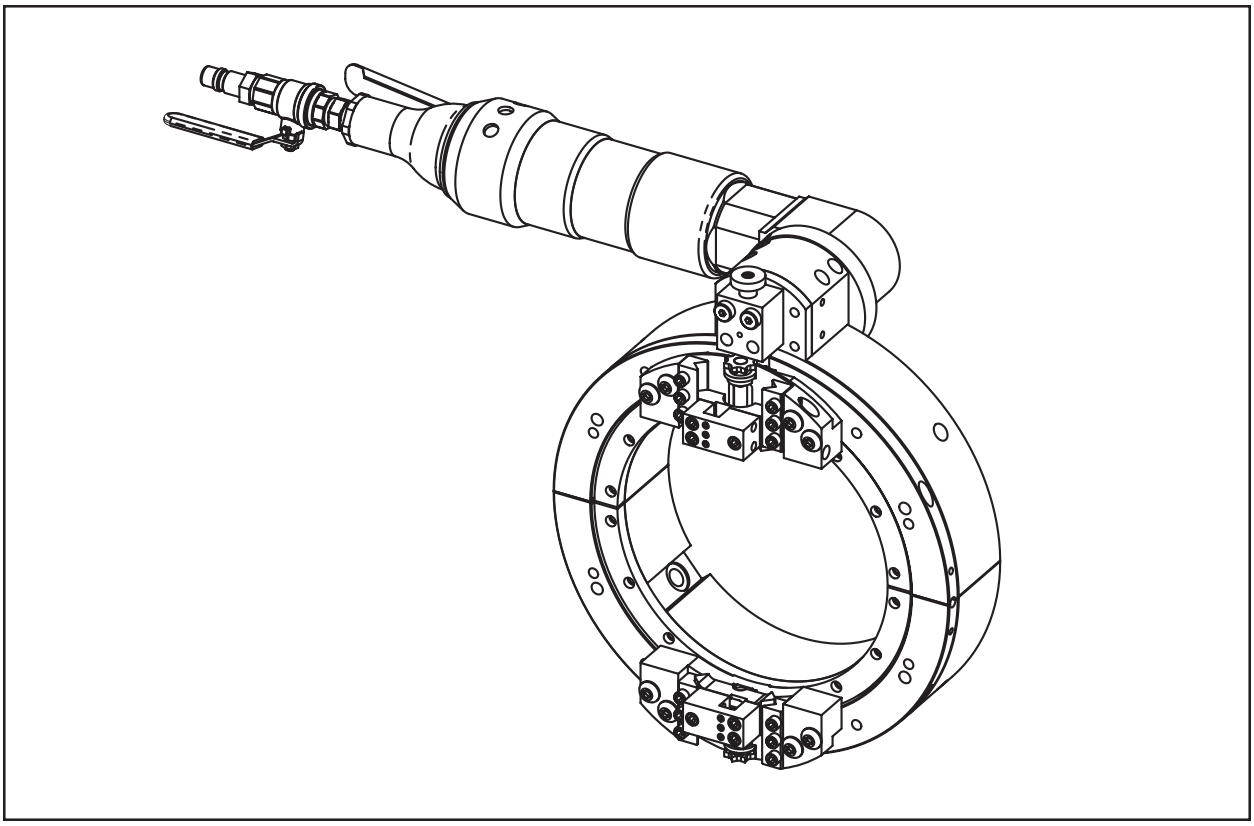

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SAFETY PRECAUTIONS

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, and 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 at or 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 are 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 that 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.

GENERAL DESCRIPTION

The Model 600SB Low-Profile Clamshell is a split-frame pipe lathe designed for severing and beveling in-line pipe with minimal radial and axial clearance.

Using Low Profile or Extended Tool Blocks the Model 600SB may be configured to perform the following operations:

Sever in-line pipe.
Sever and bevel in-line pipe.
Sever and double bevel in-line pipe.

DESIGN AND OPERATION FEATURES

The easily adjustable precision bearing surfaces pre-load and stabilize the rotating head to provide long life, low maintenance, stability, and precision.

The Clamshell splits into two halves for mounting on closed loop systems.

All parts are secured to the two halves, thus avoiding the loss of parts and at the same time providing maximum ease of handling.

The Clamshell may be equipped with self-centering Clamping Pads for quick, easy mounting or may be equipped with Adjustable Clamping Pads for out-of-round pipe conditions.

Dual Tool Blocks with Auto-feed Sprockets and Adjustable Slides provide maximum maintainability, life, and operator safety, with a minimum of operator training.

The Auto-feed Sprockets provide .003” (.08 mm) of radial feed per revolution of the Headstock for a controlled depth of cut.

The drive gears and bearing surfaces are covered for operator safety and are sealed to provide protection from dust and chips.

The operator’s controls are located away from the rotating Headstock for the operator’s safety.

A modular design concept provides quick, easy maintenance and maximum versatility in the drive and tooling options.

A detachable right angle Air Motor provides maximum handling ease and low axial clearance.

SPECIFICATIONS

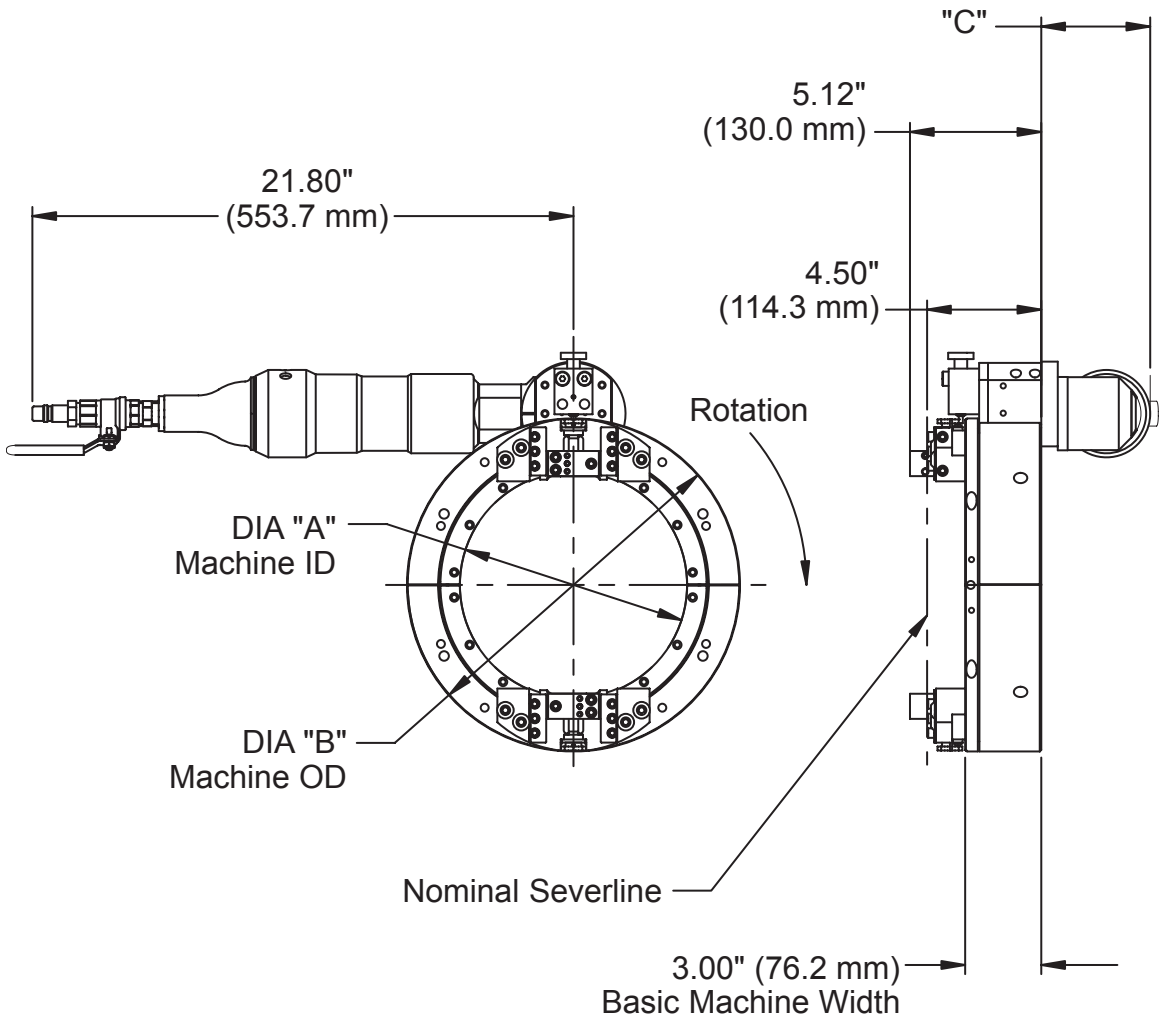
Ranges and Radial Clearance over the Pipe

Model No.	Pipe Size	Actual Diameter	Clearance Low Profile Tool Blocks (P/N 08-0037)	Clearance Extended Tool Blocks (P/N 08-0040)
604SB	2"	2.375" (60.3mm)	N/A	3.31" (84.1mm)
	2 1/2"	2.875" (73.0mm)	3.06" (77.7mm)	4.06" (103.1mm)
	3"	3.500" (88.9mm)	2.75" (69.9mm)	3.75" (95.3mm)
	3 1/2"	4.000" (101.6mm)	2.50" (63.5mm)	3.50" (88.9mm)
	4"	4.500" (114.3mm)	2.25" (57.2mm)	3.25" (82.6mm)
606SB	3 1/2"	4.000" (101.6mm)	N/A	3.56" (90.4mm)
	4"	4.500" (114.3mm)	N/A	3.31" (84.1mm)
	5"	5.563" (141.3mm)	2.78" (70.6mm)	3.78" (96.0mm)
	6"	6.625" (168.3mm)	2.25" (57.2mm)	3.25" (82.6mm)
608SB	5"	5.563" (141.3mm)	N/A	3.78" (96.0mm)
	6"	6.625" (168.3mm)	N/A	3.25" (82.6mm)
	8"	8.625" (219.1mm)	2.25" (57.2mm)	3.25" (82.6mm)
610SB	8"	8.625" (219.1mm)	N/A	3.56" (90.4mm)
	10"	10.750" (273.0mm)	2.50" (63.5mm)	3.50" (88.9mm)
612SB	10"	10.750" (273.0mm)	N/A	3.56" (90.4mm)
	12"	12.750" (324.9mm)	2.50" (63.5mm)	3.50" (88.9mm)

600SB Motor Selection

Model No.	Air Motor Assy, 1.5 HP (P/N 57-0072)	Air Motor Assy, 2.25 HP (P/N 57-0162)	Air Motor Assy, 3.0 HP (P/N 57-0163)
604SB	Standard Duty	Heavy Duty	N/A
606SB	Standard Duty	Heavy Duty	N/A
608SB	Light Duty	Standard Duty	Heavy Duty
610SB	Light Duty	Standard Duty	Heavy Duty
612SB	Light Duty	Standard Duty	Heavy Duty

Envelope, Model 600SB, Clamshell



Model No.	" A " Dia. Machine ID	" B " Dia. Machine OD	" C " Dim.	Air Motor Configuration
604SB	4.75" (120.7mm)	9.00" (228.6mm)	3.00" (76.2mm)	Standard Duty
			4.25" (108.0mm)	Heavy Duty
606SB	6.87" (174.5mm)	11.12" (282.4mm)	3.00" (76.2mm)	Standard Duty
			4.25" (108.0mm)	Heavy Duty
608SB	8.95" (227.3mm)	13.12" (333.2mm)	3.00" (76.2mm)	Light Duty
			4.25" (108.0mm)	Standard Duty
			4.63" (117.6mm)	Heavy Duty
610SB	11.20" (284.5mm)	15.75" (400.1mm)	3.00" (76.2mm)	Light Duty
			4.25" (108.0mm)	Standard Duty
			4.63" (117.6mm)	Heavy Duty
612SB	13.20" (335.3mm)	17.75" (450.9mm)	3.00" (76.2mm)	Light Duty
			4.25" (108.0mm)	Standard Duty
			4.63" (117.6mm)	Heavy Duty

Model No.	*Rotating Parts* Diameter	**Weight**	Power Requirements (Standard Air Motor)
604SB	9.00" (228.6mm)	29.0 lbs (13.1 kg)	55 cfm at 90psi (26 lt/sec at 621 kPa)
606SB	11.12" (282.4mm)	37.0 lbs (16.8 kg)	55 cfm at 90psi (26 lt/sec at 621 kPa)
608SB	13.12" (333.2mm)	43.0 lbs (19.5 kg)	75 cfm at 90psi (35 lt/sec at 621 kPa)
610SB	15.75" (400.1mm)	55.0 lbs (25.0 kg)	75 cfm at 90psi (35 lt/sec at 621 kPa)
612SB	17.75" (450.9mm)	62.0 lbs (28.1 kg)	75 cfm at 90psi (35 lt/sec at 621 kPa)

With Low Profile Tool Modules
Basic Machine with Low Profile Tool Modules and without the Air Motor

Cutting Capacities	
Note: Capacity exceeds the maximum wall thickness for small pipe sizes	
Severing with Standard procedures	.80" (20.3 mm) wall
Severing with Special procedures	1.50" (38.1 mm) wall
Severing with Single Beveling	.80" (20.3 mm) wall
Severing with Double Beveling	.40" (10.2 mm) wall

MAINTENANCE

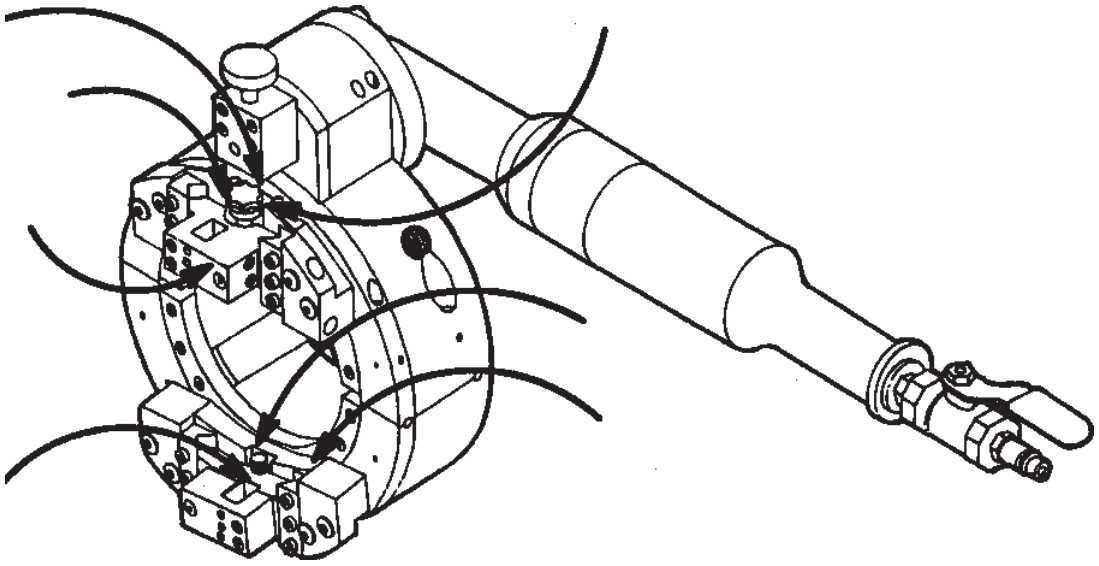
All components should be cleaned and coated with a light film of oil prior to use.

Use a clean, non-detergent oil, preferably SAE 10 (90 SSU) or lighter.

Air supply for the Model 600SB Clamshell with an Air Motor requires an adequate filter/regulator/lubricator (FRL) to be used.

NOTE:	The Motor warranty is void if damage occurs from contaminated air or lack of lubrication.

Clean Up



If the Clamshell is operated in such a manner that the Tool Blocks collect debris while cutting, the Tool Blocks and the Feed Screws should be cleaned after each cutting operation.

RECOMMENDED MAINTENANCE SCHEDULE

Daily maintenance when the unit is in operation

Wipe the unit down and spray with rust preventative under severe humidity conditions.

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

After every 20 hours of actual operation

Check adjustment of the Main Bearing pre-load.

Drive torque as measured at the Drive Socket should be 5 to 10 ft-lbs. (7 to 14 N-m)

Lubricate the male and female Tool Block Slides and the Feed Screw.

After every 40 hours of actual operation

Thoroughly clean and lubricate Main Gear, Drive Gear, male and female Tool Slides, Feed Screws, and Tripper Block Assy.

Non-scheduled maintenance

Readjust the Main Bearing pre-load if the Clamshell generates excessive heat or if the Main Bearing becomes loose.

Thoroughly clean and check the Tool Blocks in the event of feed problems.

STORAGE

If the Clamshell 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.

Remove the airline Quick disconnect and spray it with a lightweight oil.

Squirt oil into the male Quick Disconnect.

Reconnect the airline and turn on the Air Motor for 1 or 2 seconds to disperse oil throughout the vanes and rotor.

ADJUSTMENT OF THE MAIN BEARING PRE-LOAD

(See Bearing Adjustment Screw locations)

Loosen all Bearing Adjustment Lock Screws (all letters).

Loosen all Bearing Adjustment Set Screws about 1/2 turn (all numbers).

Turn in Bearing Adjustment Set Screws (all circled) so that they are snugged tightly. This insures that the Bearing is fully pushed forward.

Lightly turn in the remaining Bearing Adjustment Set Screws in the order shown until they all touch the Bearing.

Relax Bearing Adjustment Set Screws (all circled) and resnug them so that all of the Bearing Adjustment Set Screws are evenly loaded against the Bearing.

Connect the air supply and apply power to the Clamshell so that it is running at full speed.

Adjust the Bearing Adjustment Set Screws (all numbers) so that the Clamshell rotation slows slightly. (See Picture for recommended sequence).

Listen for a change in the sound of the Air Motor.

Adjust the Set Screws in small increments so that the bearing is loaded evenly.

All of the Set Screws should be snugged to ensure that the bearing is uniformly loaded.

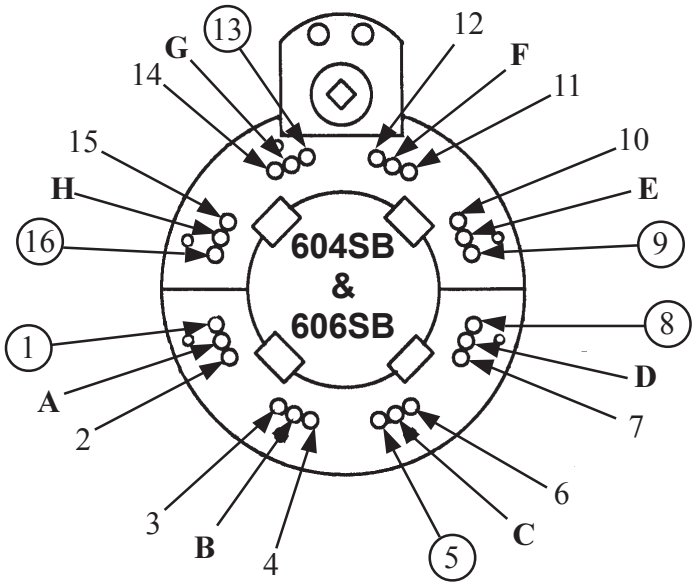
Drive torque as measured at the drive socket should be 5 to 10 ft-lbs. (7 to 14 N-m).

The safe torque range on the Bearing Adjustment Set Screws is 1 to 3 in-lbs. (.1 to .3 N-m).

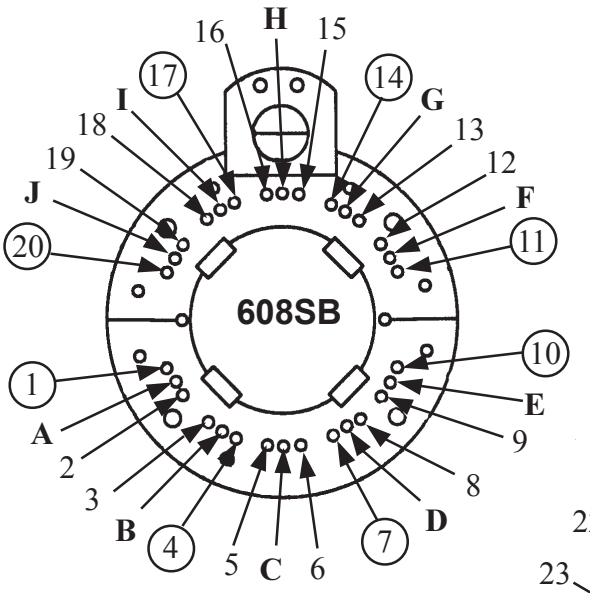
Over-tightening the Bearing Adjustment Set Screws will result in accelerated bearing wear and lower available power.

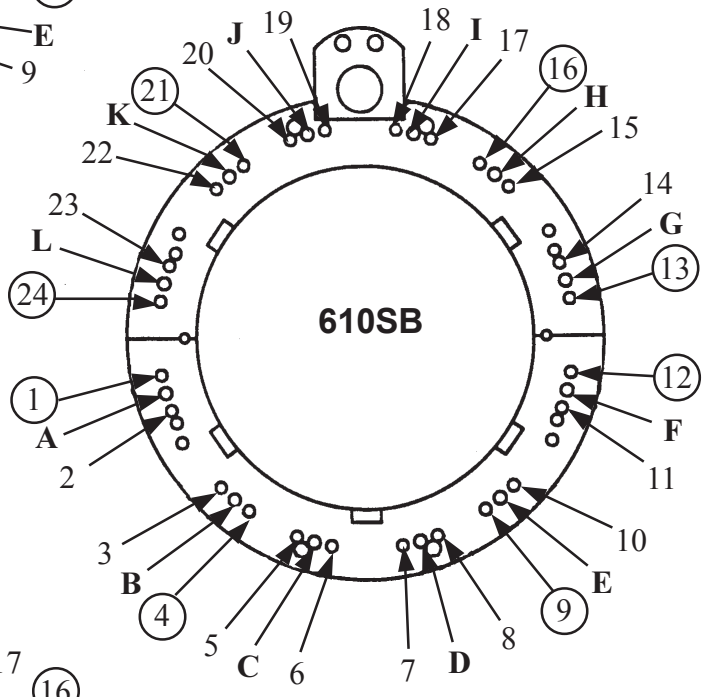
Lock the Bearing pre-load by tightening the Bearing Adjustment Lock Screws (Identified by letters).

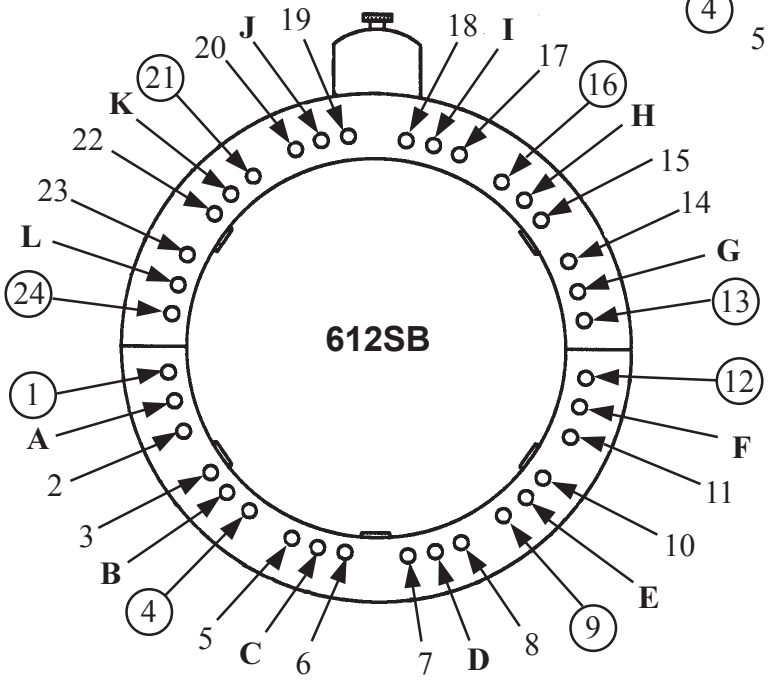
Bearing Adjustment Screw locations



Bearing Adjustment Screw locations, Continued







The safe torque should be 8 to 10 ft-lbs. (11 to 14 N-m).

WARNING:	Too much torque may crack the Bearing, while too little torque may allow the Bearing pre-load to relax.

INSPECTION OF THE MAIN GEAR

If the Headstock does not run smoothly, even after adjustment, inspect the main gear to insure that no chips, dirt or dust have damaged the gear.

Remove both of the front Thrust Plates by removing the Hold down Screws.

Lift the Headstock from the Housing.

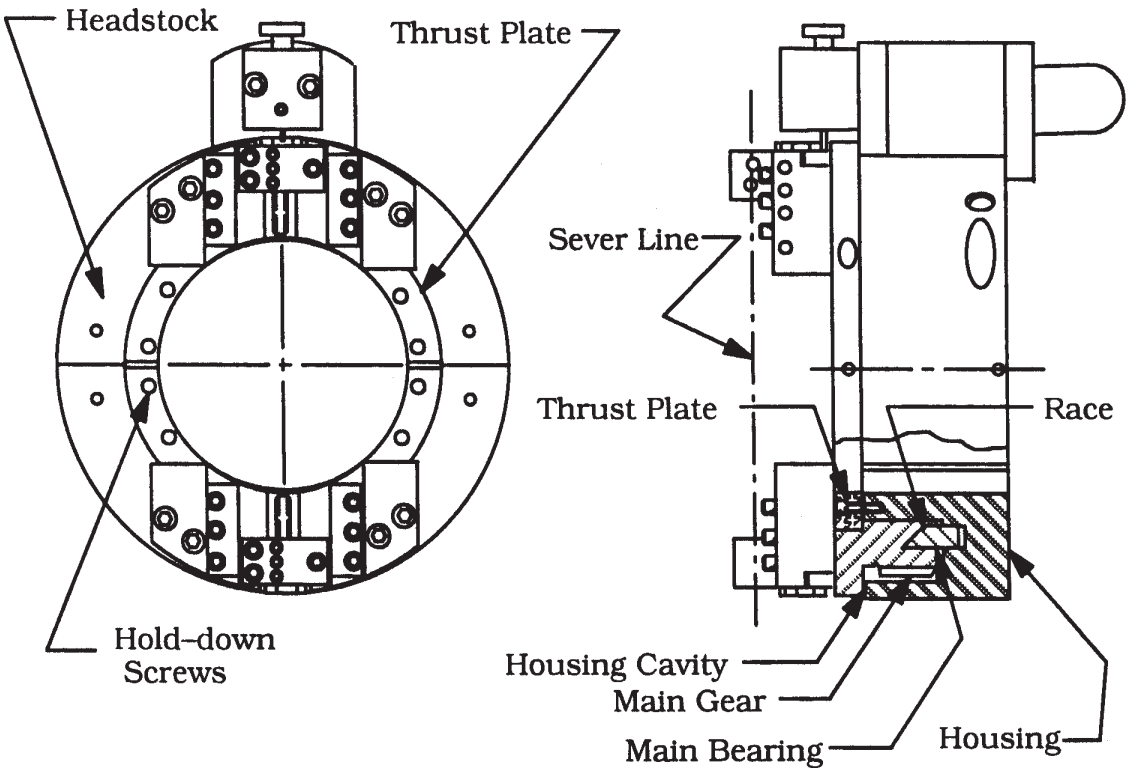
The Main Gear and the Main Bearing may now be inspected.

Check the Bearing, Housing, and the race on the Gear.

All surfaces should be smooth, without scratches, and they should feature even wear patterns over the entire surface.

Check the Housing cavity for chips, dirt and/or corrosion.

Clamshell Cross Section



To reassemble, wipe clean all of the Bearing surfaces and clean the Housing cavity.

Regrease the Gear using a lubricant approved by TRI TOOL Inc.

Place the Headstock carefully back into the Housing.

Bolt the Front Thrust Plates back into place.

If the bearing pre-load was properly adjusted before disassembly, then it will still be adjusted when reassembled.

DRIVE GEAR AND MAIN GEAR LUBRICATION

Remove the Drive Housing.

Inspect both Drive and Main Gears for chips or burrs and clean as required.

Coat the teeth of the Drive Gear and the Main Gear with a grease, which is approved by TRI TOOL Inc. (See Lubricant Recommendations).

TOOL BLOCK MAINTENANCE.

Clean the Slide Rails, the Feed Nut, the Sprocket Assy and the Feed Screw.

Inspect these parts for damage and replace as required.

Lubricate and reassemble the Tool Block.

NOTE:	Use lubricant on the Feed Screw sparingly or wipe to a film condition.

Excess lubricant will collect grit and/or chips and tend to cause a thread jamming and/or damage.

Adjust the Adjustable Slide Rail to provide a firm, but not excessive rotational pressure on the Sprocket.

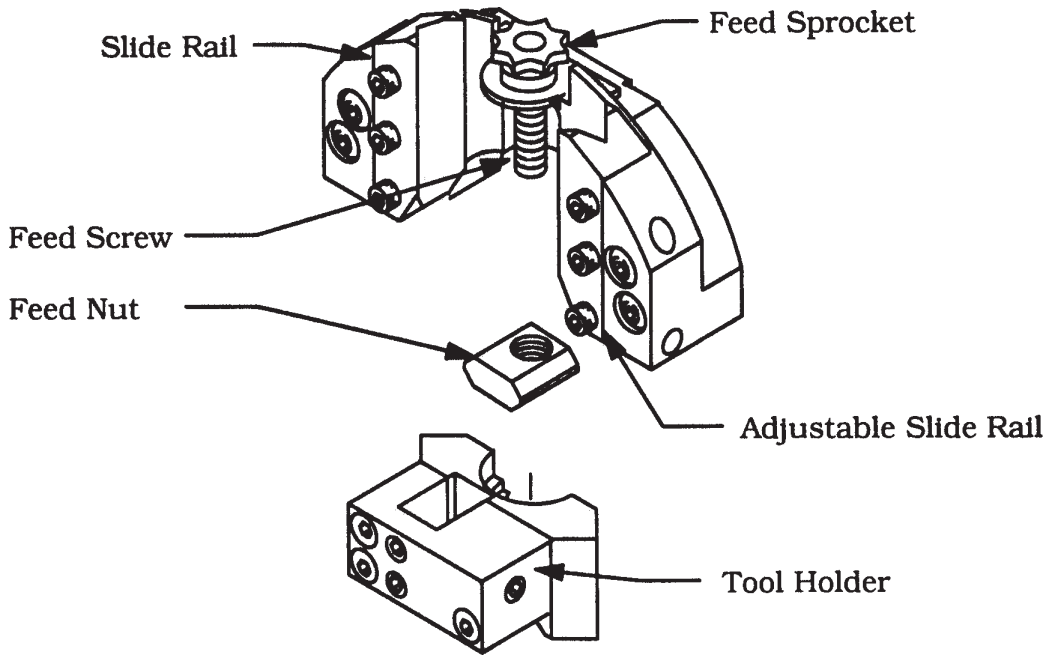
The Slide Rails must be over tightened to squeeze the oil into a thin film against the male and female surfaces of the Slide Rails.

Reset for proper operation.

NOTE:	If the Mounting Bracket has been overstressed, the Slide Rails may appear to loosen when mounted if they were adjusted off of the Clamshell.

Adjustment when mounted provides the most satisfactory results.

Tool Block Assembly



TOOL HOLDER ADJUSTMENT

Loosen the Hold-down Screws on the Adjustable Slide Rail.

Run the Tool Holder to the most outward position.

Using the Adjustment Set Screws, apply a light force to the side of the Adjustable Slide Rail so that it is in positive contact with the Tool Holder.

Adjust only those screws, which bear directly in line with the Tool Holder.

Tighten the Hold down Screws to about 12 to 24 in-lbs. (Finger tight using a hex key)

Using the Spanner Wrench, run the Tool Holder to the inward most position.

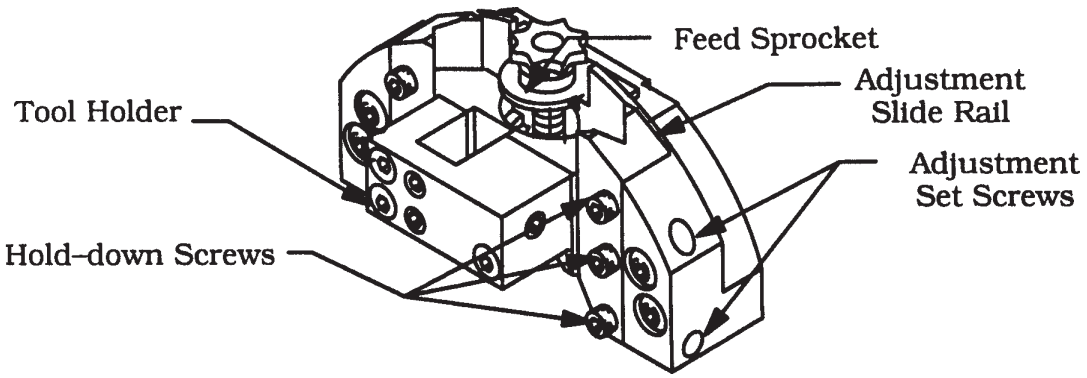
Note any changes in the feed pressure.

Adjust the remaining Adjustment Set Screws so that the Tool Holder has a smooth, even feel.

Run the Tool Holder the full length of the Slide Rail.

Tightly lock the Adjustable Slide Rail in place with the Hold-down Screws and fully snug the Adjustment Set Screws.

Tool Holder Adjustment



Check that the Tool Holder runs smoothly and evenly for the full length of travel.

Readjust as necessary.

The Tool Holder should move snugly.

In general, when the Slide Rail is set correctly, the Feed Sprocket cannot be turned by hand but may be turned easily with the Spanner Wrench.

The torque on the spanner Wrench should be about 1 to 3 ft-lbs. (1 to 4 N-m).

AIR MOTOR LUBRICATION

No direct maintenance is normally required on the Air Motor.

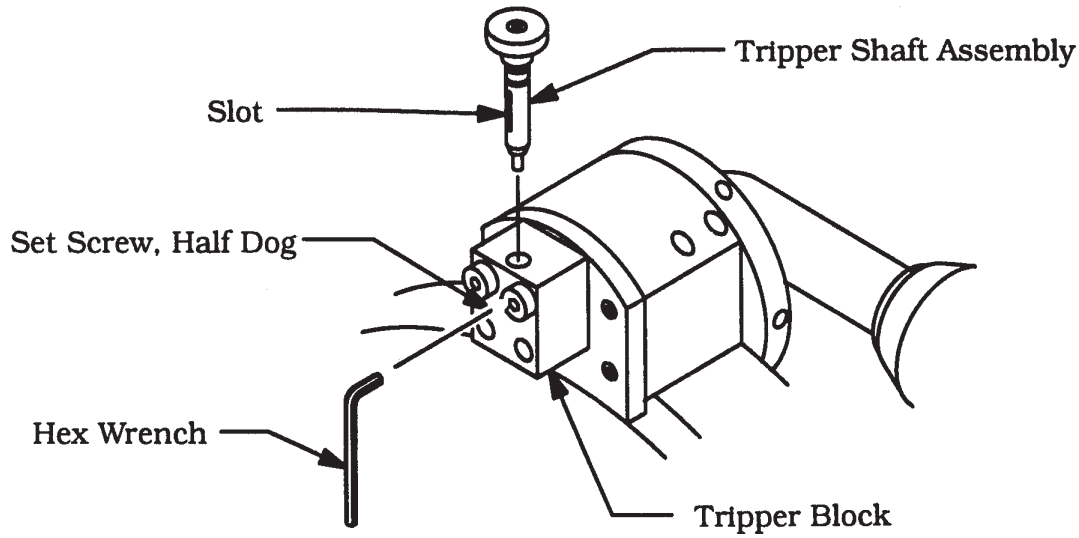
However, the air supply must flow through a filter/regulator/lubricator (FRL) unit or separate units before arriving at the motor.

The FRL unit must be maintained as required (frequency dependent on the basic air supply) to keep the water trap drained, filter cleaned and the lubrication oil reservoir filled so that a drop of oil every 2 to 5 seconds is flowing.

If the Clamshell is to be left idle for 24 hours or more after being run on ’wet’ air, it is advisable to squirt oil directly into the motor inlet and run the motor for 2 to 3 seconds.

This will prevent rusting and ‘freezing’ of the rotor vanes.

Tripper Shaft Installation



TRIPPER BLOCK ASSY LUBRICATION AND TRIPPER SHAFT ADJUSTMENT

Back off the Half Dog Set Screw until it disengages from the Tripper Shaft.

Remove the Tripper Shaft Assy from the Block and clean off all of the old lubrication.

Apply a fresh lubrication to the Tripper Shaft Assy and re-install it in the Block.

Screw in the Half Dog Set Screw until it locates itself in the slot on the Tripper Shaft.

See the Section on “Operation” for the Feed Pin to Sprocket adjustment.

LUBRICANT RECOMMENDATIONS

The Drive Gears require a high string lubrication grease such as “Chevron Utility Grease, light, high string for gears” (P/N 68-0020 - 1 qt.) or (P/N 68-0015 - 5 gal.).

The Slide Rails and Tool Blocks require a light oil such as SAE 10 light machine oil.

The Feed Screw for the Tool Block and the Tripper Block Assy require a SAE 10 light machine oil for normal conditions, and under dusty conditions a silicone, graphite or molybdenum disulfide ‘dry’ lubricant.

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

The Air Motor requires a Class 2 lubricant, viscosity of 100 to 200 SSU at 100° F (38° C) minimum aniline point of 200° F (93° C).

TRI TOOL Inc. – Air Tool Lubricant (P/N 68-0022)

AMOCO – American Industrial Oil no. 32
Atlantic Richfield – Duro Oil S-150
Chevron – A.W. Machine Oil 32
Exxon – Nuto H32
Shell – Tellus Oil 32

The bearings in the Air Motor are sealed and do not require any lubrication.

OPERATION

Read the operating instructions carefully before attempting to operate the Model 600SB Low Profile Clamshell.

See ‘Configure the Clamshell for the specific task required’ later in this section to configure the machine.

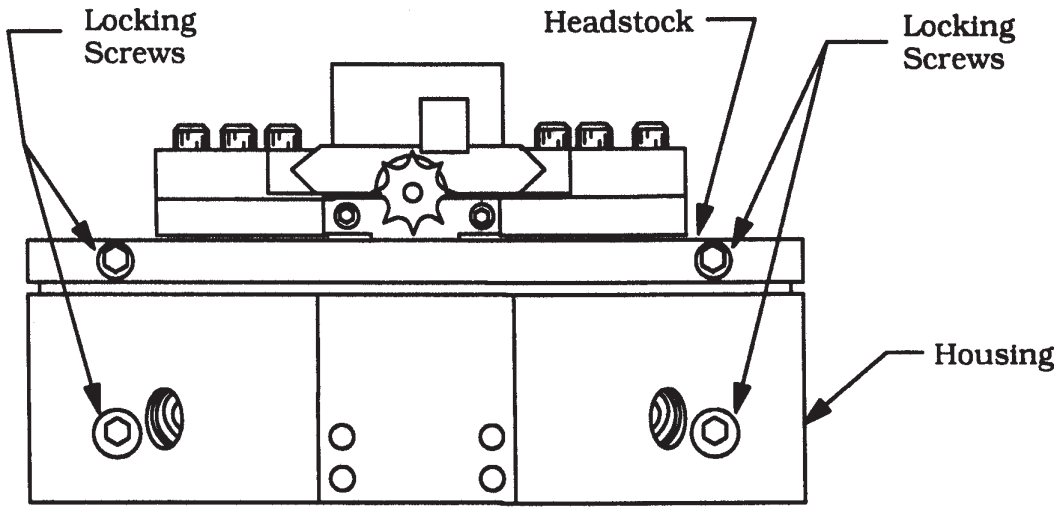
Do not install the Tool Bits until the Clamshell is installed on the pipe.

INSTALLATION OF THE CLAMSHELL ON AN IN-LINE PIPE

Separate the two halves of the Clamshell.

Disengage the Air Motor by removing the Motor hold-down Bolt and removing the Air Motor from the drive socket.

Locking Screw Locations



By hand, rotate the Headstock until the split-lines of the Headstock match the split-lines of the Housing.

Unbolt the two halves of the Clamshell.

Two Locking Screws are located on the Housing and two more on the Headstock.

These Locking Screws are captured in their holes so that they will not come totally free of the Clamshell. Separate the Clamshell halves evenly by pulling straight apart.

DO NOT FORCE OPEN.

Secure the Clamshell to the pipe.

Clean the mating surfaces and the ID of the Clamshell halves.

Wipe clean the mounting surface of the pipe.

Check to insure that the Tool Blocks will clear the pipe when the Clamshell is mounted.

Close the two halves of the Clamshell around the pipe, keeping the mating surfaces clean.

Check that the Alignment Pins have seated the two halves properly.

Bolt the two halves of the Clamshell together using the Locking Screws in the Housing and in the Headstock.

Tightening torque should be 35 to 40 ft-lbs. (47 to 54 N-m).

If using Fixed Clamping Pads, clamp the Clamshell to the pipe as follows: if not, go to “If using the fully Adjustable Clamping Pads”.

Tighten the Adjustable Pads lightly so that all of the Clamping Pads contact the pipe.

Gently rock the Clamshell as you tighten the Adjustable Clamping Pads to seat the Clamshell square on the pipe.

Check that all Clamping Pads fully contact the pipe.

If not, repeat the last three steps.

Tighten the Clamping Pads.

Tightening torque should be 40 to 50 ft-lbs. (54 to 68 N-m).

Go to “General Machining Sequence”.

If using the fully Adjustable Clamping Pads, clamp the Clamshell to the pipe as follows:

Rough center and square the Clamshell by tightening the Clamping Pads independently.

Check the center and squareness by eye.

The Adjustable Pads tend to square the Clamshell to the pipe.

If additional precision in squaring is required, consult TRI TOOL Inc. about alternate methods of squaring.

Fine center the Clamshell as you would a 4-jaw check.

Take measurements from the pipe OD to the Housing ID or use a dial indicator to sweep around the pipe's outside diameter.

Adjust the Clamping Pads so that the measurements at opposing Clamping Pads are the same.

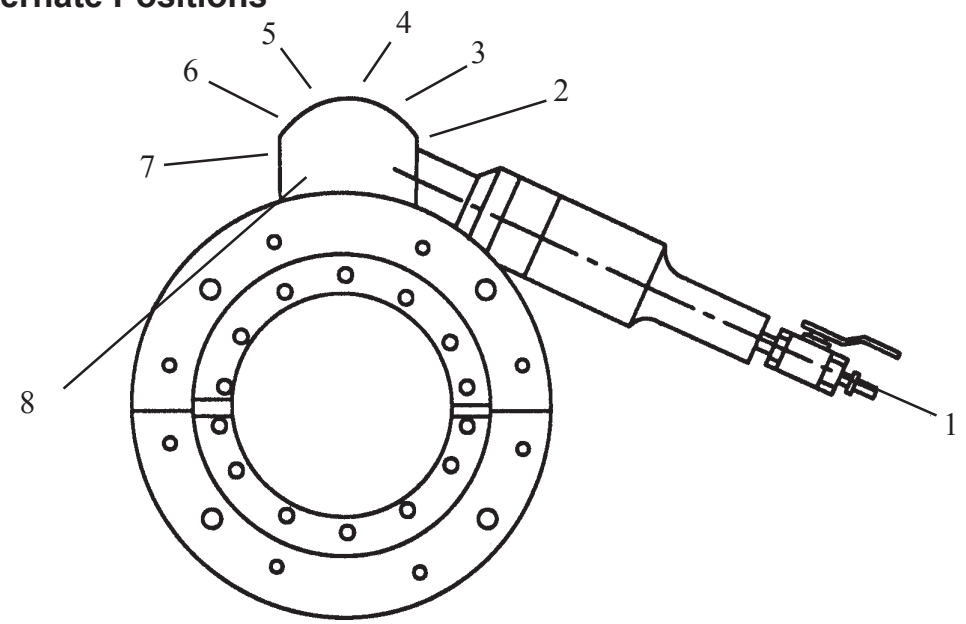
GENERAL MACHINING SEQUENCE

To set Tool Bits, go to 'Tool Bit set up' later in this section.

Install the Air Motor into the drive socket and bolt it to the Clamshell.

There are 8 various orientations available so that clearance for the Air Motor may be obtained.

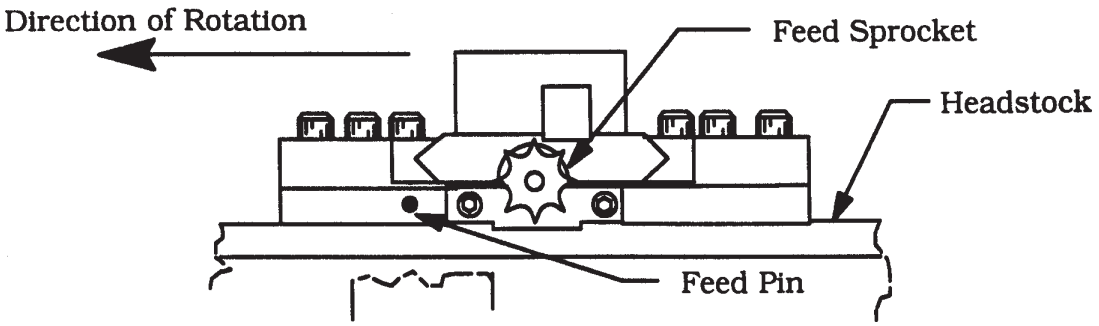
Air Motor Alternate Positions



CAUTION: The Motor Mount reacts the torque of the Air Motor only when the Motor Hold-down Bolt is in place.

NOTE: Check that the air supply filter/regulator/lubricator is installed and set properly.

Approach of the Feed Pin to the Feed Sproket



Check for proper alignment of the Feed Sprockets.

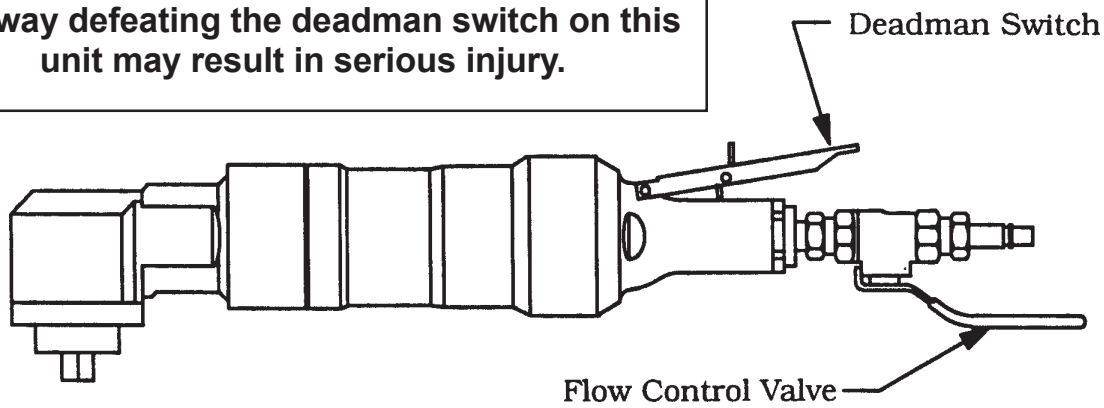
Run the Headstock slowly with the Feed Pin in to insure that the Sprocket is set right. (Do not run at full speed during the first revolution.)

WARNING: You will break the Feed Pin if the Feed Pin to Sprocket alignment is incorrect.

Deadman Switch Warning

WARNING

DO NOT OVERIDE THE DEADMAN SWITCH ON THIS UNIT. Locking down, obstructing, or in any way defeating the deadman switch on this unit may result in serious injury.



Turn on the Air Motor to full speed by opening the Throttle Control Valve.

NOTE: The Air Motor working speed will be about one half of the no-load speed. Refer to the chapter on “Cutting Speeds” for speed selection charts.

Engage the feed by pushing the Tripper Shaft in.

Monitor the cutting operation.

Apply cutting fluid as necessary.

If Chips build up so much that they tangle in the Clamshell, disengage the feed for 2-3 revolutions to clear the chip.

Then stop the Clamshell and remove the chips.

When the machine operation is finished, turn off the Air Motor by closing the Throttle Control Valve.

CAUTION: In-line pipe stores energy.

When the pipe is severed, the pipe may move.

To prevent accidents due to the spring in the pipe system, be sure to secure the pipe on both sides of the sever line in order to prevent differential movement of the pipe ends.

Retract the Tool Holders so that the Tool Bit(s) clear the pipe OD.

NOTE: The Tool Holders are retracted by rotating the Feed Sprocket clockwise using the special Spanner Wrench supplied with the Clamshell.

Run the Air Motor until the split-lines of the Headstock and the Housing match.

Loosen the Clamping Pads.

Remove the Clamshell from the pipe.

If the Clamshell must be split to remove it, be sure that both halves are properly supported.

CONFIGURE THE CLAMSHELL FOR THE SPECIFIC TASK REQUIRED

Select the proper Tool Blocks. Refer to the charts ‘Tool Blocks’.

Mount the Tool Blocks and Tripper Block to the Clamshell.

Check the adjustment of the slides and mesh of the Tripper Pin with the Feed Sprocket.

Select the proper Clamping Pad Set. Refer to the charts ‘Clamping Pad Sets’.

Install the Clamping Pad Set into the clamshell.

If using the Fixed Clamping Pad Set then install the Clamping Pad Set so that the pipe lays on the fixed Pads or vice versa.

Fixed Pads should be located 90° from each other for 604SB through 610SB and 110° for the 612SB.

TOOL BIT SET-UP

Select the proper Tool Bit set. Refer to the section ‘Tool Bits’.

WARNING:	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.

Install the Tool Bits into the Tool Blocks. Refer to the section ‘Tool Bits’ for installation drawings.

Approximately .75” to .88” (19.1 mm to 22.4 mm) should be protruding from the end of the Tool Holders.

Tighten the Tool Bit Set Screws, then verify that there is adequate clarance between the Tool Bits and the pipe by rotating the Headstock by hand.

The Leading Tool Bit should contact the pipe approximately .020” to .040” (.51 mm to 1.0 mm) before the Trailing Tool Bit.

SEVERING AND SINGLE BEVELING OR SEVERING AND DOUBLE BEVELING SIMULTANEOUSLY

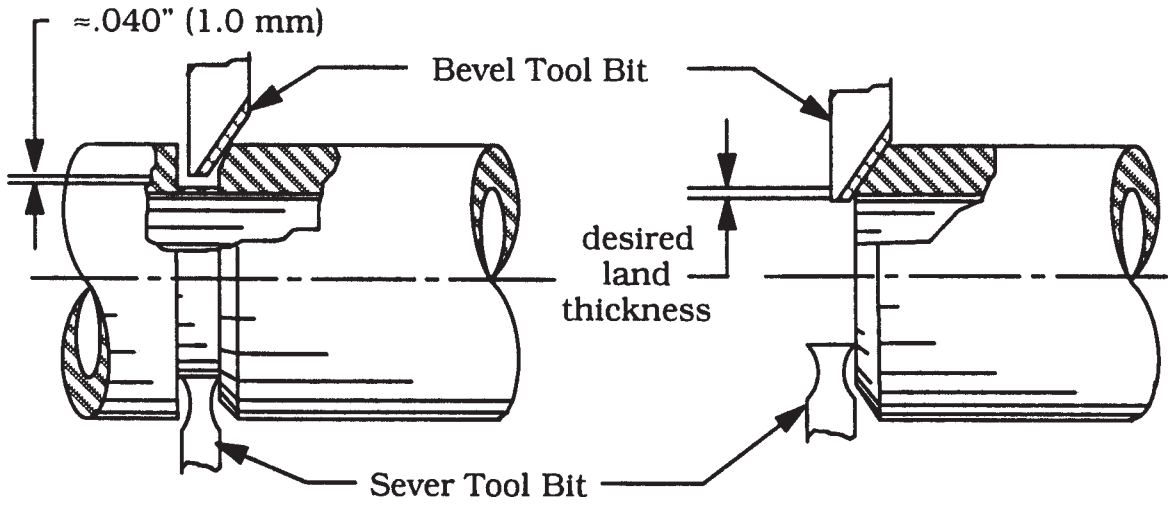
When the Tool Bits are within about .040” (1.0 mm) of severing the pipe, disengage the Feed Pin and let the Headstock rotate 2 to 3 times to clear the chip.

Retract the Tool Holder which holds the Bevel Tool Bit, be sure that the Feed Sprocket is aligned properly.

Complete the sever.

After the sever is complete, reposition the Bevel Tool Bit so that it continues cutting until the desired land thickness is obtained.

Tool Bit Adjustment



SOCKET WELD REMOVAL

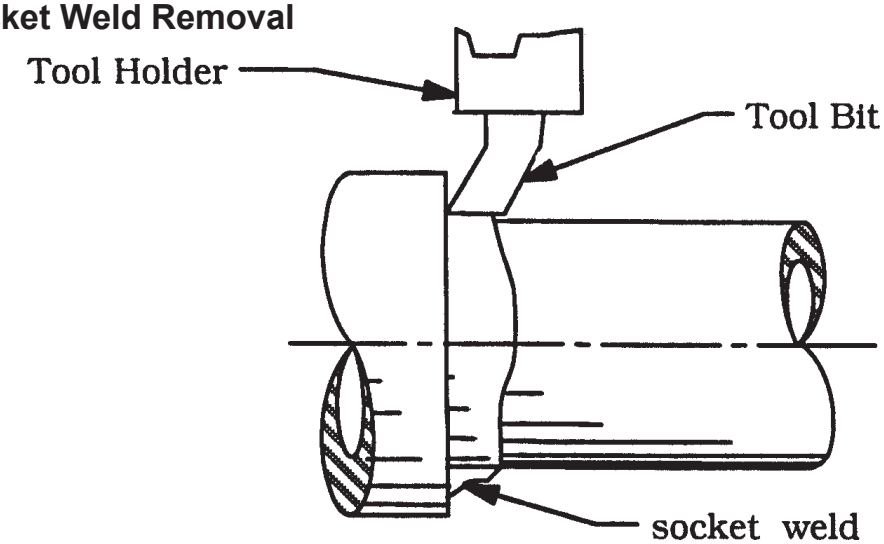
Install the Tool Bit in the Socket Weld Tool Holder (Optional) as show. See the picture below.

When the Tool Bit first cuts the parent metal, stop the machine and retract the Tool Holder.

Strike the pipe end and twist it out of the socket.

If the pipe will not separate from the socket, then continue cutting.

Socket Weld Removal



After every 3 or 4 revolutions, try again to break the pipe free.

COUNTERBORING

Counterboring requires the use of a counterbore Module (CBM-2)(P/N 05-0116).

Refer to the separate Instruction Manual for its use with the Clamshell.

CUTTING SPEEDS

The Chart shows RPM to obtain specified Tool Bit surface cutting speed.

Cutting Speeds (Approximately)					
Pipe Size	**True Diameter**		**RPM for 200 in/min (508 cm/min)**	**RPM for 250 in/min (635 cm/min)**	**RPM for 300 in/min (762 cm/min)**
12"	12.75"	323.9 mm	5	6	7
	12.50"	317.5 mm	5	6	8
	11.75"	298.5 mm	5	7	8
	11.50"	292.1 mm	6	7	8
	11.25"	285.8 mm	6	7	8
10"	10.75"	273.1 mm	6	7	9
	10.25"	260.4 mm	6	8	9
	9.75"	247.7 mm	7	8	10
	9.00"	228.6 mm	7	9	11
8"	8.625"	219.1 mm	7	9	11
	7.500"	190.5 mm	9	11	13
6"	6.625"	168.3 mm	10	12	14
	6.000"	152.4 mm	11	13	16
5"	5.563"	141.3 mm	12	14	17
4"	4.500"	114.3 mm	14	18	21
3.5"	4.000"	101.6 mm	16	20	24
3"	3.500"	88.9 mm	18	23	27
2.5"	2.875"	73.0 mm	22	28	33
2"	2.375"	60.3 mm	27	34	40

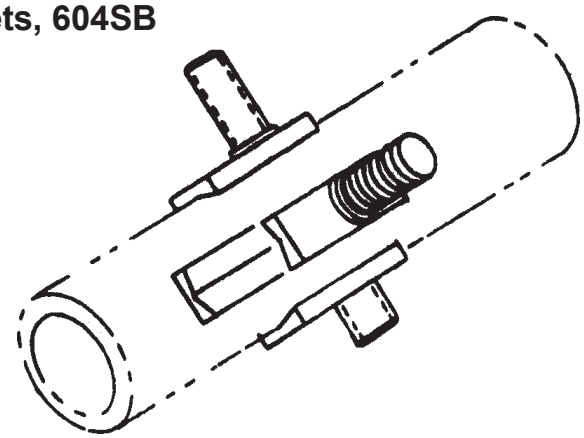
Use 200 surface inches per minute (508 surface centimeters per minute) for stainless steels in general when no coolant is allowed, all heavy-wall tube and some of the chrome/molybdenum steels.

Use 250 surface inches per minute (635 surface centimeters per minute) for mild steels and some thin wall stainless steels when coolants are permitted and applied.

Use 300 surface inches per minute (762 surface centimeters per minute) for aluminum and thin-wall mild steel and tube with coolants.

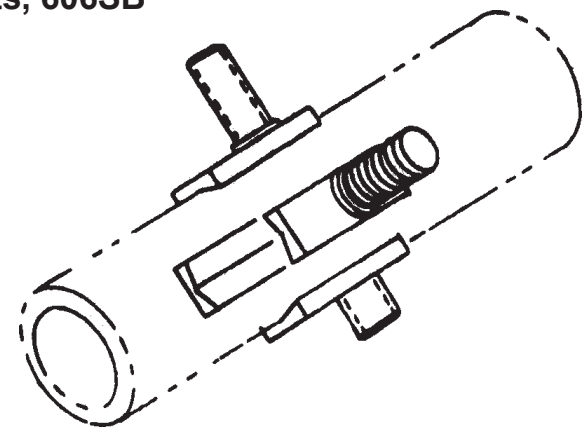
CLAMPING PAD SETS

Clamping Pad Sets, 604SB



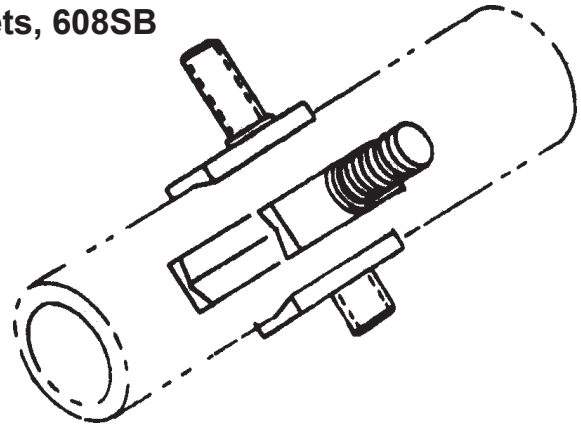
Clamping Pad Sets, 604SB					
			Clamping Pad Sets		
Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (2 req'd)	Fixed Bar Assy (2 req'd)
4"	4.500"	114.3 mm	67-3028	26-0246	26-0244
	4.250"	108.0 mm	67-3057	26-0290	26-0276
3 1/2"	4.000"	101.6 mm	67-3058	26-0292	26-0278
	3.750"	95.3 mm	67-3059	26-0294	26-0280
3"	3.500"	88.9 mm	67-3060	26-0274	26-0272
	3.250"	82.6 mm	67-3061	26-0296	26-0282
	3.000"	76.2 mm	67-3062	26-0298	26-0284
2 1/2"	2.875"	73.0 mm	67-3036	26-0258	26-0236
	2.750"	69.6 mm	67-3063	26-0300	26-0286
	2.500"	63.5 mm	67-3064	26-0302	26-0288
2"	2.375"	60.3 mm	67-3038	26-0262	26-0234
Contact TRI TOOL Inc. for sizes not listed					

Clamping Pad Sets, 606SB



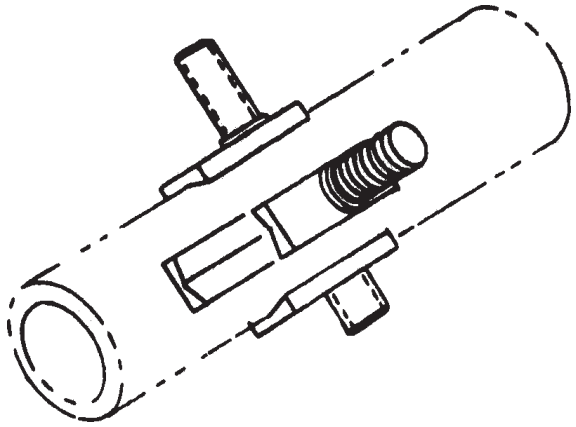
Clamping Pad Sets, 606SB					
			Clamping Pad Sets		
Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (2 req'd)	Fixed Bar Assy (2 req'd)
6"	6.625"	168.3 mm	67-3028	26-0246	26-0244
	6.500"	165.1 mm	67-3029	26-0246	26-0243
	6.250"	158.8 mm	67-3030	26-0248	26-0242
	6.000"	152.4 mm	67-3031	26-0250	26-0241
	5.750"	146.1 mm	67-3032	26-0252	26-0240
5"	5.563"	141.3 mm	67-3033	26-0254	26-0239
	5.500"	139.7 mm	67-3034	26-0254	26-0238
	5.250"	133.4 mm	67-3035	26-0256	26-0237
	5.000"	127.0 mm	67-3036	26-0258	26-0236
	4.750"	120.7 mm	67-3037	26-0260	26-0235
4"	4.500"	114.3 mm	67-3038	26-0262	26-0234
	4.250"	108.0 mm	67-3039	26-0264	26-0233
3 1/2"	4.000"	101.6 mm	67-3040	26-0266	26-0232
Contact TRI TOOL Inc. for sizes not listed					

Clamping Pad Sets, 608SB



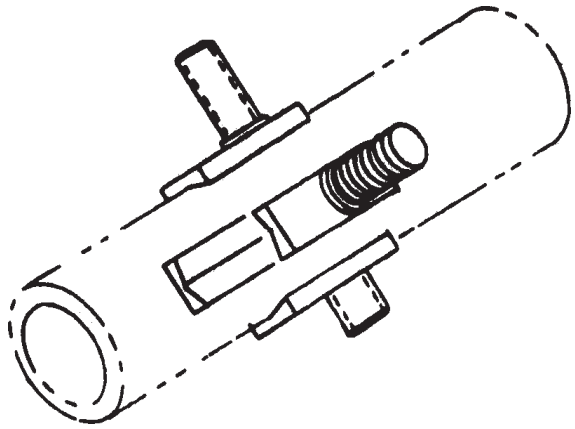
Clamping Pad Sets, 608SB					
			Clamping Pad Sets		
Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (2 req'd)	Fixed Bar Assy (2 req'd)
8"	8.625"	219.1 mm	67-3007	26-0386	26-0243
	8.500"	215.9 mm	67-3080	26-0388	26-0276
	8.250"	209.6 mm	67-3081	26-0390	26-0278
	8.000"	203.2 mm	67-3082	26-0392	26-0280
	7.750"	196.9 mm	67-3083	26-0394	26-0272
	7.625"	193.7 mm	67-3076	26-0274	26-0238
	7.500"	190.5 mm	67-3084	26-0396	26-0282
	7.250"	184.2 mm	67-3085	26-0398	26-0284
	7.000"	177.8 mm	67-3086	26-0400	26-0286
	6.750"	171.5 mm	67-3087	26-0402	26-0288
6"	6.625"	168.3 mm	67-3008	26-0302	26-0234
	6.500"	165.1 mm	67-3088	26-0404	26-0376
	6.250"	158.8 mm	67-3089	26-0408	26-0378
	6.000"	152.4 mm	67-3090	26-0410	26-0380
	5.750"	146.1 mm	67-3091	26-0412	26-0382
5"	5.563"	141.3 mm	67-3009	26-0414	26-0384
Contact TRI TOOL Inc. for sizes not listed					

Clamping Pad Sets, 610SB



Clamping Pad Sets, 610SB					
			Clamping Pad Sets		
Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (3 req'd)	Fixed Bar Assy (2 req'd)
10"	10.750"	273.1 mm	67-3093	26-0388	26-0242
	10.500"	266.7 mm	67-3095	26-0390	26-0241
	10.250"	260.4 mm	67-3096	26-0392	26-0240
	10.000"	254.0 mm	67-3097	26-0394	26-0238
	9.750"	247.7 mm	67-3098	26-0396	26-0237
	9.500"	241.3 mm	67-3099	26-0398	26-0236
	9.250"	235.0 mm	67-3100	26-0400	26-0235
	9.000"	228.6 mm	67-3101	26-0402	26-0234
	8.750"	222.3 mm	67-3102	26-0404	26-0233
8"	8.625"	219.1 mm	67-3010	26-0406	26-0378
Contact TRI TOOL Inc. for sizes not listed					

Clamping Pad Sets, 612SB



Clamping Pad Sets, 612SB					
			Clamping Pad Sets		
Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (3 req'd)	Fixed Bar Assy (2 req'd)
12"	12.750"	323.9 mm	67-3093	26-0388	26-0242
	12.500"	317.5 mm	67-3095	26-0390	26-0241
	12.250"	311.2 mm	67-3096	26-0392	26-0240
	12.000"	304.8 mm	67-3097	26-0394	26-0238
	11.750"	298.5 mm	67-3098	26-0396	26-0237
	11.500"	292.1 mm	67-3099	26-0398	26-0236
	11.250"	285.8 mm	67-3100	26-0400	26-0235
	11.000"	279.4 mm	67-3101	26-0402	26-0234
10"	10.750"	273.1 mm	67-3102	26-0404	26-0233
Contact TRI TOOL Inc. for sizes not listed					

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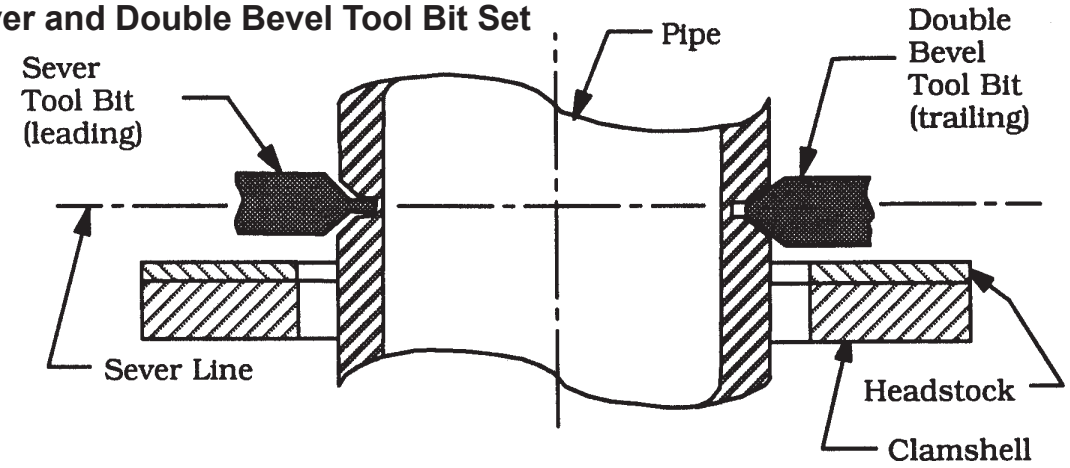
TOOL BITS

SEVER AND DOUBLE BEVEL TOOL BIT SETS

Sever and Double Bevel Tool Bit Sets have been designed to leave a bevel on both pieces of pipe or tube which has been severed.

Sever and Double Bevel Tool Bit Set

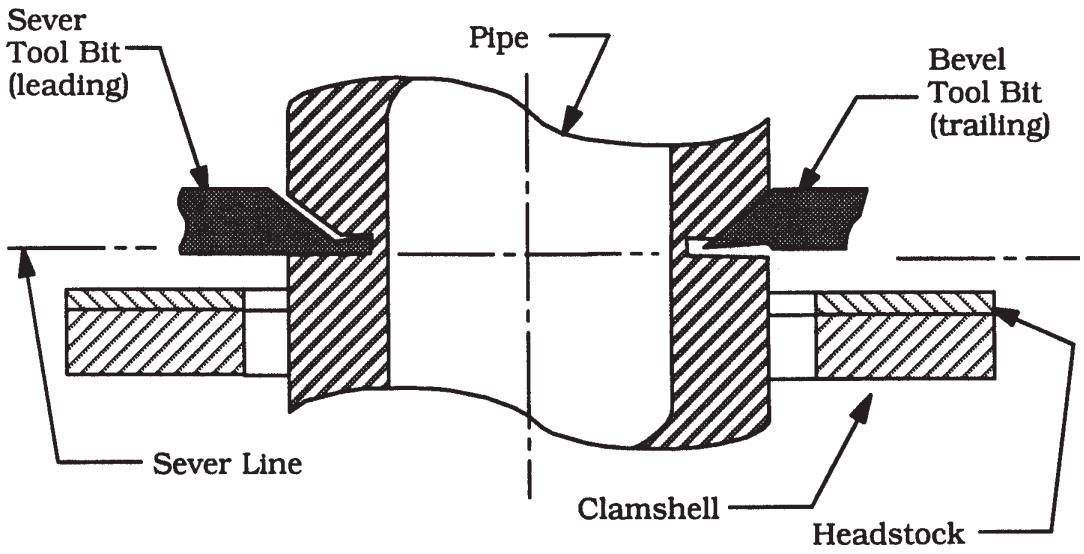


Sever and Double Bevel Tool Bit Sets						
Range	**Max Wall Thk**		**Pipe or Tube Mat'l**	**Double Bevel Tool Bit P/N**	**Sever Tool Bit P/N**	**Tool Bit Length**
Sever and Double 37.5^{O} Bevel Tool Bits for use with the Extended Tool Block (P/N 08-0040)						
2" & 2 1/2" pipe sch 5 thru 160	.400"	10.2 mm	CS, SS	99-0466	99-0467	3.00" (76.2 mm)
3" thru 5" pipe sch 5 thru 80						
6" thru 12" pipe sch 5 thru 40						
Sever and Double 37.5^{O} Bevel Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)						
2 1/2" pipe sch 5 only	.400"	10.2 mm	CS, SS	99-1642	99-1643	2.000" (50.8 mm)
3" thru 4" pipe sch 5 thru 80						
5" & 6" pipe sch 5 thru 40						
8" pipe sch 5 thru 60						
10" & 12" pipe sch 5 thru 40	.400"	10.2 mm	CS, SS	99-0987	99-0986	2.38" (60.5 mm)

SEVER AND BEVEL TOOL BIT SETS

Left Hand Sever and Bevel Tool Bit Sets have been designed to bevel the end of the pipe or tube which is cut from the pipe or tube on which the Clamshell is mounted.

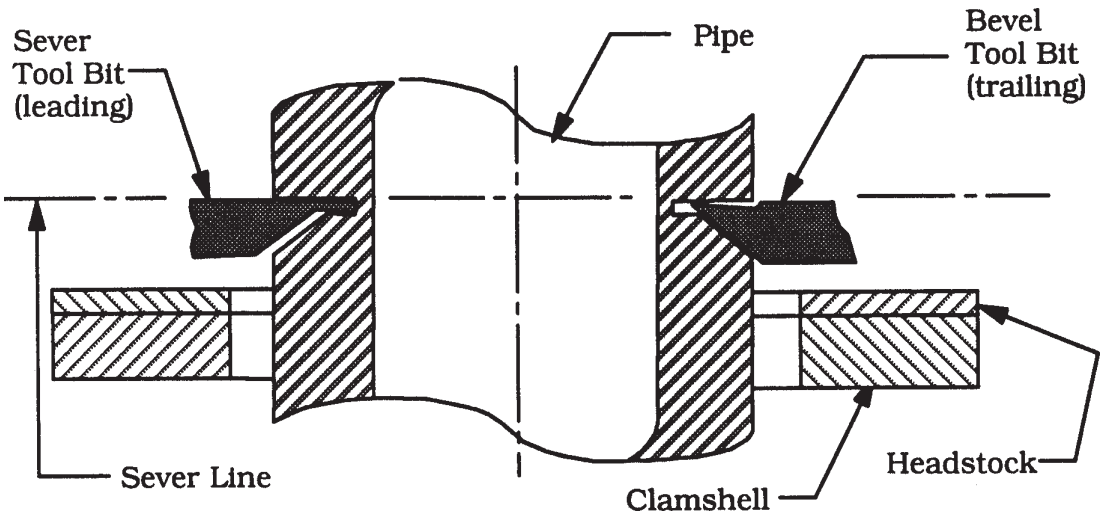
Left Hand Sever and Bevel Tool Bit Set



Left Hand Sever and Bevel Tool Bit Sets						
Range	**Max Wall Thk**		**Pipe or Tube Mat'l**	**LH Bevel Tool Bit P/N**	**LH Sever Tool Bit P/N**	**Tool Bit Length**
Left Hand Sever and 37.5^{O} Bevel Tool Bits for use with the Extended Tool Block (P/N 08-0040)						
2" thru 5" all sch	.800"	20.3 mm	CS, SS	99-1256	99-1257	3.00" (76.2 mm)
6" pipe sch 5 thru 160						
8" pipe sch 5 thru 120						
10" pipe sch 5 thru 100						
12" pipe sch 5 thru 80						
Left Hand Sever and 37.5^{O} Bevel Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)						
2 1/2" pipe sch 5 only	.800"	20.3 MM	CS, SS	99-1646	99-1647	2.000" (50.8 mm)
3" pipe sch 5 thru 80						
3 1/2" & 4" pipe all sch						
5" pipe sch 5 thru 40						
6" pipe sch 5 thru 160						
8" pipe sch 5 thru 120						
10" pipe sch 5 thru 100	.800"	20.3 MM	CS, SS	99-1264	99-1265	2.38" (60.5 mm)
12" pipe sch 5 thru 80						

Right Hand Sever and Bevel Tool Bit Sets have been designed to bevel the end of the pipe or tube on which the Clamshell is mounted.

Right Hand Sever and Bevel Tool Bit Set

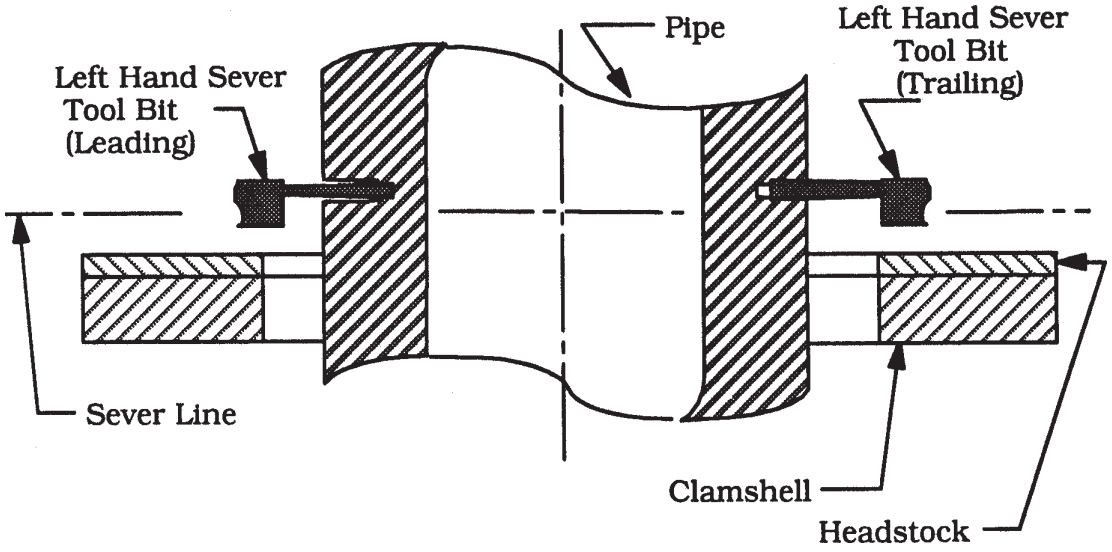


Right Hand Sever and Bevel Tool Bit Sets						
Range	**Max Wall Thk**		**Pipe or Tube Mat'l**	**RH Bevel Tool Bit P/N**	**RH Sever Tool Bit P/N**	**Tool Bit Length**
Right Hand Sever and 37.5^{O} Bevel Tool Bits for use with the Extended Tool Block (P/N 08-0040)						
2" thru 5" all sch	.800"	20.3 mm	CS, SS	99-1258	99-1259	3.00" (76.2 mm)
6" pipe sch 5 thru 160						
8" pipe sch 5 thru 120						
10" pipe sch 5 thru 100						
12" pipe sch 5 thru 80						
Right Hand Sever and 37.5^{O} Bevel Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)						
2 1/2" pipe sch 5 only	.800"	20.3 MM	CS, SS	99-1644	99-1645	2.00" (50.8 mm)
3" pipe sch 5 thru 80						
3 1/2" & 4" pipe all sch						
5" pipe sch 5 thru 40						
6" pipe sch 5 thru 160						
8" pipe sch 5 thru 120						
10" pipe sch 5 thru 100	.800"	20.3 MM	CS, SS	99-1266	99-1267	2.38" (60.5 mm)
12" pipe sch 5 thru 80						

SEVER TOOL BIT SETS

Left Hand Sever Tool Bit Sets have been designed to sever the pipe or tube away from the clamshell relative to the Tool Holder.

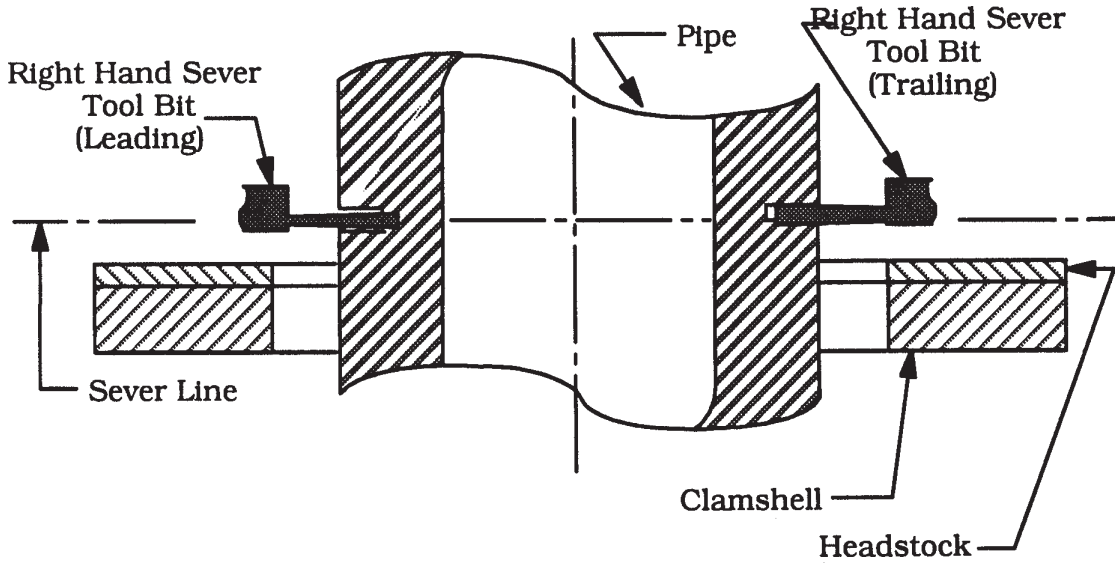
Left Hand Sever Tool Bit Set



Left Hand Sever Tool Bits						
Range	**Max Wall Thk**		**Pipe or Tube Mat'l**	**Leading LH Sever Tool Bit P/N**	**Trailing LH Sever Tool Bit P/N**	**Tool Bit Length**
Left Hand Sever Tool Bits for use with the Extended Tool Block (P/N 08-0040)						
2" thru 6" all sch	.800"	20.3 mm	CS, SS	99-0502	99-0501	3.00" (76.2 mm)
8" pipe sch 5 thru 140						
10" pipe sch 5 thru 100						
12" pipe sch 5 thru 80						
Left Hand Sever Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)						
2 1/2" pipe sch 5 only	.800"	20.3 MM	CS, SS	99-1638	99-1639	2.00" (50.8 mm)
3"" pipe sch 5 thru 80						
3 1/2" & 4" pipe all sch						
5" pipe sch 5 thru 40						
6" pipe sch 5 thru 160						
8" pipe sch 5 thru 120						
10" pipe sch 5 thru 100	.800"	20.3 MM	CS, SS	99-1596	99-1595	2.38" (60.5 mm)
12" pipe sch 5 thru 80						

Right Hand Sever Tool Bit Sets have been designed to sever the pipe or tube close to the clamshell relative to the Tool Holder.

Right Hand Sever Tool Bit Set

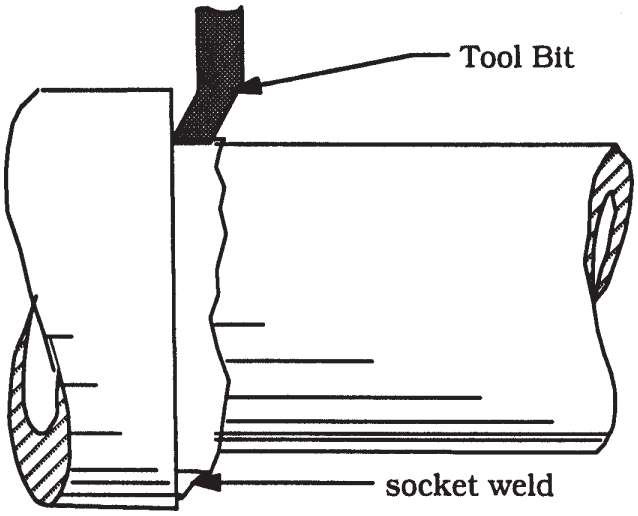


Right Hand Sever Tool Bit Sets						
Range	**Max Wall Thk**		**Pipe or Tube Mat'l**	**Leading RH Sever Tool Bit P/N**	**Trailing RH Sever Tool Bit P/N**	**Tool Bit Length**
Right Hand Sever Tool Bits for use with the Extended Tool Block (P/N 08-0040)						
2" thru 6" all sch	.800"	20.3 mm	CS, SS	99-1023	99-1022	3.00" (76.2 mm)
8" pipe sch 5 thru 140						
10" pipe sch 5 thru 100						
12" pipe sch 5 thru 80						
Right Hand Sever Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)						
2 1/2" pipe sch 5 only	.800"	20.3 MM	CS, SS	99-1640	99-1641	2.00" (50.8 mm)
3" pipe sch 5 thru 80						
3 1/2" & 4" pipe all sch						
5" pipe sch 5 thru 40						
6" pipe sch 5 thru 160						
8" pipe sch 5 thru 120						
10" pipe sch 5 thru 100	.800"	20.3 MM	CS, SS	99-1597	99-1598	2.38" (60.5 mm)
12" pipe sch 5 thru 80						

SPECIAL TOOL BIT SETS

A Socket Weld Removal Bit has been designed to remove the weld from a weld type socket joint.

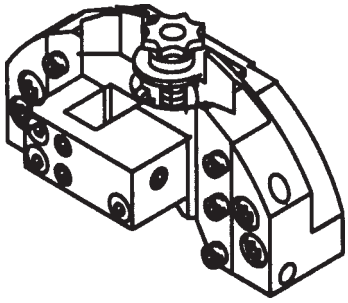
Socket Weld Removal Tool Bit



Socket Weld Removal Tool Bits				
Range	**Machine**	**Pipe or Tube Mat'l**	**Socket Weld Removal Tool Bit P/N**	**Tool Bit Length**
Socket Weld Removal Tool Bits for use with the Extended Tool Block (P/N 08-0040) using the Socket Weld Removal Tool Holder (P/N 49-0023)				
2.375" (60.3 mm) min OD 4.500" (114.3 mm) max OD	604SB	CS, SS	99-1600	2.38" (60.5 mm)
4.000" (101.6 mm) min OD 6.625" (168.3 mm) max OD	606SB			
5.563" (141.3 mm) min OD 8.625" (219.1 mm) max OD	608SB			
8.625" (219.1 mm) min OD 10.750" (273.1 mm) max OD	610SB			
10.750" (273.0 mm) min OD 12.750" (323.8 mm) max OD	612SB			
Socket Weld Removal Tool Bits for use with the Low Profile Tool Block (P/N 08-0037) using the Socket Weld Removal Tool Holder (P/N 49-0023)				
2.375" (60.3 mm) min OD 4.500" (114.3 mm) max OD	604SB	CS, SS	99-1600	2.38" (60.5 mm)
4.000" (101.6 mm) min OD 6.625" (168.3 mm) max OD	606SB			
6.120" (155.4 mm) min OD 8.625" (219.1 mm) max OD	608SB			
8.625" (219.1 mm) min OD 10.750" (273.1 mm) max OD	610SB			
10.750" (273.0 mm) min OD 12.750" (323.8 mm) max OD	612SB			

TOOL BLOCKS

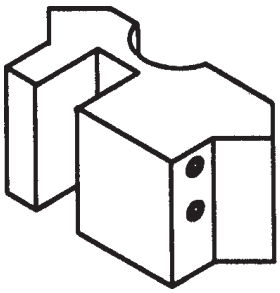
Tool Block



Tool Blocks

Part No.	Description
08-0037	TOOL BLOCK, LOW PROFILE
08-0040	TOOL BLOCK, EXTENDED RANGE

Socket Weld Removal



Tool Holder, Socket Weld Removal Tool Holder

Part No.	Description
49-0023	TOOL HOLDER, SOCKET WELD REMOVAL

TROUBLE SHOOTING

Problem: The Tool Bit Chatters

Probable Causes:
The tool bit is loose or over-extended.
The tool bit is damaged.
The tool holder is too loose in the slides.
The cutting speed is too fast.
The clamping pads are loose on the pipe or tube.
Cutting fluid is required.
The main bearing pre-load is loose.

Problem: There is excessive Tool Bit wear

Probable Causes:
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 toolbit at the start of the cut.
The tool bit is incorrect for the material being cut.

Problem: The Tool Bit is diving and the Clamshell is stalling

Probable Causes:
The Tool Bit is dull, chipped, etc.
The Tool Holder Adjustment Slide is too loose.
The Parting Tool Bit is leading the Beveling Tool Bit by too much for proper chip clearance.
The Tool Bit is over-extended.
The Tool Holder is over-extended.
The Main Bearing pre-load is too loose.

Problem: The surface finish is rough

Probable Causes:
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 Headstock is hard to rotate by hand.

Probable Causes:
The Air Motor is still engaged.
The Clamping Pads are too tight on the pipe or tube.
Foreign material is on the mating surface of the split-lines.
Chips and/or other foreign material are in the rotating section.
The Tool Bit is in contact with the pipe or tube.
The Tool Block is in contact with the pipe or tube.
The Main Bearing pre-load is too tight.

Problem: The tool holder is not feeding

Probable Causes:
The feed pin is broken or out of position.
The feed sprocket shear pin is broken.
The feed screw is stripped.
The feed nut is stripped.
The slide rails are too tight.

Problem: There is a loss of air power

Probable Causes:
The air supply pressure is too low.
The air filter is plugged.
The air line size is insufficient.
The air line is too long.
The motor is icing up because the water trap in the FRL has not been drained.

Problem: The Clamshell is slipping on the pipe or tube. (Fixed Pads)

Probable Causes:
The Clamping Pads 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: There is a loss of hydraulic power

Probable Causes:
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 tool bit will not reach the work

Probable Causes:
Incorrect tool blocks are installed for the size of the pipe or tube being worked on.
Incorrect tool bit is installed.

Problem: The Clamshell will not center on the pipe or tube. (Fixed Pads)

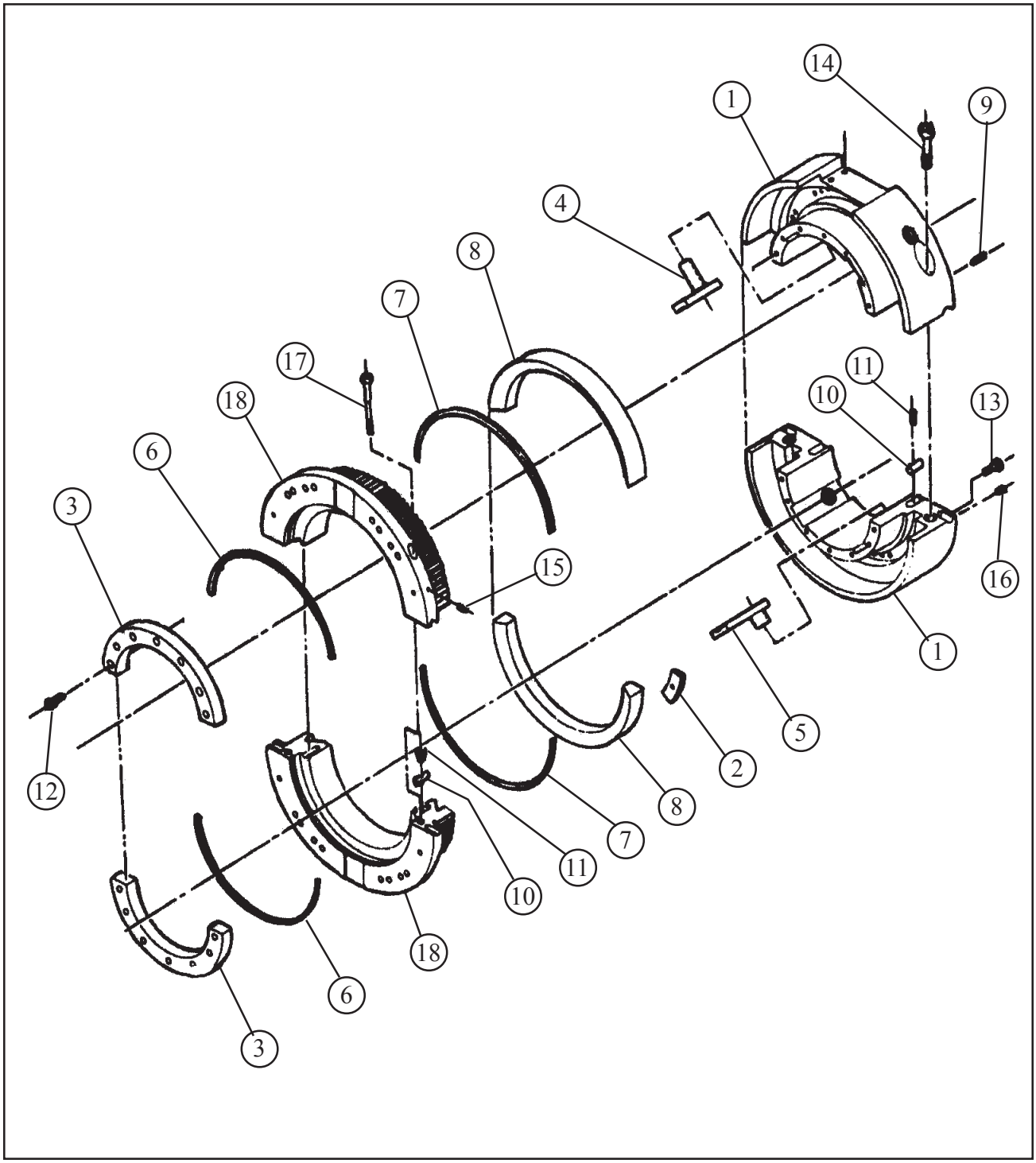
Probable Causes:
Incorrect Clamping Pad Set is installed.
Scale and/or foreign material is present on the pipe or tube.
One of the Clamping Pads is on a seam.
The pipe or tube has an out-of –round condition or is oversized or undersized.

Problem: The Air Motor will not start

Probable Causes:
The air supply is shut off.
The Air Motor will not run free.
The Air Motor needs lubrication.
Add lubrication and do not run the Air Motor for a few minutes.
Then try again.
Tap on the Air Motor casing lightly with a piece of wood or with a soft rubber mallet.
The vanes may be sticking.
Sand or other foreign material is in the vanes of the Air Motor.

ILLUSTRATED PARTS BREAKDOWN

MODEL 600SB CLAMSHELL SUB-ASSY.



Parts List, Model 604SB Clamshell Sub-Assy (Ref. P/N 02-2252)

Item No.	Part No.	Description	Qty
1.	19-0194	HOUSING, MAIN	1 SET
2.	24-0366	PLATE, BEARING BACKING	8
3.	24-0346	PLATE, THRUST	1 SET
4.		BAR ASSY, ADJUSTABLE REFER TO CLAMPING PADS FOR OPTIONS	2
5.		BAR ASSY, FIXED REFER TO CLAMPING PADS FOR OPTIONS	2
6.	28-0057	SEAL, FELT	20” (51 cm)
7.	28-0057	SEAL, FELT	28” (72 cm)
8.	29-0128	BEARING, MAIN	1 SET
9.	32-0024	PIN, ROLL, 1/8 DIA x 1/2	2
10.	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
11.	33-0012	SCREW, CAP, #6-32 X 3/8	8
12.	33-0029	SCREW, CAP, 10-24 X 5/8	14
13.	33-0042	SCREW, CAP, 1/4-20 X 1	8
14.	33-0108	SCREW, CAP, 1/2-13 X 1 3/4	2
15.	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
16.	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	16
17.	33-1284	SCREW, SPLITLINE, 1/4-20 X 2 1/2	2
18.	39-0195	GEAR, HEADSTOCK	1 SET

NOT SHOWN:

05-1076	SHIPPING KIT, 600SB	1
36-0004	WRENCH, L, 7/64, HEX	1
36-0003	WRENCH, L, 3/32” HEX	1
36-0005	WRENCH, L, 1/8” HEX	1
36-0007	WRENCH, L, 5/32” HEX	1
36-0008	WRENCH, L, 3/16” HEX	1
36-0009	WRENCH, L, 7/32” HEX	1
36-0010	WRENCH, L, 1/4” HEX	1
36-0011	WRENCH, L, 5/16” HEX	1
36-0012	WRENCH, L, 3/8” HEX	1
36-0018	WRENCH, T, 1/8” HEX	1
36-0021	WRENCH, T, 3/16” HEX	1
36-0051	WRENCH, SPANNER	1
32-0084	PIN, DOWEL, 5/32 DIA X 13/16	3
86-0049	CASE, CUSTOM CARRYING, 604SB	1

Parts List, Model 606SB Clamshell Sub-Assy (Ref. P/N 02-2253)

Item No.	Part No.	Description	Qty
1.	19-0204	HOUSING, MAIN	1 SET
2.	24-0366	PLATE, BEARING BACKING	8
3.	24-0365	PLATE, THRUST	1 SET
4.		BAR ASSY, ADJUSTABLE REFER TO 'CLAMPING PADS' FOR OPTIONS	2
5.		BAR ASSY, FIXED REFER TO 'CLAMPING PADS' FOR OPTIONS	2
6.	28-0057	SEAL, FELT	28" (71 cm)
7.	28-0057	SEAL, FELT	35" (89 cm)
8.	29-0129	BEARING, MAIN	1 SET
9.	32-00234	PIN, ROLL, 1/8 DIA X 1/2	2
10.	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
11.	33-0012	SCREW, CAP, #6-32 X 3/8	8
12.	33-0029	SCREW, CAP, 10-24 X 5/8	14
13.	33-0042	SCREW, CAP, 1/4-20 X 1	8
14.	33-0109	SCREW, CAP, 1/2-13 X 2	2
15.	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
16.	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	16
17.	33-1263	SCREW, SPLITLINE, 1/4-20 X 3	2
18.	39-0201	GEAR, HEADSTOCK	1 SET

NOT SHOWN:

05-1076	SHIPPING KIT, 600SB	1
36-0004	WRENCH, L, 7/64, HEX	1
36-0003	WRENCH, L, 3/32" HEX	1
36-0005	WRENCH, L, 1/8" HEX	1
36-0007	WRENCH, L, 5/32" HEX	1
36-0008	WRENCH, L, 3/16" HEX	1
36-0009	WRENCH, L, 7/32" HEX	1
36-0010	WRENCH, L, 1/4" HEX	1
36-0011	WRENCH, L, 5/16" HEX	1
36-0012	WRENCH, L, 3/8" HEX	1
36-0018	WRENCH, T, 1/8" HEX	1
36-0021	WRENCH, T, 3/16" HEX	1
36-0051	WRENCH, SPANNER	1
32-0084	PIN, DOWEL, 5/32 DIA X 13/16	3
86-0059	CASE, CUSTOM CARRYING, 606SB	1

Parts List, Model 608SB Clamshell Sub-Assy. (Ref. P/N 02-2254)

Item No.	Part No.	Description	Qty
1.	19-0222	HOUSING, MAIN	1 SET
2.	24-0382	PLATE, BEARING BACKING	10
3.	24-0385	PLATE, THRUST	1 SET
4.		BAR ASSY, ADJUSTABLE REFER TO 'CLAMPING PADS' FOR OPTIONS	2
5.		BAR ASSY, FIXED REFER TO 'CLAMPING PADS' FOR OPTIONS	2
6.	28-0057	SEAL, FELT	35" (89 cm)
7.	28-0057	SEAL, FELT	42" (107 cm)
8.	29-0139	BEARING, MAIN	1 SET
9.	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
10.	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
11.	33-0012	SCREW, CAP, #6-32 X 3/8	8
12.	33-0029	SCREW, CAP, 10-24 X 5/8	16
13.	33-0042	SCREW, CAP, 1/4-20 X 1	10
14.	33-0109	SCREW, CAP, 1/2-13 X 2	2
15.	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
16.	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	20
17.	33-1263	SCREW, SPLITLINE, 1/4-20 X 3	2
18.	39-0226	GEAR, HEADSTOCK	1 SET

NOT SHOWN:

05-1076	SHIPPING KIT, 600SB	1
36-0004	WRENCH, L, 7/64, HEX	1
36-0003	WRENCH, L, 3/32" HEX	1
36-0005	WRENCH, L, 1/8" HEX	1
36-0007	WRENCH, L, 5/32" HEX	1
36-0008	WRENCH, L, 3/16" HEX	1
36-0009	WRENCH, L, 7/32" HEX	1
36-0010	WRENCH, L, 1/4" HEX	1
36-0011	WRENCH, L, 5/16" HEX	1
36-0012	WRENCH, L, 3/8" HEX	1
36-0018	WRENCH, T, 1/8" HEX	1
36-0021	WRENCH, T, 3/16" HEX	1
36-0051	WRENCH, SPANNER	1
32-0084	PIN, DOWEL, 5/32 DIA X 13/16	3
86-0060	CASE, CUSTOM CARRYING, 608SB	1

Parts List, Model 610SB Clamshell Sub-Assy (Ref. P/N 02-2255)

Item No.	Part No.	Description	Qty
1.	19-0221	HOUSING, MAIN	1 SET
2.	24-0382	PLATE, BEARING BACKING	12
3.	24-0383	PLATE, THRUST	1 SET
4.		BAR ASSY, ADJUSTABLE REFER TO 'CLAMPING PADS' FOR OPTIONS	3
5.		BAR ASSY, FIXED REFER TO 'CLAMPING PADS' FOR OPTIONS	2
6.	28-0057	SEAL, FELT	50" (127 cm)
7.	28-0057	SEAL, FELT	42" (107 cm)
8.	29-0138	BEARING, MAIN	1 SET
9.	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
10.	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
11.	33-0012	SCREW, CAP, #6-32 X 3/8	8
12.	33-0029	SCREW, CAP, 10-24 X 5/8	20
13.	33-0042	SCREW, CAP, 1/4-20 X 1	12
14.	33-0112	SCREW, CAP, 1/2-13 X 2 3/4	2
15.	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
16.	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	24
17.	33-1287	SCREW, SPLITLINE, 1/4-20 X 3 1/2	2
18.	39-0225	GEAR, HEADSTOCK	1 SET

NOT SHOWN:

05-1076	SHIPPING KIT, 600SB	1
36-0004	WRENCH, L, 7/64, HEX	1
36-0003	WRENCH, L, 3/32" HEX	1
36-0005	WRENCH, L, 1/8" HEX	1
36-0007	WRENCH, L, 5/32" HEX	1
36-0008	WRENCH, L, 3/16" HEX	1
36-0009	WRENCH, L, 7/32" HEX	1
36-0010	WRENCH, L, 1/4" HEX	1
36-0011	WRENCH, L, 5/16" HEX	1
36-0012	WRENCH, L, 3/8" HEX	1
36-0018	WRENCH, T, 1/8" HEX	1
36-0021	WRENCH, T, 3/16" HEX	1
36-0051	WRENCH, SPANNER	1
32-0084	PIN, DOWEL, 5/32 DIA X 13/16	3
86-0061	CASE, CUSTOM CARRYING, 610SB	1

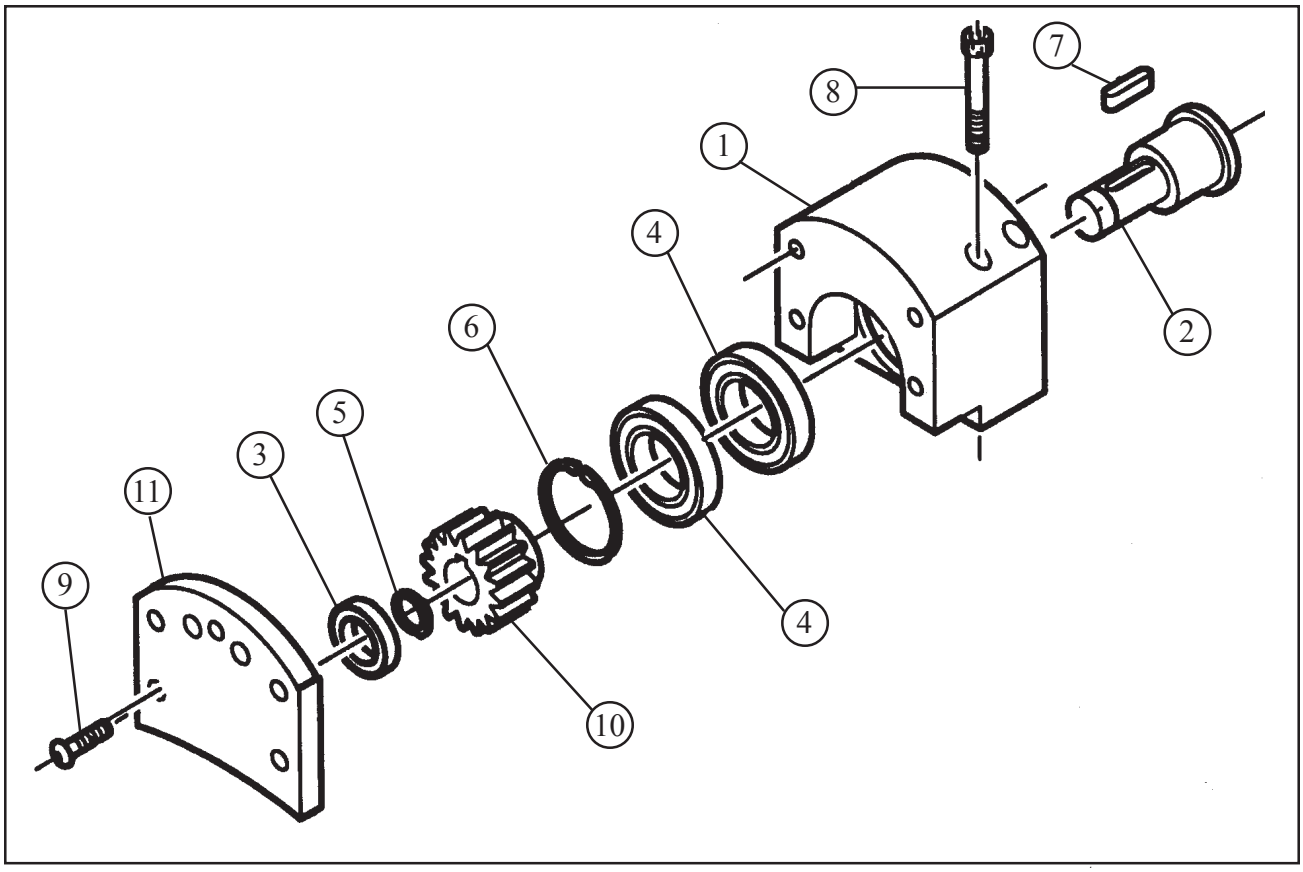
Parts List, Model 612SB, Clamshell Sub-Assy (Ref. P/N 02-2256)

Item No.	Part No.	Description	Qty
1.	19-0198	HOUSING, MAIN	1 SET
2.	24-0382	PLATE, BEARING BACKING	12
3.	24-0361	PLATE, THRUST	1 SET
4.		BAR ASSY, ADJUSTABLE REFER TO 'CLAMPING PADS' FOR OPTIONS	3
5.		BAR ASSY, FIXED REFER TO 'CLAMPING PADS' FOR OPTIONS	2
6.	28-0057	SEAL, FELT	48" (122 cm)
7.	28-0057	SEAL, FELT	56" (142 cm)
8.	29-0126	BEARING, MAIN	1 SET
9.	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
10.	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
11.	33-0012	SCREW, CAP, #6-32 X 3/8	8
12.	33-0029	SCREW, CAP, 10-24 X 5/8	20
13.	33-0042	SCREW, CAP, 1/4-20 X 1	12
14.	33-0113	SCREW, CAP, 1/2-13 X 3	2
15.	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
16.	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	24
17.	33-1252	SCREW, SPLITLINE, 1/4-20 X 4	2
18.	39-0198	GEAR, HEADSTOCK	1 SET

NOT SHOWN:

05-1076	SHIPPING KIT, 600SB	1
36-0004	WRENCH, L, 7/64, HEX	1
36-0003	WRENCH, L, 3/32" HEX	1
36-0005	WRENCH, L, 1/8" HEX	1
36-0007	WRENCH, L, 5/32" HEX	1
36-0008	WRENCH, L, 3/16" HEX	1
36-0009	WRENCH, L, 7/32" HEX	1
36-0010	WRENCH, L, 1/4" HEX	1
36-0011	WRENCH, L, 5/16" HEX	1
36-0012	WRENCH, L, 3/8" HEX	1
36-0018	WRENCH, T, 1/8" HEX	1
36-0021	WRENCH, T, 3/16" HEX	1
36-0051	WRENCH, SPANNER	1
32-0084	PIN, DOWEL, 5/32 DIA X 13/16	3
86-0062	CASE, CUSTOM CARRYING, 612SB	1

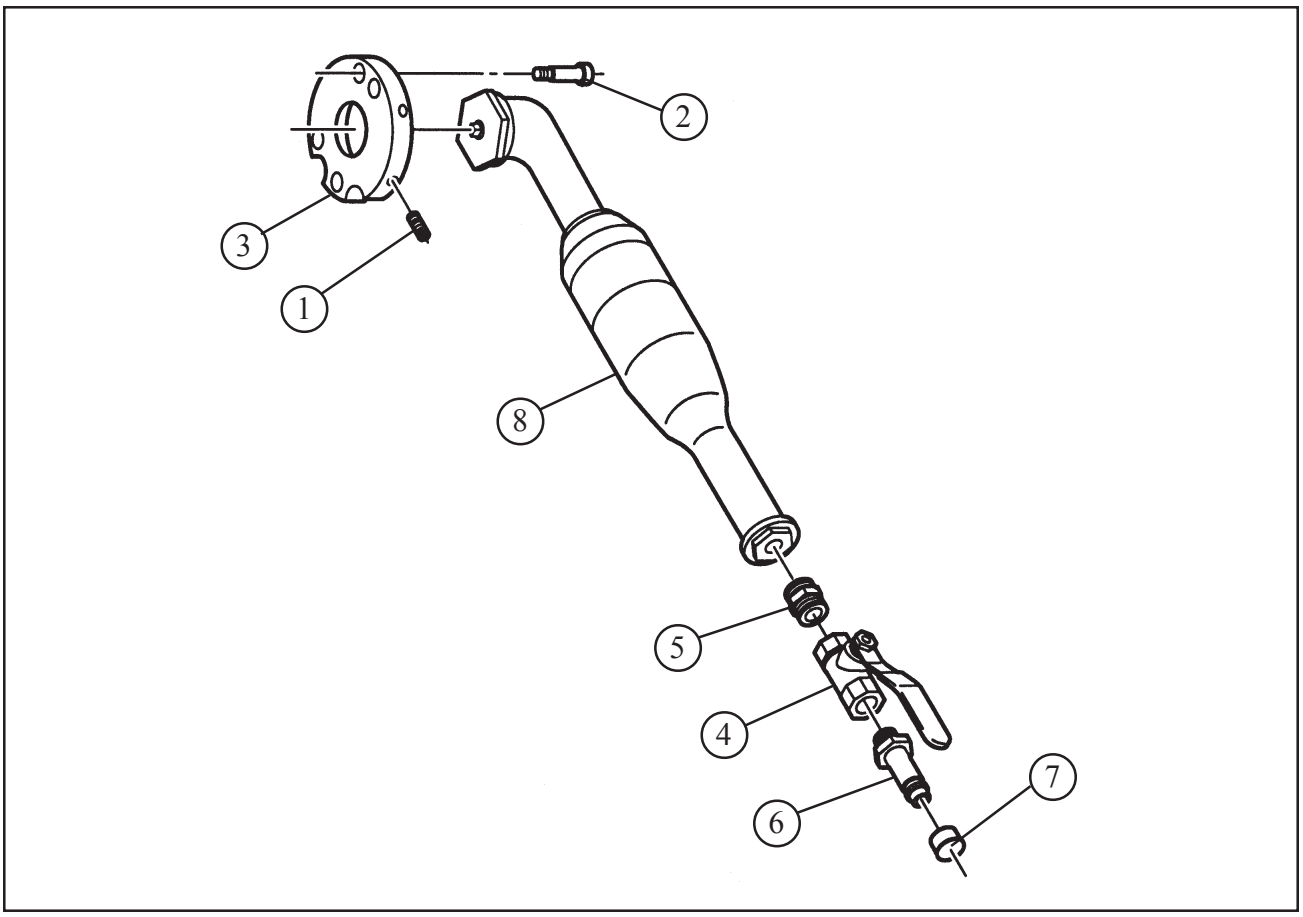
HOUSING ASSY, DRIVE (P/N 19-0201)



Parts List, Housing Assy, Drive (P/N 19-0201)

Item No.	Part No.	Description	Qty
1.	19-0200	HOUSING	1
2.	20-0195	SHAFT	1
3.	29-0064	BEARING, BALL	1
4.	29-0065	BEARING, BALL	2
5.	30-0011	RING, RETAINING	1
6.	30-0369	RING, RETAINING	1
7.	31-0037	KEY	1
8.	33-0048	SCREW, CAP, 1/4-20 X 2 1/2	4
9.	33-0287	SCREW, BUTTON, 1/4-20 X 3/4	4
10.	39-0230	GEAR, PINION	1
11.	43-0206	COVER	1

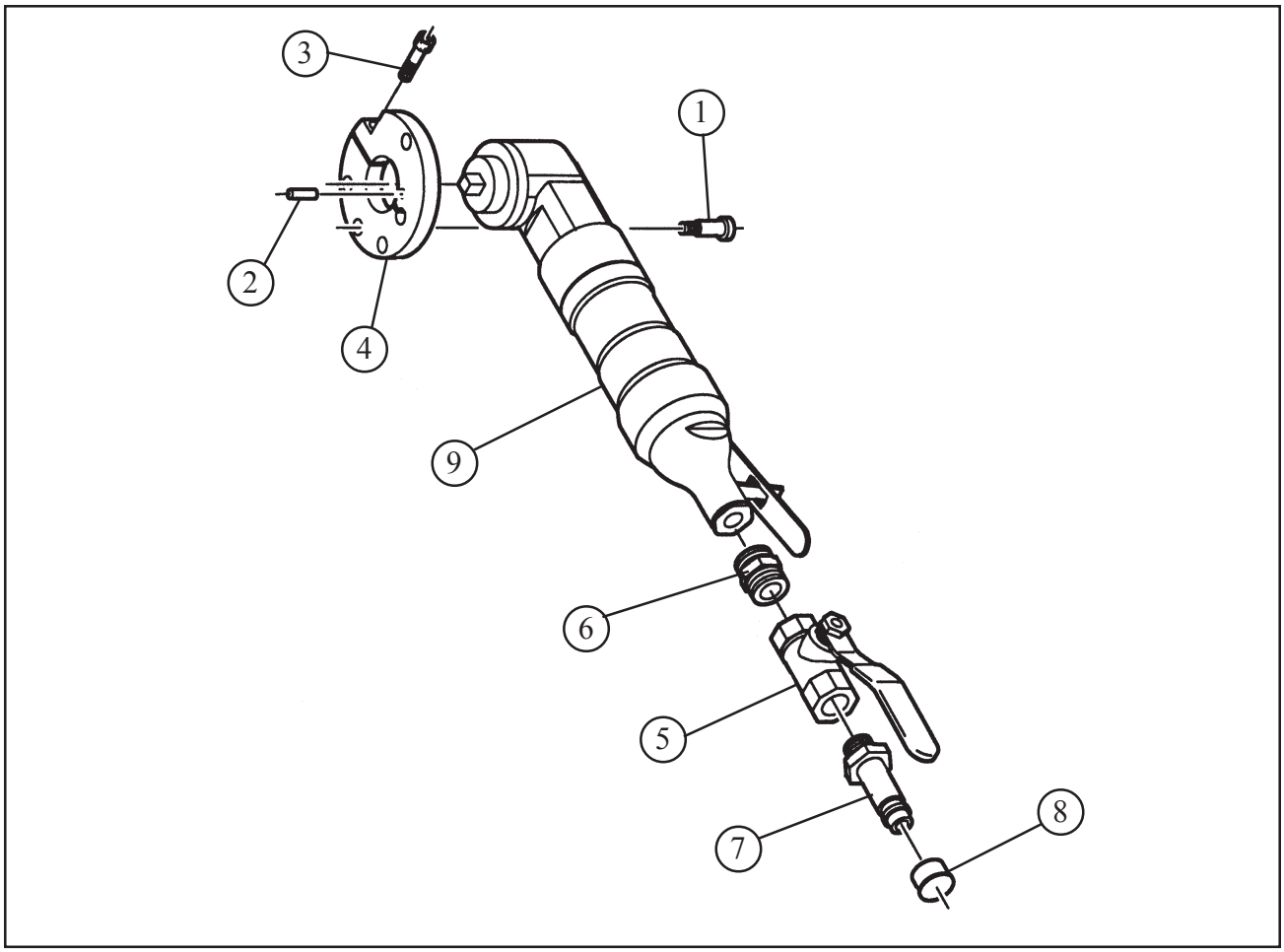
MOTOR ASSY., AIR, 1.5 HP (P/N 57-0072)



Parts List, Motor Assy, Air, 1.5 HP (P/N 57-0072)

Item No.	Part No.	Description	Qty
1.	33-0518	SCREW, SET, 5/16-18 X 3/4, CUP PT	3
2.	33-0965	SCREW, SHOULDER, 1/2 X 1	1
3.	47-0227	BRACKET, TORQUE RESTRAINT	1
	53-0029	VALVE ASSY, FLOW CONTROL	1
4.	53-0016	VALVE FLOW CONTROL	1
5.	54-0050	NIPPLE, EXT PIPE TO EXT PIPE	1
6.	54-0126	COUPLING, MALE, QUICK DISCONNECT	1
7.	54-0201	CAP, PLASTIC	1
8.	57-0043	MOTOR, AIR	1

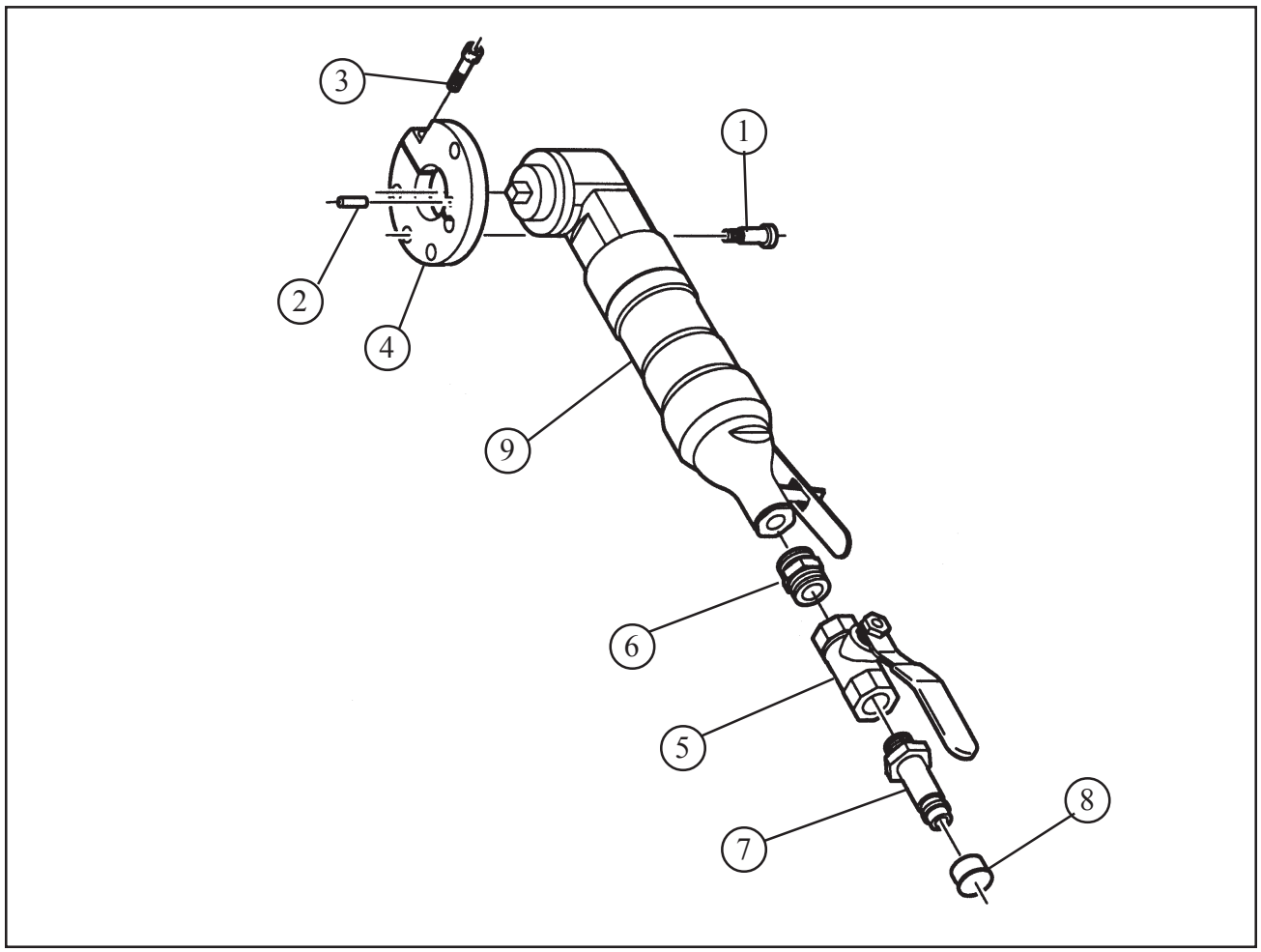
MOTOR ASSY., AIR, 2.25 HP (P/N 57-0162)



Parts List, Motor Assy, Air, 2.25 HP (P/N 57-0162)

Item No.	Part No.	Description	Qty
1.	33-1451	SCREW, SHOULDER, 1/2 DIA X 5/8	2
	47-0657	BRACKET ASSY, TORQUE RESTRAINT	1
2.	32-0257	PIN, DOWEL, 5/16 X 7/8	1
3.	33-0073	SCREW, CAP, 3/8-16 X 1 1/2	1
4.	47-0656	BRACKET, TORQUE RESTRAINT	1
	53-0031	VALVE ASSY, FLOW CONTROL, AIR	1
5.	53-0016	VALVE FLOW CONTROL	1
6.	54-0019	NIPPLE, PIPE	1
7.	54-0126	COUPLING, MALE, QUICK DISCONNECT	1
8.	54-0201	CAP, PLASTIC	1
9.	57-0157	MOTOR, AIR	1

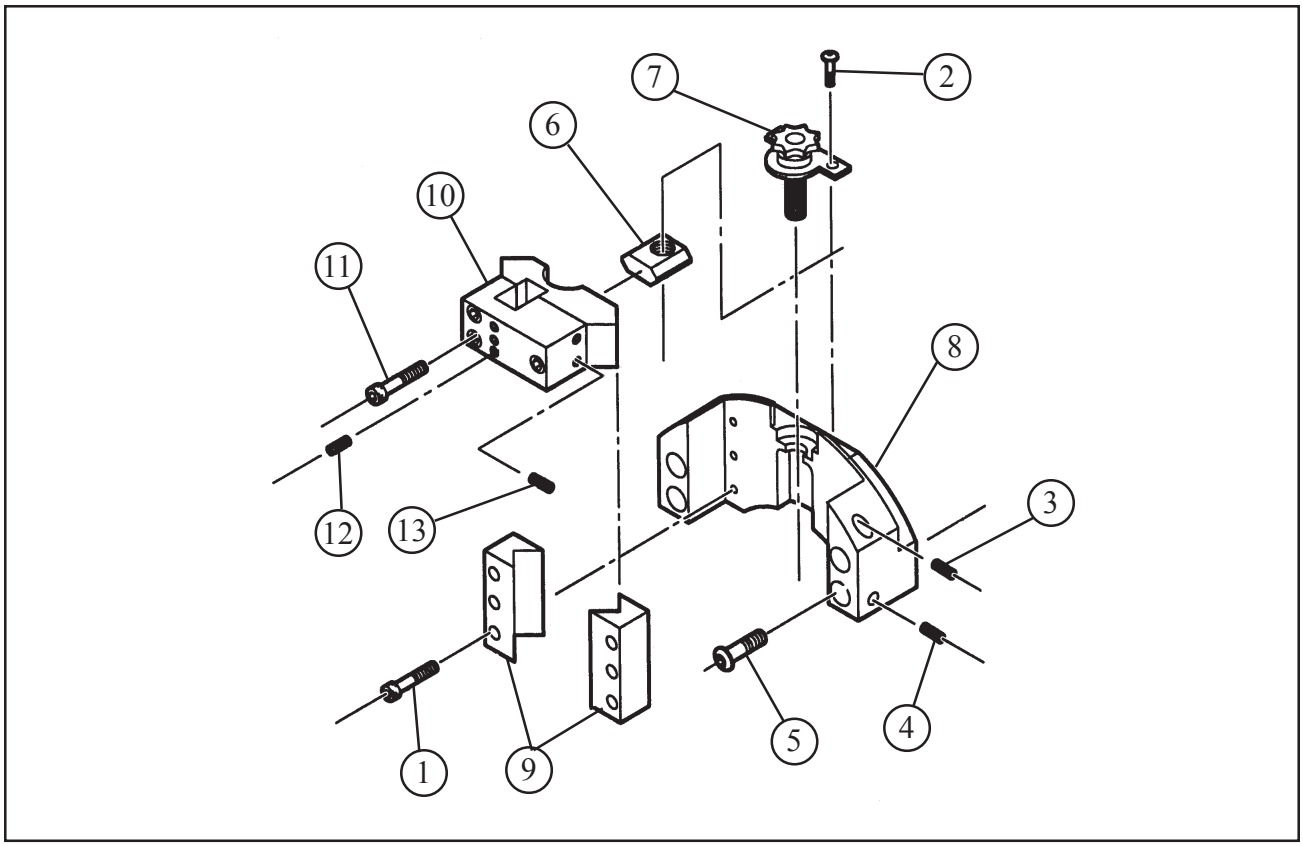
MOTOR ASSY., AIR, 3.0 HP (P/N 57-0163)



Parts List, Motor Assy, Air, 3.0 HP (P/N 57-0163)

Item No.	Part No.	Description	Qty
1.	33-1451	SCREW, SHOULDER, 1/2 DIA X 5/8	2
	47-0657	BRACKET ASSY, TORQUE RESTRAINT	1
2.	32-0257	PIN, DOWEL, 5/16 X 7/8	1
3.	33-0073	SCREW, CAP, 3/8-16 X 1 1/2	1
4.	47-0656	BRACKET, TORQUE RESTRAINT	1
	53-0031	VALVE ASSY, FLOW CONTROL, AIR	1
5.	53-0016	VALVE FLOW CONTROL	1
6.	54-0019	NIPPLE, PIPE	1
7.	54-0126	COUPLING, MALE, QUICK DISCONNECT	1
8.	54-0201	CAP, PLASTIC	1
9.	57-0158	MOTOR, AIR	1

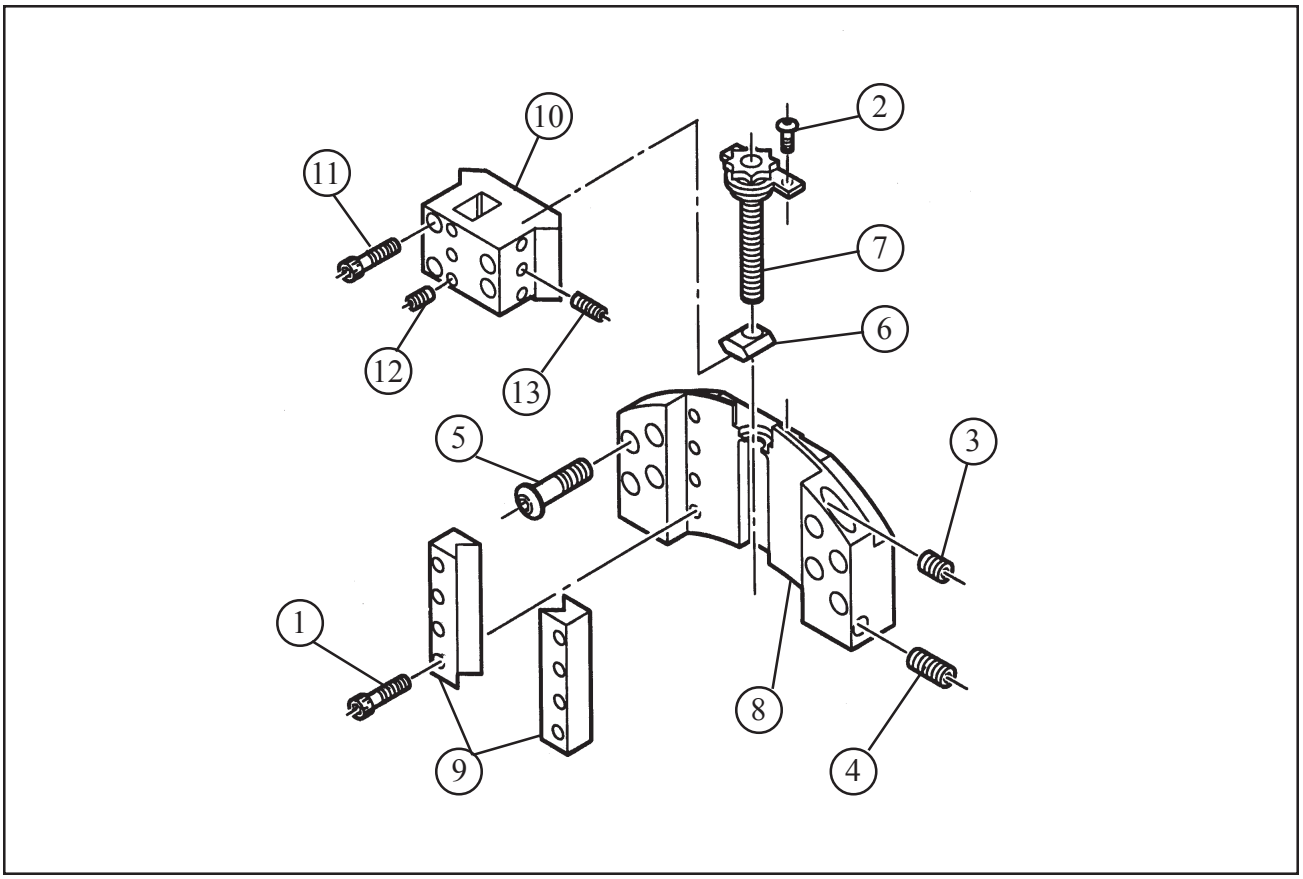
TOOL BLOCK, LOW PROFILE (P/N 08-0037)



Parts List, Tool Block, Low Profile (P/N 08-0037)

Item No.	Part No.	Description	Qty
1.	33-0042	SCREW, CAP, 1/4-20 X 1	6
2.	33-0279	SCREW, BUTTON, 10-24 X 1/2	2
3.	33-0649	SCREW, SET, 3/8-24 X 3/8, CUP PT	1
4.	33-0653	SCREW, SET, 3/8-24 X 3/4, CUP PT	1
5.	33-1243	SCREW, BUTTON, 3/8-16 X 1 1/2	4
6.	35-0176	NUT, FEED	1
7.	38-0050	SPROCKET ASSY , FEED	1
8.	47-0226	BRACKET	1
9.	48-0194	RAIL, SLIDE	2
10.	49-0018	HOLDER ASSY, TOOL	1
11.	33-0042	SCREW, CAP, 1/4-20 X 1	3
12.	33-0500	SCREW, SET, 1/4-20 X 5/16, CUP PT	3
13.	33-0505	SCREW, SET, 1/4-20 X 3/4, CUP PT	2

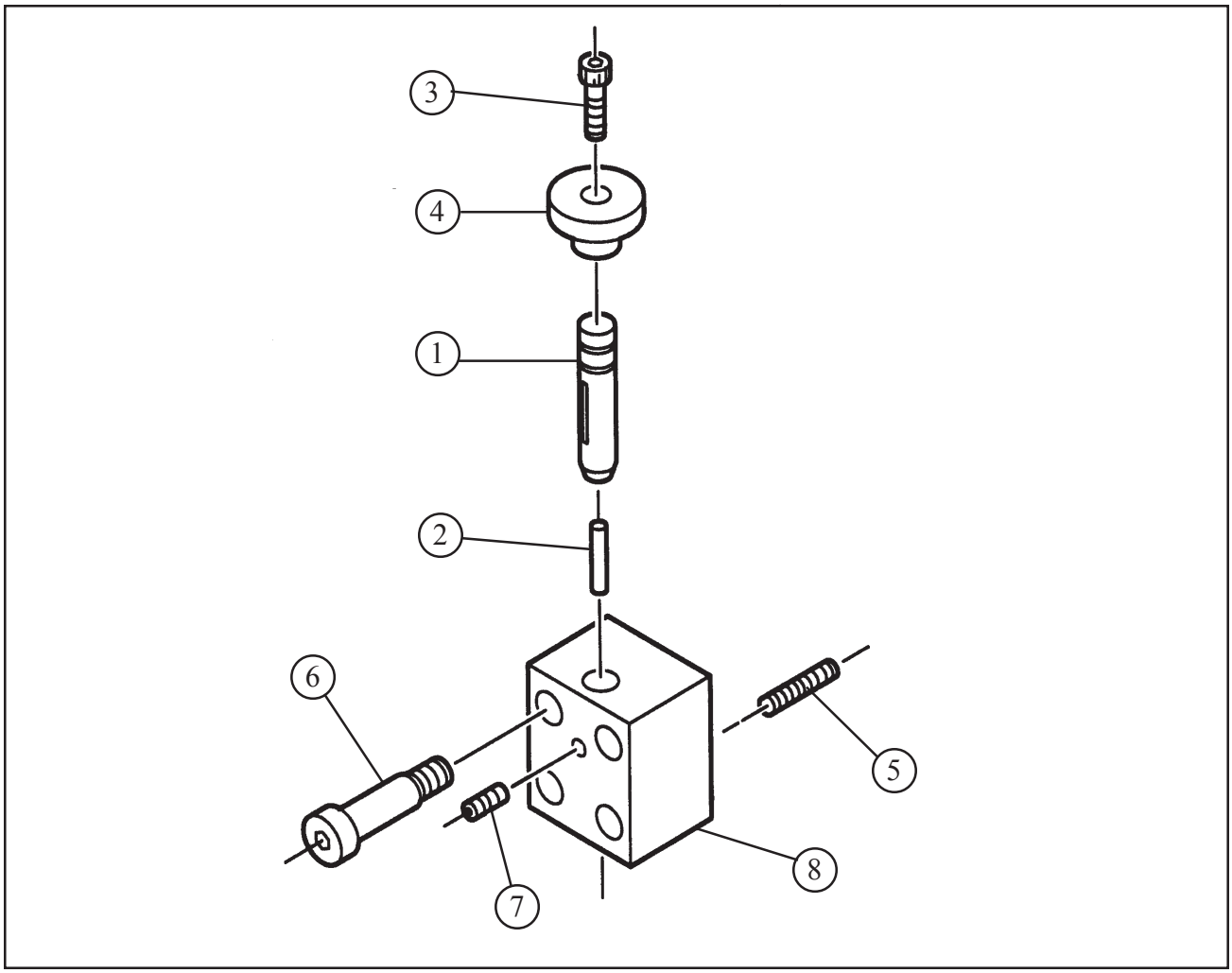
TOOL BLOCK, EXTENDED (P/N 08-0040)



Parts List, Tool Block, Extended (P/N 08-0040)

Item No.	Part No.	Description	Qty
1.	33-0042	SCREW, CAP, 1/4-20 X 1	8
2.	33-0279	SCREW, BUTTON, 10-24 X 1/2	2
3.	33-0649	SCREW, SET, 3/8-24 X 3/8, CUP PT	1
4.	33-0653	SCREW, SET, 3/8-24 X 3/4, CUP PT	1
5.	33-1243	SCREW, BUTTON, 3/8-16 X 1 1/2	4
6.	35-0176	NUT, FEED	1
7.	38-0051	SPROCKET ASSY	1
8.	47-0232	BRACKET	1
9.	48-0215	RAIL, SLIDE	2
10.	49-0019	HOLDER ASSY, TOOL	1
11.	33-0042	SCREW, CAP, 1/4-20 X 1	4
12.	33-0500	SCREW, SET, 1/4-20 X 5/16, CUP PT	3
13.	33-0505	SCREW, SET, 1/4-20 X 3/4, CUP PT	3

BLOCK ASSY., TRIPPER (P/N 47-0234)



Parts List, Block Assy, Tripper (P/N 47-0234)

Item No.	Part No.	Description	Qty
	14-0011	SHAFT ASSY	1
1.	20-0023	SHAFT, TRIPPER	1
2.	32-0084	PIN, DOWEL, 5/32 X 13/16	1
3.	33-0030	SCREW, CAP, 10-24 X 3/4	1
4.	42-0023	KNOB	1
5.	30-0125	PLUNGER, BALL	1
6.	33-0952	SCREW, SHOULDER, 3/8 X 1	2
7.	33-0954	SCREW, SET, 10-24 X 1/4, HDOG	1
8.	47-0230	BLOCK, TRIPPER	1

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OPTIONAL DRIVE KITS - IPB'S

DRIVE KIT, ELECTRIC (P/N 05-0123)

SPECIFICATIONS

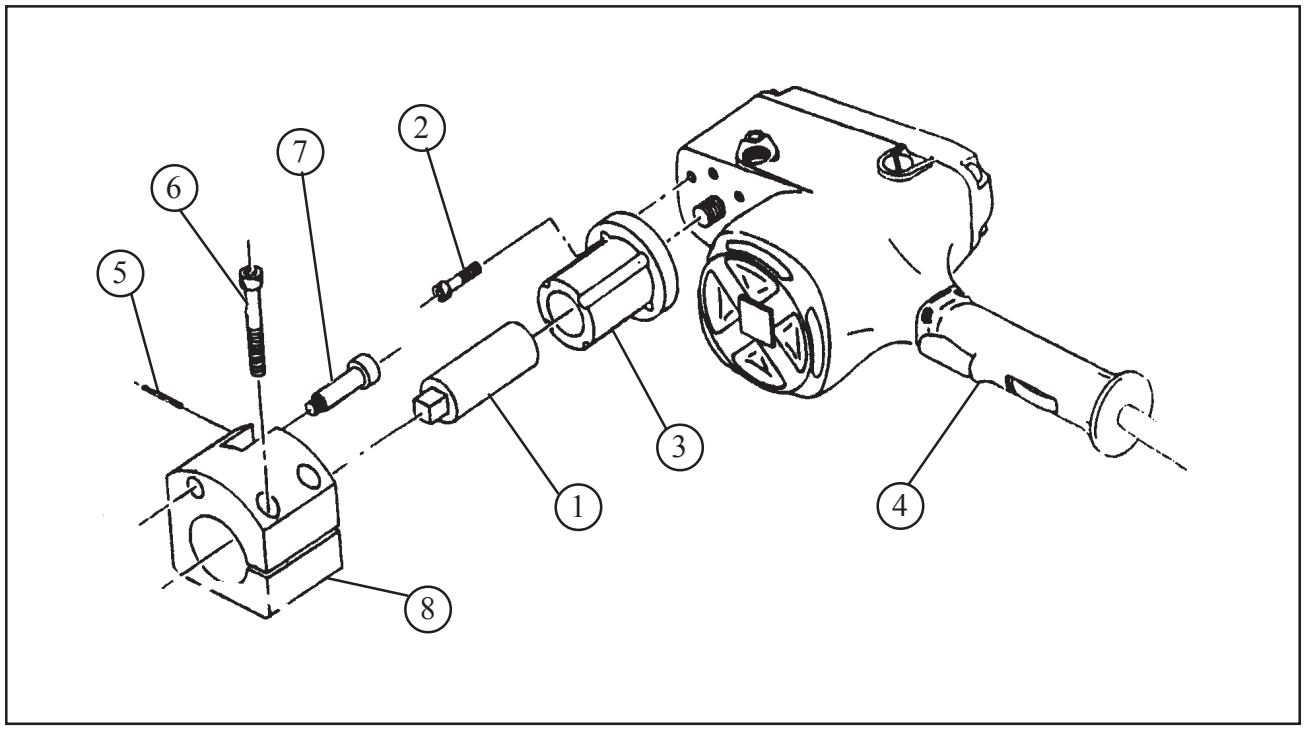
MOTOR SPECIFICATIONS	
Voltage Input	115 VAC, 60 Hz
Power requirements	7.5 amp
No load rpm	300 rpm
MATERIAL CUTTING CAPACITIES	
Note: The capacity exceeds the maximum wall thickness for small pipe sizes	
Severing with standard procedures	.75" (19 mm) wall
Severing and single beveling	.50" (13 mm) wall
Severing and double beveling	.38" (9 mm) wall

Materials include, but are not limited to: carbon steel, low alloy steel, chrome steel (20% maximum), chrome/molly alloys (R_c 32 max), austenitic stainless steel, inconel, copper, aluminum, and copper nickel alloys.

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

Contract TRI TOOL Inc.’s Engineering Department for details.

DRIVE KIT, ELECTRIC (P/N 05-0123)



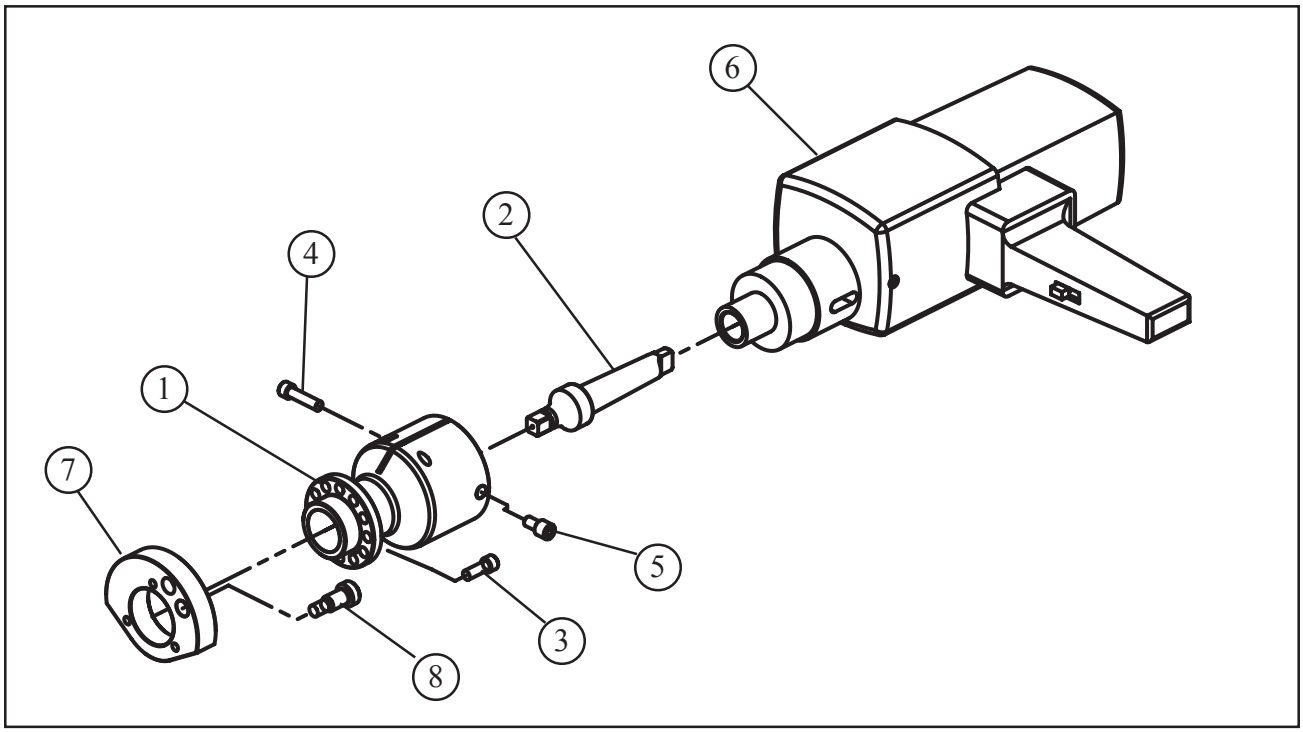
Parts List, Drive Kit, Electric (P/N 05-0123)

Item No.	Part No.	Description	Qty
	04-0091	DRIVE ASSY ELECTRIC	1
1.	27-0182	ADAPTOR, DRIVE	1
2.	33-0020	SCREW, CAP, #8-32 X 1/2	4
3.	46-0115	SLEEVE, MOUNTING	1
4.	58-0027	MOTOR, ELECTRIC	1
	47-0381	BRACKET ASSY, TORQUE	1
5.	32-0029	PIN, ROLL, 1/8 DIA X 1 1/4	1
6.	33-0059	SCREW, CAP, 5/16-18 X 1 3/4	2
7.	33-1407	SCREW, SHOULDER, 1/2 X 1 1/2	1
8.	47-0382	BRACKET, TORQUE	1

HD, ELECTRIC DRIVE KIT, 115V & 230V

SPECIFICATIONS

MOTOR SPECIFICATIONS	
Dual Range, Variable Speed	
Voltage Input	115 VAC, 40-60 Hz, 2300 Watt rated supply
	230 VAC, 40-60 Hz, 2300 Watt rated supply
Power requirements	20 amp
No load rpm	60 - 140 rpm
MATERIAL CUTTING CAPACITIES	
Note: Capacity exceeds the maximum wall thickness for small pipe sizes	
Note: Same Range As The Air Motor	
Severing with standard procedures	.80" (20.3 mm) wall
Severing with Special procedures	1.50" (38.1 mm) wall
Severing with Single beveling	.80" (20.3 mm) wall
Severing with Double beveling	.40" (10.2 mm) wall



Parts List, HD Electric Drive Kit, 115V (P/N 05-0434)

Item No.	Part No.	Description	Qty
	58-0167	MOTOR ASSY, ELECTRIC DRIVE, 115V	1
1.	27-0826	ADAPTOR, DRIVE	1
2.	30-3143	1/2” SQUARE DRIVE	1
3.	33-0055	SCREW, CAP, 5/16-18 X 7/8	3
4.	33-0057	SCREW, CAP, 5/16-18 X 1 1/4	1
5.	33-1874	SCREW, ANTI-ROTATION	2
6.	58-0192	MOTOR, ELECTRIC, 110V, MOD.	1
7.	27-0846	ADAPTOR, MOTOR	1
8.	33-0945	SCREW, SHOULDER, 1/2 X 3/4	1

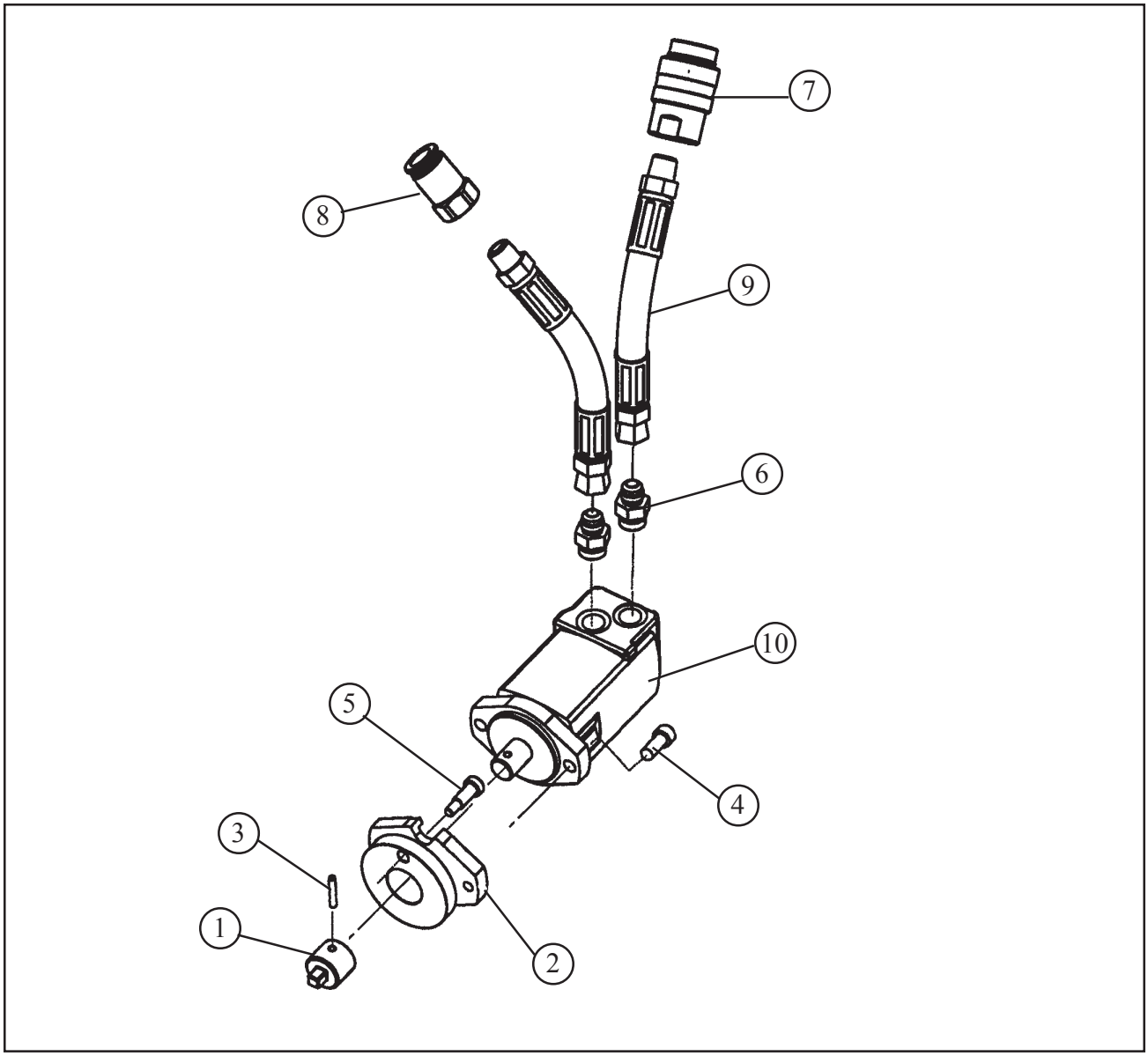
Parts List, HD Electric Drive Kit, 230V (P/N 05-0414)

Item No.	Part No.	Description	Qty
	58-0174	MOTOR ASSY, ELECTRIC DRIVE, 230V	1
1.	27-0826	ADAPTOR, DRIVE	1
2.	30-3143	1/2” SQUARE DRIVE	1
3.	33-0055	SCREW, CAP, 5/16-18 X 7/8	3
4.	33-0057	SCREW, CAP, 5/16-18 X 1 1/4	1
5.	33-1874	SCREW, ANTI-ROTATION	2
6.	58-0173	MOTOR, ELECTRIC, 110V, MOD.	1
7.	27-0846	ADAPTOR, MOTOR	1
8.	33-0945	SCREW, SHOULDER, 1/2 X 3/4	1

HYDRAULIC DRIVE MOTOR KIT (P/N 05-0358)

SPECIFICATIONS

Weight: 32 lbs. (14.5 kg)
Power requirements: 20 gpm at 1200 psi (1.3 L/s at 82.8 bar)



Parts List, Motor Kit, Hydraulic Drive (P/N 05-0358)

Item No.	Part No.	Description	Qty
1.	27-0237	ADAPTOR, DRIVE	1
2.	27-0610	ADAPTOR, MOTOR	1
3.	32-0090	PIN, SHEAR, 1/4 DIA X 1.41”	1
4.	33-0106	SCREW, CAP, 1/2 –13 X 1 1/4	2
5.	33-0965	SCREW, SHOULDER, 1/2 DIA X 1	1
6.	54-0002	FITTING, ADAPTOR	2
7.	54-0333	COUPLER, QD, HYD, DRIPLESS, FEMALE	1
8.	54-0334	COUPLER, QD, HYD, DRIPLESS, MALE	1
9.	55-0156	HOSE ASSEMBLY	2
10.	56-0106	MOTOR, HYSRAULIC	1
NOT SHOWN:			
	36-0178	WRENCH, 1/4, L	1
	54-0335	DUST, PLUG, DRIPLESS	2

ACCESSORIES

The following accessories are recommended for use with the Model 600SB Clamshells and are available from TRI TOOL INC.

1. Portable Air Filter (P/N 75-0115)
   A Filter/Regulator/Lubricator (FRL) is required to protect the warranty on all TRI TOOL INC air driven tools.

2. Counterboring Module Kit-CBM-2 (P/N 05-0116)

3. Counterboring Module Kit, CBM-3 (P/N 05-0405)

4. Tool Bits (Refer to section on Tool Bits)

5. Tool Blocks (Refer to section on Tool Blocks)

6. Clamping Pad Sets (Refer to section on Clamping Pads)

7. Air Motor, 1.5 HP (P/N 57-0072

8. Air Motor, 2.25 HP (P/N 57-0162)

9. Air Motor, 3.0 HP (P/N 57-0163)
   Heavy Duty Motor is recommended for use when beveling carbon steel pipe with a wall thickness greater than .75” (19.1 mm) or when beveling stainless steel pipe with a wall thickness greater than .50” (12.7 mm)
   (See specifications for motor selection)

10. Electric Drive Kit, 110V (Milwakee) (P/N 05- 0123)

11. HD, Electric Drive Kit, 115V (Unitec) (P/N 05-0434)

12. HD, Electric Drive Kit, 230V (Unitec) (P/N 05-0414)

13. Hydraulic Drive Kit (P/N 05-0358)

14. Reverse Drive Housing Kit (P/N 05-0127)

15. Repair Kit (P/N 05-0135)
    (For the Standard Tool Module (P/N 08-0037))

16. Repair Kit (P/N 05-0136)
    (For the Extended Tool Module (P/N 08-0040))

17. Lathe Stand Kit's:
    604SB (P/N 60-0044)
    606SB (P/N 60-0045)
    608SB (P/N 60-0046)
    610SB (P/N 60-0047)
    612SB (P/N 60-0048)

18. HD Tool Module Kit (P/N 05-0440)

19. Sever Tool Holder Kit (Iscar) (P/N 05-1357)

20. An ASO (Automatic Shut Off) (Special order only)

SPARE PARTS

Recommended Spares for the Model 600SB Clamshell

Item No.	Part No.	Description	Qty
1.	14-0011	SHAFT ASSY	2
2.	32-0126	PIN, SHEAR, FEED SPROCKET	2
3.	33-0279	SCREW, BUTTON, 10-24 X 1/2	4
4.	33-0500	SCREW, SET, 1/4-20 X 5/16, CUP PT	6
5.	33-0505	SCREW, SET, 1/4-20 X 3/4, CUP PT	4
6.	33-0952	SCREW, SHOULDER, 3/8 DIA X 1	2
7.	33-0965	SCREW, SHOULDER, 1/2 DIA X 1	1
8.	33-1243	SCREW, BUTTON, 3/8-16 X 1	8
9.	35-0176	NUT, FEED	2
10.	38-0023	SPROCKET, FEED	2