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SAFETY PRECAUTIONS

IN GENERAL:

When using rotating head cutting equipment, basic safety precautions should always be followed to reduce the risk of personal injury.

Operate this tool only in accordance with specific operating instructions.

WARNING:

Do not override the deadman switch on the power unit. Locking down, obstructing, or in any way defeating the deadman switch on the power drive unit may result in serious injury.

DRESS CONSIDERATIONS:

Use standard safety equipment. Hard hats, safety shoes, safety harnesses, protective clothes, and other safety devices should always be used when appropriate.

Use safety glasses. Do not operate cutting tools without eye protection.

Dress properly. Do not wear loose clothing or jewelry. They can be caught in rotating and moving parts. Avoid slippery floors or wear nonskid footwear. If you have long hair, wear protective hair covering to contain it.

WORK AREA:

Keep the work area clean. Cluttered work areas and benches invite injuries.

Consider the work area environment. Keep the area well lit. Keep electrical cords, cables, rags, rigging straps, etc. clear of rotating equipment. Do not use power cutting tools in the presence of flammable liquids and gasses.

Keep visitors away. Do not let visitors or untrained personnel near operating tools. Enforce eye protection requirements for all observers.

Do not over reach. Keep proper footing at all times.

Stay alert. Watch what you are doing. Use common sense. Do not operate tools when you are tired.

TOOL CARE:

Maintain tools with care. Keep tools in good operating condition. Sharp tool bits perform better and safer than dull tool bits. Well maintained tools function properly when needed.

Check for damaged parts. If a tool has malfunctioned, been dropped or hit, it must be checked for damage. Run no-load tests and feed function checks. Do a complete visual inspection.

Electric motors. Use only with proper AC voltage power sources and observe all normal electric shock hazard procedures.

Do not abuse power and control cords. Pulling or running over cords and cables can result in electrical shock hazards and malfunctions. Keep control and power cords out of all cutting fluids and water.

Hydraulic drives. Observe proper procedures for electrically driven power sources. Avoid damage to hydraulic lines. Keep quick-disconnects clean. Grit contamination causes malfunctions.

Air tools. Check the exhaust muffler. Broken or damaged mufflers can restrict air flow or cause excessive noise. Use air motors only with a filtered, lubricated and regulated air supply. Dirty air, low pressure air or over pressure air will cause malfunctions, including delayed starting.

AREA EQUIPMENT:

Secure work. Whenever possible use clamps, vises, chains and straps to secure pipe.

Make sure the tool is secured, it is safer to have both hands free to operate the tool.

TOOL USE:

Use the right tool and tool bit for the job. Do not use a tool which is incorrect for the job you are doing.

Keep the tool bits fully engaged in the tool bit holders. Loose bits are a safety hazard.

Disconnect power supply during setup and maintenance. Use all stop or shut-off features available when changing or adjusting tool bits, maintaining the tool, or when the tool is not in use.

Remove adjusting keys and wrenches before applying power to the equipment. Develop a habit of checking the tool before turning it on to make sure that all keys and wrenches have been removed.

Do not force tools. Tools and tool bits function better and safer when used at the feed and speed rate for which they were designed.

Do not reach into rotating equipment. Do not reach into the rotating head stock to clear chips, to make adjustments, or to check surface finish. A machine designed to cut steel will not stop for a hand or an arm.

Handle chips with care. Chips have very sharp edges and are hot. Do not try to pull chips apart with bare hands; they are very tough.

Avoid unintentional starts. Do not carry or handle tools with your hand on the operating switches or levers. Do not lay the tool down in a manner which will start the drive. Do not allow the tool to flip around or move when adjusting or changing tool bits. Store idle tools properly.

Disconnect tools from the power source and store in a safe place. Remove tool bits for safe handling of the tool.

MACHINE SPECIFICATIONS

IN GENERAL:

The Model 212B Single Point/Flange Facer Kit is supplied to provide the Model 212B BEVELMASTER™ with beveling, and flange facing capabilities over a cutting range of 8.20" (208.3mm) to 24.00" (609.6mm) diameter, beveling angles between 0° and 45°.

This kit allows a quick, easy field conversion of the 212B from a beveling configuration, to a Single Point configuration and back again as required.

SPECIFICATIONS:

212B Single Point: Weight: 66 lbs (29.9Kg).

CUTTING CAPACITIES:

Range: 8.20" (208.3mm) I.D.to 24.00" (609.6mm) O.D.

Bevel Angle: 0° to 45°.

Feed Rate: 0 - .026" (0 - .66mm) per revolution.

Max Wall Thickness: 1.50" (38.1mm) at 37.5°.
 2.34" (59.4mm) 37.5°/10° Compound Bevel.

Maximum Chip Width: .20" (5.1mm) (Depending on Material).

Alignment: When used with Miter Mandrel;

Angular: ± 5°.

Offset: ± .190" (4.8 mm).

MATERIAL:

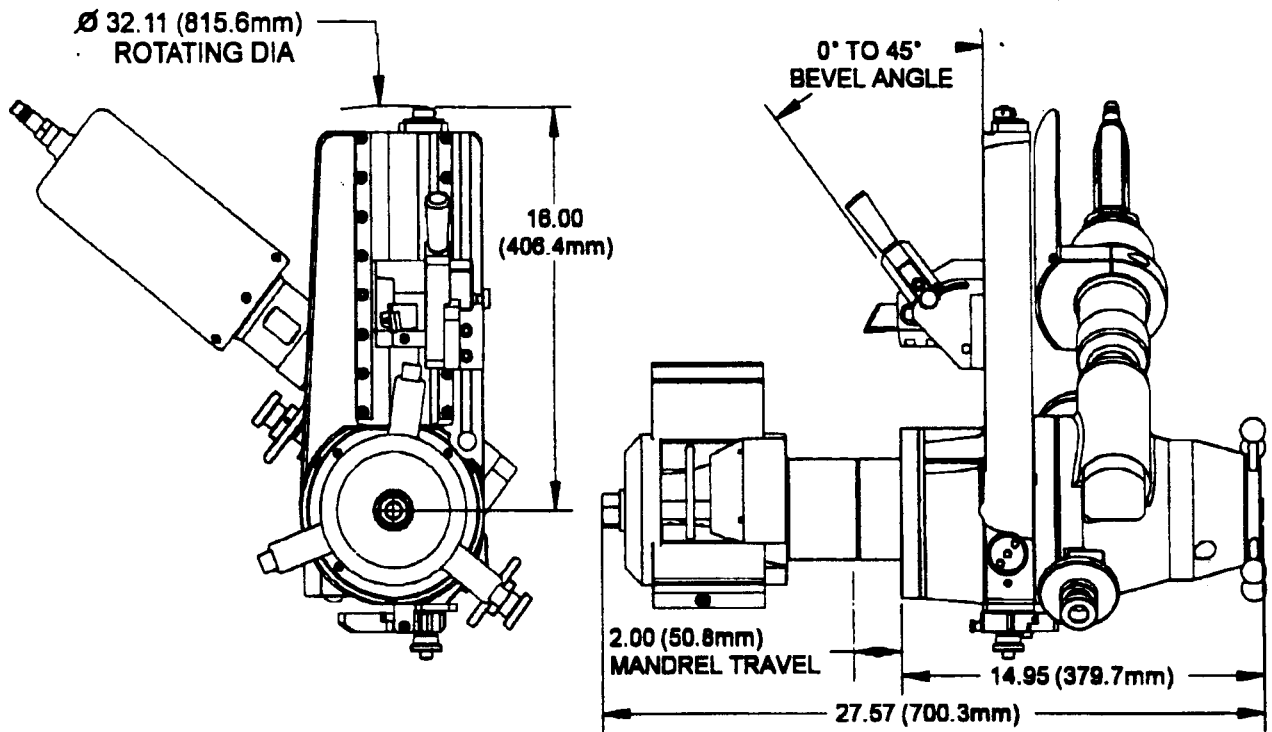
Mild steels, Chrome steels (Rc 35 max.), Stainless steel, Copper-nickel and Aluminum.

Inconel and some other high temperature alloys may require special procedures as a function of wall thickness and type of end preparation.

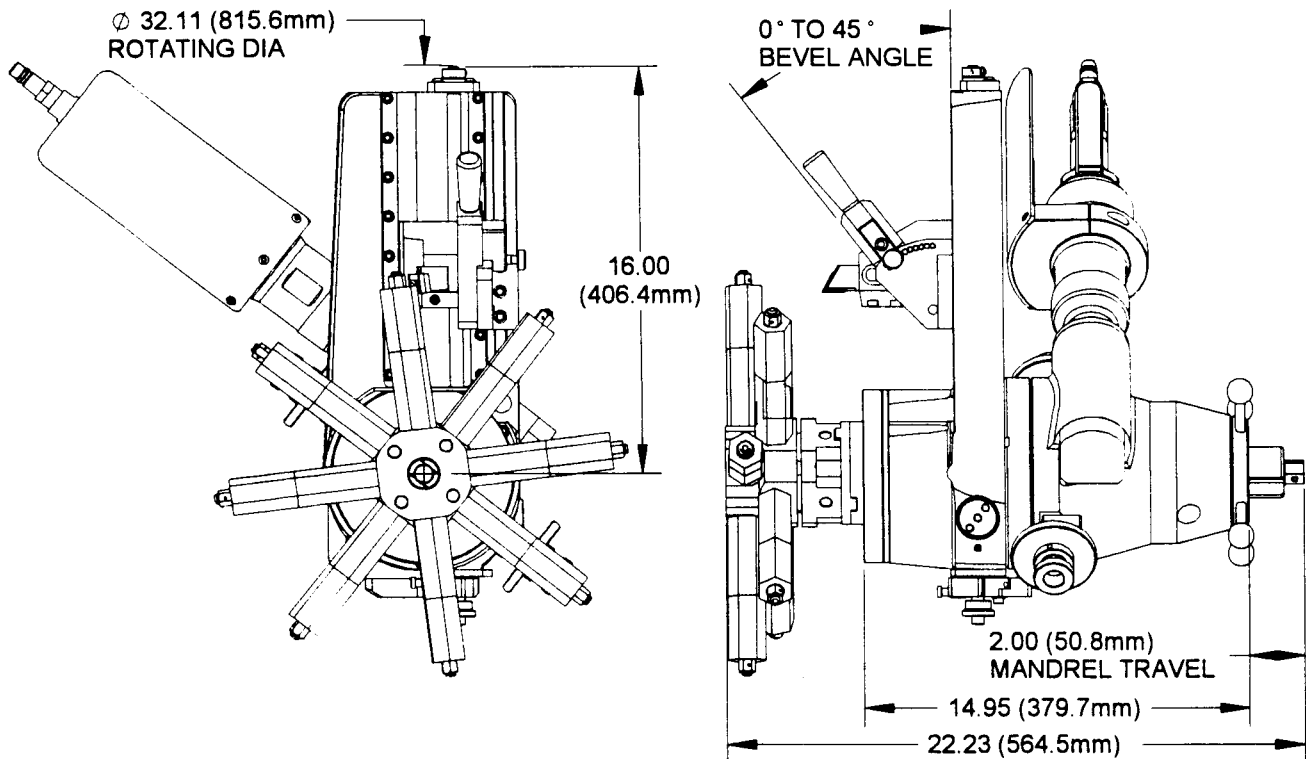
Contact Tri Tool's Engineering Department for details.

MOUNTING:

The 212B Single Point can be mounted in pipe or tube with an internal diameter from 6.10" (155.0mm) through 23.50" (596.9mm).



ENVELOPE, 212B BEVELMASTER™ WITH SINGLE POINT AND 3 JAW HEAD KIT.



ENVELOPE, 212B BEVELMASTER™ WITH SINGLE POINT AND MITER MANDREL HEAD.

TOOL BITS

TOOL BITS FOR USE ON THE 212B BEVELMASTER™ WITH SINGLE POINT

Part Number	Description
49-0368	Tool Holder, Insert
30-0554	Insert
49-0374	Tool Holder, Counterbore
99-2909	Counterbore Tool Bit, [(4:1) (Use on 8" - 12" pipe)]
99-2940	Counterbore Tool Bit (4:1)

OPERATION

IN GENERAL:

Read the operating instructions carefully before attempting to operate the:

Model 212B Bevelmaster™ Single Point.

Model 212B Bevelmaster™

ATTACHING THE 212B SINGLE POINT TO THE 212B BEVELMASTER™:

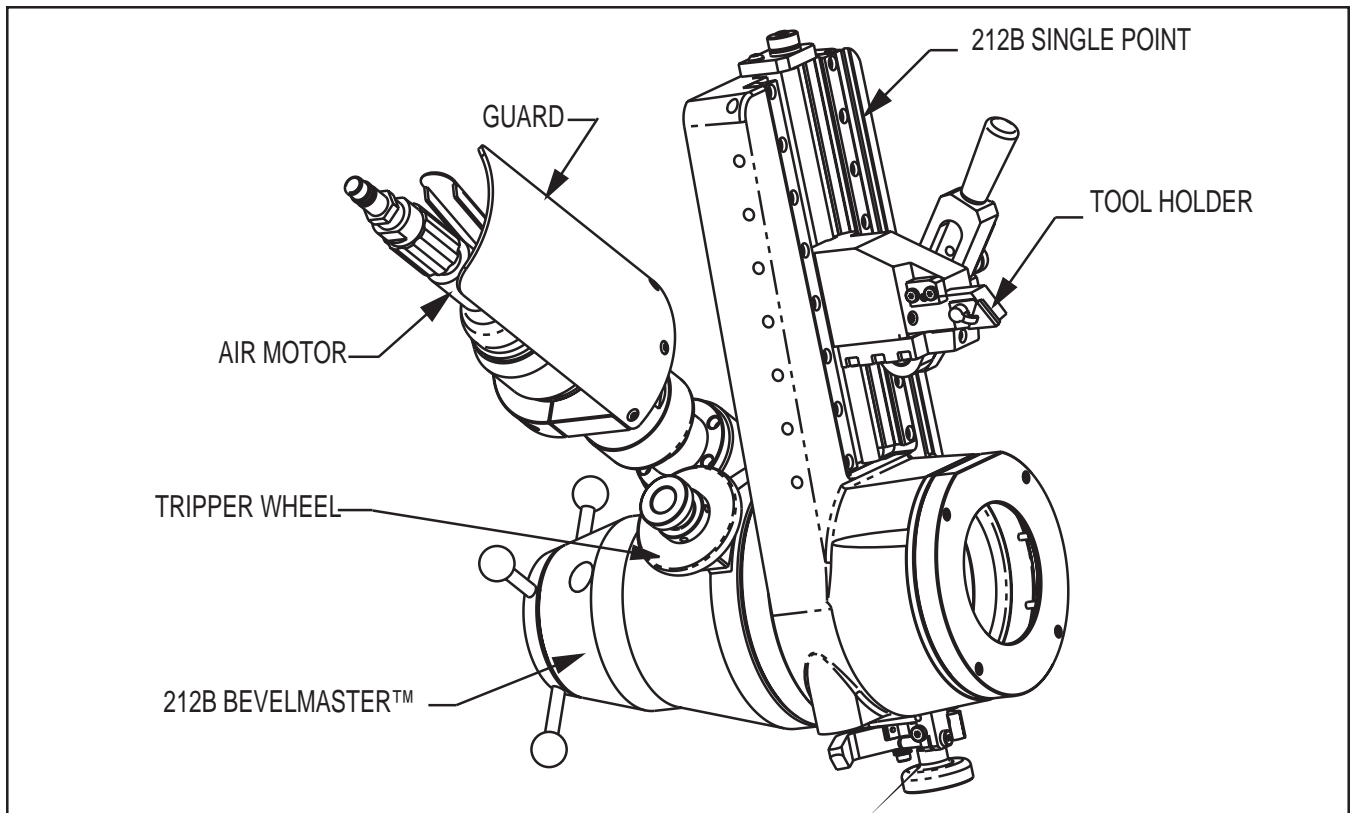
Disconnect Power supply from the 212B Bevelmaster.™

Remove the Mandrel Shaft and the Tool Holders from the 212B Bevelmaster™ and return to the carrying case.

Clean the Main Shaft, bore of the 212B Bevelmaster™ and the mounting face of the Single Point. Locate the location ring of the Single Point in the bore of the 212B Bevelmaster™ and secure using the 5 Cap screws provided (P/N 33-0059).

Attach the Motor guard to the Air Motor.

WARNING: Using the 212B Single Point without the Air Motor Guard may result in injury to the operator.



212B BEVELMASTER™ SINGLE POINT / FLANGE FACER

Attach the two tripper brackets to the 212B BEVELMASTER™.

Loosen the Torque Acceptance Keys in the 212B BEVELMASTER™.

Remove the cover plate from the bearing of the Single Point to gain access to the adjustment screws for the split mandrel sleeve.

Loosen the 16 set screws and 8 cap screws that hold the Split Mandrel Sleeve in position.

Slide the Mandrel Boss Assembly into the Single Point and through the 212B Bevelmaster™ until it comes to a solid stop against the Torque Acceptance Keys.

Rotate the Mandrel Boss Assembly as required until the mandrel slots engage the Torque Acceptance Keys.

CAUTION:

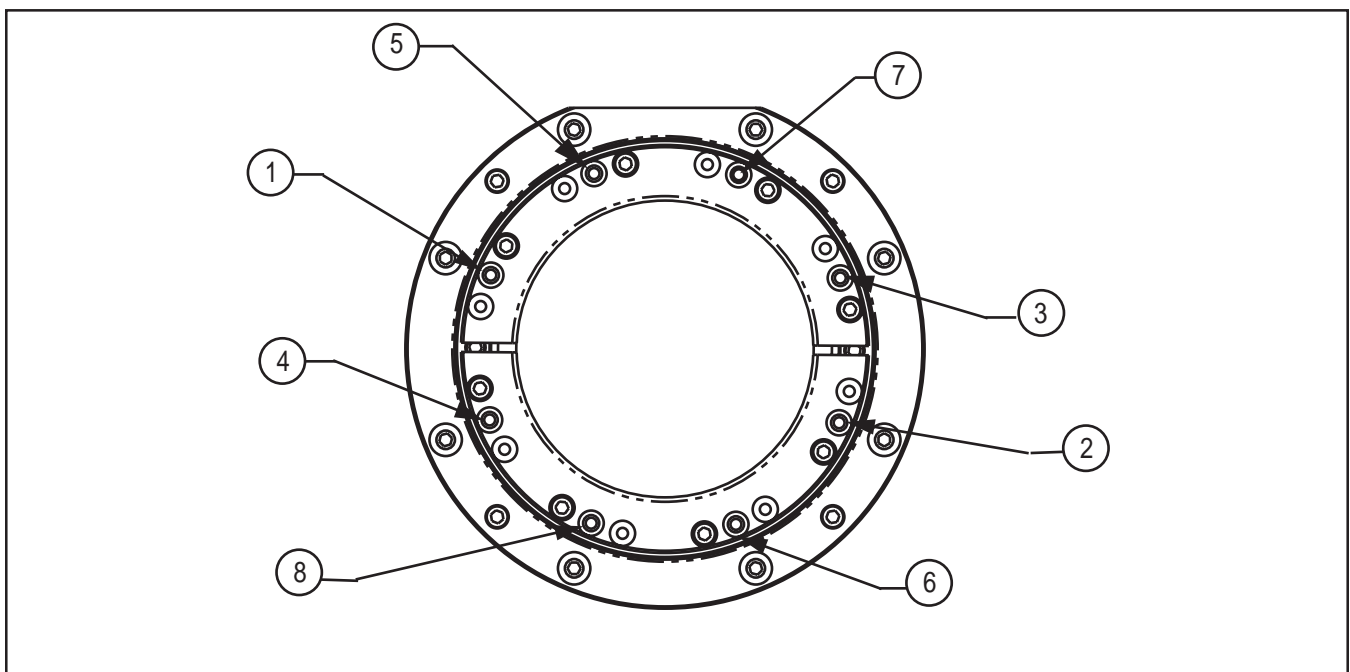
Since the Mandrel Shaft will contact the torque acceptance keys before the Feed Nut engages the Mandrel Boss assembly threads, caution should be taken not to force (or Allow) the Mandrel to impact the lead threads of the Feed Nut with the lead threads of the Mandrel.

Engage the Feed Handle and wind the Mandrel Boss Assembly back into the Single Point.

Tighten the 8 cap screws in the Split Mandrel Sleeve in the order shown, until the Mandrel Boss Assembly is located centrally in the Single Point and slides with some resistance when the feed handle of the 212B Bevelmaster™ is rotated.

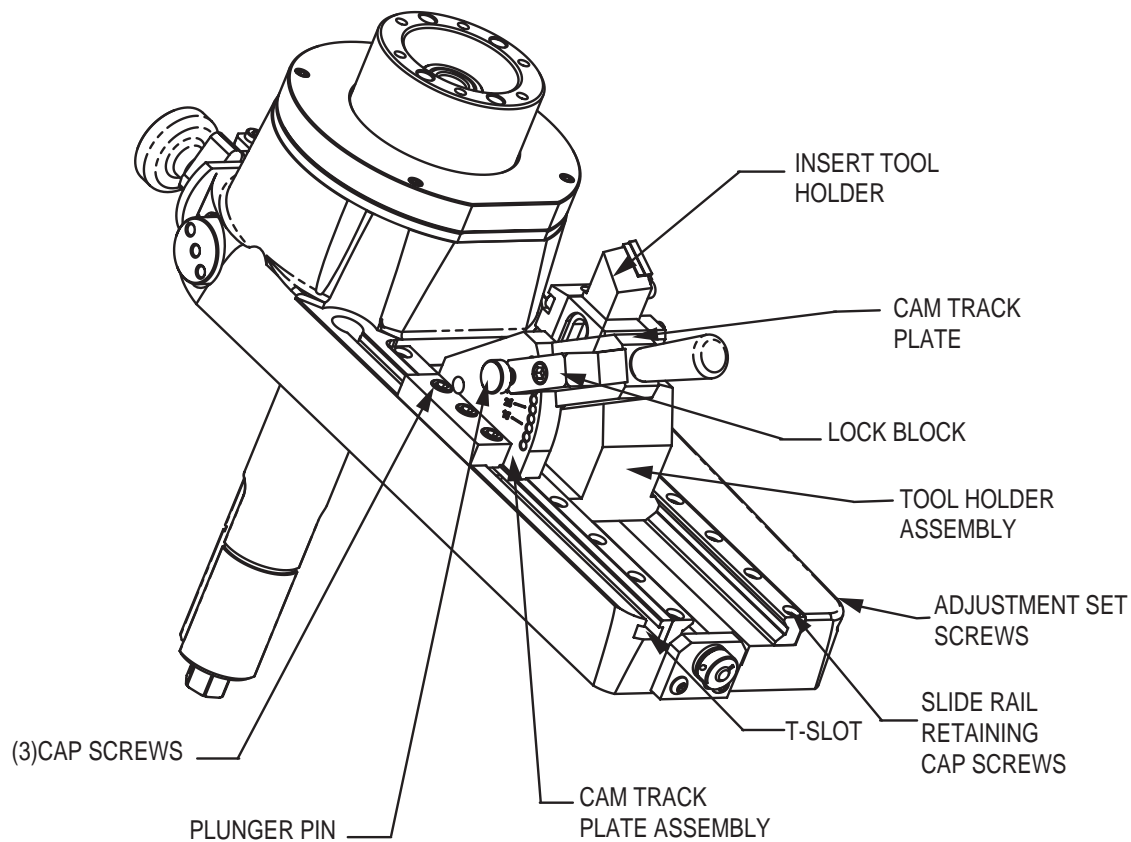
Tighten the 16 Screws around the split sleeve mandrel.

Replace the Cover Plate.



NOTE:

After the Mandrel Boss Assembly has been set once, it should not need readjustment after removal or reinstallation. Readjustment may be necessary for wear adjustment.



Parts of the Tool Holder Mechanism

TOOL SLIDE ADJUSTMENT 212B SINGLE POINT

When To Adjust:

The tool slide does require adjustment more frequently when the tool is new because of “break in”.

It is recommended that the slide be adjusted or checked for looseness everyday, or after any long period of use.

If any unusual chatter occur, the tool slide could be one of the possible sources of instability that produces chatter or a bad finish.

When ever the tool is to be lubricated or serviced.

Procedures:

To adjust the tool slide, remove the cam track plate assembly. To do so, loosen the 3 cap screws in the “T” slot. Advance the tool holder assembly to the opposite end of the boss. Loosen the lock block, pull back the plunger pin, swing around the track plate and slide off the end of the main plate the cam track plate assembly.

Using a “T” wrench, rotate the feed knob assembly to feel the resistance of the tool slide all the way down the full length of the slide. If the tool appears loose in some areas, the tool slide needs adjustment.

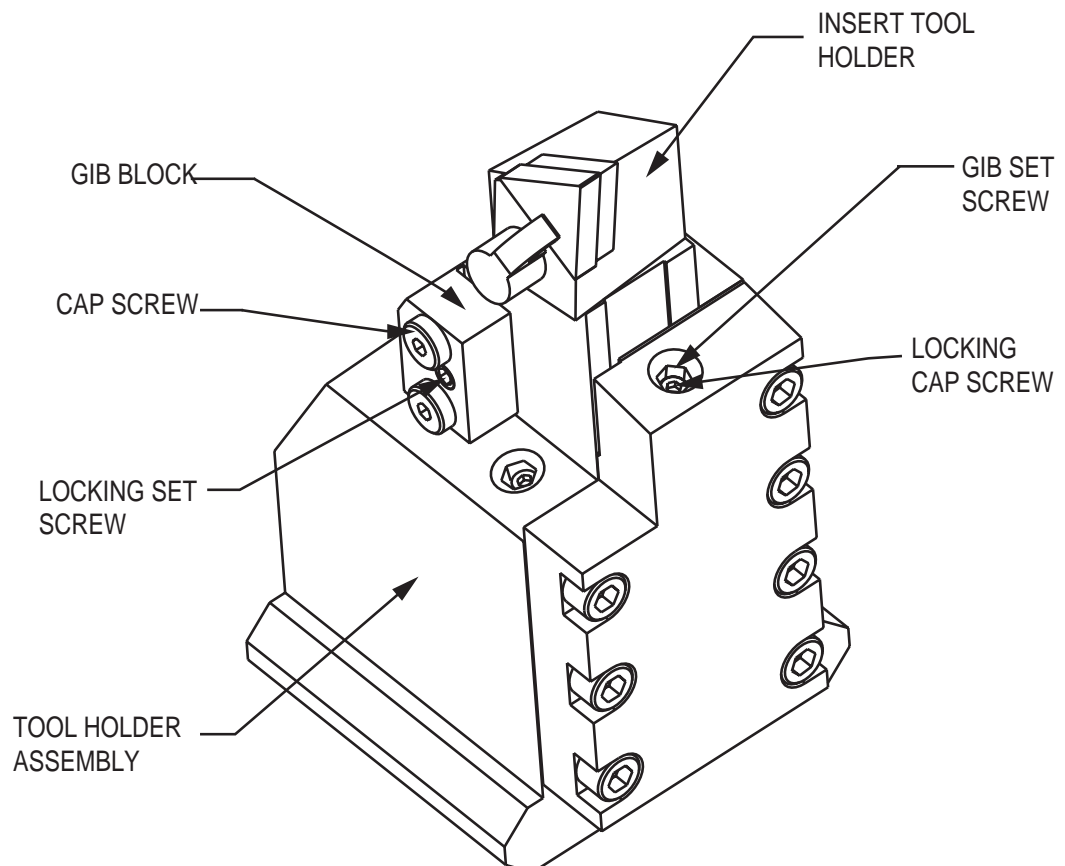
With a “T” wrench, loosen the slide rail retaining cap screws, (leave these screws somewhat snug so that the rail doesn’t flop around) on the adjusting set screw side to allow adjustment of the slide rail with the adjusting set screws. Where ever the tool feels loose, tighten gently the corresponding set screws, and at the same time, while tightening the set screws, feel the tool slide by rotating the feed knob to ensure that the resistance is constant all along the full length of the rails.

When the slide feels snug, but not to tight all the way down the full travel, tighten the slide rail retaining cap screws.

Recheck and feel the tool slide to make sure it does not bind anywhere on the full length of the travel. If it does bind in some area, loosen about a 1/16 of a turn or less the corresponding adjusting set screw(s), and with a soft hammer or a piece of wood, tap gently the tool slide from the opposite side to settle the rail against the adjusting set screw. This should free the slide.

If the slide is loose, loosen the corresponding slide rail retaining cap screw(s) (leaving it (them) somewhat snug) and tighten very gently the corresponding set screw(s). When the slide feels right, retighten the retaining cap screw(s).

When doing any slide adjustment, rotate the feed knob at the same time and feel the resistance of the slide at all time this procedure will ensure a fast and perfect adjustment every time.



Tool Holder Gib Adjustment

TOOL HOLDER ADJUSTMENT.

When To Adjust:

The Tool Holder will not require adjustment when the Insert Tool Holder and the Counterbore Tool Holder are changed.

It is recommended that the Tool Holder be adjusted or checked for looseness every day, or after any long period of use.

If any unusual chatter occurs, the Tool Holder Gibs could be one of the possible sources of instability that produces the chatter or a bad finish.

When ever the tool is lubricated or serviced.

Procedures:

To adjust the Tool Holder, loosen the 3 cap screws in the “T” slot, and pull back the plunger pin, so the Cam Track Plate Assembly moves freely.

Loosen the two low head cap screws and one set screw in the Gib Block.

Using a “L” wrench loosen the two #5 cap screws that are found inside the Adjustable Gib screws.

Tighten the two Adjustable Gib screws until the Gibs are snug onto the Tool Holder. Move the Cam Track Plate Assembly Arm to check the resistance of the Gibs. The Tool Holder should be tight but not locked up.

Tighten up the two low head cap screws so the Gib Block just locks against the Tool Holder, lock in position with the center set screw.

Load the Tool Holder.

Select the correct cutting tool to be used. The Single Point comes ready with the standard cutting tool already for cutting. The Insert should be checked to ensure that it is not worn or chipped, replace or index as necessary.

If a counterboring operation is required, the Insert Tool Holder will have to be changed to the Counterbore Tool Holder (# 49-0374).

To remove the Insert Tool Holder, loosen the shoulder screw, remove the Insert Tool Holder and change out to the Counterbore Tool Holder.

*A Tool Holder Extension Adaptor (P/N 27-0626 and P/N 33-2123, included in the 212B Miter Mandrel Kit) allows for extended reach of the tool holder when mounting in short perch applications on 8” to 16” pipe.³

NOTE: Insure that no Tool Bit is installed backwards.

CAUTION: Use of dull or improperly designed Tool Bits or Tool Bits not manufactured by Tri Tool Inc. may result in poor performance and may constitute abuse of this machine and therefore voids the Tri Tool Inc. Factory Warranty.

NOTE: The cutting edge of the tool must be located on the radial centerline.

Set the Tool Holder to the required bevel angle required and tighten the Lock Block.

NOTE: The Can Track Plate /assembly has a pre-selected angular position between 0° and 30° in 5° increments, plus a position at 37.5° and 45°. These are selected by engaging the plunger pin at the appropriate position.

Using the 212B Single Point and Miter Mandrel Kit.

The Miter Mandrel Head this should now be fitted into the pipe ready to accept the 212B Single Point.

Refer to the Model 212B-Miter Mandrel Head Manual (#92-0738).

Attach the 212B Single Point to the Miter Mandrel. Align the two dowel pins in the Mitre Mandrel Head with the holes in the Mandrel Boss Assembly and tighten the 212B Single Point Wrench to secure the system to the Miter Mandrel ready for machining.

Using the 212B Single Point and 3 Jaw Head Kit.

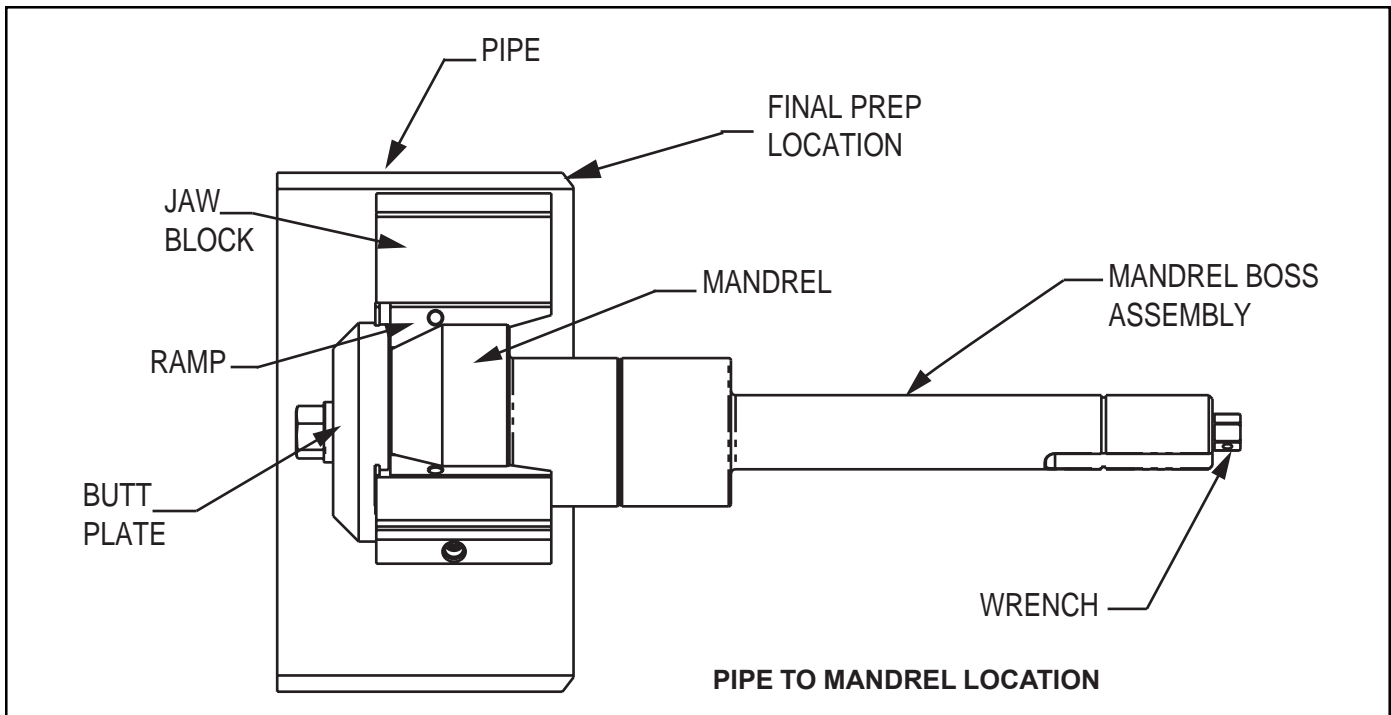
Attach the Mandrel Head to the Mandrel Boss Assembly using the 6 cap screws. Engage the Butt Plate Lead screw by turning the Wrench in the Mandrel Boss Assembly.

Select the recommended Jaw Blocks and Ramp Set combination that matches the Internal Diameter of the pipe (Refer to the Jaw Blocks and Ramp Set Table).

Install the Single Point into the pipe.

CAUTION: In order to avoid cutting the Jaw Blocks during the machining operation, the Mandrel must be installed beyond the final end preparation.

Tighten the Wrench to force the Jaw Blocks out to the inside diameter of the pipe.



Position the Tool Holder For Cutter.

Adjusting The Cam Track Plate.

Loosen the lock block screw then pull the plunger pin. Pivot the cam track plate to the desired angle, each preset adjustment hole in the angle plate is in 5° increment from 0° to 30°, one at 37 1/2° and one at 45°. Let go of the plunger pin into a preset adjustment hole and tighten the lock block screw securely.

Positioning The Cam Track Plate Assembly.

Loosen the three angle plate locking cap screws. So that the cam track plate assembly can slide easily with the tool holder assembly.

Depress the feed knob to its innermost position (infeed) or pull it to its outer most position (outfeed), rotate the feed knob clockwise until the tool bit insert is approximately 1/8" (3.2mm) passed the inside diameter of pipe to be cut. Push outward the cam track plate assembly, until the cam follower is at the bottom end of the cam track plate slot, this will be the end of the radial travel. Now tighten the three angle plate locking cap screws.

Positioning The Tool Holder For The Cutting Operation.

Pull the feed knob to its outermost position and rotate the feed knob clockwise until the tool bit clears the OD of the pipe or tube to be cut (approximately .050" (1.3mm) above the highest point on the pipes OD).

Rotate the 212B Bevelmaster™ feed handle clockwise until the tool holder is above the pipes OD by the amount of material to be removed in one pass (depending on material as described in cutting speeds and feeds mentioned in this manual).

Securing The Model 212B BEVELMASTER™.

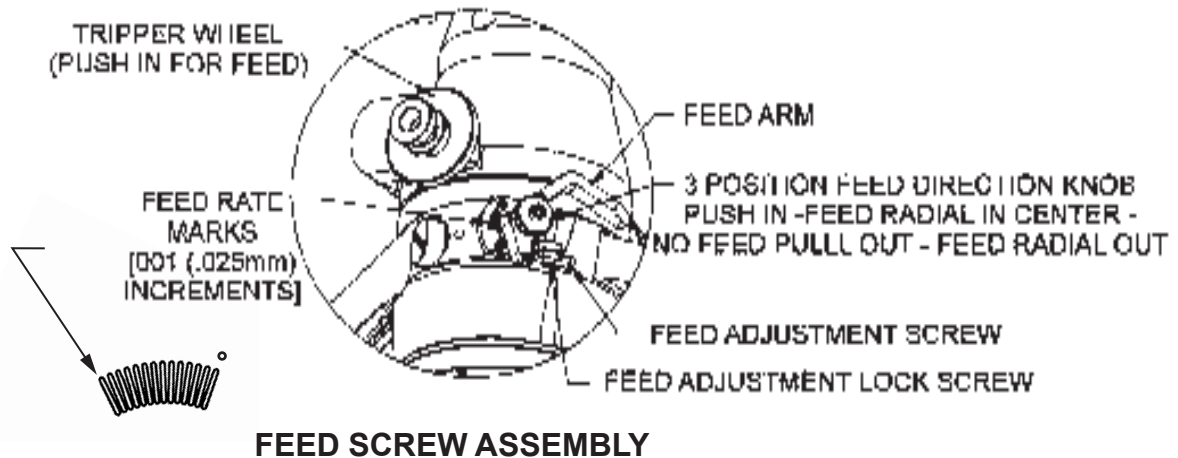
CAUTION: Do not start the tool without having read and understood the “Cutting speeds and feeds” section of this manual.

Once in position, rotate and tighten the torque keys of the model 212B Bevelmaster™, (located ahead of the feed handle) to secure the position and restraint the cutting torque.

Connect the power source to the model 212B Bevelmaster™, and start the cutting operation as described in “Cutting speeds and feeds” of this operator manual.

Select the Feed Rate.

Turn the Feed Adjustment Screw to the required feed rate.



NOTE: Feed Rate increments of .001” (.025mm) is for one Tripper, to double the feed rate engage Both Tripper Wheels.

Machining of the Pipe.

Rotate the Feed Handle to move the Cutting Tool into position to start the cut.

Lock the Torque Acceptance Keys against the Mandrel Boss Shaft, to lock the 212B Single Point in position.

Select the direction of feed. Push the Feed Knob In to feed Radially in, Pull out to feed Radially Out.

CAUTION: Changing feed direction must be accomplished with the power off.

Connect the power supply to the 212B BEVELMASTER.™

Turn the power supply on, slowly, letting the cutter rotate around the pipe to ensure that it does not hit any part of the pipe.

Adjust the cutting speed by rotating the flow control valve on the motor. (Refer to the Cutting Speed Section for the recommended cutting speed).

Engage the Tripper Wheel(s) to start the cut.

At the end of the cut stop the motor.

Release the Torque Acceptance Keys and back the machine away from the pipe by turning the Feed Handle, on the 212B Bevelmaster™, Half a turn.

Reverse the direction of the feed by Pushing, or Pulling the Feed Knob. Turn the feed Knob until the cutter returns to the start of the cut.

Rotate the Feed Handle, on the 212B Bevelmaster™, to the next depth of cut, lock the Torque Acceptance Keys and begin cutting.

Continue until the Prep is completed.

NOTE:

Use a Wrench to speed the resetting of the Cutting Tool in the end of the Feed Knob on the 212B Single Point Feed Assembly

CAUTION:

If the Cutting Tool runs out of feed travel, the actuating arm of the feed assemble will trip, stopping the feed. Stop the machine and reset the Tool Assembly to achieve the correct feed travel.

Disconnect Power supply.

Loosen the Torque Acceptance Keys and back the machine away from the pipe by turning the Feed Handle, on the 212B Bevelmaster™.

Remove the 212B Single Point from the Pipe.

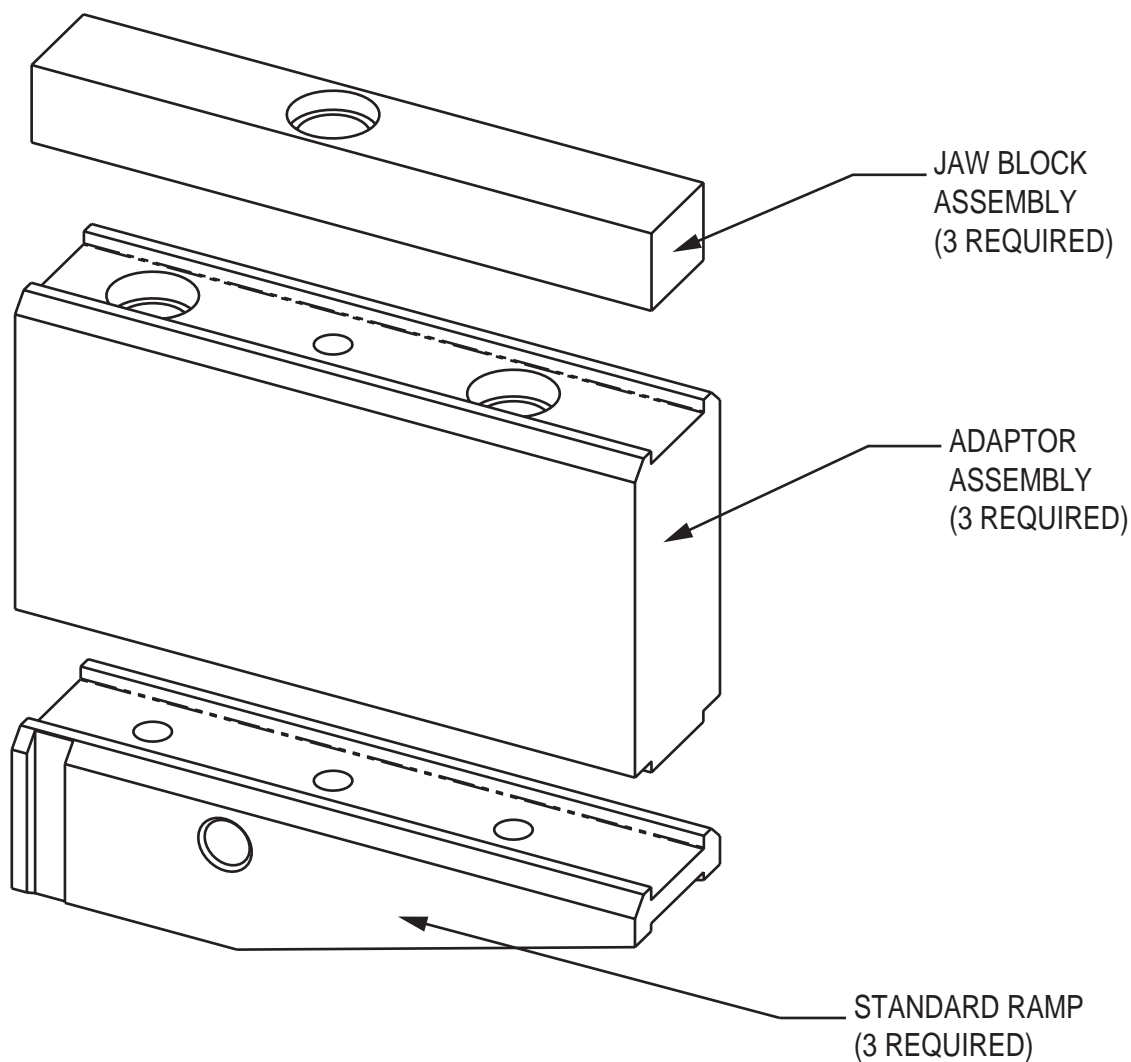
For the Miter Mandrel set up, turn the Wrench until the 212B Single Point comes away from the Miter Mandrel. Remove the Miter Mandrel separately from the pipe.

For the Jaw Block set up, turn the Wrench on the Mandrel until the Jaw Blocks are released from the inside of the pipe, pull the machine away from the pipe.

If the next bevel is the same repeat the previous set up procedure.

If the bevel is a different angle the Cam Track Plate Assembly will need to be reset.

JAW BLOCKS AND RAMP SETS



JAW BLOCKS, RAMPS AND ADAPTORS

MOUNTING RANGE

MINIMUM ID	MAXIMUM ID	STANDARD RAMP (3 REQUIRED)	ADAPTOR (3 REQUIRED)	JAW BLOCK (3 REQUIRED)
6.00" (152.4mm)	7.11" (180.6mm)	48-0520		
6.80" (172.7mm)	8.10" (205.7mm)	48-0520		08-0185
7.80" (198.1mm)	9.06" (230.1mm)	48-0520		08-0186
8.80" (223.5mm)	10.00" (254.0mm)	48-0520		08-0187
9.80" (248.9mm)	11.00" (279.4mm)	48-0520		08-0188
10.86" (275.8mm)	11.95" (303.5mm)	48-0520	08-0189	
11.84" (300.7mm)	12.95" (328.9mm)	48-0520	08-0189	08-0185
12.97" (324.9mm)	13.92" (353.6mm)	48-0520	08-0189	08-0186
13.76" (349.5mm)	14.89" (378.2mm)	48-0520	08-0189	08-0187
14.77" (375.2mm)	15.87" (403.1mm)	48-0520	08-0189	08-0188
15.73" (399.5mm)	16.83" (427.5mm)	48-0520	08-0433	
16.73" (424.9mm)	17.83" (452.9mm)	48-0520	08-0433	08-0185
17.73" (450.3mm)	18.80" (477.5mm)	48-0520	08-0433	08-0186
18.68" (474.5mm)	19.78" (502.4mm)	48-0520	08-0433	08-0187
19.65" (499.1mm)	20.75" (527.1mm)	48-0520	08-0433	08-0188
20.60" (523.2mm)	21.72" (551.7mm)	48-0520	08-0434	
21.61" (548.9mm)	22.72" (577.1mm)	48-0520	08-0434	08-0185
22.58" (573.5mm)	23.66" (601.0mm)	48-0520	08-0434	08-0186

CUTTING SPEEDS AND FEEDS

The following information is provided in good faith for general guidance to the operator. Different materials, pipe diameters, use of coolants or dry cutting, will change these procedures. To accomplish the best cycle times and surface finishes, experimentation may be necessary to obtain optimum results.

The model 212B-SP uses titanium nitrate coated carbide inserts, which will provide good results for most applications.

The model 212B BEVELMASTER™, powered with the recommended air supply will deliver a head stock maximum free speed of 22 rpm (no load). At maximum h.p. the headstock will rotate at 11 rpm (Approximately full load). Using these numbers, it is possible to establish the right speeds for different materials to be cut.

One of the worst conditions, is a 24" dia. (609.6mm) maximum cutting diameter, stainless pipe or tube, dry cutting. When the single point unit is in position, (adjusted to take a chip width of approximately .080" (2.0mm), and the feed rate adjusted to .003" to .004" (.08mm to .10mm) per feed tripper) and ready to start cutting, depress the throttle, and slowly rotate the headstock. Observe for any interference between the tool and the pipe for one full revolution. If every thing clears, engage the two (2) feed tripping wheels. Increase the rotating speed gradually, to approximately 10 to 15 rpm, when the tool bit touches the pipe, at one point, reduce the rotating speed to approximately 5 to 8 rpm, and disengage one (1) feed tripping wheel. With this feed rate and rotation speed increase the throttle speed gradually, to maintain the rotation speed as more power is required until the tool has a continuous chip load. As the tool obtains a continuous chip load, the rpm drops to a slower speed. Now increase the throttle speed to maximum. Observe the chip, the finish, and any possible chatter that can occur in the cut from a non-optimum feed and/or rpm condition. The tool holder is equipped with 2 tapered gibs and if a gib is loose, chatter will occur in the cut, most likely around the full perimeter of the pipe, and further adjustments will be futile. If the gibs are tight, and localized chatter, quadrant chatter or resonance occurs, varying the rpm of the cutting head by rotating the throttle valve, slower and faster alternately, for each rotation of the cutting head, will get rid of resonance that can occur with certain types of materials and/or conditions. Make sure that the mandrel head is mounted very tight in the pipe.

If results are satisfactory, leave the rpm and the feed rate alone. To improve productivity try increasing the feed rate by engaging the second tripping wheel. The rpm will drop again. Increasing the feed rate will reduce the rpm, and is not always a solution to obtain a higher material removal rate. In most cases, with carbide inserts, a higher rpm, less chip width, and a high feed rate, is preferable. If surface finish and/or speed is satisfactory, you have it "dialed in"! . If not decreasing or increasing the chip width, and/or increasing or decreasing the feed rate, and/or decreasing or increasing rotation speed, normally the right combination of feed rate, rpm and chip width will produce satisfactory results. Again, materials, and different conditions, alter the rules. Common sense and analytical deduction will solve most problems.

For softer materials like most carbon steels, the chip width can be increased,(without exceeding the maximum recommended chip width) the feed rate can be increased, and the rpm can also be increased, again, there are no fixed rules.

NOTE:

On the last finish pass, a lower feed rate, combined with a lower RPM and a lesser chip width, will result in the best surface finish for most applications.

Tri Tool Inc. provides training by our specially trained field technicians with their full knowledge of Tri Tool Inc. equipment and factory support.

MAINTENANCE

GENERAL:

All components should be cleaned and coated with a light film of oil prior to use. Use a clean, non-detergent oil, preferably SAE 10 (90 SSU) or lighter. If the 212B Series Single Point is operated in such a manner that the tool holder collect debris while cutting, the tool holder and the feed shaft should be cleaned after each cutting operation.

Tool life may be severely shortened, unless chips and/or other debris that have been deposited on the cutting head during the machining operation are removed.

RECOMMENDED MAINTENANCE SCHEDULE:

Daily maintenance when the unit is in operation includes wiping the unit down and spraying with rust preventative under severe humidity conditions.

Visually inspect for loose screws, missing screws, damage, etc.

After every 20 hours of actual operation, lubricate the male and female tool holder slides.

After every 40 hours of actual operation, thoroughly clean and lubricate male and female tool slides, and tripper bracket assembly.

If the 212B Series Single Point is to be stored or if it will remain out of service for a significant period of time (30 days or more), it should be thoroughly cleaned, lubricated and sprayed with a rust preventative prior to storage.

TOOL HOLDER MAINTENANCE:

Clean the tool holder, and the feed components.

Inspect these parts for damage and replace as required.

Lubricate and reassemble.

LUBRICANT RECOMMENDATIONS:

The slide rails and tool holder require a light oil such as SAE 10 light machine oil.

The tripper bracket assembly also require a SAE 10 light machine oil for normal conditions and under dusty conditions a silicone, graphite or molybdenum disulfide 'dry' lubricant.

A light film of all purpose grease may be used, but it must be checked for grit contamination frequently.

TROUBLE SHOOTING

Problem: The Tool Bit Chatters.

- The tool bit is loose or overextended.
- The tool bit is damaged.
- The tool holder is too loose in the guide.
- The cutting speed is too fast.
- The jaw blocks are loose in the pipe or tube.
- Cutting fluid is required.

Problem: There is excessive Tool Bit wear.

- The pipe or tube material is too hard or abrasive.
- The cutting speed is too fast.
- Cutting fluid is required.
- A dull Tool Bit is causing surface hardening conditions (Stainless pipe or tubing.)
- There is scale or other foreign matter on the pipe or tube, which is dulling the tool bit at the start of the cut.
- The tool bit is incorrect for the material being cut.

Problem: The Tool Bit is diving and the Bevelmaster™ is stalling.

- The tool bit is dull, chipped, etc.
- The tool bit is overextended.

Problem: The surface finish is rough.

- The tool bit is dull, chipped, etc.
- Metal build/up on the cutting edge of the tool bit is creating a false cutting edge.
- Cutting fluid is required.
- The cutting speed is incorrect.

Problem: The tool holder is not feeding.

- The feed gear shear pin is broken.
- The feed screw is stripped.
- The feed nut is stripped.
- The slide rails are too tight.
- The Actuating Arm has Tripped.
- The Feed Knob has not been engaged.

Problem: There is a loss of air power.

- The air supply pressure is too low.
- The air filter is plugged.
- The air line size is insufficient.
- The air line is too long.

Problem: There is a loss of hydraulic power.

The hydraulic supply pressure is too low.

The hydraulic filter is plugged.

The hydraulic line size is insufficient.

The hydraulic line is too long.

Problem: The Bevelmaster™ is slipping on the pipe or tube.

The jaw blocks are not in full contact with the pipe or tube.

The clamping pressure is too light.

Scale and/or other foreign material is present on the pipe or tube.

Weld seams, swelling, or bumps under the Clamping Pads are preventing full contact.

Dull tool bits are causing extra force in the axial and/or radial direction.

The pipe or tube wall is too thin which allows the tube wall to flex and the machine to move.

Problem: The air motor will not start.

The air power supply is shut off.

The air motor is damaged and will not run free.

The air motor needs lubrication.

Add lubrication and do not run the air motor for a few minutes, then try running the air motor again.

Tap on the side of the air motor casing lightly with a piece of wood or with a soft rubber mallet just in case the vanes may be sticking. Sand or other foreign material may be in the vanes of the air motor..

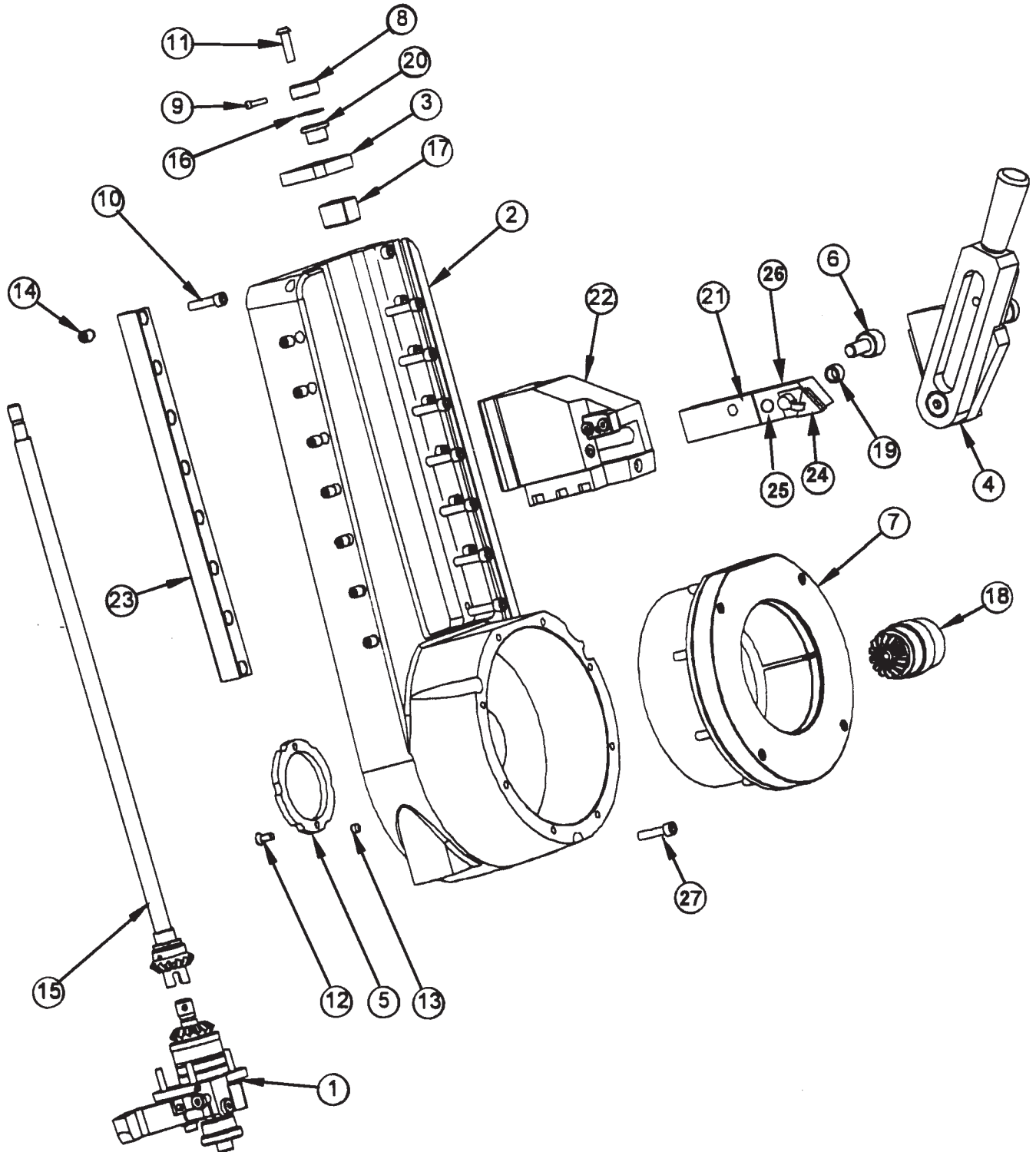
Problem: The hydraulic motor will not start.

The hydraulic power supply is shut off.

The hydraulic motor is damaged and will not run free.

PARTS LISTS

SINGLE POINT ASSEMBLY P/N 82-0128)

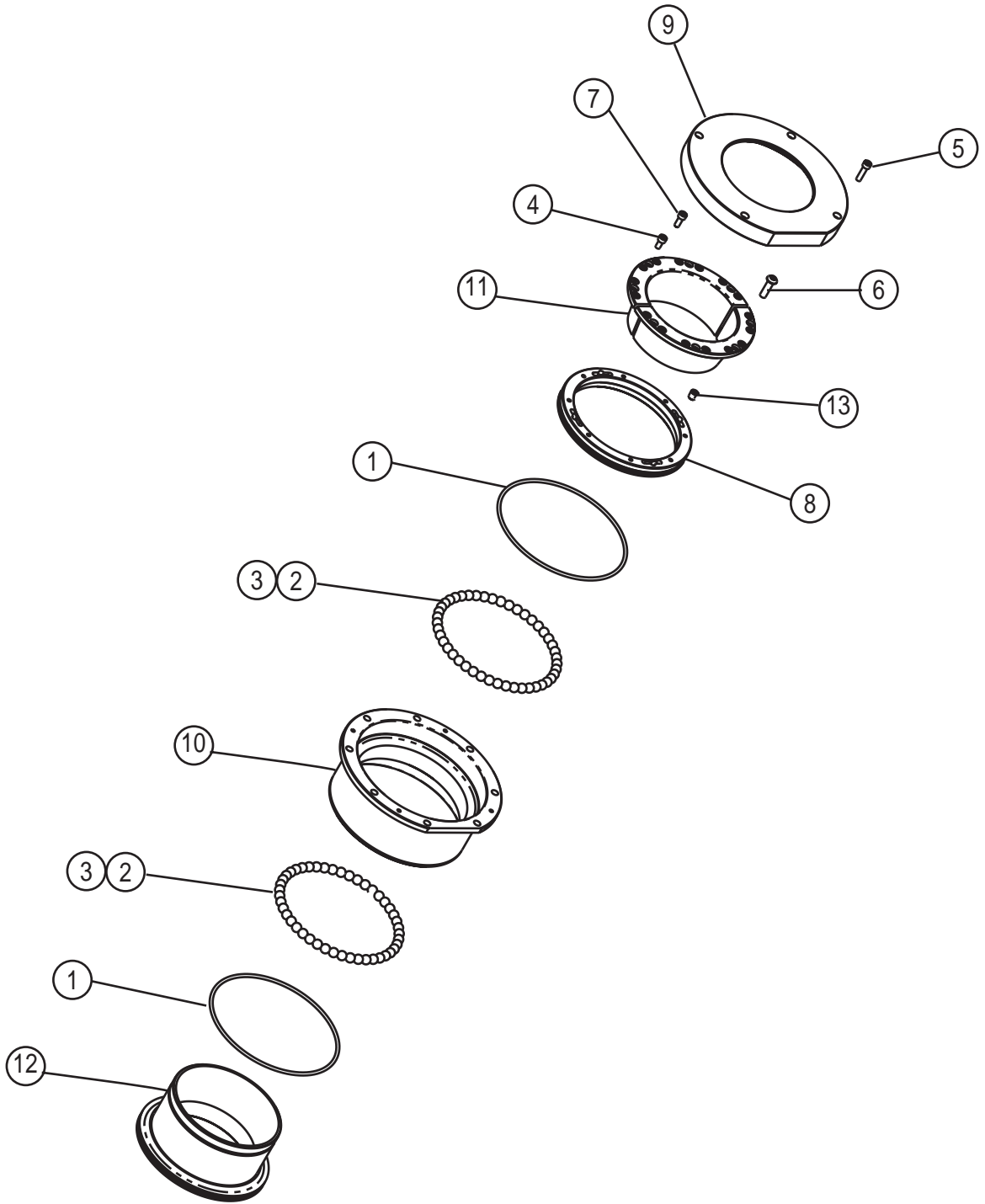


212B BEVELMASTER™ SINGLE POINT / FLANGE FACER

Parts List: Single Point Assembly (P/N 82-0128)

Item No	Part Number	Description	Qty
1	16-0037	Knob Assy, Feed	1
2	24-1566	Plate, Main 212B SP	1
3	24-1571	Plate, Feed Thrust	1
4	24-1580	Plate, Cam Track Assy	1
5	27-0608	Adaptor, Location	1
6	29-0219	Cam Follower	1
7	29-0363	Bearing Assy, Main	1
8	30-2721	Collar	1
9	33-0013	Screw, Cap (#6-32 x .50)	1
10	33-2102	Screw, Cap, Low Head (1/4-20 x 1.00)	16
11	33-0288	Screw, Button Head (1/4-20 x .88)	2
12	33-0352	Screw, Flat Head (#10-24 x .50)	2
13	33-0499	Screw, Set, Cup Point (1/4-20 x .25)	2
14	33-0996	Screw, Set, Half Dog (5/16-18 x .50)	8
15	33-2074	Feedscrew Assy, 1/2 -10, ACME	1
16	34-0107	Washer, Thrust	1
17	35-0536	Nut, ACME, 1/2-10	1
18	39-0855	Gear Assy, Idler	1
19	44-0481	Spacer, Cam	1
20	45-0294	Bushing, Flanged	1
21	49-0367	Holder, Tool, Slide	1
22	49-0331	Holder Assy, Tool	1
23	66-0172	Rail, Slide	2
24	30-0554	Insert, Cutting	1
25	33-2123	Screw, Shoulder	1
26	49-0368	Holder, Tool, Insert	1
27	33-0059	Screw, Cap, 5/16-18 X 1 3/4"	REF.
Not Shown:			
	36-0003	Wrench, 3/32 HEX, L	1
	36-0005	Wrench, 1/8 HEX, L	1
	36-0007	Wrench, 5/32 HEX, L	1
	36-0008	Wrench, 3/16 HEX, L	1
	36-0009	Wrench, 7/32 HEX, L	1
	36-0010	Wrench, 1/4 HEX, L	1
	36-0012	Wrench, 3/8 HEX, L	1
	36-0018	Wrench, 1/8 HEX, T	1
	36-0020	Wrench, 5/32 HEX, T	1
	36-0021	Wrench, 3/16 HEX, T	1
	36-0023	Wrench, 1/4 HEX, T	1
	49-0374	C'Bore Tool Holder Assy	1
	33-0516	Screw, Set, Cup Point (5/16-18 x .50)	6
	49-0369	Holder, C'Bore Tool	1

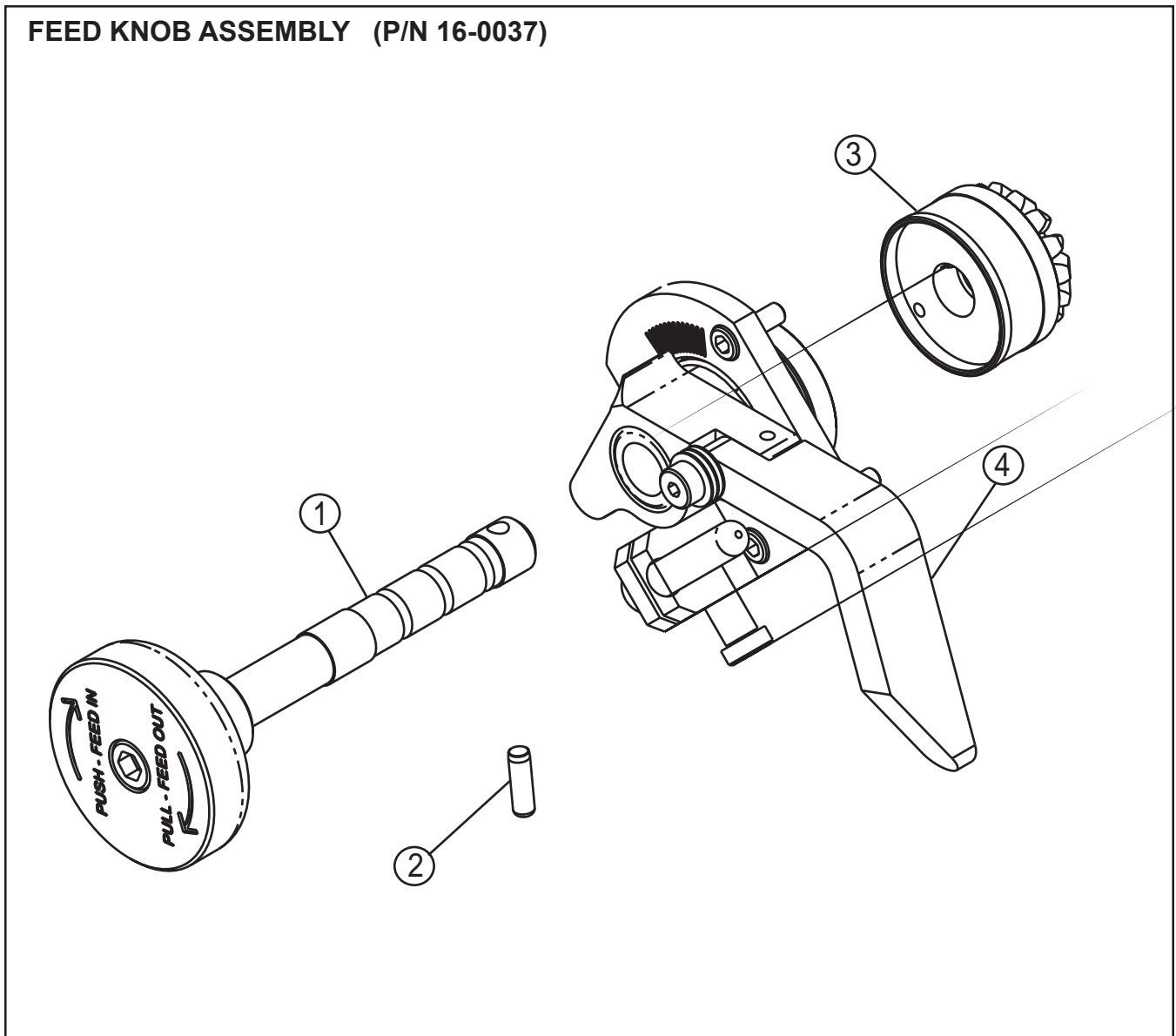
MAIN BEARING ASSEMBLY P/N 29-0363)



Parts List: Main Bearing Assembly (P/N 29-0363)

Item No	Part Number	Description	Qty
1	28-0002	O-Ring	2
2	30-2612	Ball Bearing, Steel	47
3	30-2707	Ball Bearing, Teflon	47
4	33-0028	Screw, Cap (#10-24 x .50)	8
5	33-0030	Screw, Cap (#10-24 x .75)	4
6	33-0288	Screw, Button Head (1/4-20 x .88)	8
7	33-0027	Screw, Cap (#10-24 x .38)	16
8	35-0535	Nut, Preload Retaining	1
9	43-0516	Plate, Cover	1
10	46-0470	Sleeve, Main Bearing	1
11	46-0471	Sleeve, Mandrel Tapered	1
12	46-0472	Sleeve, Tapered Mandrel, Outer	1
13	54-0403	Pressure Plug	4

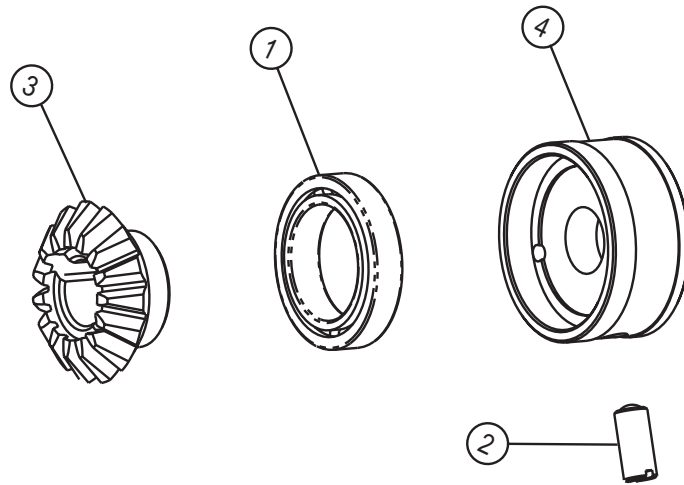
FEED KNOB ASSEMBLY (P/N 16-0037)



Parts List: Feed Knob Assembly (P/N 16-0037)

Item No	Part Number	Description	Qty
1	20-0700	Shaft Assy, Feed	1
2	32-0588	Pin, Dowel (.188 Dia x .675)	1
3	39-0853	Gear Assy, Reverse	1
4	63-0142	Arm Assy, Feed	1

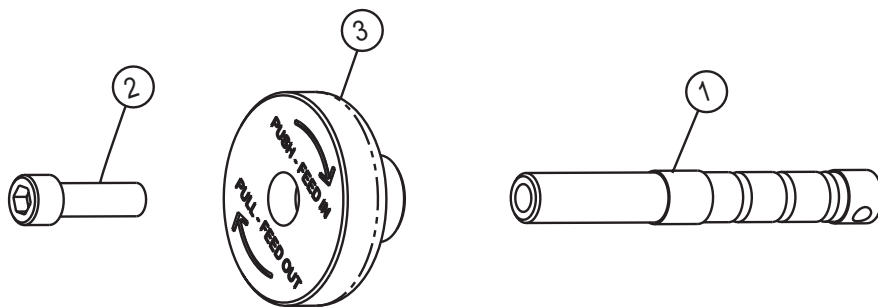
REVERSE GEAR ASSEMBLY (P/N 39-0853)



Parts List: Reverse Gear Assembly (P/N 39-0853)

Item No	Part Number	Description	Qty
1	29-0096	Bearing Ball	1
2	30-0125	Plunger, Ball	1
3	39-0900	Gear, Reverse drive	1
4	44-0482	Spacer, Feed Bearing	1

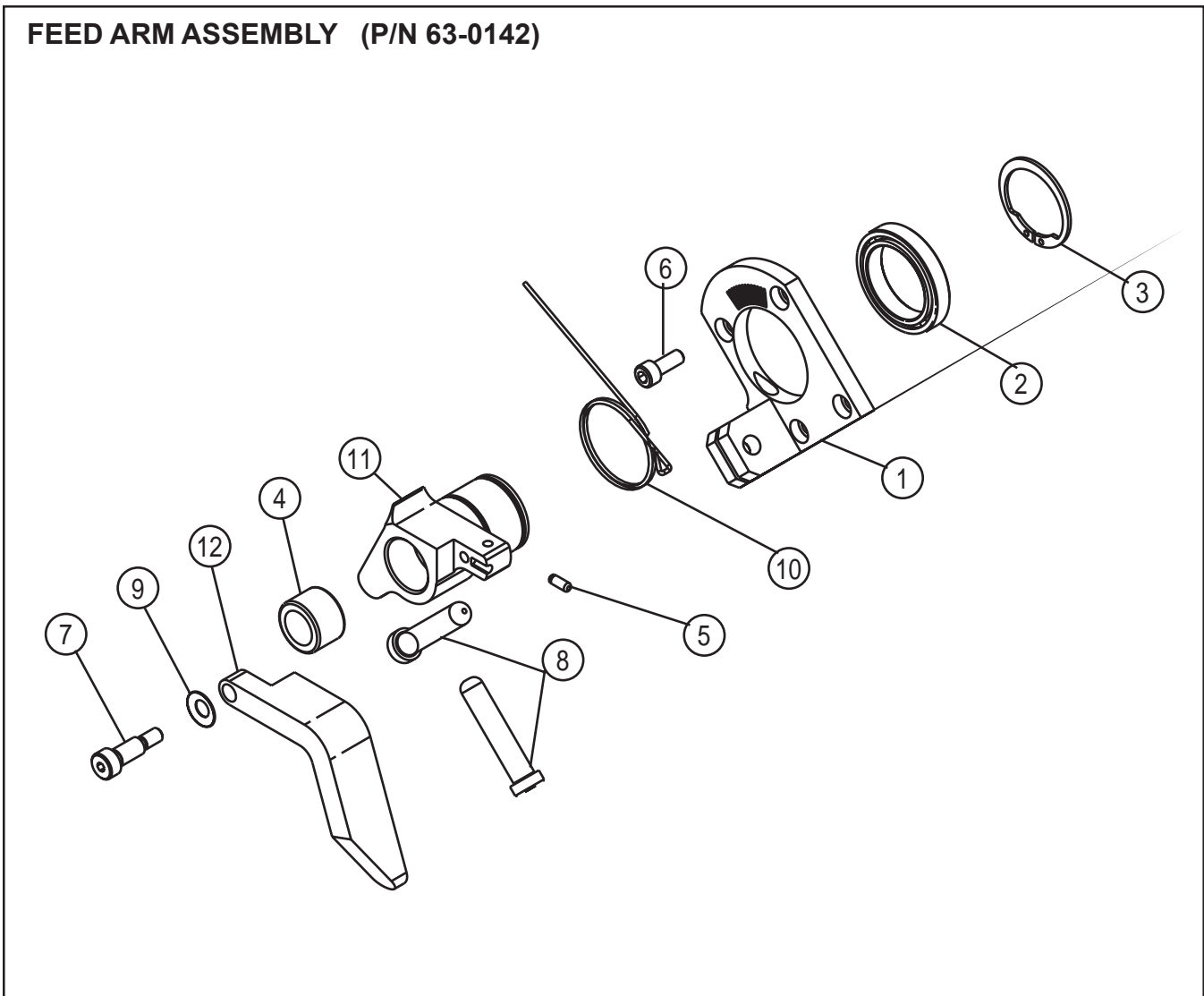
FEED SHAFT ASSEMBLY (20-0700)



Parts List: Feed Shaft Assembly (P/N 20-0700)

Item No	Part Number	Description	Qty
1	20-0695	Shaft, Feed	1
2	33-0056	Screw, Cap (5/16-18 x 1.00)	1
3	42-0178	Knob, Feed	1

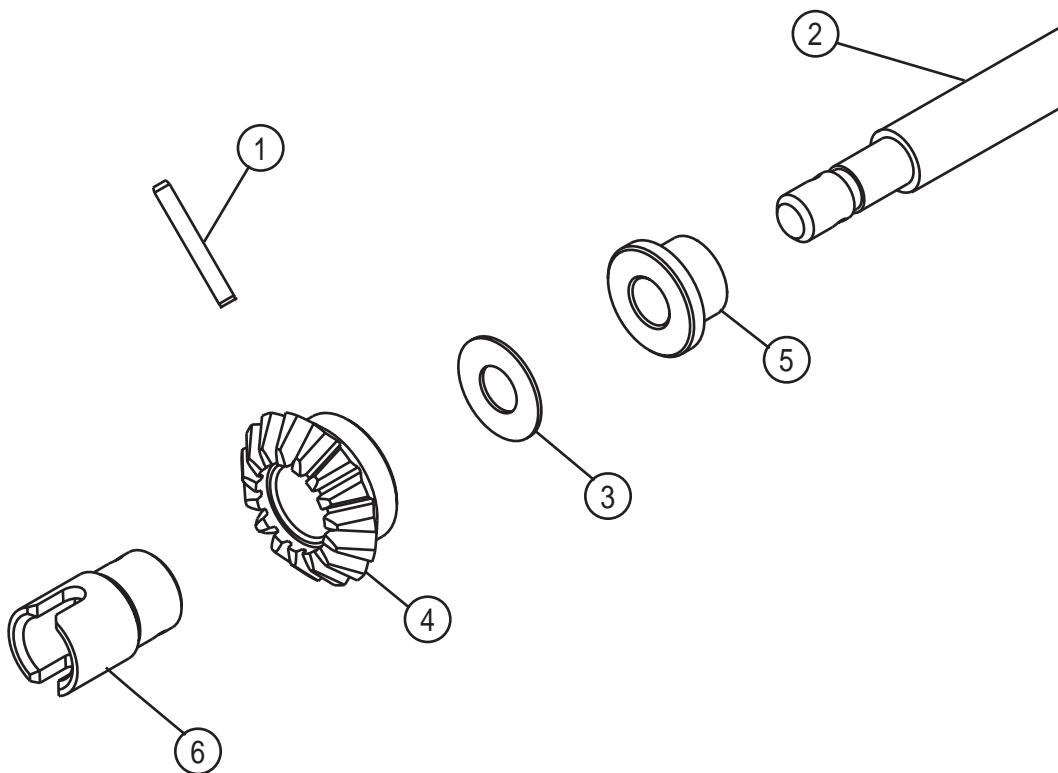
FEED ARM ASSEMBLY (P/N 63-0142)



Parts List: Feed Arm Assembly (P/N 63-0142)

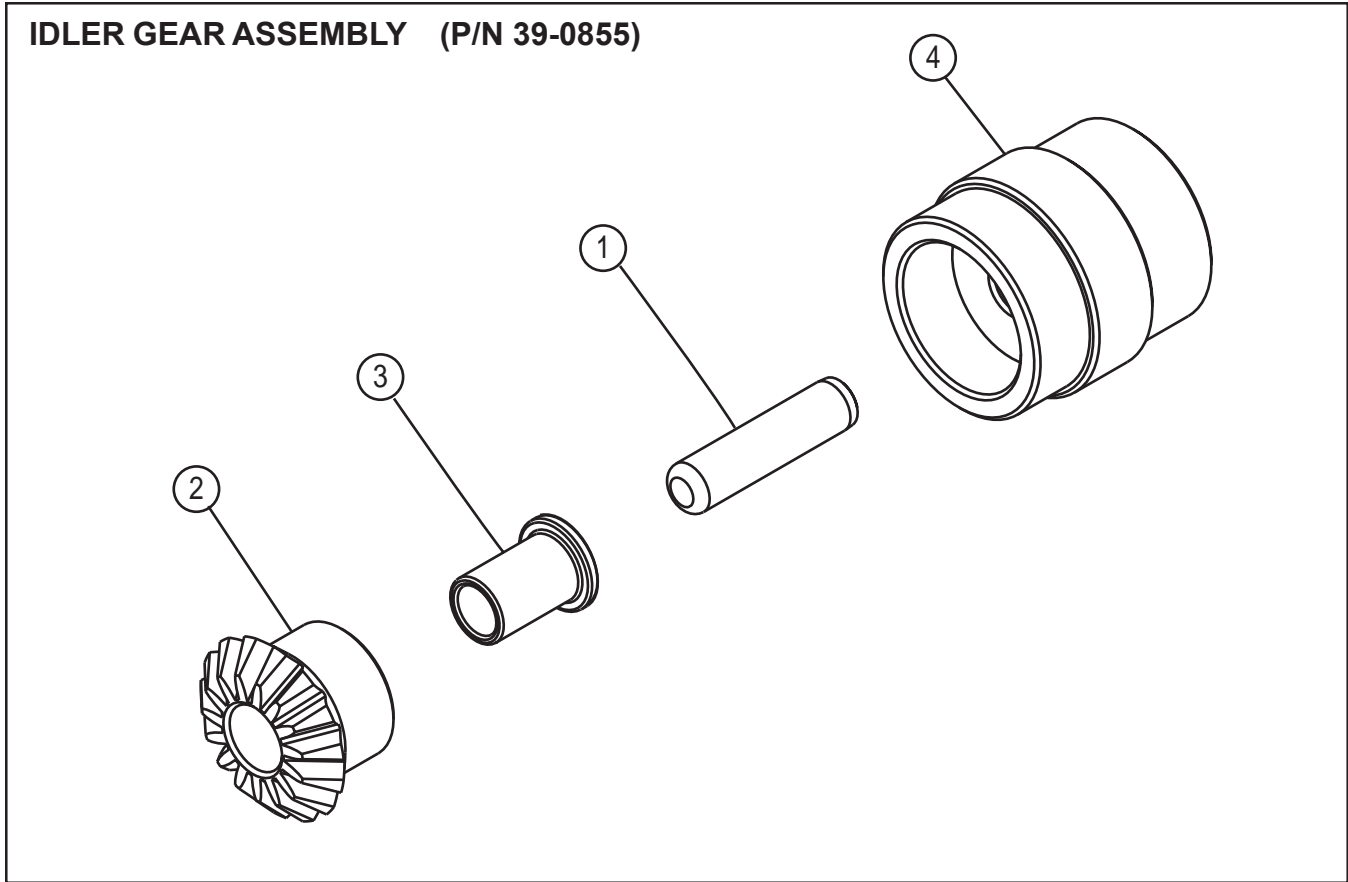
Item No	Part Number	Description	Qty
1	24-1572	Plate, Thrust	1
2	29-0095	Bearing, Ball	2
3	30-0878	Retaining Ring, External	2
4	30-2490	Roller Clutch	2
5	32-0534	Pin, Dowel (.125 Dia x .312)	1
6	33-0028	Screw, Cap (#10-24 x .50)	4
7	33-0901	Screw, Shoulder (.250 Dia x .50)	1
8	33-2065	Screw, Stop	2
9	34-0343	Washer, Belleville	6
10	40-0254	Spring, Torsion	1
11	63-0140	Arm, Feed	1
12	63-0141	Arm, Feed	1

FEED SCREW ASSEMBLY (P/N 33-2074)



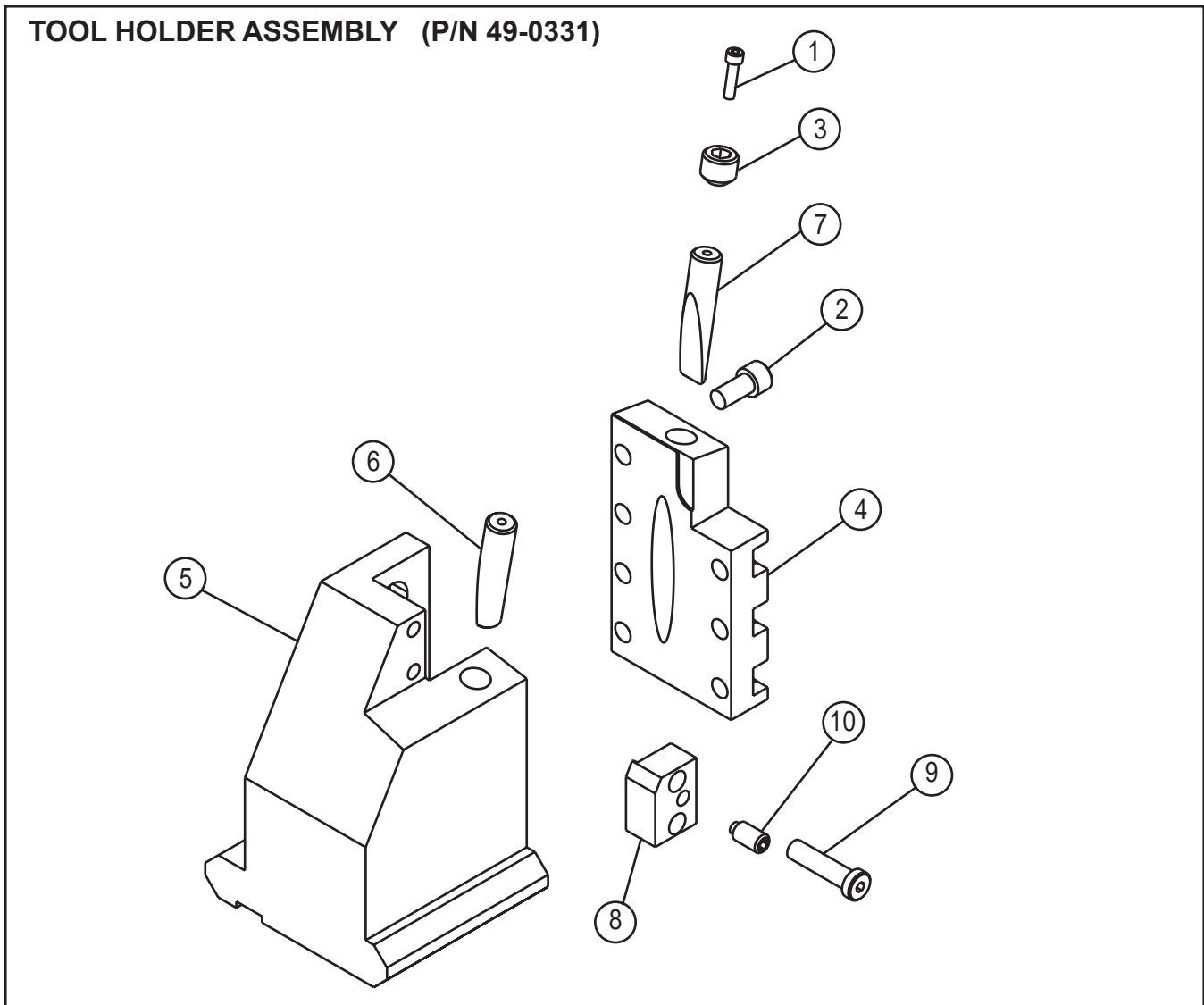
Parts List: Feed Screw Assembly (P/N 33-2074)

Item No	Part Number	Description	Qty
1	32-0028	Pin, Roll (.125 Dia x 1.00)	1
2	33-2064	Feedscrew, 12-10 ACME	1
3	34-0107	Washer, thrust	1
4	39-0848	Gear, Forward Drive	1
5	45-0294	Bushing, Flanged	1
6	46-0474	Sleeve, Drive	1



Parts List: Idler Gear Assembly (P/N 39-0855)

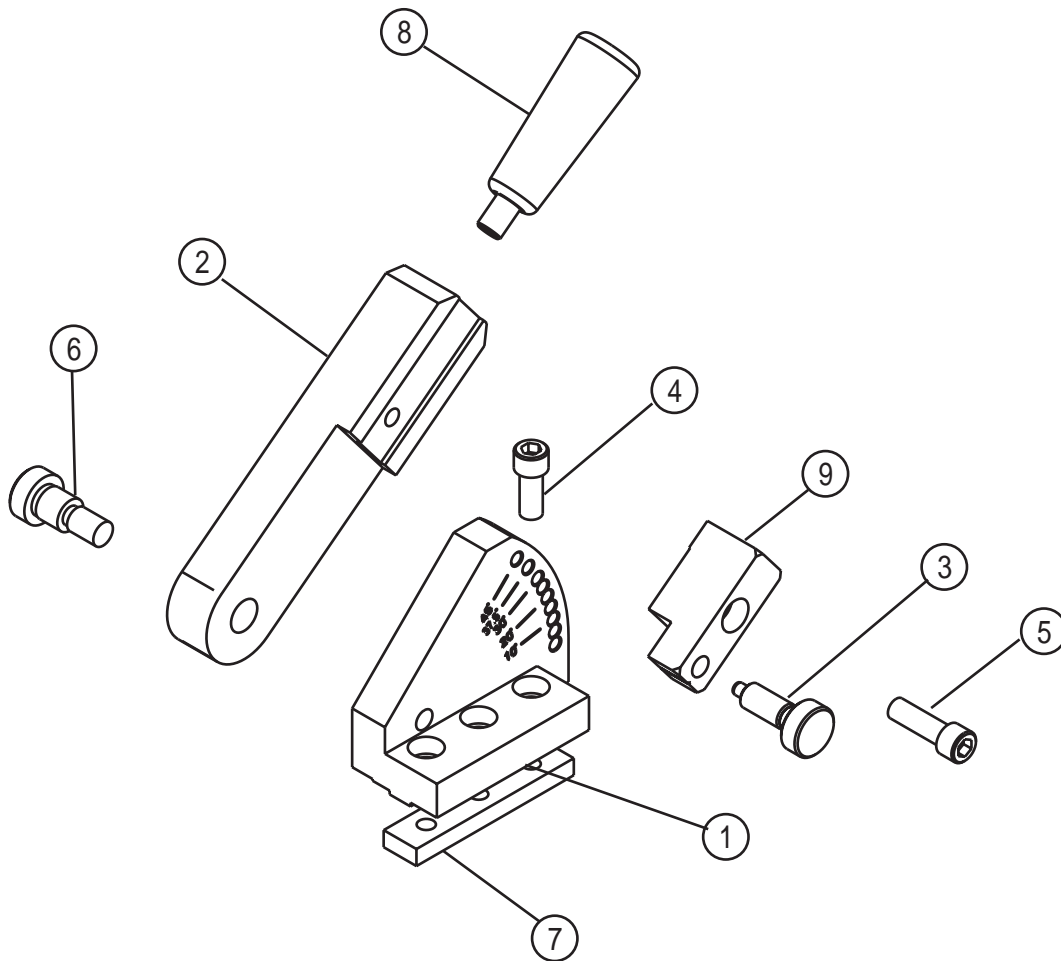
Item No	Part Number	Description	Qty
1	32-0148	Pin Dowel (.375 Dia x 1.50)	1
2	39-0845	Gear, Feed, Idler	1
3	45-0281	Bushing, Flange	1
4	54-0399	Plug, Feed	1



Parts List: Tool Holder Assy (P/N 49-0331)

Item No	Part Number	Description	Qty
1	33-0007	Screw, Cap (#5-40 x .38)	2
2	33-0039	Screw, Cap (1/4-20 x .63)	7
3	33-2071	Screw, Adjustable Gib	2
4	43-0512	Cover, Tool Holder	1
5	48-1134	Block, Tool Slide	1
6	66-0173	Gib, Tool	1
7	66-0176	Gib, Tool	1
8	66-0177	Gib, Block	1
9	33-2102	Screw, Cap, Low Head (1/4-20 x 1.00)	2
10	33-0927	Screw, Set, Half Dog (1/4-20 x .50)	1

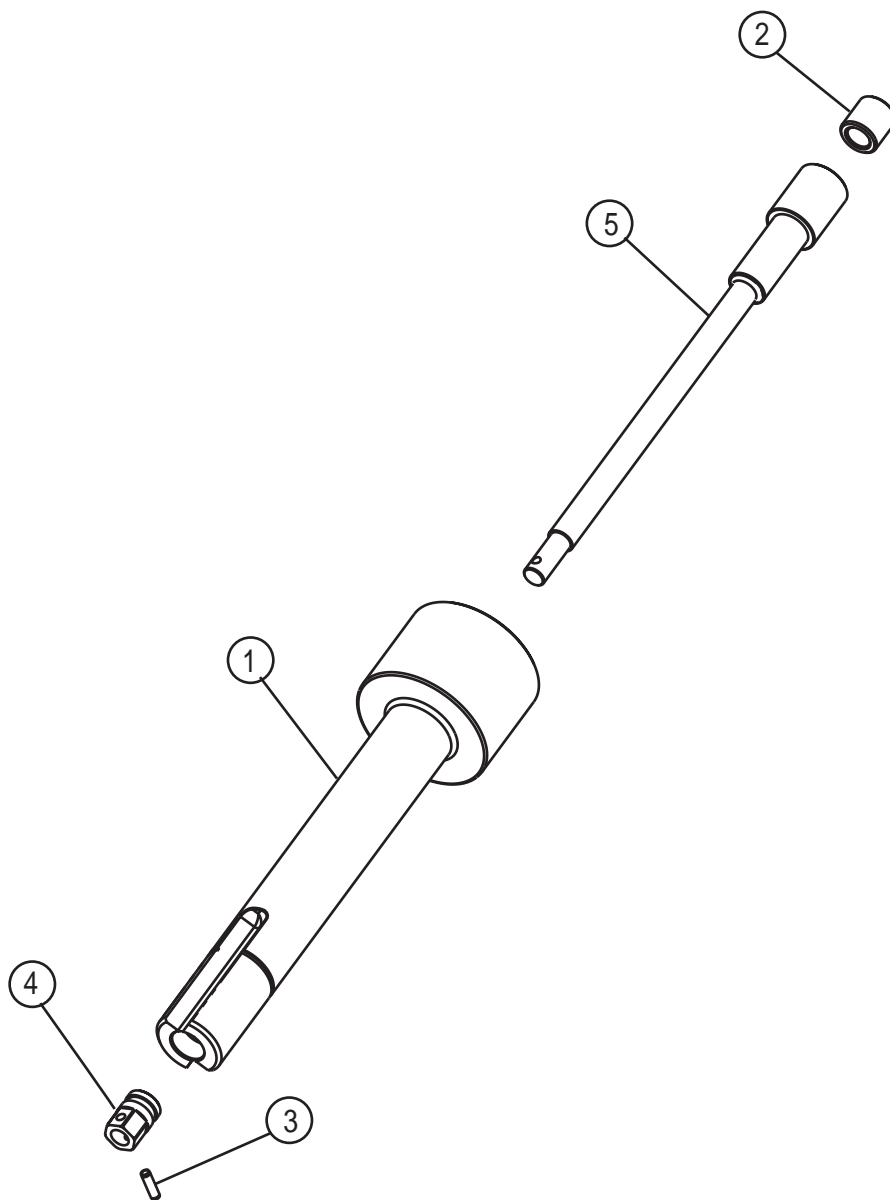
CAM TRACK PLATE ASSEMBLY (P/N 24-1580)



Parts List: Cam Track Plate Assembly (P/N 24-1580)

Item No	Part Number	Description	Qty
1	24-1567	Plate, Angle	1
2	24-1568	Plate, Cam Track	1
3	30-2727	Plunger, Hand Retractable	1
4	33-0054	Screw, Cap (5/16-18 x .75)	3
5	33-0056	Screw, Cap (5/16-18 x 1.00)	1
6	33-1479	Screw, Shoulder (.500 Dia x .50)	1
7	35-0537	Nut, tool holder	1
8	41-0150	Handle	1
9	48-1135	Block, Lock	1

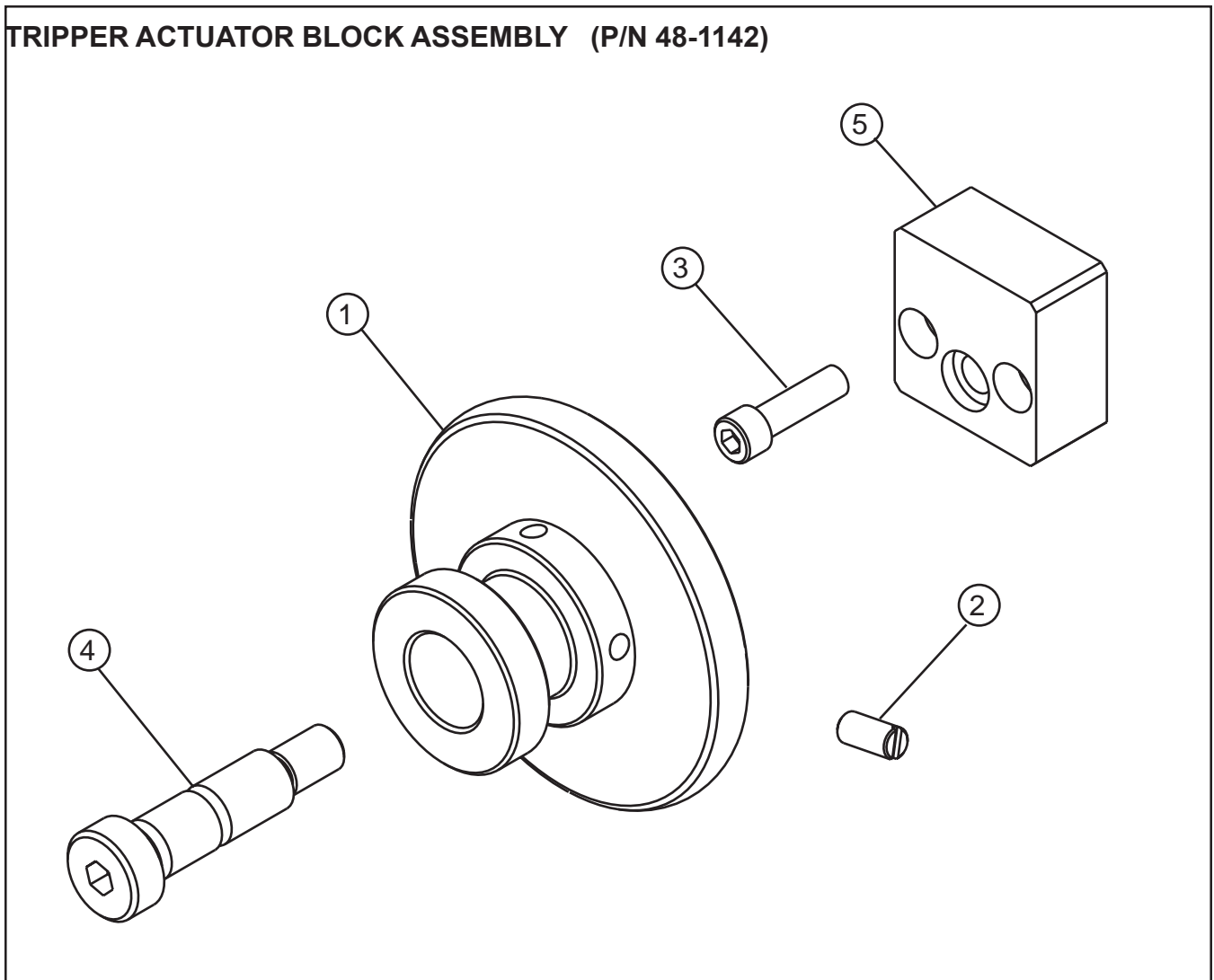
MANDREL ASSEMBLY (P/N 06-0427)



Parts List: Mandrel Assembly (P/N 06-0427)

Item No	Part Number	Description	Qty
1	13-0439	Mandrel	1
2	30-0032	Threaded insert	1
3	32-0052	Pin, Roll (.25 Dia x .88)	1
4	35-0291	Nut, Mandrel	1
5	36-0238	Drawrod, Mandrel	1

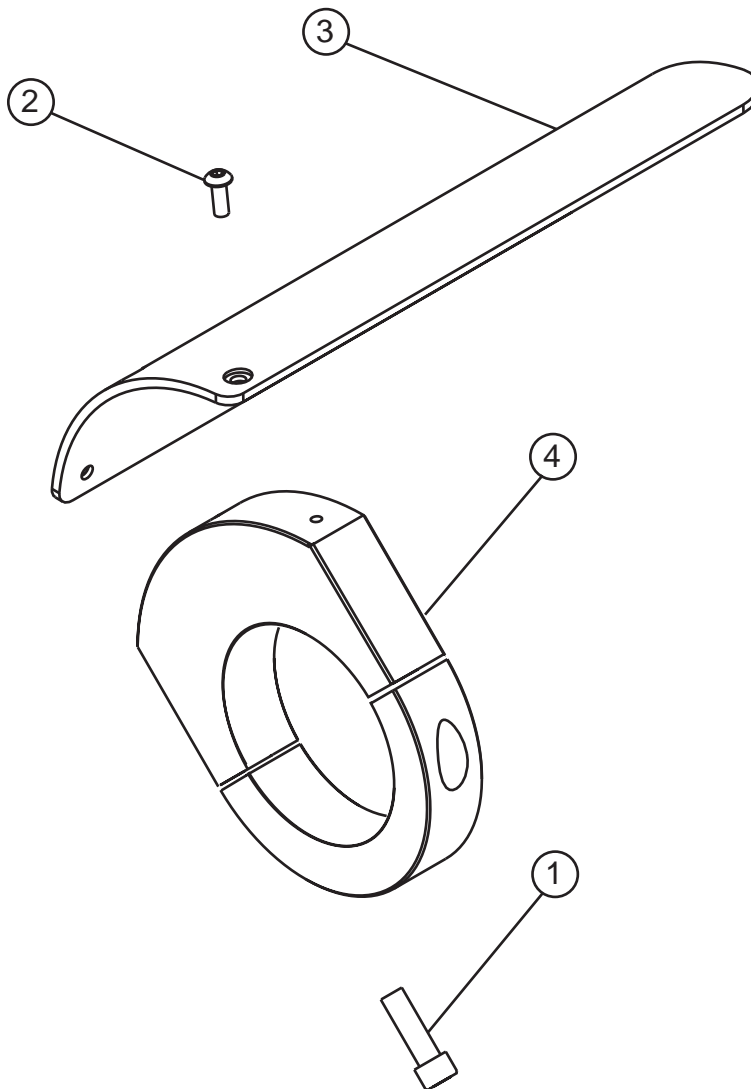
TRIPPER ACTUATOR BLOCK ASSEMBLY (P/N 48-1142)



Parts List: Tripper Actuator Block Assembly (P/N 48-1142)

Item No	Part Number	Description	Qty
1	20-0694	Shaft, Tripper Actuator	1
2	30-0125	Plunger, Ball	4
3	33-0041	Screw, Cap (1/4-20 x .88)	2
4	33-2067	Screw, Tripper	1
5	48-1137	Block, Tripper	1

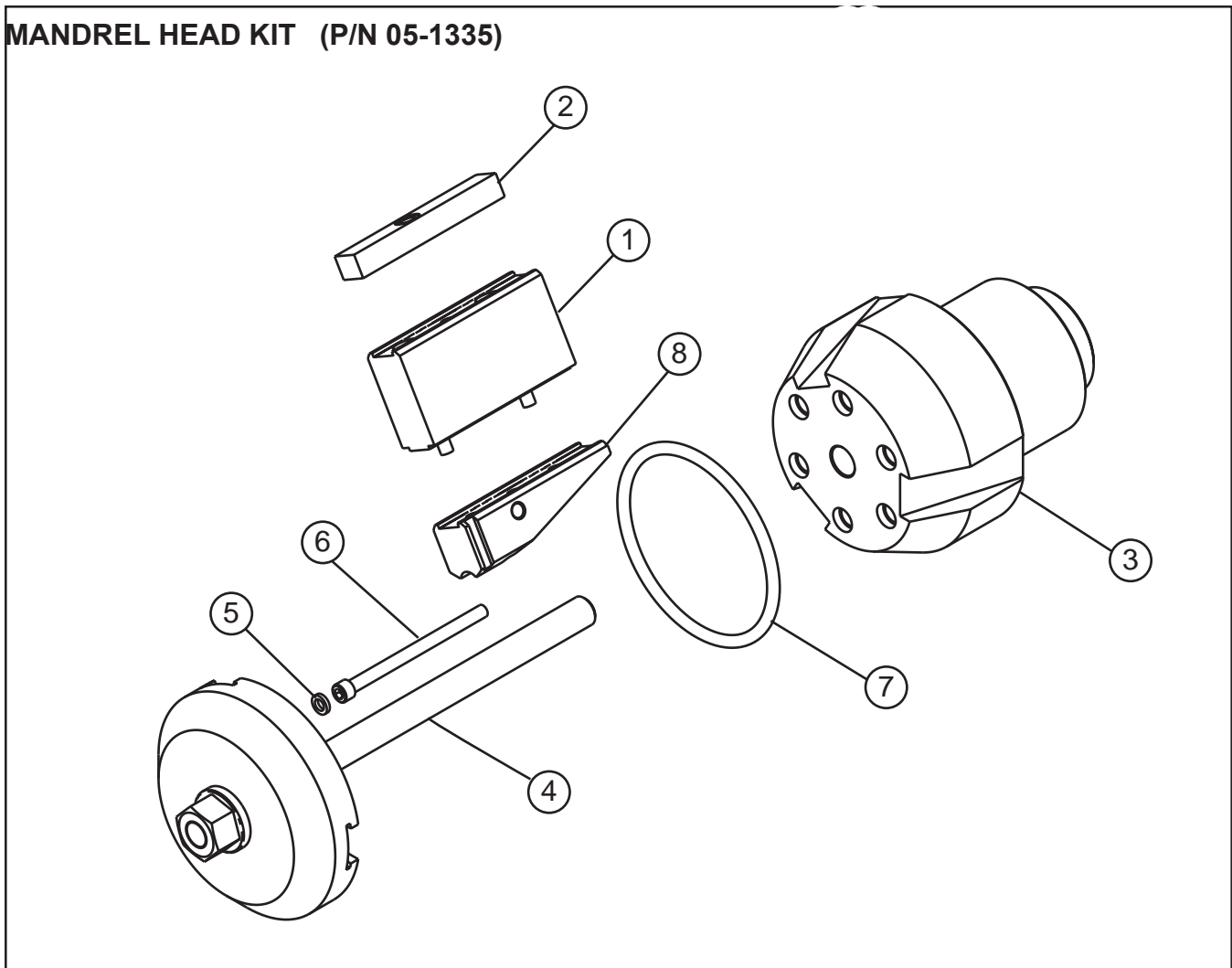
GUARD BRACKET ASSEMBLY (P/N 47-1205)



Parts List: Guard Bracket Assembly (P/N 47-1205)

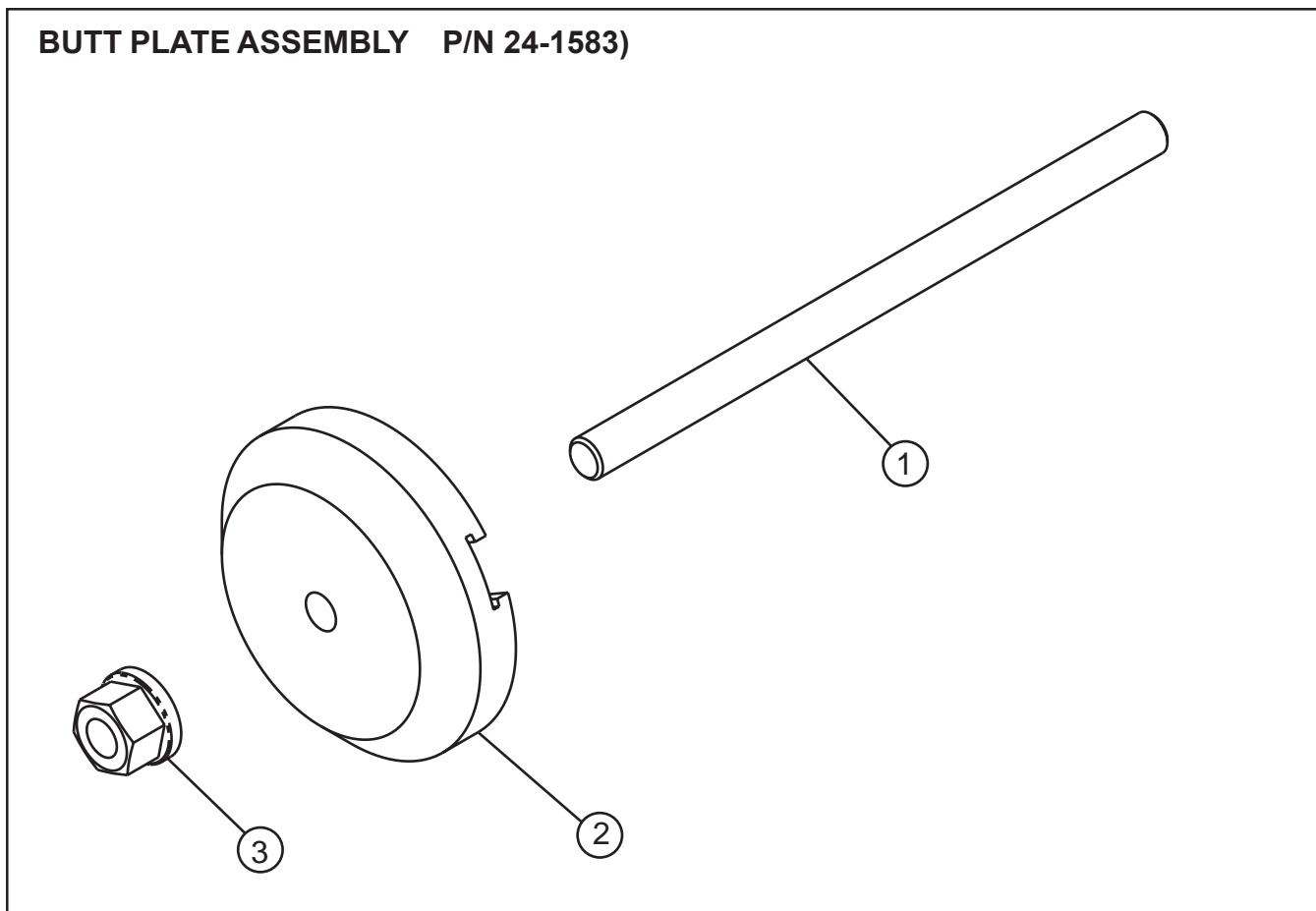
Item No	Part Number	Description	Qty
1	33-0056	Screw, Cap (5/16-18 x 1.00)	2
2	33-0279	Screw, Button Head (10-24 x .50)	3
3	43-0515	Cover, Guard	1
4	47-1204	Bracket, Guard	1

MANDREL HEAD KIT (P/N 05-1335)



Item No	Part Number	Description	Qty
1	08-0185	Jaw Block Assy	3
1	08-0186	Jaw Block Assy	3
1	08-0187	Jaw block Assy	3
1	08-0188	Jaw Block Assy	3
2	08-0189	Block Assy, Adaptor	3
2	08-0433	Block Assy, Adaptor, #2	3
2	08-0434	Block Assy, Adaptor, #3	3
3	21-0501	Head, Mandrel	1
4	24-1583	Plate Assy, Butt	1
5	34-0233	Washer, Nylon	6
6	33-1230	Screw, Cap (5/16-18 x 4.50)	6
7	40-0006	Spring	1
8	48-0520	Block, Ramp	3

BUTT PLATE ASSEMBLY (P/N 24-1583)



Parts List: Butt Plate Assembly (P/N 24-1583)

Item No	Part Number	Description	Qty
1	23-0315	Threaded Rod	1
2	24-1573	Plate, Butt	1
3	35-0067	Nut, Flange	1

ACCESSORIES

The following accessory is recommended for use with the Model 212B SP/FF and is available from TRI TOOL INC.

1. 212B Miter Mandrel Kit (P/N 05-1336)

