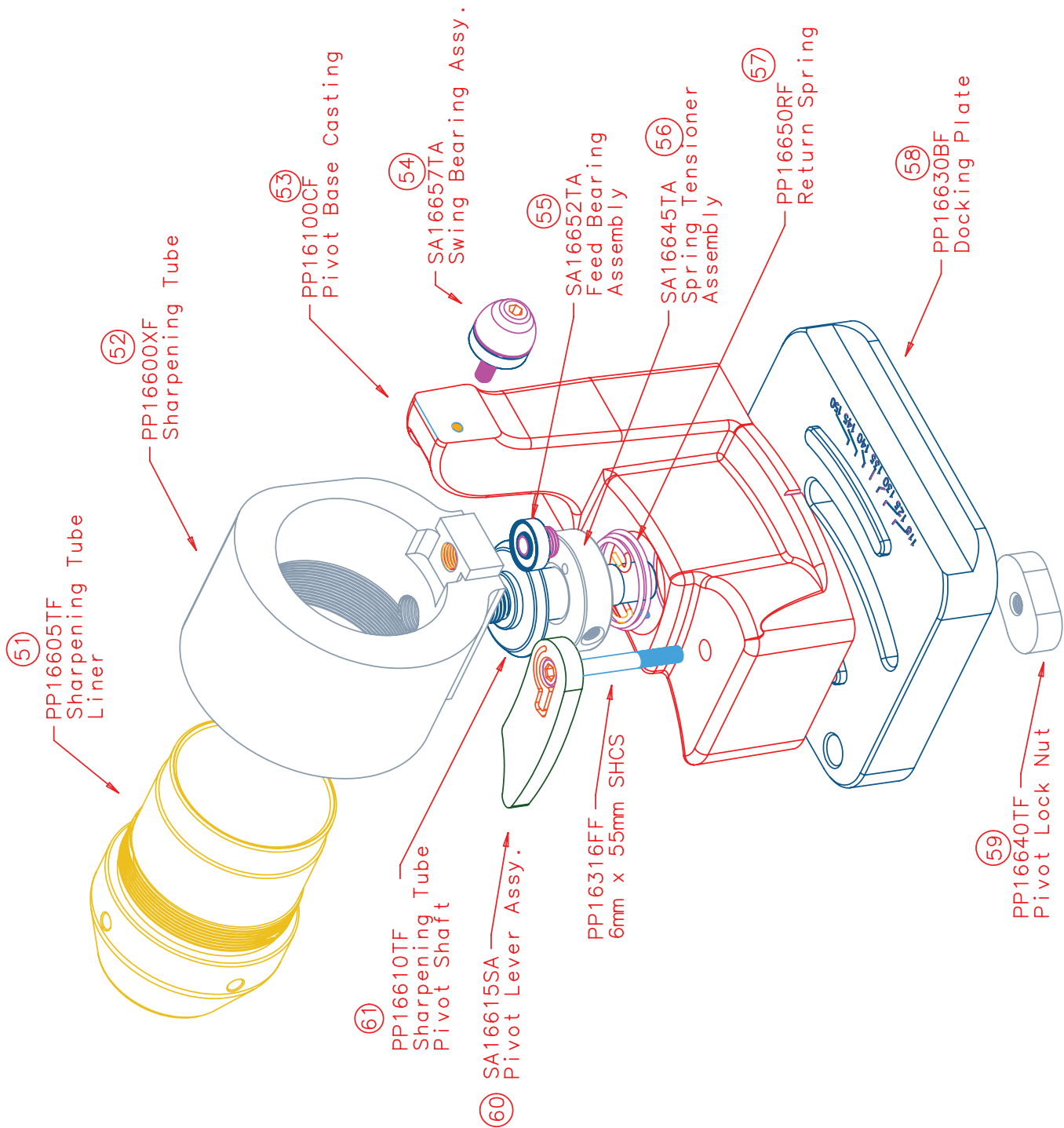
Not Shown LEX450 - AUTO SHARPENING ATTACHMENT 12-21MM (OPTIONAL)

Not Shown LEX500 - AUTO SHARPENING ATTACHMENT 3 - 21MM (OPTIONAL)

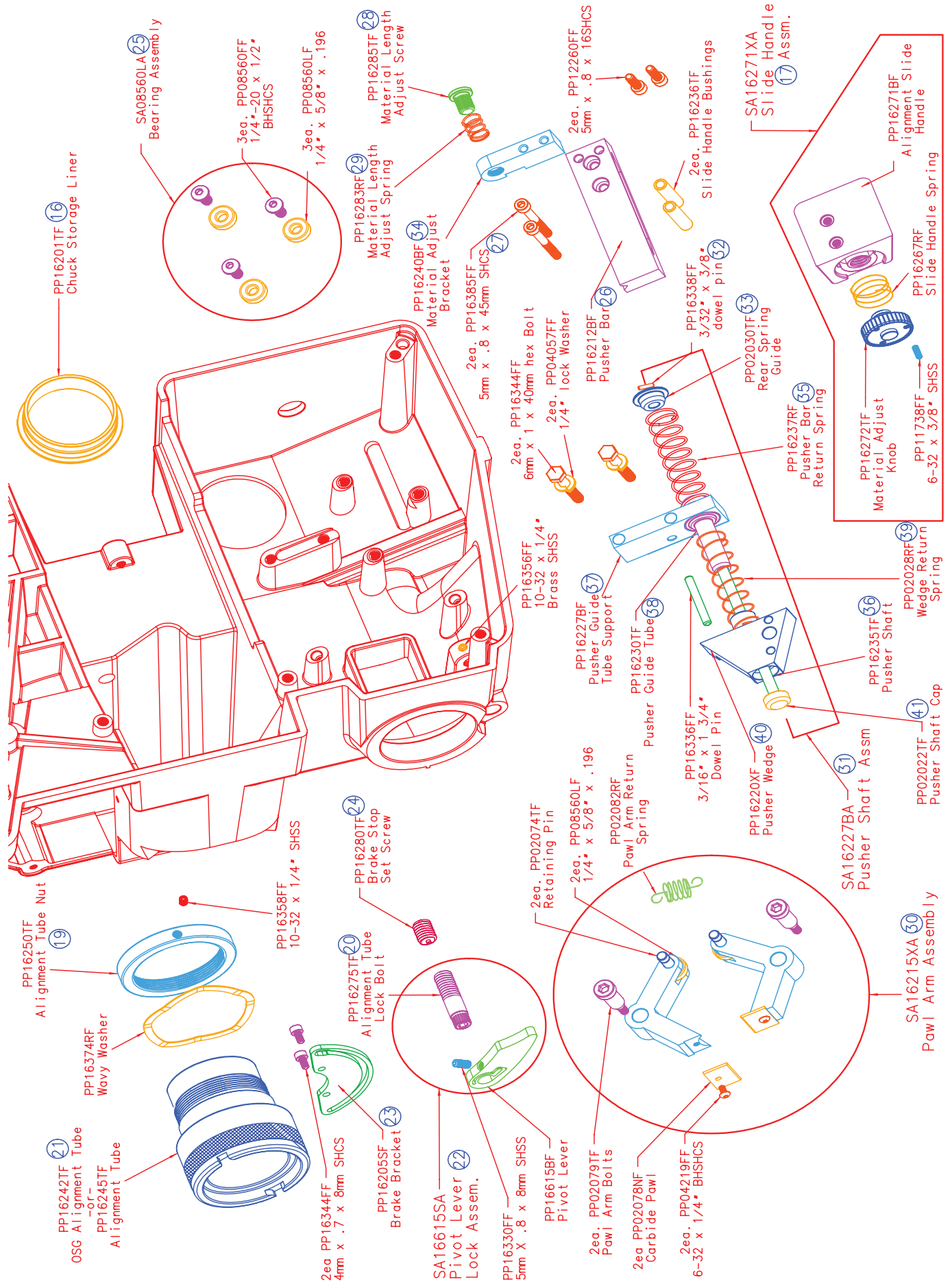
Exploded View Beginning Serial # 5015 Rev B



EXPLODED VIEW SHARPENING FIXTURE 118-150 (All Models)



EXPLODED VIEW ALIGNMENT (Rev B)



Machine Parts List-Serial # 0 - 5014 Rev A

XT-3000 PARTS LIST

Exploded View / Alignment Assembly Rev A-page 36

Exploded View / Machine Rev A-page 41

93) - PP16632SF - DOCKING LEVER

92) - PP16634TF - DOCKING LEVER BOLT

91) - PP16005TF - LOCATING PIN

90) - SA16077TA - 230v 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

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)**

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)**

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*

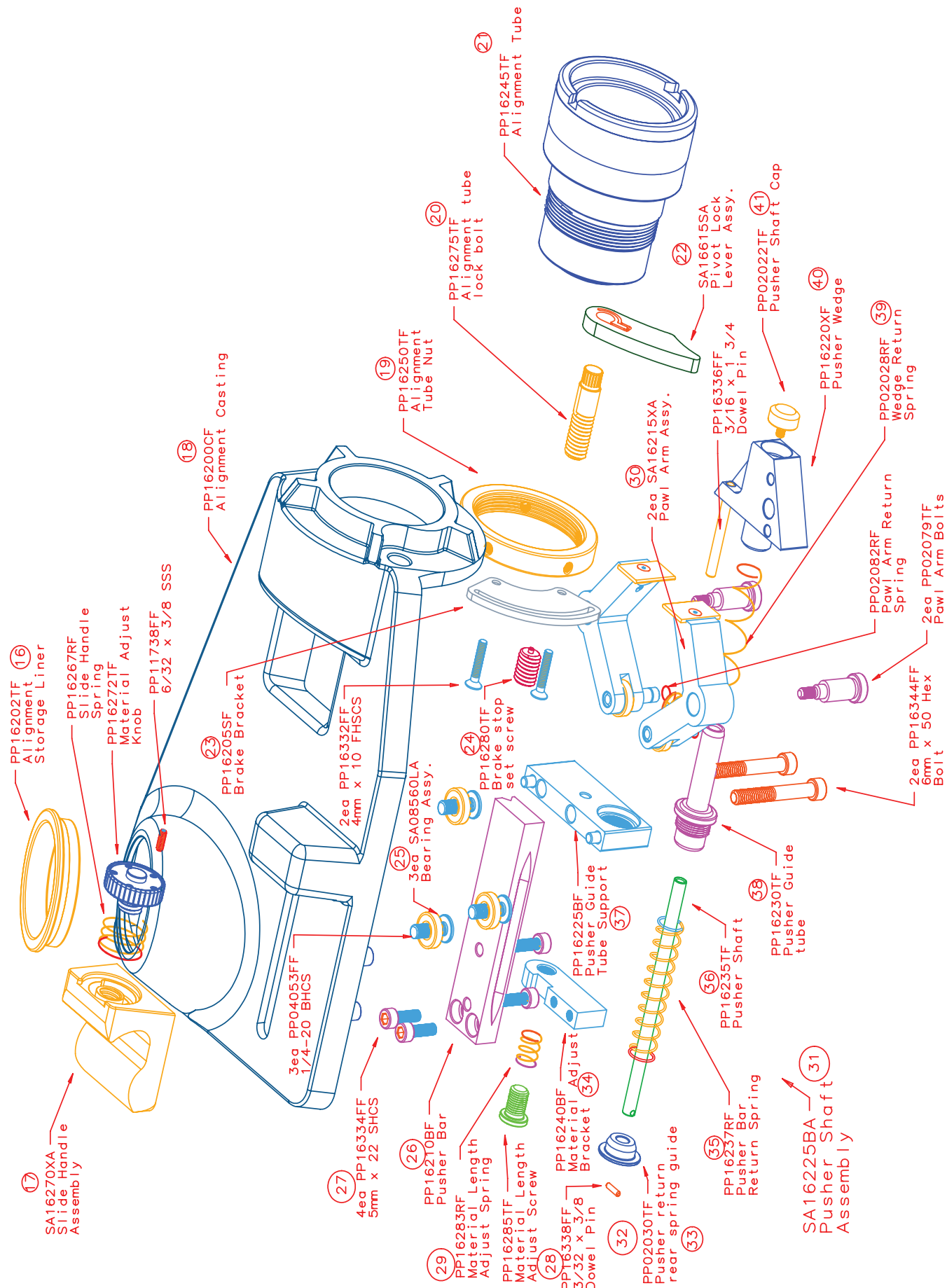
16) - PP16202TF - ALIGNMENT STORAGE LINER*

15) - **SA16200CA - ALIGNMENT ASSEMBLY COMPLETE* (#31 - #16) & (#41 - #32)**

Diagram illustrating the assembly of a machine, showing various components and their assembly order (indicated by numbers in circles):

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

EXPLODED VIEW ALIGNMENT ASSEMBLY Serial # 0 - 5014 Rev A



XT-3000 Attachments

LEX050 - Large Drill Attachment	page 39
LEX100 - XY Table Attachment	page 43
LEX150 - Countersink Attachment.....	page 44
LEX200 - Brad Point Attachment	page 48
LEX250 - Step Drill Attachment	page 50
LEX300 - 90° - 120° Drill Attachment.....	page 54
LEX350 - Mini Attachment.....	page 58
XT-3000 Auto Attachment.....	page 61

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Large Drill Attachment

LEX050

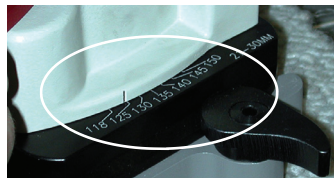
Congratulations on the purchase of your **Darex XT-3000** Large Drill Attachment. (21 mm—30 mm) As part of the assembly (see picture from left to right) you should have a SA16565XA Large drill alignment, SA16575CA Sharpening fixture,



and SA16500TA Large Drill Chuck. By now you are familiar with the 'quick disconnect' feature of your **XT-3000**. Start by placing the Large Drill Alignment on the top of your **XT-3000**. Rotate the 'Docking Lever' clockwise to securely lock the fixture in place. In a similar manner, remove your current sharpening fixture and replace it with the Large Drill Sharpening



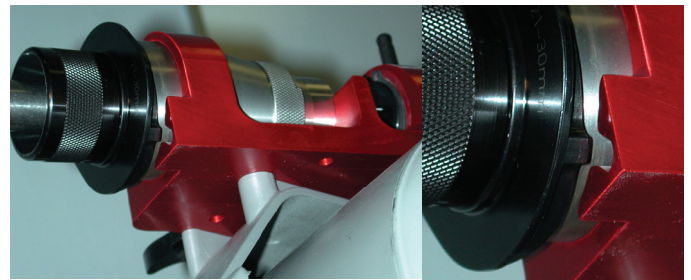
Fixture. Determine the point angle of the drill to be sharpened and adjust both the sharpening fixture and alignment to that point angle. The Sharpening fixture is adjusted by pulling the red lever towards (counterclockwise) the operator and sliding the fixture to the point angle desired. Lock the fixture by returning the red lever to its original position.



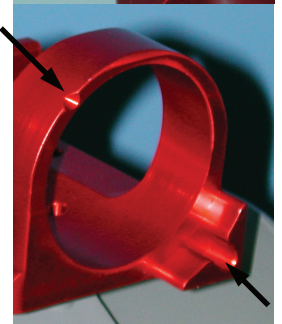
The alignment is adjusted by rotating the black lever located on the front of the alignment fixture. As per the decal, rotating the lever towards the operator will reduce the amount of relief ground onto the drill and pushing the lever away from the operator will increase the relief. Placing the pin at the midway point on the decal is a good starting place for 118° drills. For 135°-150° drills start with the alignment 2 marks towards the operator. You can set the alignment at any setting necessary to achieve the amount of relief desired.



Place the drill in the chuck and turn the chuck knob clockwise until the drill slides freely through the chuck jaws. Next slide the Chuck and drill into the alignment rotating the chuck until one of the

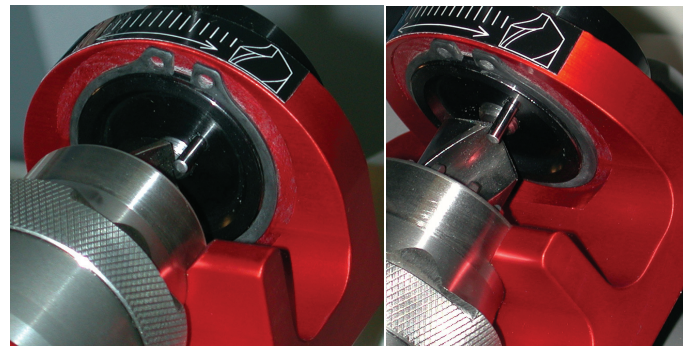


'cam dogs' aligns with the mating 'notch' in the fixture.



You will notice the opposite 'dog' aligns with a reference mark machined into the alignment fixture.

Now push the drill through the chuck until it contacts the stop. Rotate the drill clockwise until



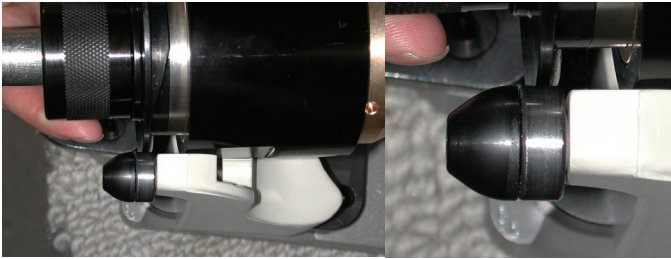
Incorrect

Correct

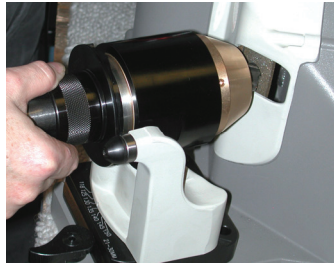
the outer edge of the cutting lip is touching the pins in the setting fixture.

Firmly tighten the chuck by turning the knob clockwise while the chuck is still in the fixture. Remove the chuck and drill. The drill is now aligned and set to length to the chuck cam for the necessary grinding.

Slide the chuck into the Sharpening fixture and rotate the Chuck clockwise applying slight pressure into the wheel. It is also necessary to keep the cam up against the swing cam follower bearing.



Try to sharpen the drill in such a manner that the drill is off the wheel before you reposition your hand on the chuck.

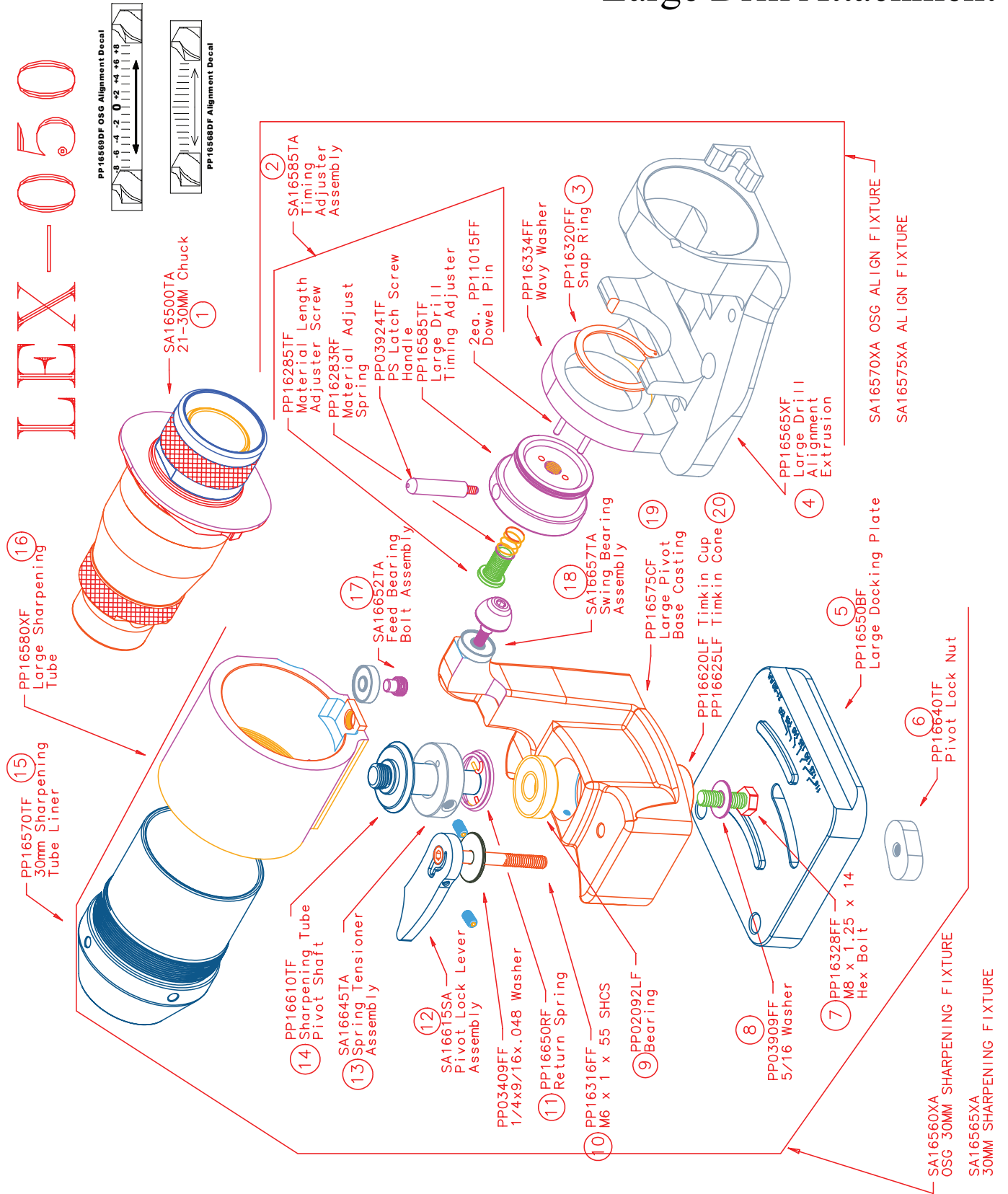


Grinding time will vary depending on wheel condition and amount of material removal but it should require a minimum of 8-10 rotations.

NOTE: The MTO drill stop setting is adjustable using a 5/32" or 4 mm hex key if you think more or less material removal is desired.

Please Note, you do not have the ability to split drills from 21 mm to 30 mm on the XT-3000.

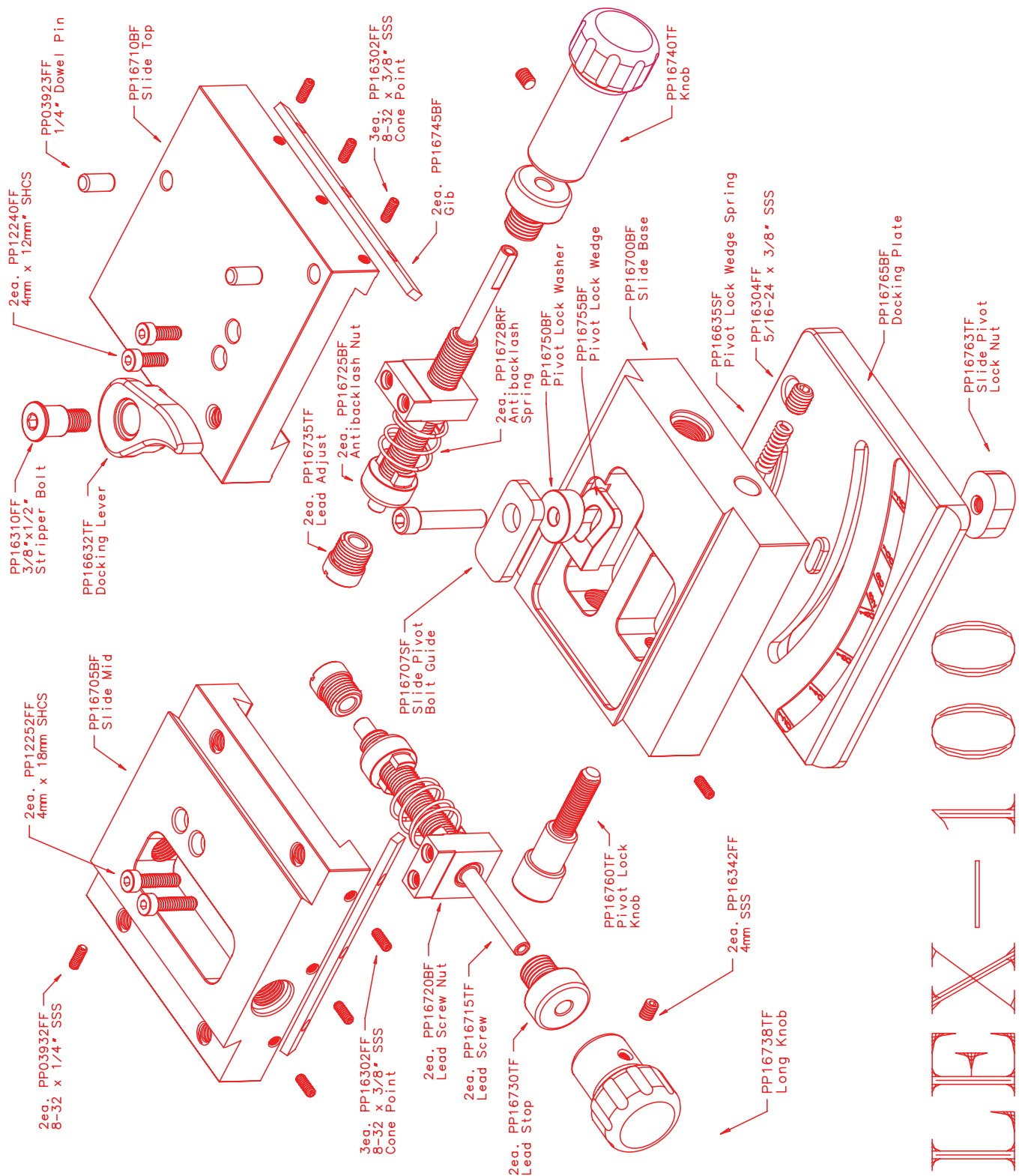
Large Drill Attachment



Large Drill Attachment LEX050

SA16615BA	Pivot Lock Lever Assembly	
	PP16615BF	Pivot lock lever
	PP16630FF	5mmX8mm SSS
SA16585TA	Timing Adjuster Assembly	
	PP16283RF	Material adjust spring
	PP16285TF	Material adjust screw
	PP03924TF	PS Latch Screw Handle
	PP16585TF	Large Drill Timing Adjuster
	PP11015FF	1/8" Dowel Pins
SA16652TA	Feed Bearing Assembly	
	PP16652TF	Feed Bearing Bolt
	PP08560LF	Bearing
SA16657TA	Swing Bearing Assembly	
	PP16655LF	Swing Bearing
	PP16657TF	Swing Bearing Bolt
SA16645TA	Spring Tensioner Assembly	
	PP16645TF	Spring Tensioner
	PP12280FF	M6 x 1 x 8mm SSS
SA16500TA	21-30 MM Chuck	
	PP16500TF	Large chuck Body 21-30mm
	PP16505TF	21-30mm chuck cam
	PP16510TF	21-30mm chuck knob
	PP16515TF	21-30mm Closing sleeve
	PP16520TF	21-30mm closing screw
	PP16525NF	Thrust Washer
	PP16530SF	Jaws
	PP16535TF	Jaw guide
	PP16472FF	Snap ring
	PP16540LF	Jaw race
	PP12560RF	Jaw springs
	PP16440FF	Jaw key screw

XY Table Attachment



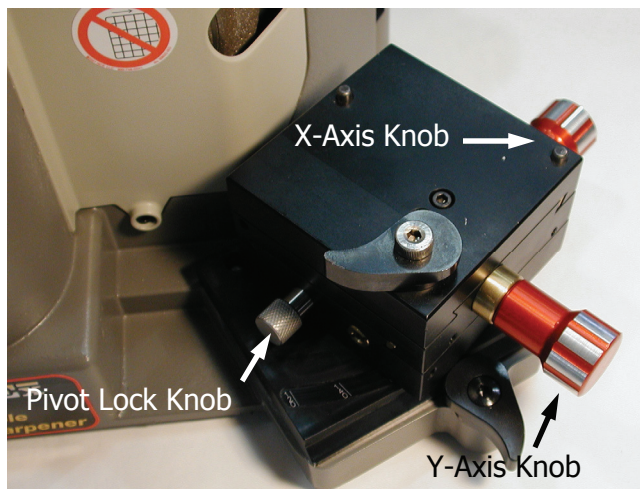
LEX-100

X-Y Table No Sub Assemblies, Send in for Repair

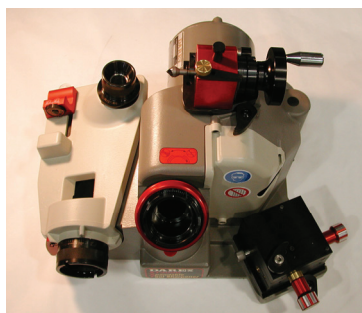
Countersink Instructions

LEX150

Congratulations on the purchase of your **Darex XT-3000** Countersink Attachment. This fixture comes with 2 V-40 double angle collets and is used in conjunction with the **Darex XT-3000** X-Y Attachment.



By now you are familiar with the 'quick disconnect' feature of your **XT-3000**. Begin by removing the current sharpening fixture and replacing it with the X-Y table. Secure it in place by rotating the 'Docking Lever' clockwise. In a similar manner, lock the Countersink Attachment to the top of the machine.



It is now necessary to determine the shank diameter of the tool that will be sharpened and place the corresponding collet into the Countersink Attachment.



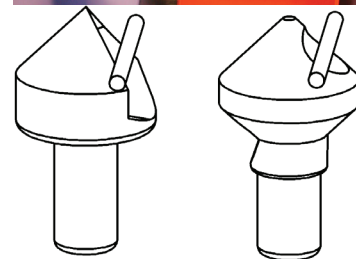
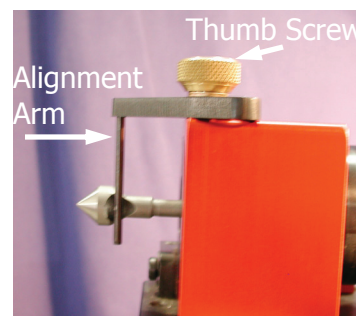
To do so slowly rotate the spindle clockwise until the Spindle Lock engages the spindle.



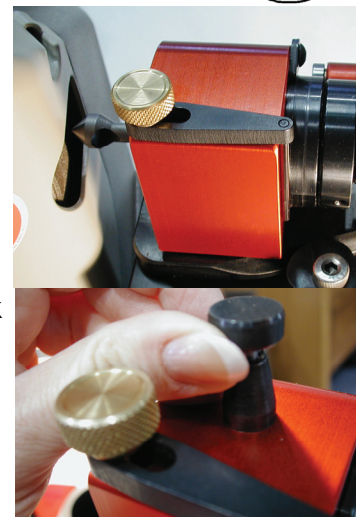
Now unscrew the Draw Tube assembly. Place the correct collet in the end of the Draw Tube and replace the Draw Tube assembly and tighten 3 or 4 revolutions. Should you need a collet size other than the ones provided, you may order them from Darex . (1-800-547-0222)



Slide the cutting tool into the spindle leaving approximately 1" or more of the tool exposed. Loosen the Alignment Thumb Screw and rotate the Alignment Arm assembly around until the dowel pin intersects both the cutting edge and the heel simultaneously.



Tighten the Alignment Thumb Screw. Rotate the Draw tube assembly clockwise to tighten the tool in the spindle. Return the Alignment Arm to its original position and release the spindle lock pin by pulling up and turning the pin 90°. The cutting tool is now oriented to the spindle cam and is ready to be sharpened.

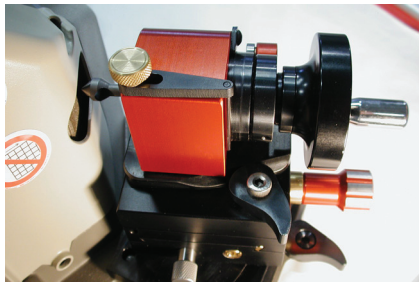


To sharpen the tool, determine which angle the tool will be sharpened at. To adjust the X-Y table, loosen the Pivot Lock Knob and swing the table to that angle. Tighten the Pivot Lock Knob.



grinding wheel. Loosen the Docking Lever and return the Countersink Assembly to the top of the XT-3000 to remove the cutter. The sharpening is now complete.

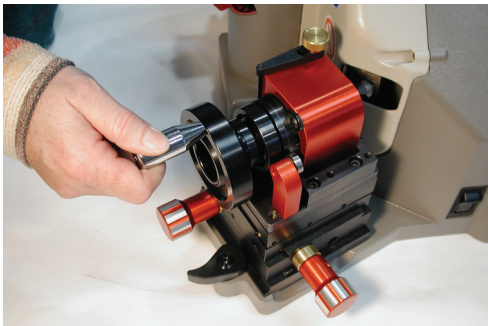
Remove the Countersink Attachment from the top of the machine and place it on the X-Y Table. Again, rotate the Docking Lever clockwise to secure the fixture. Turn the machine ON.



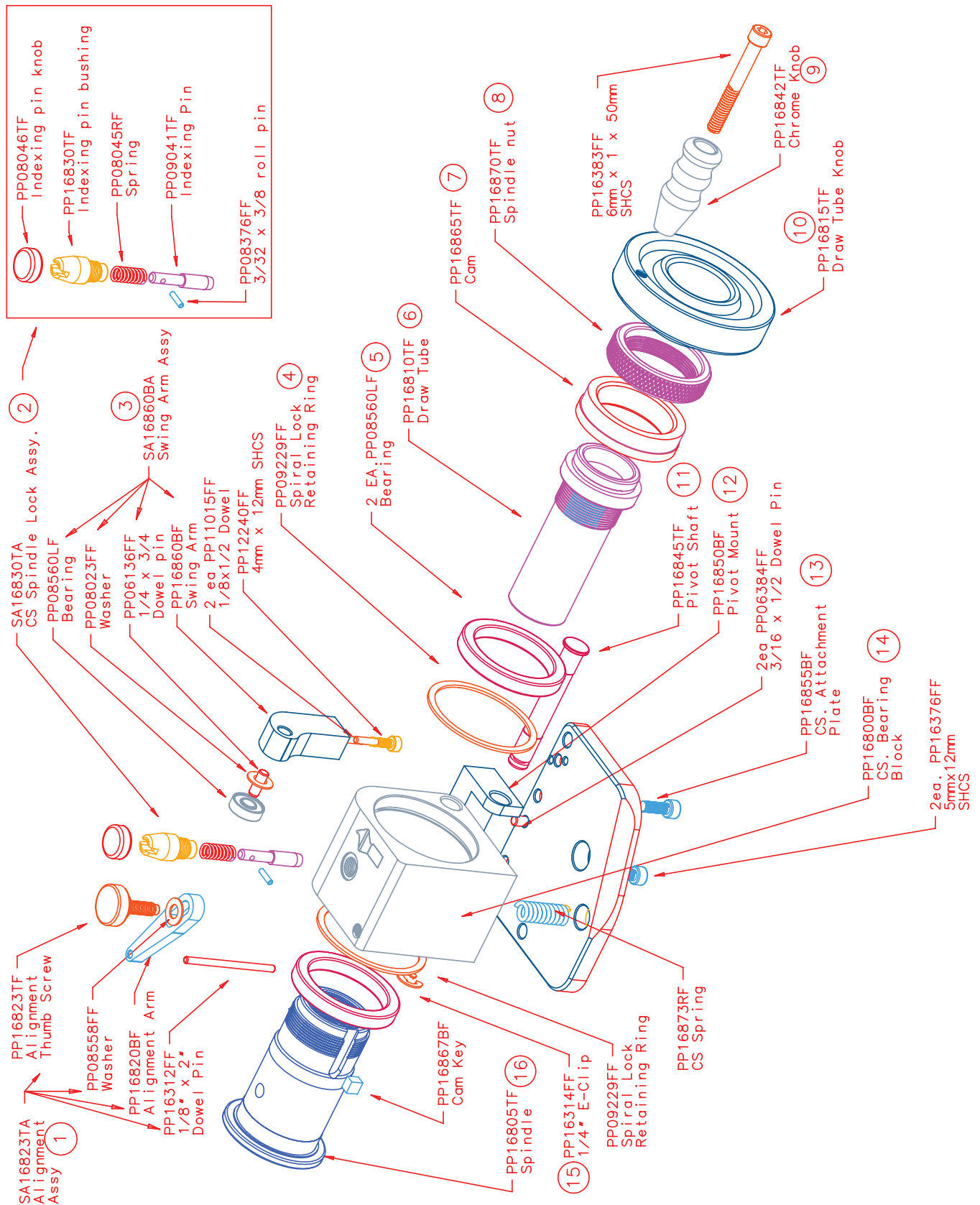
Using both the X and Y axis feed knobs, carefully position the cutter into the grinding wheel.



Once the tool touches the grind wheel, begin to rotate the spindle in a clockwise direction slowly feeding the cutter into the wheel. Once the desired amount is ground off, continue rotating 1 or 2 more revolutions to "spark out" the cutter. While still rotating the spindle, use one of the feed axis knobs to position the cutter safely away from the



Countersink Attachment



Counter Sink Attachment LEX150

SA16823TA	Alignment Assembly	
	PP16823TF	Alignment Thumb Screw
	PP16820BF	Alignment Arm
	PP16312FF	1/8"x2" Dowel pin
	PP08558FF	Washer
SA16860BA	Swing Arm Assembly	
	PP16860BF	Swing Arm
	PP06136FF	Dowel Pin
	PP08560LF	Bearing
SA16830TA	CS Spindle lock assy.	
	PP16830TF	Indexing Pin Bushing
	PP08041TF	Indexing Pin
	PP08046TF	Indexing Pin Knob
	PP08045TF	spring
	PP08376FF	roll pin

BRAD POINT ATTACHMENT

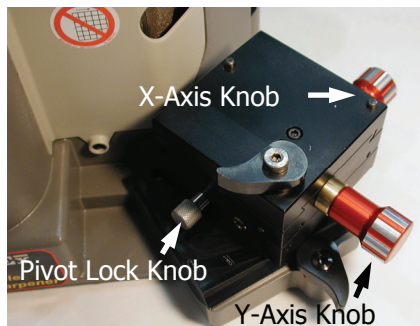
LEX200

Congratulations on the purchase of the Darex XT-3000 Brad point Attachment. (LEX200) This attachment consists of 2 pieces, 1 Sharpening Fixture, SA16900BA and 1 - 3mm – 12mm Chuck, SA16916TA. (The 12mm – 21mm Chuck, SA16918TA is available as an optional accessory) Both components are laser marked with a Brad Point icon to minimize confusion with other XT-3000 attachments.



SETTING UP:

To sharpen a Brad Point, you will have to remove the standard sharpening fixture and replace it with the **X-Y Table** (LEX100).

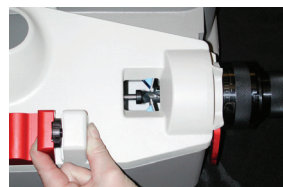


The Brad Point Attachment works in conjunction with the X-Y Table. By now you are familiar with the 'quick' disconnect feature or your XT-3000. Begin by removing the current sharpening fixture and replacing it with the X-Y Table. Secure it in place by rotating the Docking Lever CW. In much the same manner, secure the Brad Point Sharpening Fixture to the X-Y Table.



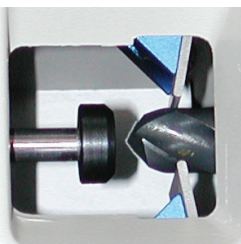
ALIGNING THE DRILL:

The alignment of the drill happens in the XT-3000 Alignment Tube. Loosen the Timing Tube Lock lever and position the Tube @ 118°.



CORRECT

INCORRECT

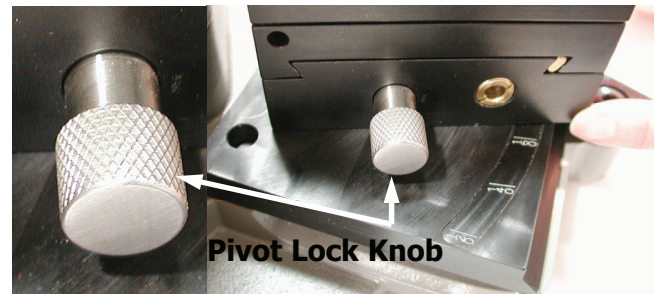


Push the lever down to lock the tube. Align the drill as

you normally would.

SETTING UP THE X-Y TABLE:

Brad point drills are ground with the X-Y Table positioned at approx. the 160° mark. Loosen the Pivot Lock Knob and rotate the X-Y Table to 160°. Lock the Table.

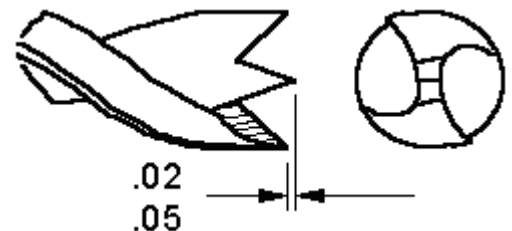


SHARPENING:

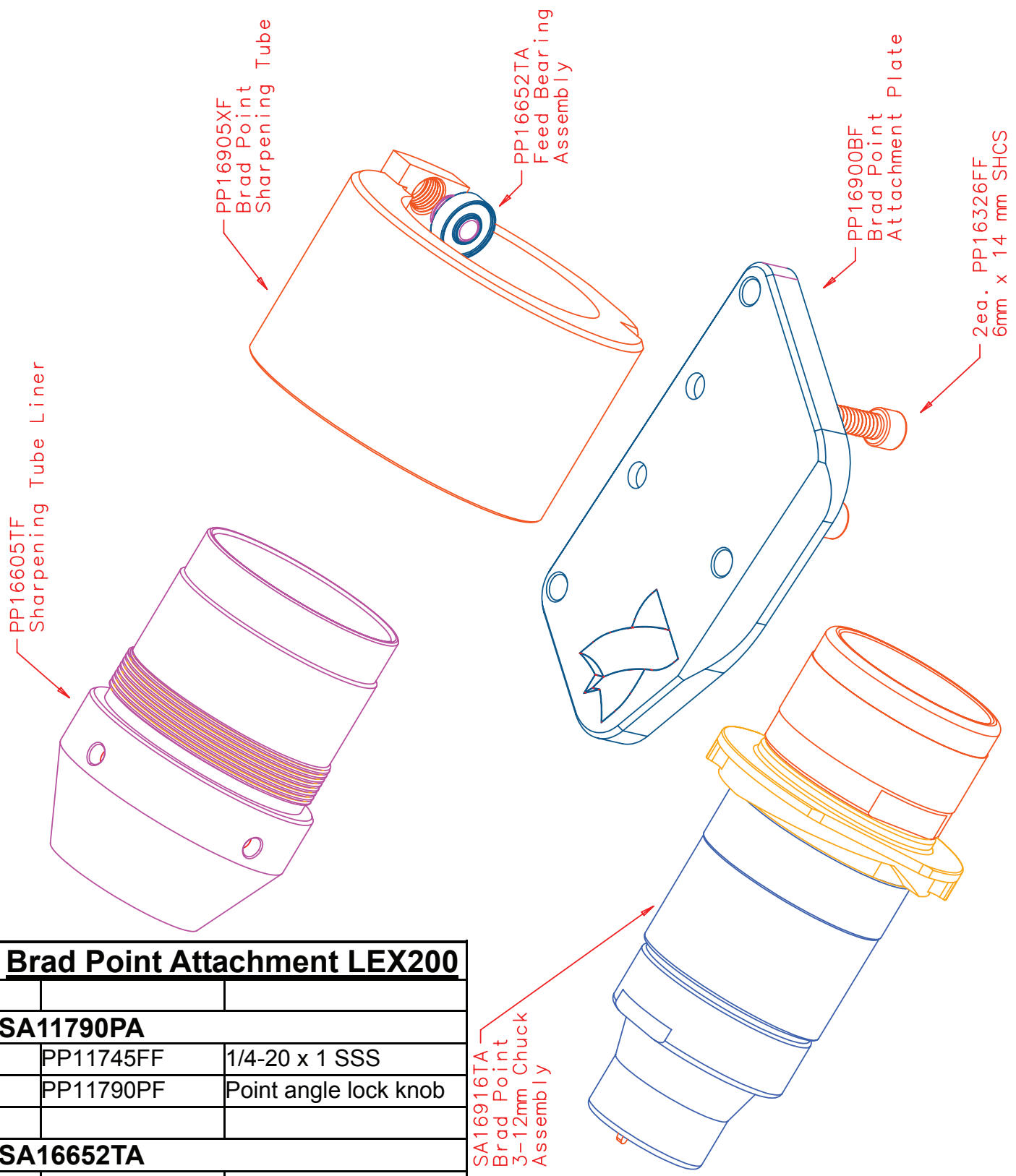
With the XT-3000 **OFF**, place the Chuck in the sharpening mechanism making sure the drill **DOES NOT** contact the grinding wheel. If it does, use the X-Y axis knobs to position the drill **OFF** the wheel.



Turn **ON** your XT-3000. Using the same Axis Knobs, start to move the drill into the grinding wheel while rotating the Chuck. This fixture is meant to re-sharpen existing drills. During the sharpening process, should you remove an excessive amount of material, due to damage, it will be necessary to re-align the drill and sharpen again. Refer to the diagram below for examples of proper drill geometry.



Brad Point Attachment

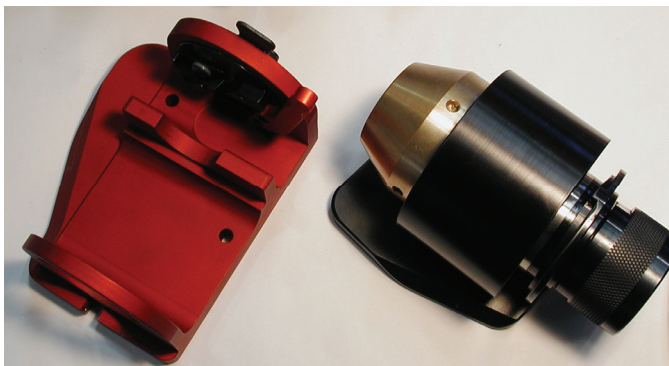


Brad Point Attachment LEX200		
SA11790PA		
	PP11745FF	1/4-20 x 1 SSS
	PP11790PF	Point angle lock knob
SA16652TA		
	PP16652TF	Feed Bearing Bolt
	PP08560LF	Feed Bearing

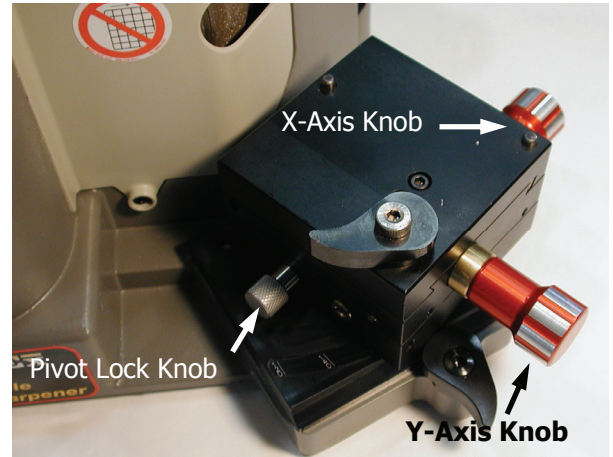
STEP DRILL ATTACHMENT

LEX 250

Congratulations on the purchase of your **Darex XT- 3000** Step Drill Attachment. (LEX250). This attachment consists of 3 pieces, 1 Sharpening Fixture, SA16950BA, 1 Alignment Fixture, SA16970XA and a 3mm – 12 mm Chuck, SA16975TA. (The 12mm – 21mm Chuck, SA16980TA is available as an optional accessory) All 3 components are laser marked with a Step Drill icon to minimize confusion with other XT-3000 attachments.



the XT-3000. Rotate the Docking Lever CW to secure the X-Y Table to the XT-3000.



In a similar manner, lock the Step Drill Sharpening Fixture on to the top of the X-Y Table. Secure the Step Drill Alignment Fixture to the top of the XT-3000.

SHARPENING THE PILOT

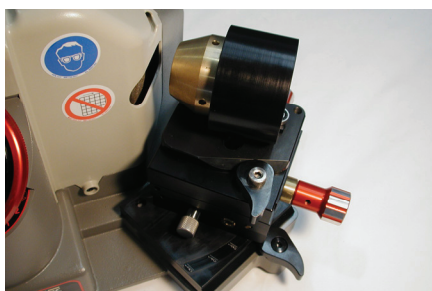
Should the pilot of the step drill need re-sharpened, do so, just as you sharpen a standard twist drill. Having the exploded view drawing handy will be beneficial at this point.

SHARPENING THE STEP

SETTING UP:

To sharpen the 'step' on your step drill, you will have to remove the standard sharpening fixture and replace it with the **X-Y Table** (LEX100). The Step Drill Attachment works together with the X-Y Table.

Rotate the Docking Lever CCW to free the standard sharpening fixture, then remove. Place the X-Y Table on



ALIGNING THE DRILL:

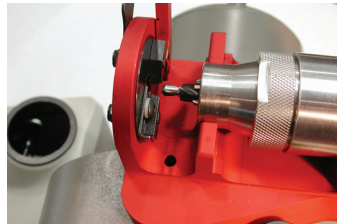
Place the drill in the chuck and tighten chuck by rotating the chuck knob CW. Stop just before the chuck jaws make contact with the drill. Make sure the drill still slides easily through the chuck. Place the Chuck in the Alignment fixture until the shoulder of the chuck stops against the alignment.



Rotate the Chuck until one of the alignment dogs rests firmly against the Alignment.

Rotate the Pawl Locating Cam until the arrow lines up to the major diameter of the drill. As indicated by the logo on the Timing Arm, rotating it will have an impact on the amount of relief

ground on the drill. Unless the drill is intended for a unique material, it is our recommendation that it stay in its normal location. Push the drill through the chuck until the pilot starts to pass through the Alignment. Slide the Length Setting Pawl until it almost touches the pilot. Continue to slide the drill through the chuck until the major diameter stops against the Length Setting Pawl.

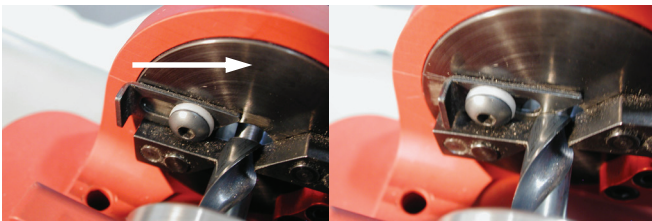
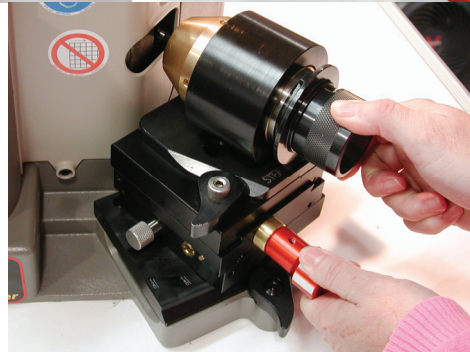


With the XT-3000 **OFF**, Slide the chuck into the Sharpening Fixture making sure the drill is clear of the grinding wheel. Using both the X and Y axis knobs, position the drill close to, but not touching the wheel.



Now, turn your machine **ON**.

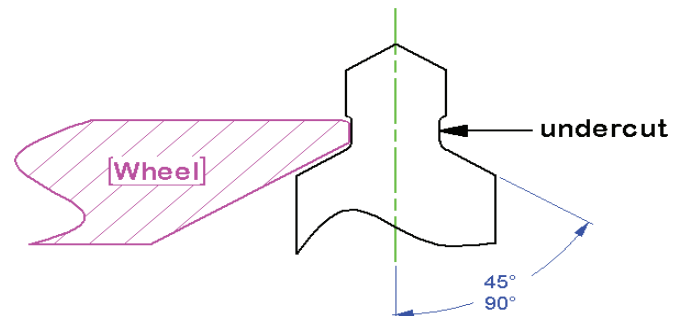
Continue to position the drill into the wheel while rotating the chuck. It will be necessary to slightly undercut the pilot of the step drill to produce a sharp corner at the end of the pilot and beginning of the step. Refer to the diagram below.



Rotate the drill CW until the cutting edges align with the pawls. The drill is now set to length and oriented to the chuck cam. Tighten the chuck and remove it from the Alignment.

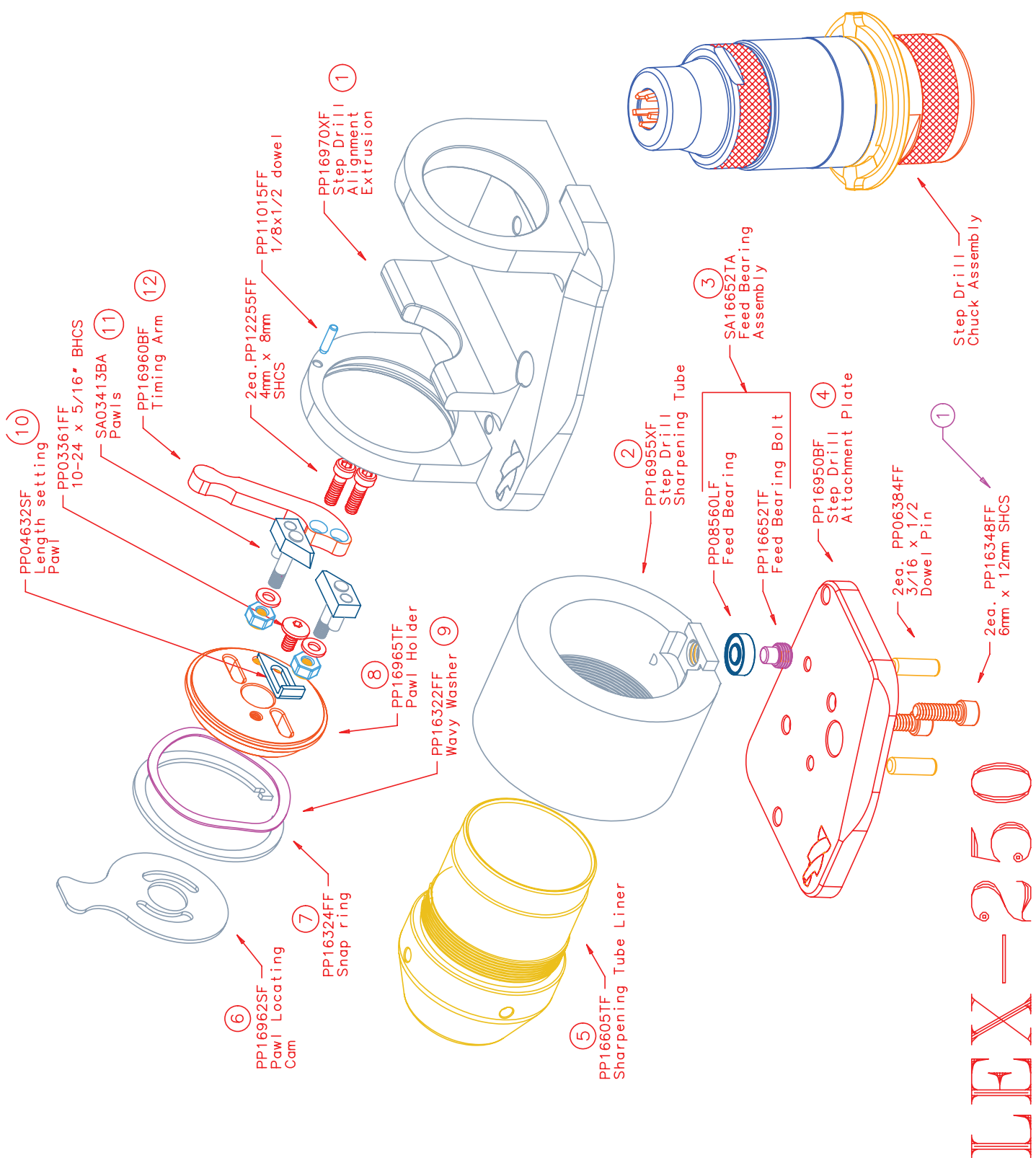
SETTING UP THE X-Y TABLE:

Utilizing the X-Y Table, the angle ground into the step portion of the drill can be 90°-180°. Loosen the Pivot Lock Knob and slide table to the desired angle. Tighten the knob.



Once you are satisfied with the results, turn the cross feed knob with your right hand CCW to remove the drill from the grinding wheel. Carefully remove the chuck from Sharpening Fixture. The sharpening is now complete. During the sharpening process, should you remove an excessive amount of material, due to damage, it will be necessary to re-align the drill and sharpen again.

Step Drill Attachment



LEX-250

Step Drill Attachment SA16950BA		
SA16652TA	Feed Bearing Assembly	
	PP16652TF	Feed Bearing Bolt
	PP08560LF	Bearing
SA03413BA	Pawl Assembly	
	PP03440FF	10-24 Nylon hex nut
	PP03435FF	#10 nylon washer
	PP03420TF	Pawl Retaining Pin
	PP03415TF	Pawl Guide Pin
	PP03412BF	Pawl
Step Drill 3mm-12mm Chuck		
SA16975TA	Step Drill 3-12mm Chuck	
	PP16400TF	3-12mm Body
	PP16975TF	Step Drill 3-12mm Cam
	PP16410TF	3-12mm knob
	PP16415TF	3-12mm closing sleeve
	PP16420TF	3-12mm closing screw
	PP02404SF	Thrust Washer
	PP16425SF	3-12mm - 12-21mm jaws
	PP16442FF	snap ring
	PP16430TF	Jaw guide
	PP16435LF	3-12mm Jaw race
	PP12560RF	3-12mm jaw springs
	PP16440FF	Jaw key screw

90° - 120° Drill Attachment LEX300

Congratulations on the purchase of your **Darex XT-3000** 90°-120° Sharpening Attachment. As part of the assembly you should have a Sharpening fixture (SA16995XA) and Drill Chuck (SA16890TA) range 3mm to 12mm. (SA016880TA



12mm to 21mm chuck available as optional accessory.)

By now you are familiar with the 'quick disconnect' feature of your **XT-3000**. Start by replacing the current fixture with the 90°-120° attachment.



Set your desired point angle by pulling the red Pivot Lock Lever (counter clockwise) towards the operator

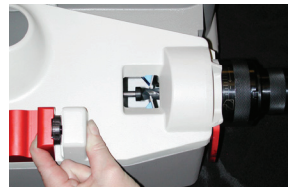
and



sliding the fixture across the base plate to the desired point angle.

Lock the fixture by returning the red Pivot Lock Lever to its original position.

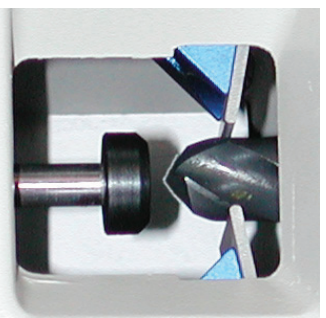
Use the **XT-3000** alignment tube to align the drill in the same manner that you are accustomed to. If the desired point angle is 90°, the alignment tube should be positioned at 118°. For other angles using this attachment, walk the alignment tube towards or past 135° until the correct chisel edge is produced.



CORRECT

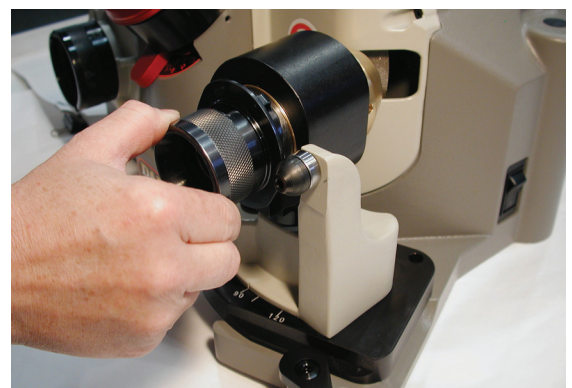


INCORRECT



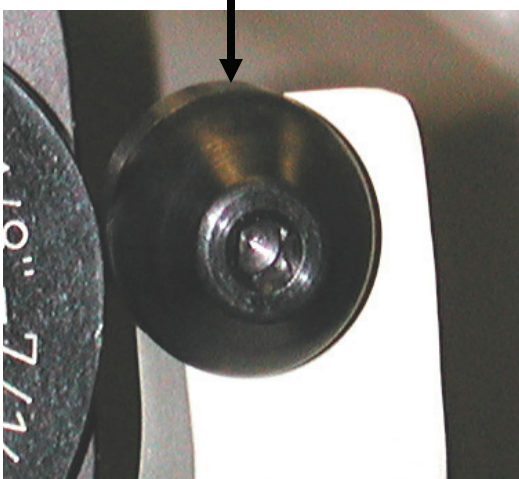
Remove the Chuck.

Gently slide the Chuck into the Sharpening fixture. While keeping the Swing Cam in contact with the Swing Cam Bearing, apply slight pressure into the Grind wheel and rotate the chuck clockwise. Try to sharpen the drill in such a manner that the drill is off the wheel before you reposition your hand on the Chuck Knob. Grinding time will vary depending on wheel condition and amount of material removal. It should require a minimum of 8-10 rotations. **NOTE:** If your drill does not touch



90° - 120° Drill Attachment LEX300

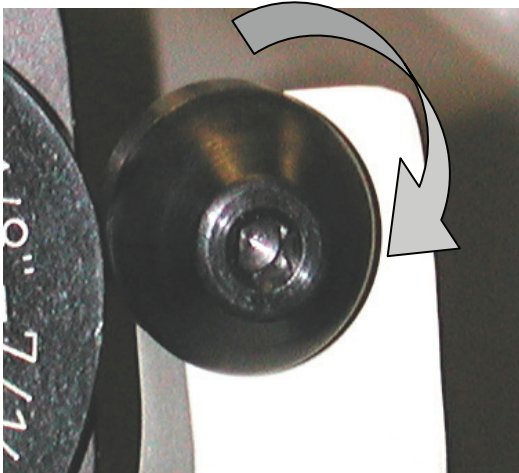
the wheel, an adjustment to the Swing Bearing Assembly will need to be made. Loosen the Swing Bearing Assembly located on the Pivot Base Casting. Rotate the Swing Bearing Assembly until the locating dot is positioned at 12 o'clock.



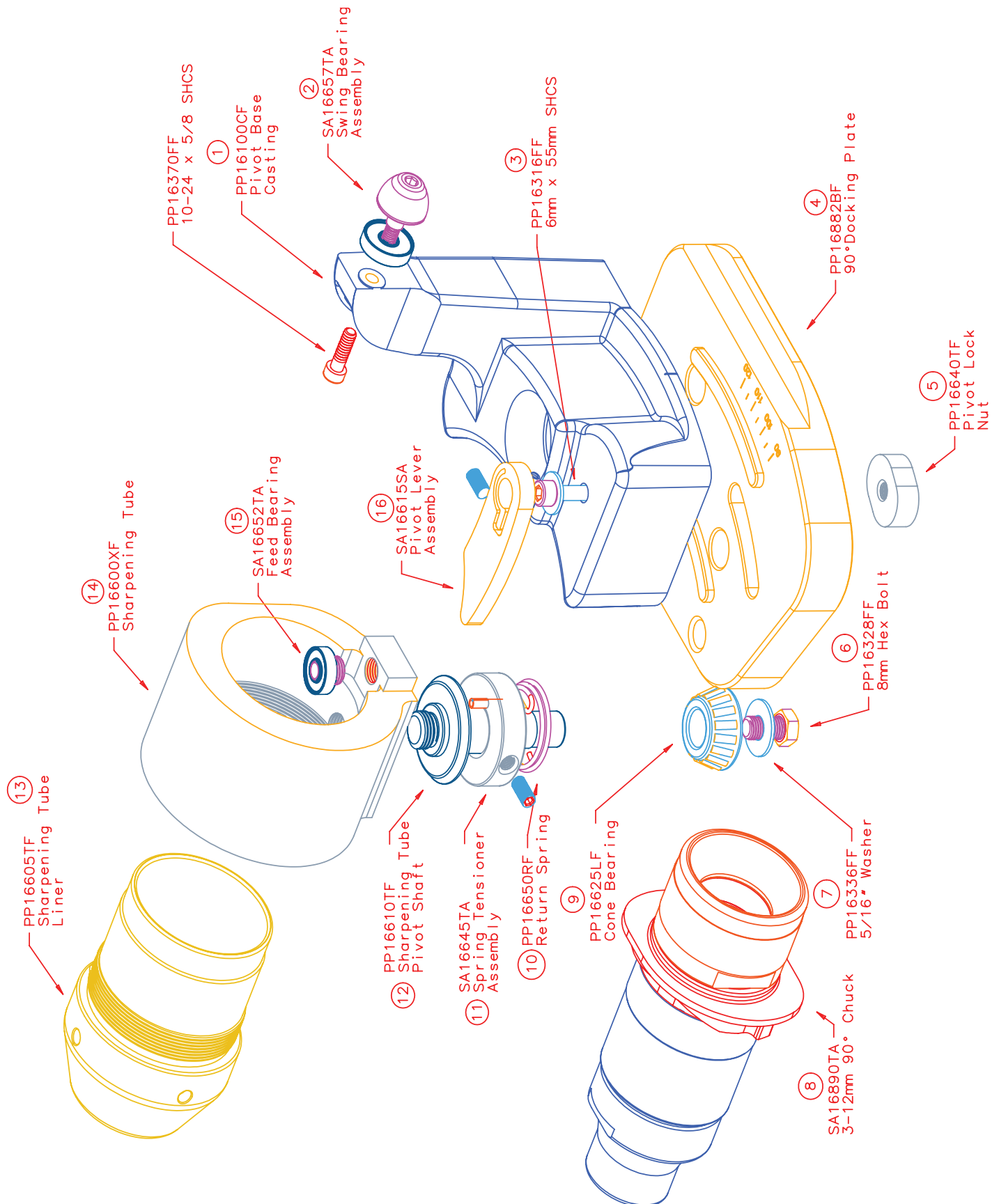
To decrease the material removed rotate the bearing counterclockwise.

After adjusting, be sure to retighten, securing the Swing Bearing Assembly. Re-sharpen the drill and verify the corrected amount of material has been removed. If incorrect, repeat procedure until the desired amount has been removed. Approximately .010 should be the total amount of material removed during sharpening.

This bearing assembly is eccentric. The swing cam on the chuck rests and rides on this bearing. When rotated, the relationship between the chuck cam and the bearing change the starting and stopping point of the drill bit. Depending in which direction you rotate the bearing you will move tip of the drill either closer to, or further from the angle of the grinding wheel. This will change the amount of material removed from the end of the drill. To increase the amount of material removed, slightly rotate the bearing clockwise.



90° - 120° Sharpening Attachment



90° - 120° Sharpening Attachment

90° - 120° Attachment		
SA16652TA	Feed Bearing Assembly	
	PP16652TF	Feed Bearing Bolt
	PP08560LF	Bearing
SA16615BA	Pivot Lock Lever Assembly	
	PP16615BF	Pivot lock lever
	PP16630FF	5mmX8mm SSS
SA16657TA	Swing Bearing Assembly	
	PP16655LF	Swing Bearing
	PP16657TF	Swing Bearing Bolt
SA16645TA	Spring Tensioner Assembly	
	PP16645TF	Spring Tensioner
	PP12280FF	M6 x 1 x 8mm SSS
SA16890TA	3-12mm 90° Chuck	
	PP16400TF	3-12mm body
	PP16890TF	90° 3-12 mm Cam
	PP16410TF	Knob
	PP16415TF	Closing sleeve
	PP16420TF	Closing screw
	PP02404SF	Thrust Washer
	PP16425SF	Jaws
	PP16430TF	3-12mm jaw guide
	PP16435LF	3-12mm jaw race
	PP12560RF	Jaw springs
	PP16440FF	Jaw key screw

Mini Attachment LEX350 & LEX351

Material Take off Adjustment for SA16401TA (1.5-7mm Chuck):

Small diameter bits have a high possibility of breaking if too much pressure is put on them. For this reason, it is critical to follow all of the safety warnings in the XT 3000 User's Manual. In particular, it is very important to wear ANSI certified (impact resistant) goggles when sharpening small bits!

To minimize the risk of breaking bits, burning them because of too much material take off, or creating negative relief on the small bit, the Small Chuck is designed to have a very small Material Take Off (MTO). It will operate only at the high end of the Material Take Off (MTO) adjustment range. This minimizes

the possibility of a user accidentally trying to remove 0.015" or 0.025" of material and ruining a small bit. Because the chuck has been tuned for low MTO, it is possible that your XT3000 may be adjusted out of working range. If a drill bit mounted in the Small Chuck, and then aligned at maximum MTO (meaning the MTO knob is fully counter-clockwise) does not touch the grinding wheel, then you will need to adjust the Material Removal knob to allow additional material take off. Simply follow the instructions from page 23 of the User's Manual, which are partly re-printed below.

Calibrating the Material Removal Knob

1. At the rear of the machine base, there is a small access hole.
2. Insert a 5/32 Allen wrench into the access hole.
3. To retract the pusher shaft cap, increasing the amount of drill stick out, rotate the wrench counterclockwise.
4. Each 1/4 turn will adjust 0.010" (0,25mm) or one full turn will adjust 0.040" (1,0mm). After adjusting the pusher shaft assembly, realign the drill and remeasure the amount of stick out. Repeat steps 2-4 until the system removes approximately 0.005" (0,12mm) of material from the small drill.



Notes:

Notes:

XT3000

Auto Sharpening Attachment

Auto Specification Sheet.....	page 62
Quick Start Instructions	page 63
Attaching Auto Sharpening Fixture to XT-3000.....	page 64
Auto Controller/Display Details.....	page 70
Alignment Instructions.....	page 74
Auto Sharpening Fixture Details.....	page 75
Auto Sharpening Fixture Parts List.....	page 78
Auto Sharpening Fixture Schematic	page 79
Geared Chuck Parts List	page 80
Geared Chuck Schematic	page 81
Auto Controller/Display Parts List.....	page 82
Auto Controller/Display Schematic	page 83
Maintenance	page 84
Trouble Shooting Guide	page 86

*For Technical Service visit our web site at **darex.com**
Or call Darex at 800-547-0222
Or contact your Darex Distributor

Auto Sharpening Attachment Specification Sheet



XT-3000 Auto Sharpening Attachment Specifications

Warranty - 1 year on defective parts

- A) Geared Chuck:
Chuck Body Material - 303 Stainless
Knob and Cam Material - 12L14
Capacity - 3mm - 12mm or 12mm - 21mm
Gear Spline - 45 Tooth
Weight - 2.1lbs each (0.95kg)
- B) Sharpening Fixture:
Gear Material - Acetal;
Gear Motor - 12 VDC, rated current 350 mA, typical current 150 mA
Home switch - Slotted Optical
Weight - 6.0 lbs (2.72 kg)
- C) Controller/Display:
Housing Material - Glass filled, Acrylonitrile Butadiene Styrene (ABS)
STN Graphic LCD w/ Green LED back light
Weight - 1.5lbs (0.68 kg)
- Power Inlet:**
Voltage: 115v~
Frequency: 60hz
Current:
Grind Motor: 3.2A
Accessory: 8.0A
- Power Outlet:**
Voltage: 115v~
Current : 8A Max
Fusing : 8A Time Lag

Quick Start Set Up

The Auto Sharpening Attachment comes equipped with a sharpening fixture, a Controller/Display and a chuck/chucks. Available chuck options listed below. **The Automated Sharpening System is for use with the XT-3000 Expandable Tool Sharpener *only* and not for use with other sharpeners.**

LEX400 - 115v w/3-12mm Chuck
LEX400I - 230v w/3-12mm Chuck
LEX450 - 115v w/12-21mm Chuck
LEX451I - 230v w/12-21mm Chuck
LEX500 - 115v w/3-21mm Chucks
LEX500I - 230v w/3-21mm Chucks

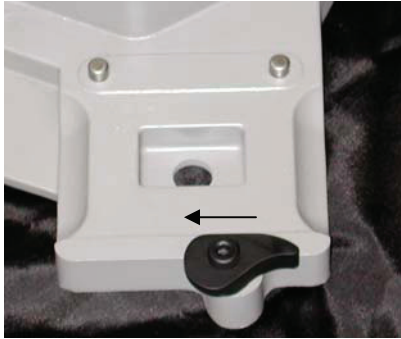
1. Remove from shipping box and remove all packaging material.
2. Attach sharpening fixture to XT base, making sure the sharpening fixture is secure. For more information on mounting the sharpening fixture, see page 9.
3. Attach Controller/Display with mounting bracket provided, see page 10.
4. Connect DIN cable from sharpening fixture to Controller/Display, see page 12.
5. Connect power from outlet source to back of Controller/Display inlet, see page 13.
6. Connect Pigtail Jumpers from the back of Controller/Display to XT-3000 Base casting inlet. For detailed set up information, see page 13.
7. The accessory receptacle is located at the top of the power receptacle on the back of the Controller/Display 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.**
8. Make sure the grit tray is in place and secure.
9. Un-box the chuck.
10. Align and secure the drill in the chuck. (See XT-3000 Instruction Manual PP16180KF for Alignment details)
11. Insert chuck into Sharpening fixture. Secure chuck in sharpening fixture.
12. Power on the machine by pushing the rocker switch into the ON position, ***this will immediately start the grinding wheel in motion*** and power up the Controller/Display screen.
13. Set up the LCD screen on the Controller/Display, see pages 15-18.
14. **(THIS STEP IS NOT NECESSARY WHEN PURCHASING AND XT-3000 A COMPLETE)** Calibrate Final Grind - Drill Stick Out on sharpening fixture, see pages 20-21.
15. Press Start on the Controller/Display screen to begin sharpening. **NOTE:** The sharpening fixture will immediately begin to rotate and sharpen the drill. Make sure hands and clothing are free of the sharpening fixture.
16. Once the chuck has stopped, release the chuck and remove from sharpening fixture.
17. If a split point drill is desired, insert chuck into splitting port. DO NOT remove drill from chuck until split is complete. (See XT-3000 Instruction Manual, PP16180KF, for Split Point details)

Automated Sharpening Attachment

Attaching Sharpening Fixture to Base Casting:

Make sure all contact areas are clean and free of metal dust.

1. Rotate the locking lever so the flat edge is on 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 sharpening fixture to the base.



Mounting Auto Controller/ Display to Base Casting:

1. Install and tighten the two, 6mm BSHC screws from the stamped bracket to the control box.



2. Align control box to main casting and transfer punch or mark for drilling mounting screw holes.

3. Drill through casting.



⚠ Caution don't drill into motor housing

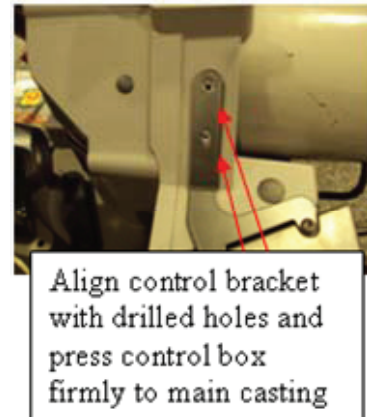


4. Using the alcohol wipe provided, thoroughly clean the XT base casting surface where the adhesive will make contact.

5. Peel adhesive backing from dual-lock tape.



6. Carefully align Controller/ Display to XT base casting and press firmly.



5. Using 2, 10-24 thread forming screws, insert into mounting bracket. While pushing hard, drive in screws until seated.



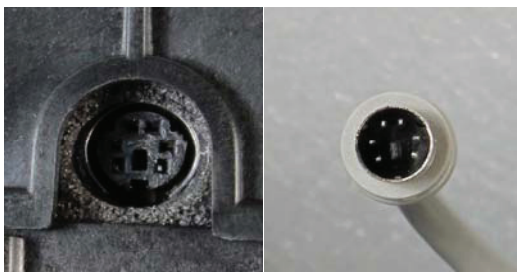
Automated Sharpening Attachment

Connecting Sharpening Fixture to Controller/Display:

1. Connect the mini DIN power cable coming from the Sharpening Fixture to the mini DIN receptacle located slightly underneath the bottom of the Controller/Display.



Important: Be sure you have the DIN pins and receptacle aligned correctly before engaging. Improper connection can result in a blown optical switch in the sharpening fixture which will make the unit nonfunctional.



Automated Sharpening Attachment

Connecting Auto Controller/Display to XT-3000:

1. Located on the back of the XT-3000 base casting is the secondary power receptacle.

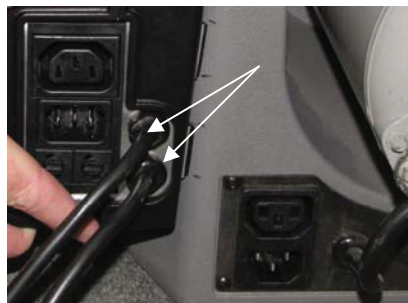


Caution: Do not connect a separate power source to this Inlet!

2. The secondary accessory receptacle is located on the top and the secondary power inlet is located on the bottom of the receptacle.

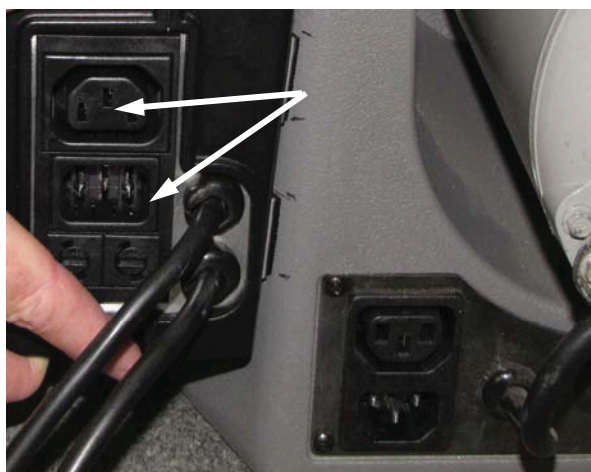


3. Connect both pigtail jumpers coming from the Controller/Display to the appropriate positions in the secondary receptacle located at the back of the XT-3000.



Connecting AC Power to Auto Controller/Display:

1. Located on the back of the Controller/Display is the primary power receptacle. Within this receptacle you will find a power inlet and accessory receptacle.



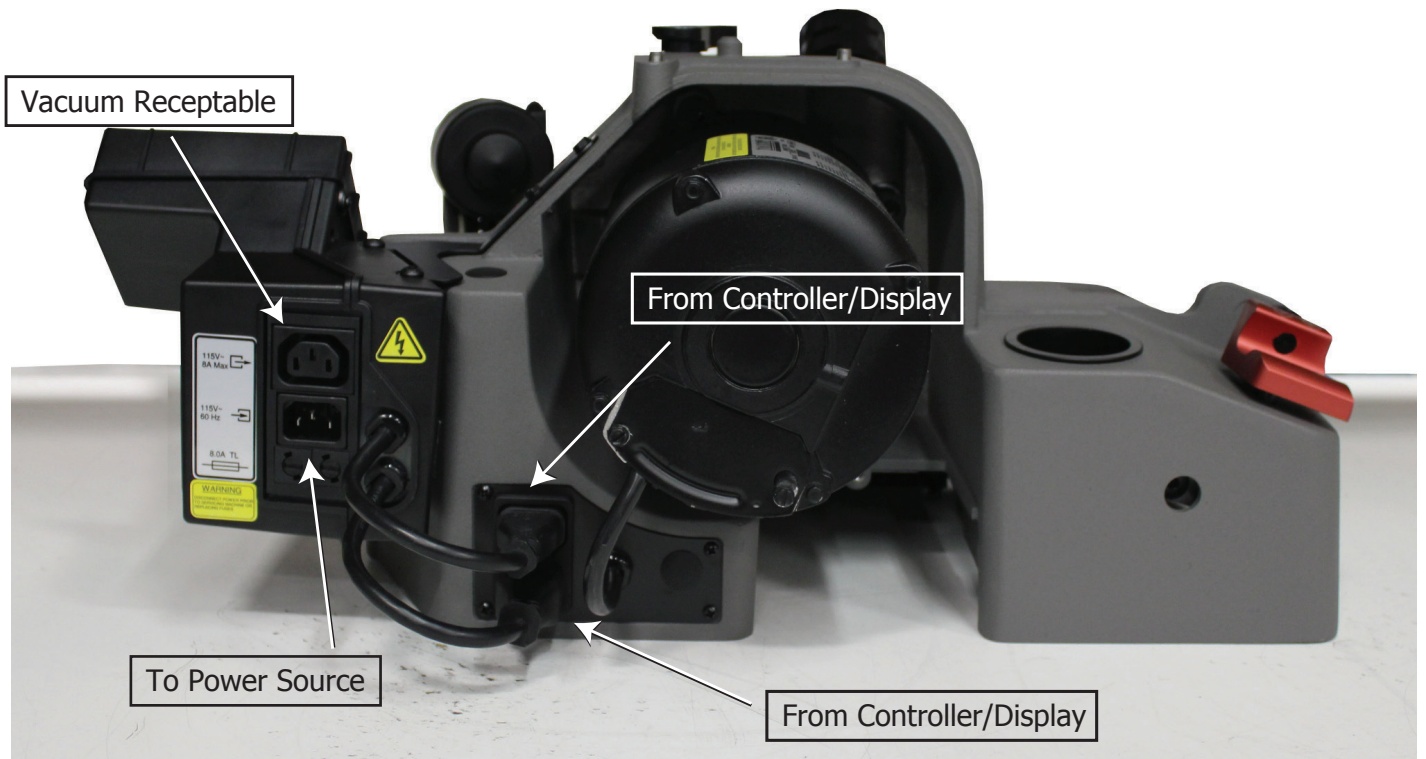
2. Provided with the XT-3000 is a power cord. Plug the cord into to a power outlet and into the power inlet located on the back of the Controller/Display.



Caution: Only one supply source can be connected to this equipment!



Power Connections - Back View Automated Sharpening System



Automated Sharpening Attachment

Connecting Vacuum:

The accessory receptacle on the back of the Controller/Display is located in the top position on the receptacle. This will allow you to connect a dust extraction system to be used during sharpening.

***We highly recommend the use of a dust extraction system when the auto sharpening system is in use. DAREX offers a vacuum system compatible with your XT3000.**

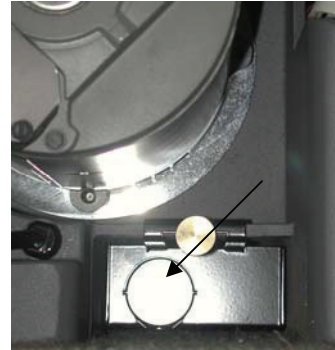
Call DAREX for pricing.

- SA12075EA - 115V Vacuum
- SA12072EA - 230V Vacuum



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).

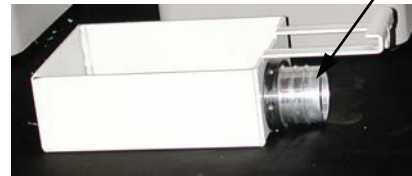


Grit Tray/Vacuum Port Connection: Grit tray

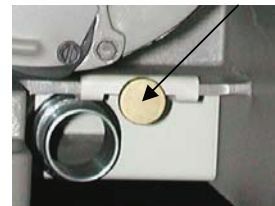
At the back of the machine, located underneath the grinding motor is the grit tray. Drill grindings will accumulate inside the grit tray. The grit tray has a magnetic liner to attract and hold these dust particles. Do not let the tray become more than 1/3 full.



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.



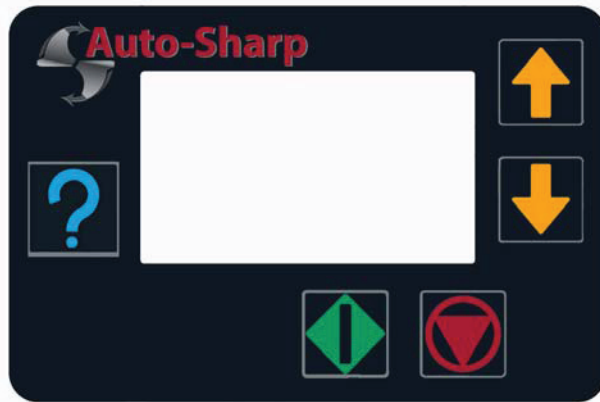
Make sure the grit tray is in place and secure before connecting the vacuum hose.



To remove tray, unscrew brass thumb screw. Remove tray and dump contents. Wipe excess dust from the tray with a rag.



Display Details



CYCLE START/SELECT/SAVE:



CYCLE STOP/STOP/EXIT:



ARROW UP:

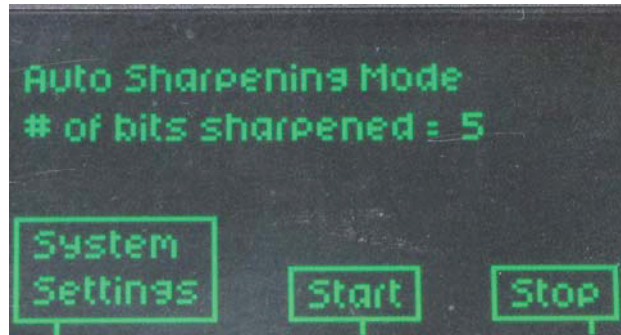


ARROW DOWN:



SYSTEM SETTING:

To operate the Auto Attachment you must first power up the XT-3000 sharpener. Once powered up, the grinding wheel on the XT-3000 will begin to turn at full speed and the Controller/Display screen will illuminate.



To access the complete menu, touch the System Settings button located on the left of the screen.



This will display the full menu:

- Clean Up Turns
- Auto/Manual Select
- Reset Bit Count
- Language Selection
- Motor Stall Delay
- Grind Sensitivity
- Factory Bit Count
- Software Version

Use the Arrow up and Arrow down buttons to view the entire menu. When the text of the menu option has changed to bold, the secondary menu option can be accessed.



To select and enter into each secondary menu

touch

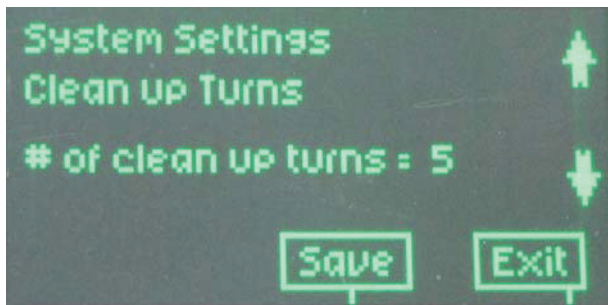


Pressing  will allow you to exit the screen you are working in.

Display Details

CLEAN UP TURNS:

By selecting "Clean up turns",
The display shows:



The "Clean up turns" is active only when in "Auto" Sharpening mode.

Pressing "Arrow up"  advances clean up pass by one.

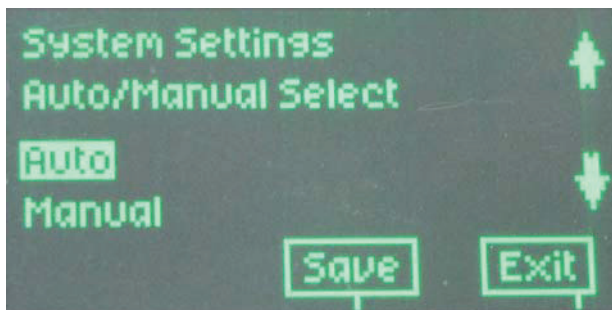
Pressing "Arrow down"  reduces pass by one.

Pressing "Save ",  stores and exits.

Pressing "Exit",  exits without saving.

AUTO/MANUAL SELECT:

By selecting "Auto/Manual",
The display shows:



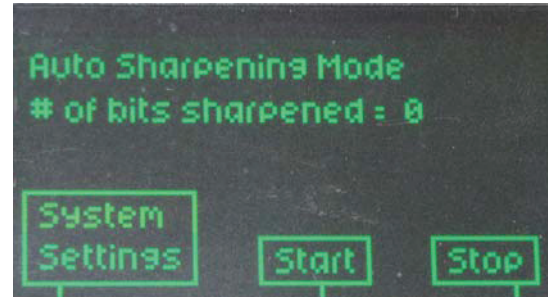
Pressing "Arrow up"  or "Arrow down"  will highlight each menu option.

Pressing "Save ",  stores and exits.

Pressing "Exit",  exits without saving.

AUTO:

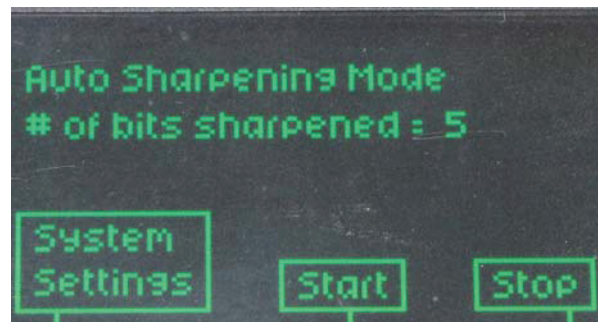
By selecting "Auto",
The display shows:



When "start"  is pressed, the sharpening fixture will begin to sharpen.

During sharpening, you will see the number of rotations on the screen increase. When the grind is complete, the programmed cleanup passes will appear and begin to count down to 0. The sharpening port will rotate to the home position and stop.

At the end of each sharpening, the Bit Count increases.

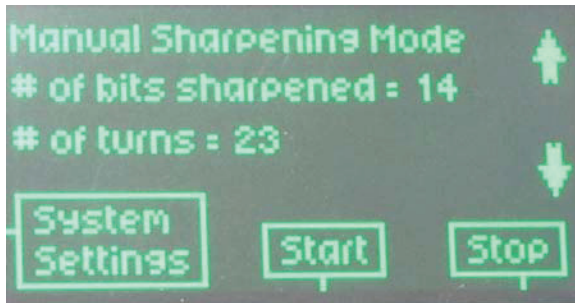


By pressing "stop"  during the Auto Cycle the unit stops and returns home.

Display Details

MANUAL:

By selecting "Manual",
The display shows:



By pressing "Arrow up",  the number of Manual turns increases.

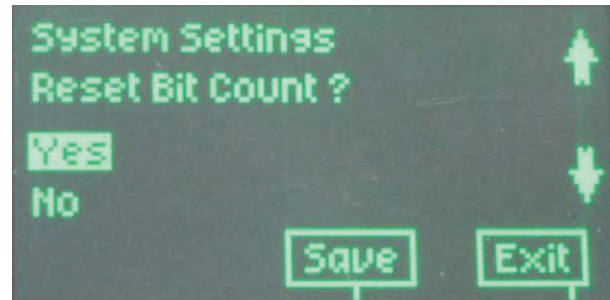
By pressing "Arrow Down",  the number of Manual turns is decreased. This automatically saves the new setting.

After pressing "Start",  the manual sharpening begins.

The display starts counting down the number of turns. At the end of sharpening, the Bit Count increases. By pressing "Stop",  the manual sharpening ends.

RESET BIT COUNT:

By selecting "Reset Bit Count",
The display shows:



Pressing "Arrow up",  or

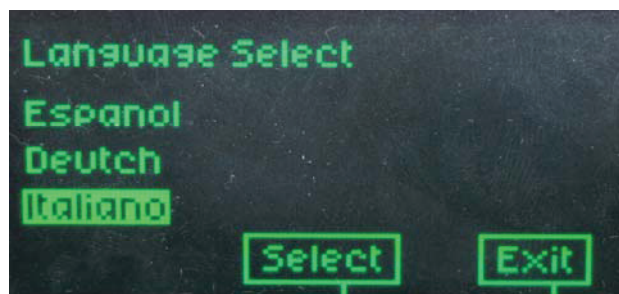
"Arrow down",  will highlight each menu option.

Pressing "Save",  resets the bit count, only, if the "yes" is highlighted.

Pressing "Exit",  exits without saving.

LANGUAGE SELECTION:

By selecting "Language Option",
The display shows:



Pressing "Arrow up"  or "Arrow down"

 will highlight each language option.

Display Details

Pressing "Select",



displays language se-

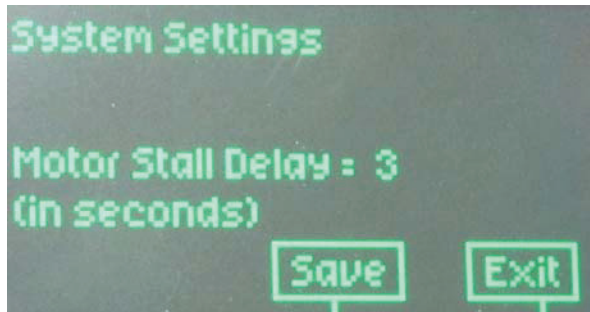
lection and exits.



Pressing "Exit", exits without saving.

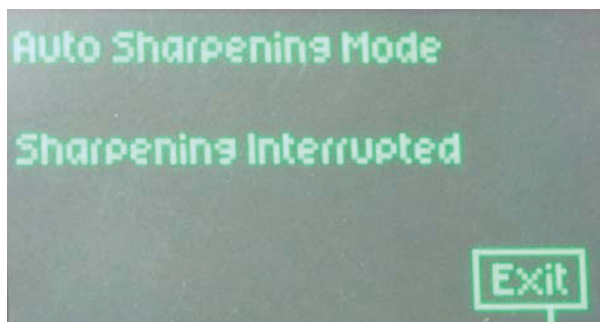
MOTOR STALL DELAY:

This screen will appear on the display:



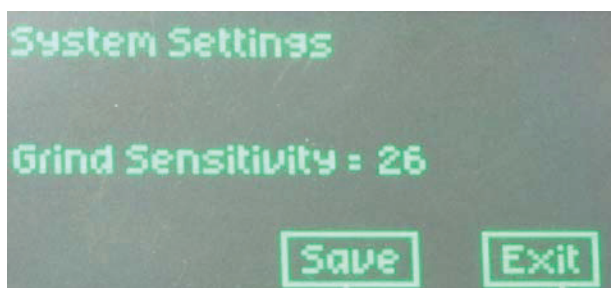
"Motor Stall Delay is used to detect a prolonged period of the Gear Motor not turning, sensing a blocked or jammed condition. The available settings are 2, 3 or 4 seconds; the factory default is 3 seconds.

If the unit detects a 3 seconds lapse and the chuck has not rotated at least a half turn, the unit will shut itself off and "Sharpening Interrupted" will appear.



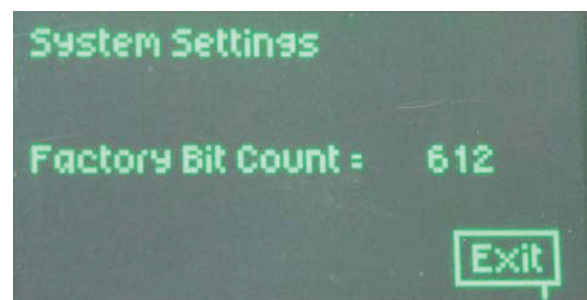
The system will reset itself.

.GRIND SENSITIVITY:



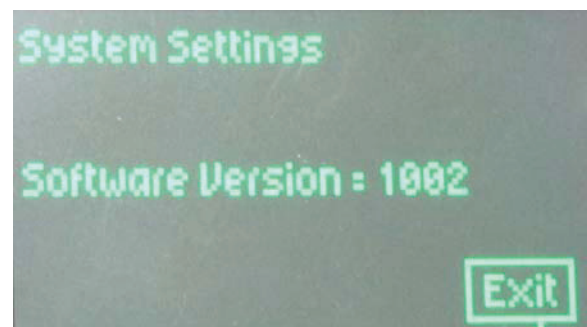
The Grind Sensitivity is a measure of how quickly the controller responds to the material take off during AUTO grinding. A lower number generally creates more turns, a higher number means fewer turns before the controller decides it has reached the proper material removal. This variable is set at a factory default of 25. When Darex CBN and Diamond wheels are used, the setting of 25 is appropriate and will not need to be changed.

FACTORY BIT COUNT:



This screen displays the accumulative number of times the cycle start button has been pressed. This number cannot be reset and will be used for warranty evaluations.

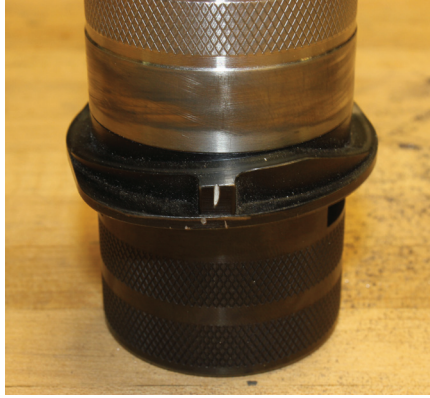
SOFTWARE VERSION:



This screen displays the current version of software. You will need to know the software version for upgrade status and troubleshooting.

Alignment Instructions

Each chuck has an orientation line scribed on the chuck dog of the cam.



To achieve the highest level of concentricity, in the alignment step, insert the chuck with the white line up.



Auto Sharpening Fixture

SECURE CHUCK IN SHARPENING FIXTURE

After the drill has been properly aligned and secured in the chuck, be sure to lock the chuck into the automated sharpening fixture.

Located on the front of the sharpening fixture is a spring loaded handle assembly. This is the "Cam Follower" assembly.



Insert chuck into sharpening port with the white line on the dog, aligned



Grip the Cam Follower "Knob", rotate the assembly as far clockwise as possible.



with the locating mark on the face of the sharpening tube housing.



This will allow you to insert the chuck into the sharpening tube without interference.



Auto Sharpening Fixture

Gripping the follower "Knob", gently pull back and rotate the "Cam Follower" assembly as far counterclockwise as possible.



Release the "Knob".



This will secure the chuck in the sharpening fixture.



To remove the chuck, wait for the sharpening fixture to come to a complete stop. Simply rotate the "Cam Follower" assembly as far clockwise as possible.



NOTE: It is not necessary to pull back when rotating the "Cam Follower" assembly clockwise.

DRILL STICK OUT- FINAL GRIND:

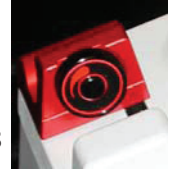
IMPORTANT: This step is **NOT** necessary for the **XT-3000-A & XT-3000I-A Complete.**

The Drill Stick Out - Final Grind amount on the Auto Sharpening system must be calibrated to produce the same Drill Stick Out - Final Grind amount as produced on your existing Manual

Before you begin sharpening with your Auto system, take the time to calibrate Final Grind-Drill Stick Out. This will help retain your current point split depth calibration.

Verify Final Grind Drill Stick Out On Manual System First:

1. Rotate material removal knob to minimum take off setting.
2. Align drill in chuck. Once drill is set to length, aligned and securely captured in the chuck, remove from alignment port.



3. Using a height gauge, measure the amount of drill protruding from the end of the chuck to the tip of the drill. (Drill Stick Out - Before Grind)



4. Sharpen the drill until spark out has been achieved. Remove chuck from sharpening port. Without removing the drill, re-measure the amount of Drill Stick Out after grinding. Your Auto system must be adjusted to produce the same Final Grind - Drill Stick Out measurement as the manual system.

5. Remove the Manual System and install the Auto Sharpening System.

6. Using the same drill bit, repeat steps 1-4 to determine the Final Grind - Drill Stick Out measurement currently produce by the Auto Sharpening System.

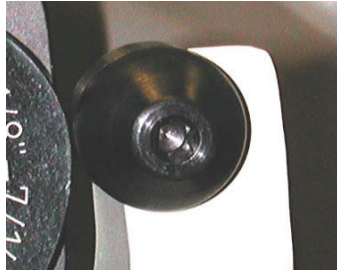
You will need to adjust the Swing Bearing assembly on your Auto sharpening attachment to duplicate the Final Grind - Drill Stick Out measurement produced by the Manual system, see page 21 for calibration details.

Auto Sharpening Fixture

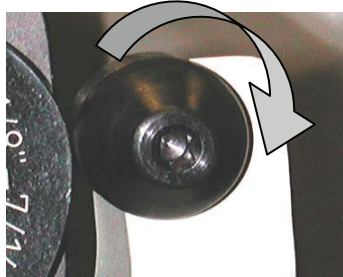
CALIBRATING DRILL STICK OUT - FINAL GRIND :

The swing cam on the chuck rests and rides on the Swing Bearing assembly. This bearing assembly is eccentric. The Auto Sharpening Fixture will arrive with this bearing positioned so that the drill will NOT make contact with the grinding wheel. By repositioning the bearing, the amount of material removed from the end of the drill will change, changing the Final Grind - Drill Stick Out amount.

1. Using a 3mm hex wrench, loosen the Swing Bearing Assembly, located on the back of the Pivot Base Casting.



2. To increase the amount of material removed from the end of the drill and reduce the Drill Stick Out amount, slightly rotate the bearing clockwise.



3. After repositioning the bearing, be sure to retighten the assembly bolt, securing the new position of the Swing Bearing Assembly.

4. Sharpen the drill and verify the amount of Final Grind - Drill Stick Out.

Repeat this procedure until the Final Grind - Drill Stick Out amount measures the same as produced with the Manual system.

Once the Final Grind - Drill Stick Out has been calibrated, it will not be necessary to make this adjustment again.

Auto Sharpening Fixture Parts List

SA17050TA	Auto Sharpening Fixture Complete
1) - PP17128PF	Gear Cover
2) - SA17121TA	Drive Gear Assembly
3) - PP17125MF	Gear Motor
4) - PP17131PF	Motor Cover
5) - SA17145EA	Switch Harness
6) - SA16652TA	Feed Bearing Assembly
7) - PP17065TF	Gear Chuck Tube Liner
8) - PP12220FF	3mm x .5 x 6mm screw
9) - PP17075PF	Park Cam Wear Plate
10) - SA16645TA	Spring Tensioner Assembly
11) - PP16650RF	Return Spring
12) - SA16615SA	Pivot Lever Assembly
13) - PP16630BF	Docking Plate
14) - SA16657TA	Swing Bearing Assembly
15) - SA17085TA	Follower Bearing Assembly
16) - PP17079FF	5mm x .8 x 16mm screw
17) - PP17078PF	Follower Plunger Knob

SA17145EA Switch Harness

PP17128PF Gear Cover

SA17121TA Drive Gear Assembly

PP16330FF Gear M5 x .8 x 8mm SHSS

PP17125MF Gear Motor

2X PP12240FF M4 x .7 x 12mm SHCS

PP12238FF M4 x .7 x 6mm BSHCS

PP17156PF Motor Lead Strain Relief

2X PP17163FF

PP17131PF Motor Cover

PP12245FF M4 x .7 x 12mm BSHCS

PP17140SF Switch Mounting Plate

PP17157SF Harness Mounting Plate

Strain Relief

2X PP16354FF M4 x .7 x 8mm BSHCS

PP12220FF M3 x .5 x M6 FSHCS

PP12460EF Switch Slotted

2X PP12235FF M3 x .5 x M6 BSHCS

PP17070TF Pivot Shaft

3X PP12240FF M4 x .7 x 12mm SHCS

PP17073FF M4 x .7 x 14mm FSHCS

SA16645TA Spring Tensioner Assembly

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

PP16630BF Docking Plate

PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

PP17106SF Follower Tube Thrust Washer

PP08350FF 1/8 x 3/4 dowel pin

SA16652TA Feed Bearing Assy

PP17060TF Sharpening Tube

PP17065TF Tube Liner

PP17102RF Follower Spring

PP17108PF Spring Cap

PP17096TF Follower Set Screw

SA16645TA Spring Tensioner Assembly

PP17070TF Pivot Shaft

3X PP17073FF M4 x .7 x 14mm FSHCS

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

PP16630BF Docking Plate

PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

PP17106SF Follower Tube Thrust Washer

PP08350FF 1/8 x 3/4 dowel pin

SA16652TA Feed Bearing Assy

PP17060TF Sharpening Tube

PP17065TF Tube Liner

PP17102RF Follower Spring

PP17108PF Spring Cap

PP17096TF Follower Set Screw

SA16645TA Spring Tensioner Assembly

PP17070TF Pivot Shaft

3X PP17073FF M4 x .7 x 14mm FSHCS

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

PP16630BF Docking Plate

PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

PP17106SF Follower Tube Thrust Washer

PP08350FF 1/8 x 3/4 dowel pin

SA16652TA Feed Bearing Assy

PP17060TF Sharpening Tube

PP17065TF Tube Liner

PP17102RF Follower Spring

PP17108PF Spring Cap

PP17096TF Follower Set Screw

SA16645TA Spring Tensioner Assembly

PP17070TF Pivot Shaft

3X PP17073FF M4 x .7 x 14mm FSHCS

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

PP16630BF Docking Plate

PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

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PP17065TF Tube Liner

PP17102RF Follower Spring

PP17108PF Spring Cap

PP17096TF Follower Set Screw

SA16645TA Spring Tensioner Assembly

PP17070TF Pivot Shaft

3X PP17073FF M4 x .7 x 14mm FSHCS

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

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PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

PP17106SF Follower Tube Thrust Washer

PP08350FF 1/8 x 3/4 dowel pin

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PP17060TF Sharpening Tube

PP17065TF Tube Liner

PP17102RF Follower Spring

PP17108PF Spring Cap

PP17096TF Follower Set Screw

SA16645TA Spring Tensioner Assembly

PP17070TF Pivot Shaft

3X PP17073FF M4 x .7 x 14mm FSHCS

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

PP16630BF Docking Plate

PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

PP17106SF Follower Tube Thrust Washer

PP08350FF 1/8 x 3/4 dowel pin

SA16652TA Feed Bearing Assy

PP17060TF Sharpening Tube

PP17065TF Tube Liner

PP17102RF Follower Spring

PP17108PF Spring Cap

PP17096TF Follower Set Screw

SA16645TA Spring Tensioner Assembly

PP17070TF Pivot Shaft

3X PP17073FF M4 x .7 x 14mm FSHCS

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

PP16630BF Docking Plate

PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

PP17106SF Follower Tube Thrust Washer

PP08350FF 1/8 x 3/4 dowel pin

SA16652TA Feed Bearing Assy

PP17060TF Sharpening Tube

PP17065TF Tube Liner

PP17102RF Follower Spring

PP17108PF Spring Cap

PP17096TF Follower Set Screw

SA16645TA Spring Tensioner Assembly

PP17070TF Pivot Shaft

3X PP17073FF M4 x .7 x 14mm FSHCS

PP16650RF Return Spring

PP16620LF Cup & Cone Bearing

PP16625LF Cup & Cone Bearing

PP17071TF Pivot Shaft Cap

PP17072FF M6 x 1 x 16mm FSHCS

PP17134SF Switch Flag/Limit

PP02092LF Radial Bearing

SA16615SA Pivot Lever Assembly

PP16316FF M6 x 55mm SHCS

PP16640TF Pivot Lock Nut

PP16630BF Docking Plate

PP17055CF Pivot Base Casting

SA16657TA Swing Bearing Assembly

PP17093TF Follower Mounting Bolt

PP17106SF Follower Tube Thrust Washer

PP08350FF 1/8 x 3/4 dowel pin

SA16652TA Feed Bearing Assy

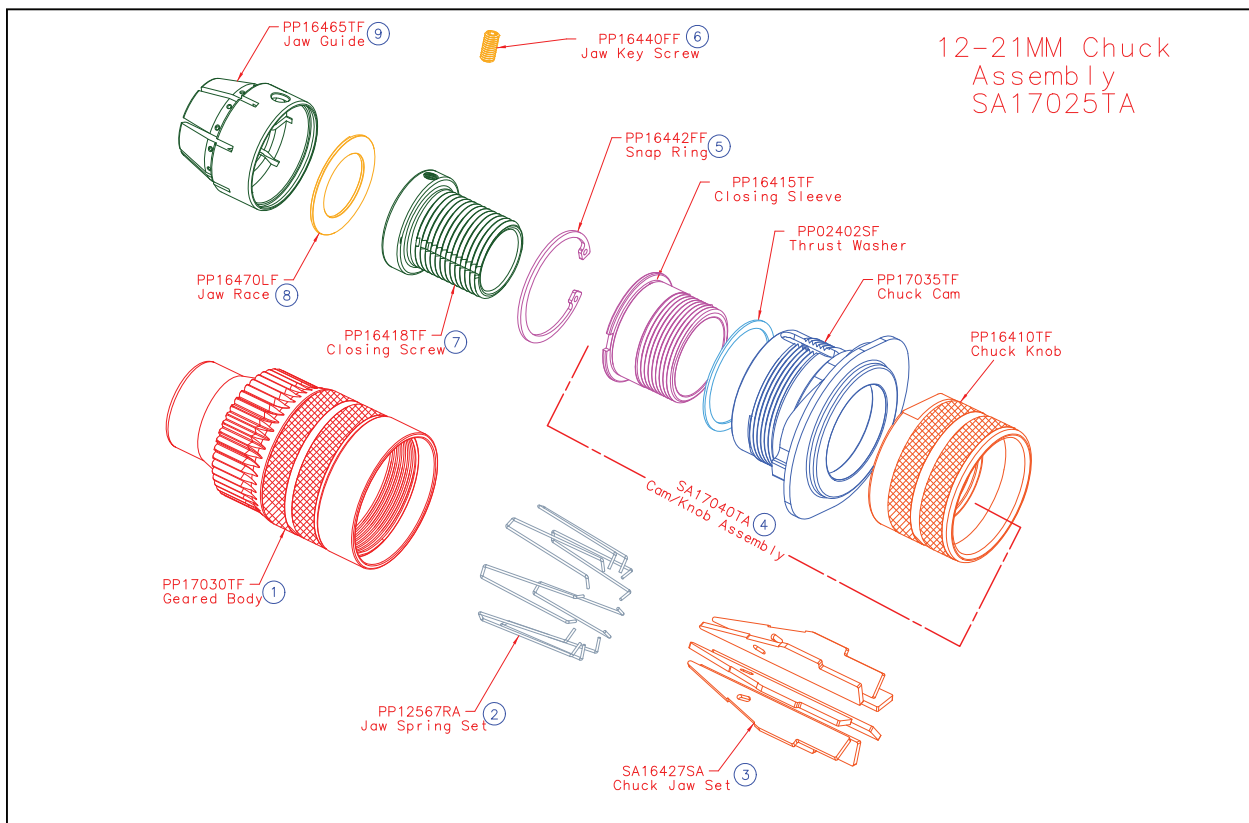
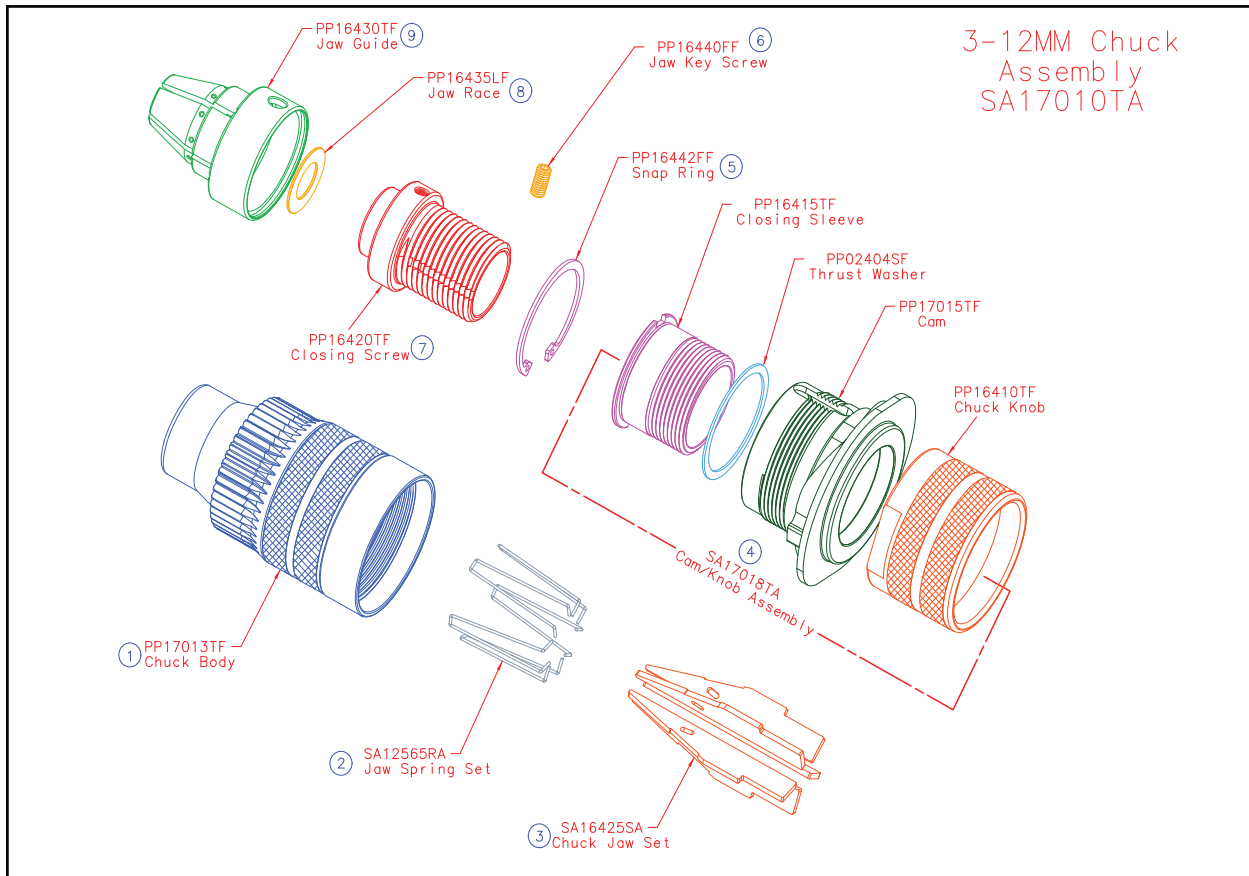
PP17060TF Sharpening Tube

PP1

Geared Chuck - Auto

ITEM	ITEM_DESC
SA17010TA	3-12MM GEARED CHUCK (OPTIONAL)
1) - PP17013TF	3-12MM GEARED CHUCK BODY (B BP S N)
2) - SA12565RA	CHUCK JAW SPRINGS (5 PIECES)
3) - SA16425SA	JAW SET (5 PIECES)
4) - SA17018TA	3-12MM GEARED CHUCK CAM/KNOB ASSEMBLY
5) - PP16442FF	3-21MM SNAP RING
6) - PP16440FF	JAW KEY SCREW
7) - PP16420TF	3-12MM CLOSING SCREW
8) - PP16435LF	JAW RACE
9) - PP16430TF	3-12MM JAW GUIDE (B BP S N)
ITEM	ITEM_DESC
SA17025TA	12-21MM GEARED CHUCK (OPTIONAL)
1) - PP17030TF	12-21MM GEARED CHUCK BODY (B BP S N)
2) - SA12567RA	CHUCK JAW SPRINGS (7 PIECES)
3) - SA16427SA	JAW SET (7 PIECES)
4) - SA17040TA	12-21MM GEARED CHUCK CAM/KNOB ASSEMBLY
5) - PP16442FF	3-21MM SNAP RING
6) - PP16440FF	5MM X .8MM X 10MM SSS
7) - PP16418TF	12-21MM CLOSING SCREW (B BP S N)
8) - PP16470LF	12-21MM JAW RACE
9) - PP16465TF	12-21MM JAW GUIDE (B BP S N)

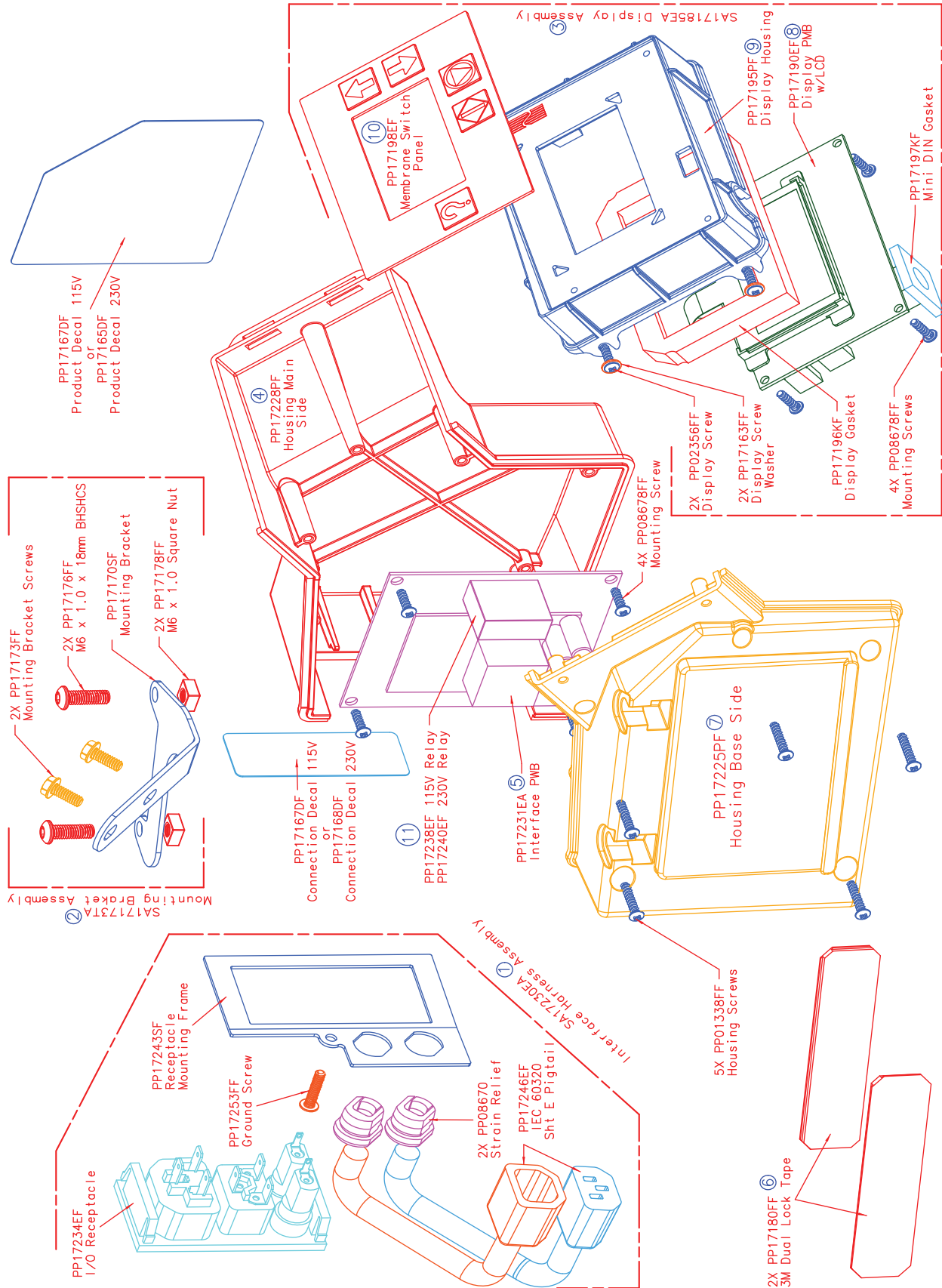
Geared Chuck - Auto



Controller/Display Parts List

SA17060TA	Auto Controller/Display 115V Complete
SA17061TA	Auto Controller/Display 230V Complete
1) - SA17230EA	Interface Harness Assembly
2) - SA17173TA	Mounting Bracket Assembly
3) - SA17185EA	Display Assembly
4) - PP117228PF	Housing Main Side
5) - PP17231EA	Interface PWB
6) - PP17180FF	Dual Lock Mounting Tape
7) - PP17225PF	Housing Base Side
8) - PP17190EF	Display PMB w/LCD
9) - PP17195PF	Display Housing
10) - PP17198EF	Membrane Switch Panel
11) - PP17238EF	115V Relay
11) - PP17240EF	230V Relay
Not Shown - PP17250FF	Vacuum Fuse 115V
Not shown - PP12057EF	Vacuum Fuse 230V

Controller/Display



Maintenance

This unit will display a "Maintenance Alert" when maintenance is required. The screen will display:



Every 100 sharpenings this alert will appear as a reminder to perform the required routine maintenance listed below. Performing this maintenance will keep the auto sharpening fixture running properly and extend the life of the components. It will also help prevent excessive grit build up which will cause premature sharpening interruptions.

1. Power off the machine, waiting to perform the maintenance only once the grinding wheel has come to a complete stop. **Disconnect the power from the machine using a lock out tag out procedure.**
2. Vacuum any grit found on the machine. Pay special attention to the electronic controller, the Follower Cam Tube Assembly and Chuck Tube Liner.

NOTE: Do not use an air gun, as this can blow grit into the Controller/Display housing or the Follower Cam Tube Assembly on the sharpening port.

3. Use a clean, dry cloth to wipe down the chuck bodies and the inside liner of the chuck port. After using a dry cloth to clean these, use the lubricated cloth, (gun cloth or similar) provided, to re-apply a very fine lubrication to these surfaces. (You can also use a clean cloth with a light spray of silicone. Avoid aggressive solvent based lubricants like WD-40.)

This is a good time to inspect the rest of the XT machine and perform any other necessary maintenance, see page 30.

For best performance and longevity of the Auto Sharpener we highly recommend the use of a dust extraction system.

For more information contact DAREX @ 800-547-0222.

Once maintenance has been completed, using the "Arrow up" "Arrow down" buttons, highlight "Yes".



To select yes press the select button. This will clear the "Maintenance Alert" and you may resume sharpening.



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.

CHUCK MAINTENANCE

The use of a dust extraction system during grinding will help reduce the amount of maintenance, however, the chuck assembly should be disassembled and cleaned periodically. See XT-3000 instruction manual for detailed disassembly instructions.

GRIT TRAY

At the back of the XT-3000 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.



Darex recommends the use of a dust extraction system when the Auto Attachment is in use.

Trouble Shooting

The unit stopped working and the screen displays "Sharpening Interrupted":

- This message will appear if the user presses the "Stop" button during sharpening. It will also appear if the controller detects a large load on the chuck turning motor. This is typically caused by dirt or grit accumulating on the Chuck Body, Chuck Tube Liner, or the Cam Follower Assembly. Turn the machine off and perform the standard maintenance procedures listed on pages 29 & 30. Restart the machine and see if it runs without interruption. If the controller continues to show this message, call Darex customer service for assistance.
- If the optical switch in the Sharpening Fixture is faulty, call Darex customer service for assistance.
- Check the small cable coming from the sharpening port to the Gear Motor.
- Finally, remove both covers on the Gear Motor and Gear located on the Sharpening Fixture. Verify the Drive Gear is secured to the Gear Motor.

The display does not come on when I plug the unit it:

- The auto controller receives its power through the AC plugs in the rear of the unit. Make sure there is power to the outlet you are using.
- Make sure the wiring on the back of the unit matches that of the user manual (power comes in to the controller, and both pigtails are firmly seated between the controller and the XT unit).
- Try unplugging and re-plugging these cords to ensure they are well seated.
- Finally, make sure the on/off switch on the XT-3000 machine is powered on. The display will not come on until you power up the XT-3000. If unsuccessful, call Darex customer service for assistance @ 800-547-0222.

The unit powers up, the display is on, but pushing the "Start" button to sharpen nothing happens:

- There is a cord that connects the sharpening port to the Auto Controller/Display, see page 12. Be sure that the 5 pin DIN connector on this cord is firmly seated into the connector on the Controller/Display, paying careful attention to cord/connector orientation. **Important:** See information on page 67. Inspect the cable, coming from the controller to the sharpening port, for damage.

The unit powers up and runs the sharpening system, but the vacuum does not come on:

- The vacuum receptacle for the Auto sharpening system is located on the back of the Controller/Display housing, see page 14. Make sure this connector is firmly seated.
- The connector is fused with two 8A time delay fuses (1.6A on the 230V international model). Make sure these fuses are intact. If a fuse is found to be blown, then both fuses should be replaced with the appropriate capacity. You can find the part numbers for these fuses listed on page 26.

Note: Using fuses not supplied by DAREX is not recommended and may cause damage to the Controller/Display.

If the grind motor starts but the Auto Display is off:

- The internal relay may be defective. This can be detected by checking for voltage at the vacuum output receptacle with an electrical meter.



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