Operation Manual

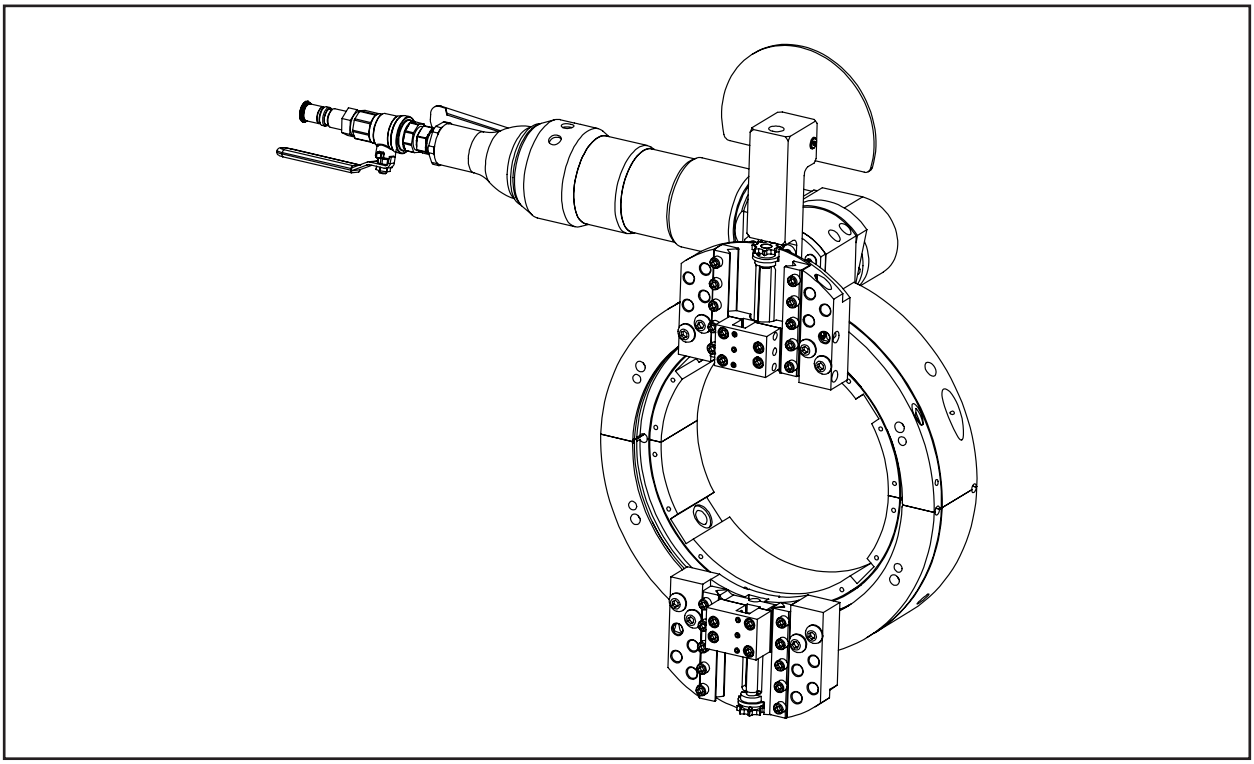
92-1197 Rev. 240826
Model 604SB - 612SB Clamshell

TRI TOOL TECHNOLOGIES

ABOUT TRI TOOL TECHNOLOGIES

At Tri Tool Technologies, we are committed to your success through relentless innovation and powerful partnership. We insist on developing tools and equipment that exceed your expectations of performance, precision, safety, and durability. As a full-service engineering firm, we are here to support you every step of the way.

For more information on engineered solutions, products, and trainings, visit tritool.com or contact our engineers at +1 (916) 288-6100.



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Tri Tool Technologies Warranty

LIMITED WARRANTY: All products manufactured by Seller are warranted to be free from defects in materials and workmanship under normal use. The period of this warranty shall be three years from the date of shipment for all products, except for welding and Non-Standard Products which shall be one year from the date of shipment. The Buyer shall bear all shipping, packing and insurance costs and all other costs to and from a designated repair service center. All return goods must be authorized in advance and communicated upon issuance of a Return Material Authorization (RMA) by Seller. The product will be returned to the Seller accompanied by a RMA number and associated paperwork, freight prepaid and billed to the Buyer. This warranty is not transferable and will not apply to tool bits or other consumables, or to any Goods to have been (i) mishandled, misused, abused or damaged by Buyer or any third party; (ii) altered without the express permission in writing by Seller, (iii) repaired by a party other than Seller without Seller's prior written approval; or (iv) improperly stored, installed, operated, or maintained in a manner inconsistent with Seller's instructions. This warranty does not apply to defects attributed to (i) normal wear and tear or (ii) failure to comply with Seller's safety warnings.

No warranty for any parts or other supplies provided to seller by buyer, whether or not they are incorporated into goods. Goods supplied by seller which are designed or manufactured by a third party are subject strictly to the third party's warranty for those goods. Seller makes no warranty and disclaims all statutory or implied warranties for these goods, including the implied warranties of merchantability, freedom from patent infringement and fitness for a particular purpose.

Neither this warranty nor any other warranty, expressed or implied, including implied warranties of mechanical ability, fitness for a particular use, or merchantability, shall extend beyond the warranty period. No responsibility is assumed for any incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and some states do not allow the exclusion or limitations incidental or consequential damages, so the above limitation of exclusion does not apply to all Buyers. This warranty gives the Buyer specific legal rights. Other rights vary from state to state.

Warranty Claims and Remedies

Buyer must promptly notify Seller in writing during the applicable warranty period, of any defective Goods covered by Seller's warranties under the Limited Warranty section herein, and no later than fifteen (15) calendar days after discovery of the defect. Seller has no obligation to honor any warranty claim made after the expiration of the warranty period. However, despite the expiration of the warranty period, Seller, at its reasonable discretion, may accept warranty claims submitted up to fifteen (15) calendar days after the expiration of the warranty period provided that Buyer provides Seller with credible and persuasive documentary evidence that the defect was discovered during the warranty period. No warranty claims submitted after this fifteen (15) day calendar period will be considered by Seller.

Buyer's notice of a defective Goods must identify the specific Goods affected, and the nature of the defect. It is required when returning the defective Goods, that it is suitably packed, fully insured, and transportation and insurance prepaid in accordance with instructions issued by Seller. Seller, at its sole option, will either repair or replace any Goods authorized for return to Seller. Such repair, replacement, or credit shall be Buyer's sole remedy for defective Goods. Buyer must promptly provide Seller with all information requested regarding the identified defect.

If the defect claimed by Buyer cannot be reproduced or otherwise verified by Seller, the Goods will be returned to Buyer unmodified at Buyer's expense.

The warranty period for repaired or replaced Goods shall be (i) ninety (90) days or (ii) the unexpired portion of the original warranty period. Under no circumstances is Seller liable for recall, retrieval, removal, dismantling, re-installation, redeployment, or re-commissioning of any defective Goods or any costs associated therewith.

Tool Bit Resharpening Policy

Buyer is required to check all tool bits prior to returning and ensure they are packaged well for shipment. The price structure is available from the Seller's sales coordinator. Seller cannot resharpen badly gouged, chipped, or broken tool bits. Seller will return tool bits that are not suitable for resharpening with the tool bits that were resharpened upon Buyer's request. Buyer is responsible for all shipping charges to and from Seller.

1. ABOUT THE MANUAL

Copyright

Disclaimer

The instructions and descriptions in this manual were accurate when the manual was written. However, the information in the manual is subject to change without notice. Check for updated information before you start any job. The Tri Tool Technologies web site has the most current information.

Do not operate or work on this equipment unless you have read and understood the instructions in this Manual. Failure to follow the instructions or follow the safety instructions could result in serious injury or death. This manual describes conditions and hazards that are common and anticipated during equipment operation. No manual can address all conditions which may occur.

Safety Symbols

The manual may contain one or more safety symbols. These symbols and the associated text warn you of potentially hazardous conditions. Examples of the safety symbols and the associated text follow:

DANGER

DANGER: Indicates a hazardous situation that, if not avoided, will result in serious injury or death.

WARNING

WARNING: Indicates a hazardous situation that, if not avoided, could result in serious injury or death.

CAUTION

CAUTION: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury, or cause property damage.

GLASSES

SAFETY GLASSES: Indicates a hazardous situation that requires the use of safety glasses.

HOT SURFACE

HOT SURFACE: Indicates a hazardous situation that hot surfaces may be present.

GLOVES

GLOVES: Indicates a hazardous situation that requires glasses.

SHOCK HAZARD

ARC FLASH & SHOCK HAZARD: High voltage. Entry by authorized personnel only. Appropriate PPE and tools required when working on this equipment.

READ MANUAL

READ MANUAL: Read manual before use, refer to manual for Tri Tool Technologies machine being used.

DISCONNECT FROM POWER

DISCONNECT FROM POWER: Disconnect main plug from electrical outlet before performing all maintenance.

2. SAFETY PRECAUTIONS

In General

Use standard safety equipment such as: hard hats, safety shoes, safety harnesses, protective clothes, and other safety devices when appropriate.

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.

Personal Protective Equipment

Use standard safety equipment such as: hard hats, safety shoes, safety harnesses, protective clothes, and other safety devices when appropriate.

Wear safety glasses.

Do not wear loose clothing or jewelry.

Wear nonskid footwear.

Put long hair in a cap or a net to make sure hair does not get tangled in equipment.

Personnel

Only personnel who are trained or are being trained may operate the equipment.

Keep the operation manual available where the equipment is used.

The operator must read the operation manual before using the equipment.

The equipment must be operated in accordance with the manual information.

The operator must follow the safety precautions in this manual and good engineering practices to reduce the risk of injury.

Before using the equipment, the operator must ensure that all safety messages on the equipment are legible.

Work Area

Keep the work area clean.

Keep the area well lit.

Keep items such as electrical cords, cables, rags, rigging straps, away from rotating equipment.

Do not use power-cutting tools in the presence of flammable liquids and gases.

Do not let visitors or untrained personnel near tools that are in use.

Ensure all observers wear eye protection.

Keep proper footing at all times.

Area Equipment

Secure the pipe with clamps, vises, chains or straps.

Ensure that both sides of the pipe at the cut site are fully supported so that the pipe will not move after the cut is completed. Long lengths of pipe may be under load and the separation of the pipe can release pressure. This pressure can cause both sides of the pipe to move.

Tool Care

Keep tools in good operating condition. Sharp tool bits perform better and are safer than dull tool bits.

Do not use damaged tools. Always check your tools for damage especially if a tool has malfunctioned, been dropped or hit, check it for damage.

Before you start operating the equipment, do no-load tests and feed function checks.

Tool Use

Use the right tool and tool bit for the job. Contact Tri Tool Technologies to help with your application.

Keep the tool bits fully engaged in the tool bit holders. Loose bits are sharp and can cause cuts or punctures.

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. Check 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 recommended speeds.

Do not reach into rotating equipment.

Do not reach into the rotating head stock to remove chips, to make adjustments, or to check the surface finish.

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

Store tools properly. Disconnect tools from the power source, remove the tool bits, and store in a safe place.

3. GENERAL DESCRIPTION

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

Use the Low Profile or Extended Tool Blocks to configure the Model 600SB 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” (.08mm) 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 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.

4. SPECIFICATIONS

3 POSITION TOOL BLOCKS 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)**	**Clearance 3 Position Tool Blocks (P/N 08-0214)**
604SB	2"	2.375" (60.3mm)	N/A	3.31" (84.1mm)	N/A
	2 1/2"	2.875" (73.0mm)	3.06" (77.7mm)	4.06" (103.1mm)	N/A
	3"	3.500" (88.9mm)	2.75" (69.9mm)	3.75" (95.3mm)	N/A
	3 1/2"	4.000" (101.6mm)	2.50" (63.5mm)	3.50" (88.9mm)	N/A
	4"	4.500" (114.3mm)	2.25" (57.2mm)	3.25" (82.6mm)	N/A
606SB	2"	2.375" (60.3 mm)	N/A	N/A	4.36" (110.7mm)
	2 1/2"	2.875" (73.0 mm)	N/A	N/A	4.11" (104.4mm)
	3"	3.500" (88.9 mm)	N/A	3.81" (96.8 mm)	3.81" (96.8mm)
	3 1/2"	4.000" (101.6mm)	N/A	3.56" (90.4mm)	4.60" (116.8mm)
	4"	4.500" (114.3mm)	N/A	3.31" (84.1mm)	4.35" (110.5mm)
	5"	5.563" (141.3mm)	2.78" (70.6mm)	3.78" (96.0mm)	4.83" (122.7mm)
	6"	6.625" (168.3mm)	2.25" (57.2mm)	3.25" (82.6mm)	4.29" (109.0mm)
608SB	4"	4.500" (114.3mm)	N/A	N/A	4.36" (110.7mm)
	5"	5.563" (141.3mm)	N/A	3.78" (96.0mm)	4.83" (122.7mm)
	6"	6.625" (168.3mm)	N/A	3.25" (82.6mm)	4.29" (109.0mm)
	8"	8.625" (219.1mm)	2.25" (57.2mm)	3.25" (82.6mm)	4.29" (109.0mm)
610SB	6"	6.625" (168.3mm)	N/A	N/A	4.62" (117.3mm)
	8"	8.625" (219.1mm)	N/A	3.56" (90.4mm)	4.62" (117.3mm)
	10"	10.750" (273.0mm)	2.50" (63.5mm)	3.50" (88.9mm)	4.56" (115.8mm)
612SB	8"	8.625" (219.1mm)	N/A	N/A	4.62" (117.3mm)
	10"	10.750" (273.0mm)	N/A	3.56" (90.4mm)	4.56" (115.8mm)
	12"	12.750" (323.9mm)	2.50" (63.5mm)	3.50" (88.9mm)	4.56" (115.8mm)

600SB MOTOR SELECTION

MODEL NO.	AIR MOTOR ASSEMBLY		
	1.5 HP(P/N 57-0072)	2.25 HP (P/N 57-0162)	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

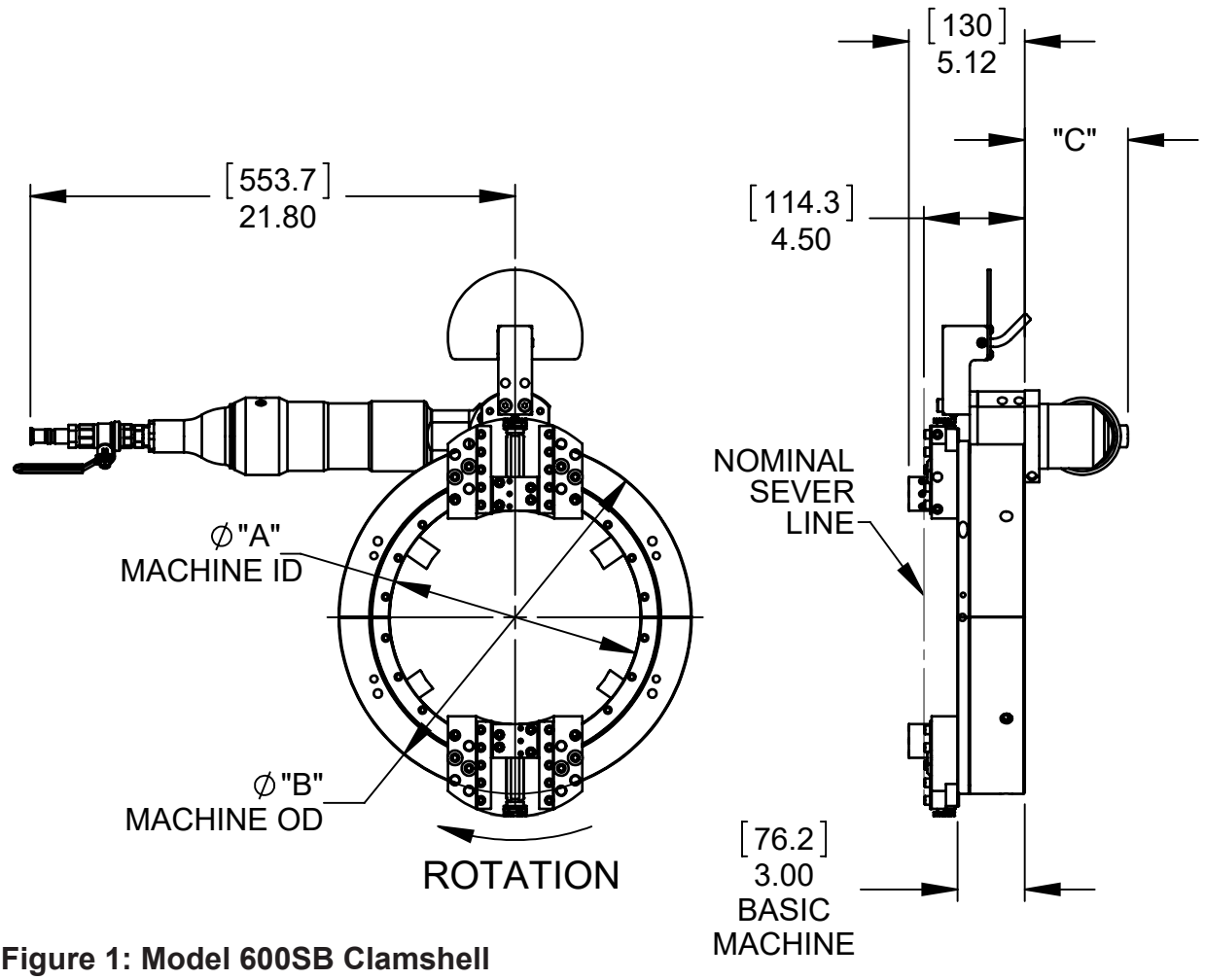


Figure 1: Model 600SB Clamshell

Model No.	"A" Dia. Machine ID	"B" Dia. Machine OD	"C" Dia.	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" (20.3mm) wall
Severing with Special Procedures	1.50" (38.1mm) wall
Severing with Single Beveling	.80" (20.3mm) wall
Severing with Double Beveling	.40" (10.2mm) wall

5. MAINTENANCE

CAUTION: The Motor warranty is void if damage occurs from contaminated air supply or contaminated hydraulic fluid.

CAUTION

Before Use

Clean all components.

Coat the clean components with a light coat of oil. Use a clean, non-detergent oil, preferable SAE 10 (90 SSU or lighter).

Ensure that air supply for the Clamshell with an Air Motor has an approved filter/regulator/lubricator (FRL).

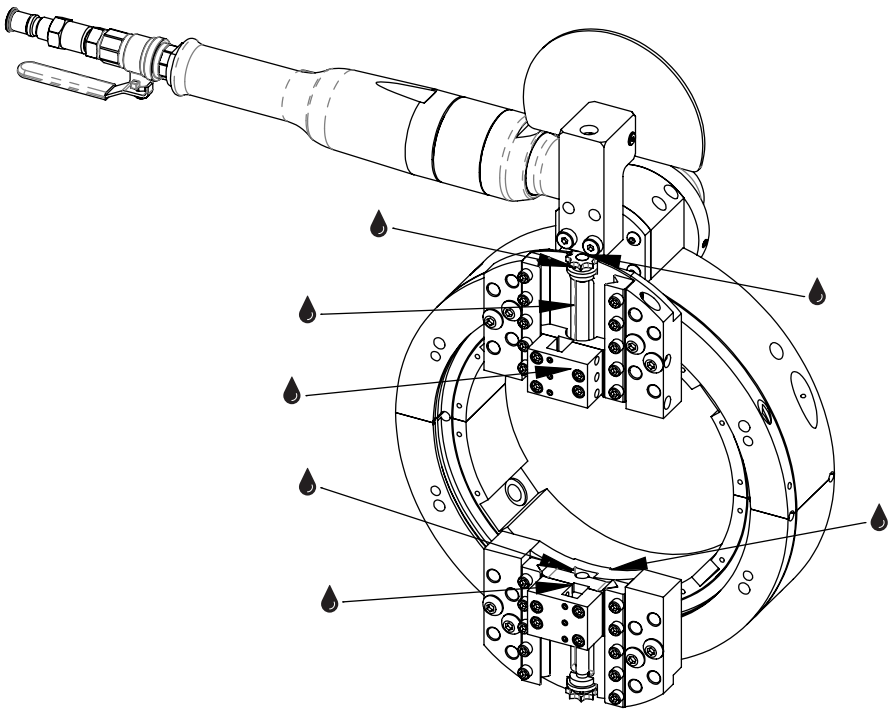


Figure 2: Cleanup

During Use

If the Tool Blocks collect debris while cutting, clean the Tool Blocks and the Feed Screws after each cutting operation.

Recommended Maintenance

Daily Maintenance When the Unit Is In Operation

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

Inspect the unit for loose screws, missing screws, damage, and such.

After 20 Hours of Actual Operation

Check adjustment of the Main Bearing pre-load.

Check that the Drive torque at the Drive Socket is 5 to 10 ft-lbs. (7 to 14 N-m).

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

After 40 Hours of Actual Operation

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

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 out of service for 30 days or more, thoroughly clean, lubricate, and spray it with a rust preventative before storing it.

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

Refer to Fig. 3 and Fig. 4, 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.

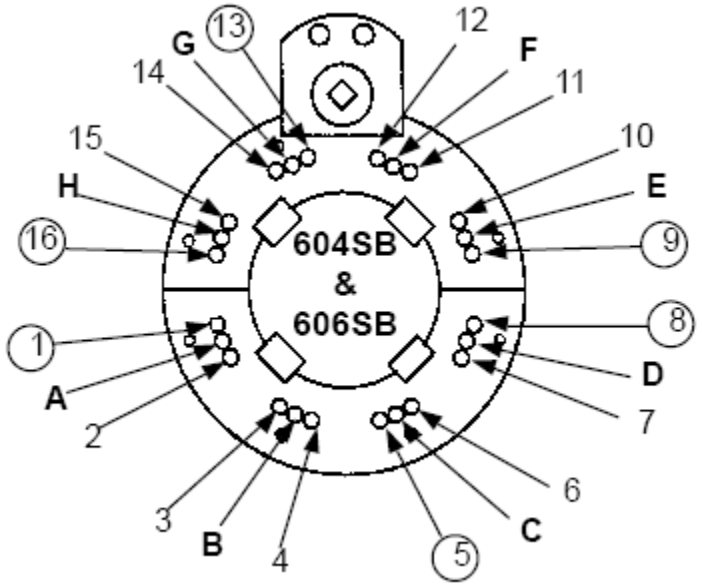


Figure 3: Locations of the Bearing Adjustment Screws - Part 1

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. *(Refer to Fig. 3 and Fig. 4 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.

Check that the Set Screws are snugged to ensure that the bearing is uniformly loaded.

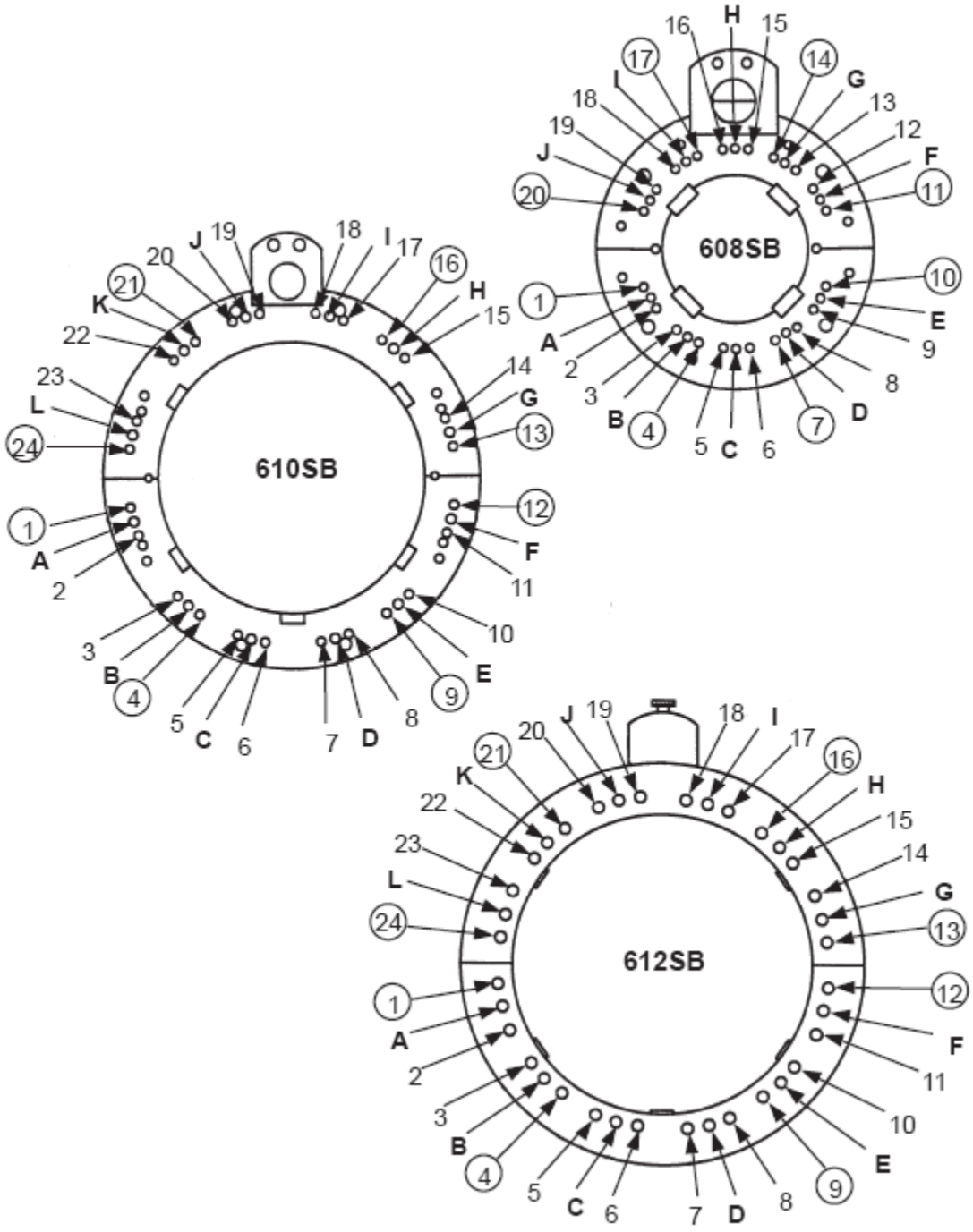


Figure 4: Locations of the Bearing Adjustment Screws - Part 2

The 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. *(refer to the numbers in Fig. 3 and Fig. 4)*.

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.

Inspect the Main Gear and the Main Bearing.

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.

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

Regrease the Gear using a lubricant approved by Tri Tool Technologies.

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.

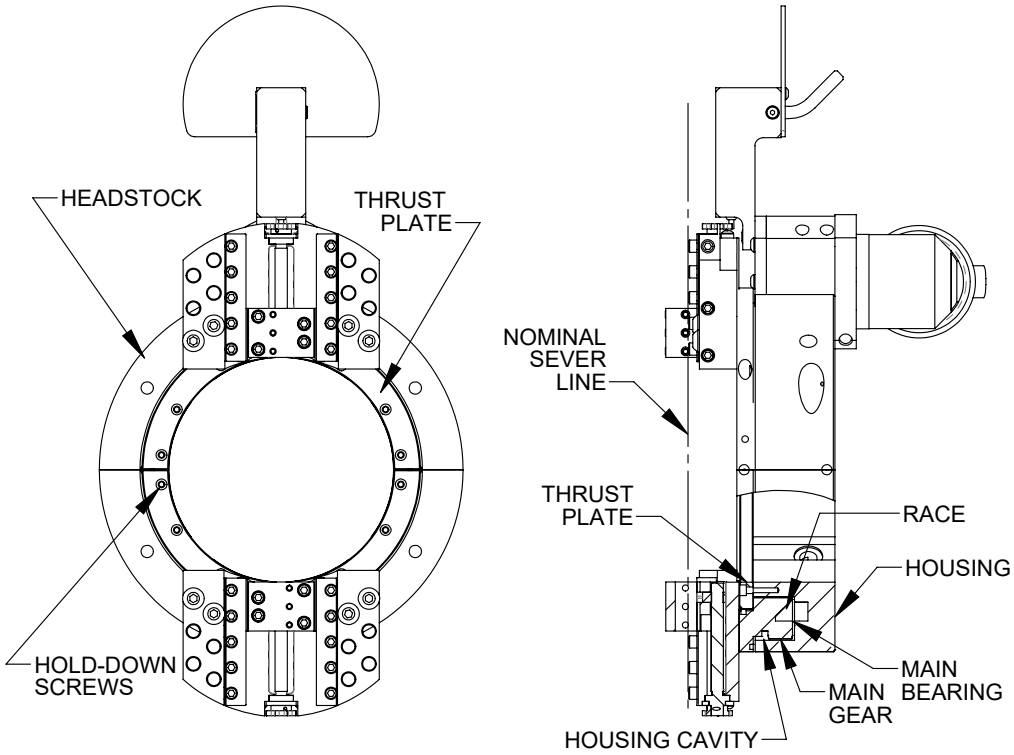


Figure 5: Clamshell Cross Section

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 grease approved by Tri Tool Technologies (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 chips and tend to cause thread jamming and damage.

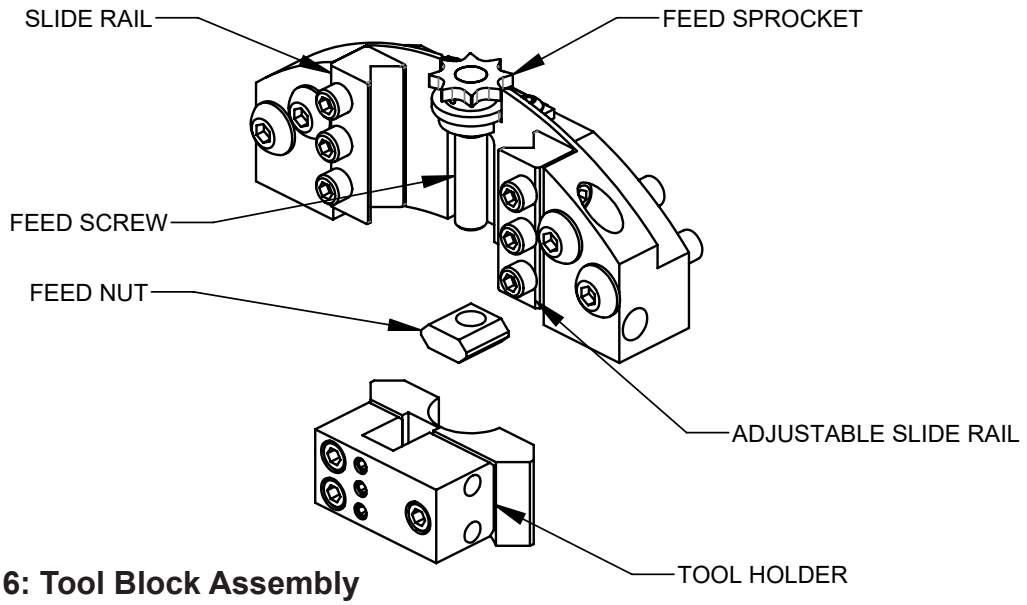


Figure 6: Tool Block Assembly

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 was 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 Holder Adjustment

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

Run the Tool Holder to the most outward position.

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

Only adjust the screws that are directly in line with the Tool Holder.

Tighten the Hold-down Screws to about 12 to 24 in-lbs. (1.4 to 2.7 N-m). Finger-tighten using a hex key.

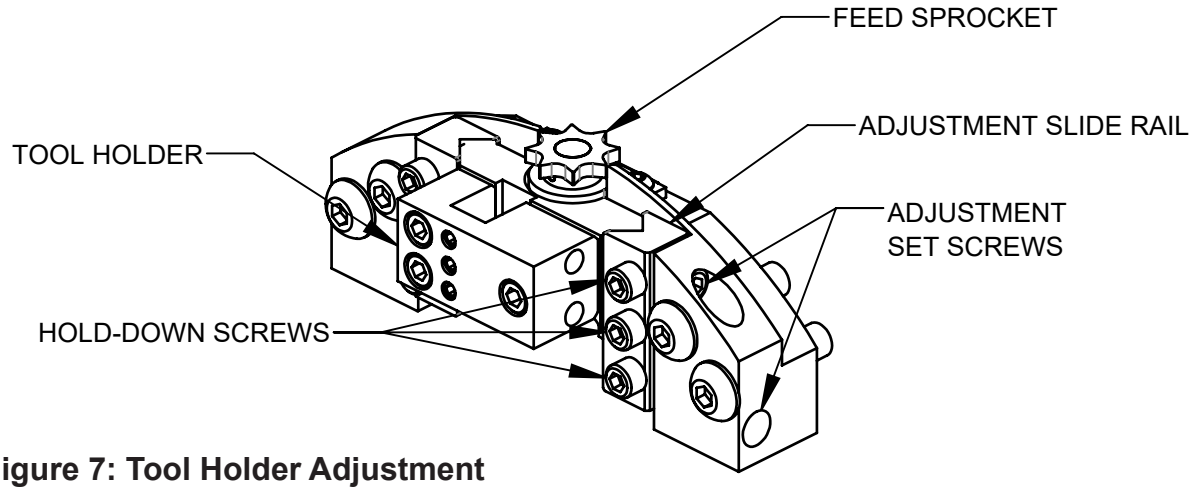


Figure 7: Tool Holder Adjustment

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.

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).

Tripper Block Assembly Lubrication and Tripper Shaft Adjustment

Back off the Ball Plunger Set Screw until it disengages from the Tripper Shaft Assembly.

Remove the Shoulder Bolt, and then remove the Tripper Lever.

Remove the Tripper Shaft Assembly from the block, and then degrease and clean all parts.

Apply fresh lubrication to the Tripper Shaft Assembly and to the Shoulder Bolt.

Reassemble in reverse order.

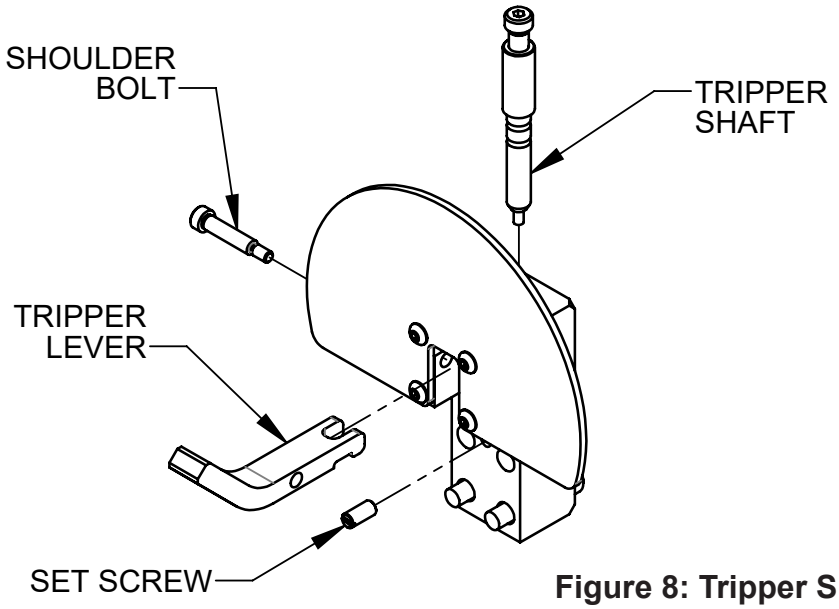


Figure 8: Tripper Shaft Installation

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.

WARNING

WARNING: 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 Technologies – 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

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

6. OPERATION

Read the operating instructions before operating the Model 600SB Low Profile Clamshell.

Refer to Configure the Clamshell (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 Inline Pipe

1. Separate the halves of the Clamshell.
2. Disengage the Air Motor by removing the Motor Hold-Down Bolt and removing the Air Motor from the drive socket.
3. By hand, rotate the Headstock until the split-lines of the Headstock match the split-lines of the Housing.
4. Unbolt the halves of the Clamshell.
5. 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 (refer to Fig. 9).

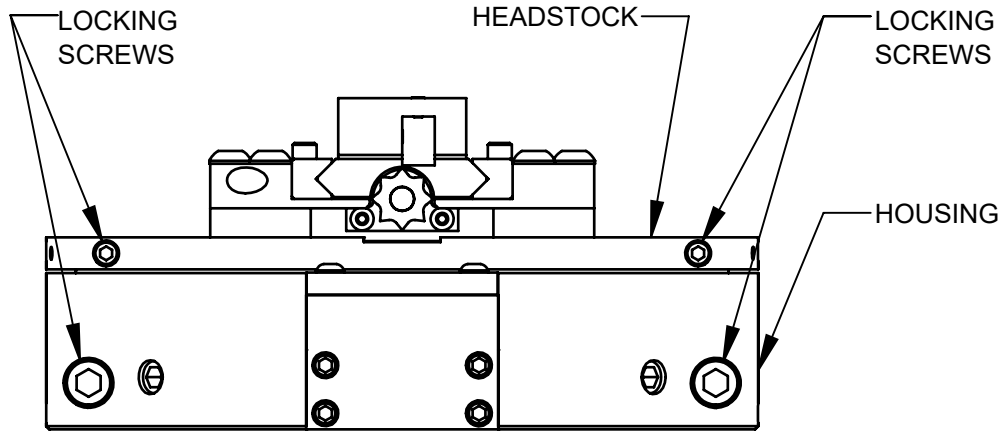


Figure 9: Locations of the Locking Screw

6. Separate the Clamshell halves by pulling them straight apart.

CAUTION

CAUTION: DO NOT FORCE OPEN.

Secure the Clamshell to Pipe

1. Clean the mating surfaces and the ID of the Clamshell halves.
2. Wipe clean the mounting surface of the pipe.
3. Check that the Tool Blocks will clear the pipe when the Clamshell is mounted.
4. Close the halves of the Clamshell around the pipe, keep the mating surfaces clean.
5. Check that the Alignment Pins have seated the two halves properly.
6. Bolt the two halves of the Clamshell together using the Locking Screws in the Housing and in the Headstock.

NOTE: The tightening torque must be 35 to 40 ft-lbs. (47 to 54 N-m).

Using Fixed Clamping Pads

NOTE: If using fully adjustable Clamping Pads, go to the next section.

Clamp the Clamshell to the pipe as follows:

1. Tighten the Adjustable Pads lightly so that all of the Clamping Pads contact the pipe.
2. Gently rock the Clamshell as you tighten the Adjustable Clamping Pads to seat the Clamshell square on the pipe.
3. Check that all Clamping Pads fully contact the pipe. If not, repeat the last three steps.
4. Tighten the Clamping Pads. Tightening torque should be 40 to 50 ft-lbs. (54 to 68 N-m).
5. Go to “General Machining Sequence” section on next page.

Using Fully Adjustable Clamping Pads

Clamp the Clamshell to the pipe as follows:

1. Rough center and square the Clamshell by tightening the Clamping Pad independently.
2. Visually check the center and squareness.
   - The Adjustable Pads tend to square the Clamshell to the pipe. If additional precision in squaring is required, consult Tri Tool Technologies about alternate methods of squaring.
3. Fine-center the Clamshell as you would a 4-jaw chuck.

4. Take measurements from the pipe OD to the Housing ID or use a dial indicator to sweep around the pipe's outside diameter.
5. 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 Setup" later in this section.

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

There are five (5) alternate orientations available so that clearance for the Air Motor may be obtained (refer to Fig. 10).

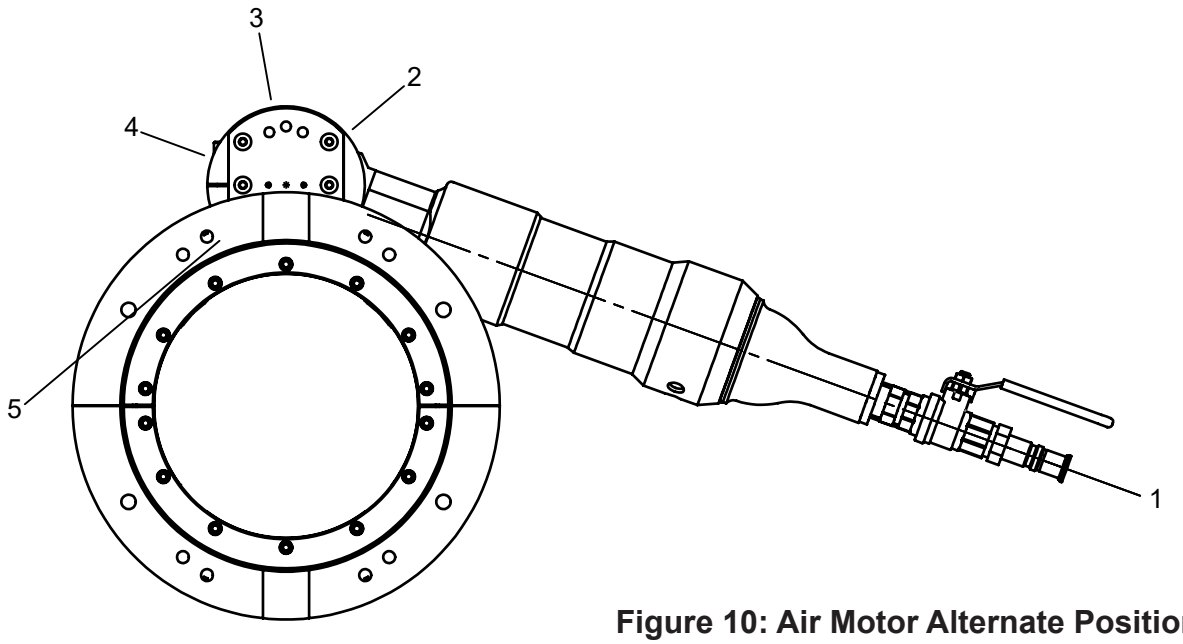


Figure 10: Air Motor Alternate Positions

WARNING

WARNING: The Motor Mount reacts to 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 (FRL) is installed and set properly.

Check for proper alignment of the Feed Sprockets (refer to Fig. 11).

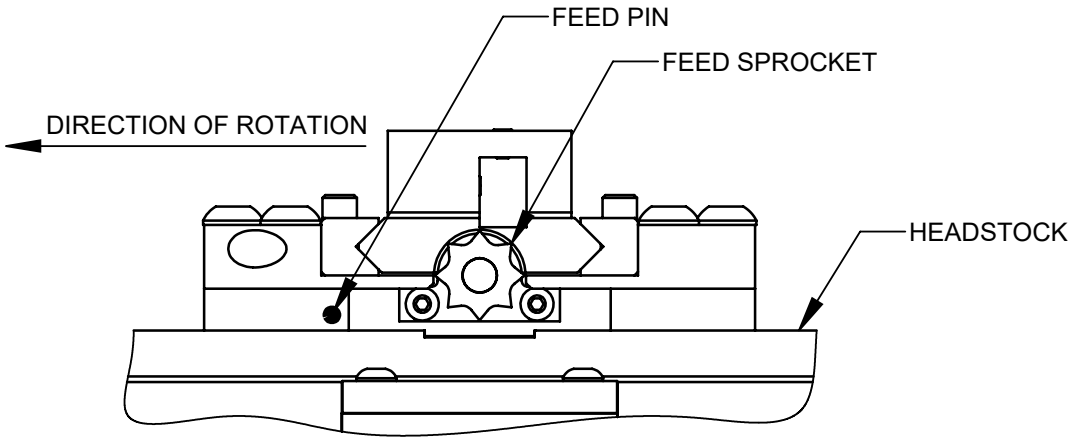


Figure 11: Approach of the Feed Pin to the Feed Sprocket

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

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

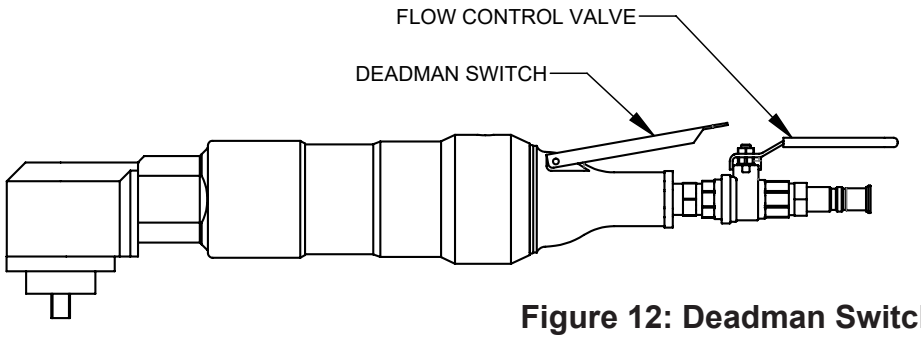


Figure 12: Deadman Switch Warning

WARNING

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.

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 CUTTING SPEEDS section.

Engage the feed by pushing the Tripper Shaft in.

Cutting Operation

1. Apply cutting fluid as necessary.
2. 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.
3. When the machine operation is finished, turn off the Air Motor by closing the Throttle Control Valve.

CAUTION: Inline pipe stores energy.

NOTE: 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.

4. 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.

5. Run the Air Motor until the split-lines of the Headstock and the Housing match.
6. Loosen the Clamping Pads.
7. Remove the Clamshell from the pipe.

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

Configure the Clamshell for the Specific Task

Select the proper Tool Blocks (refer to TOOL BLOCKS section), and 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 CLAMPING PAD SETS section), and install the Clamping Pad Set into the Clamshell.

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

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

Select the proper Tripper Block Assembly for the correct tool module/position. Refer to TRIPPER BLOCK ASSEMBLIES section.

Tool Bit Setup

1. Select the proper Tool Bit set (refer to TOOL BITS section).

CAUTION

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 void the TRI TOOL Inc. factory warranty.

2. Install the Tool Bits into the Tool Blocks (refer to TOOL BITS section for installation drawings).
   - Approximately .75” to .88” (19.1mm to 22.4mm) should protrude from the end of the Tool Holders.
3. Tighten the Tool Bit Set Screws, then verify that the clearance is adequate 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” (.51mm to 1.0mm) before the Trailing Tool Bit.

Severing and Single Beveling and Severing and Double Beveling Simultaneously

When the Tool Bits are within about .040” (1.0mm) 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.

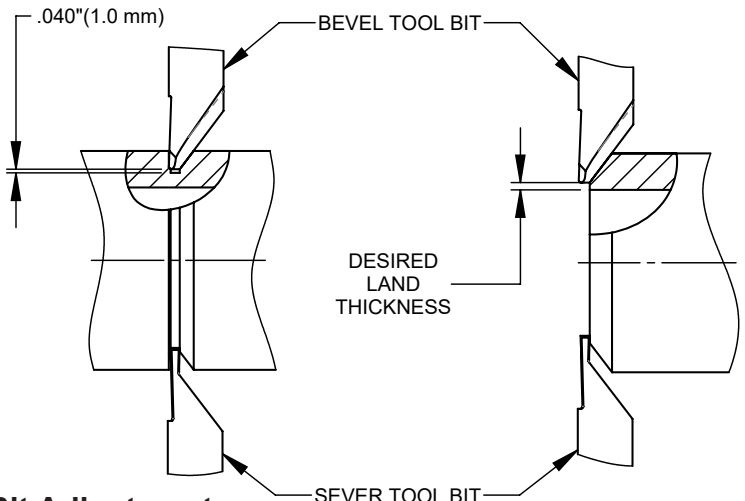


Figure 13: Tool Bit Adjustment

Socket Weld Removal

Install the Tool Bit in the Socket Weld Tool Holder (optional) as shown (refer to Fig. 14).

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

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

If the pipe does not separate from the socket, continue to cut.

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

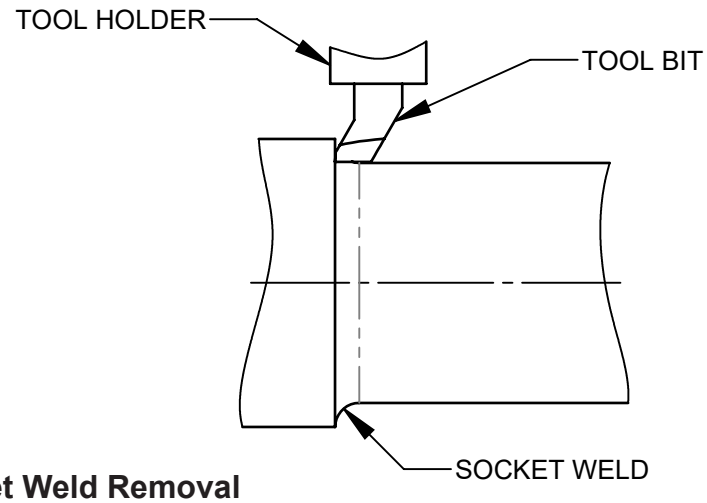


Figure 14: Socket Weld Removal

Counterboring

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

Use the Counterbore Instruction Manual to operate the Counterbore Module with the Clamshell.

7. CUTTING SPEEDS

The Chart shows RPM required for the specified Tool Bit surface cutting speed.

Cutting Speeds (Approximate)

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"	323.9mm	5	6	7
	12.50"	317.5mm	5	6	8
	11.75"	298.5mm	5	7	8
	11.50"	292.1mm	6	7	8
	11.25"	285.8mm	6	7	8
10"	10.75"	273.1mm	6	7	9
	10.25"	260.4mm	6	8	9
	9.75"	247.7mm	7	8	10
	9.00"	228.6mm	7	9	11
8"	8.625"	219.1mm	7	9	11
	7.500"	190.5mm	9	11	13
6"	6.625"	168.3mm	10	12	14
	6.000"	152.4mm	11	13	16
5"	5.563"	141.3mm	12	14	17
4"	4.500"	114.3mm	14	18	21
3.5"	4.000"	101.6mm	16	20	24
3"	3.500"	88.9mm	18	23	27
2.5"	2.875"	73.0mm	22	28	33
2"	2.375"	60.3mm	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:

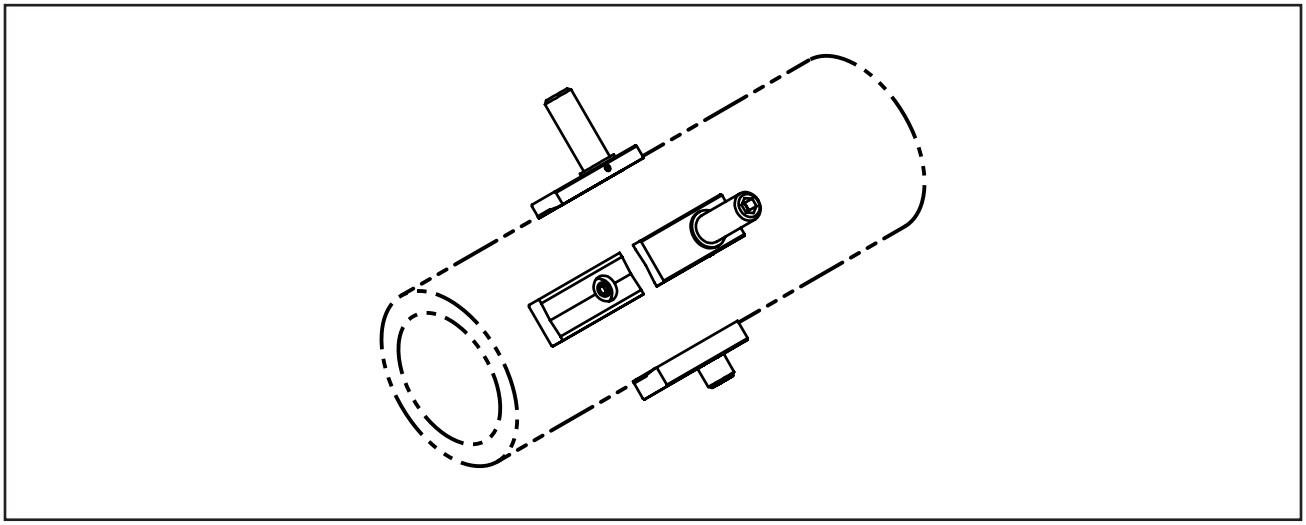
- Mild steels and some thin wall stainless steels when coolants are permitted and applied.

Use 300 surface inches per minute (762 surface centimeters per minute) for:

- Aluminum and thin-wall mild steel and tube with coolants.

8. CLAMPING PAD SETS

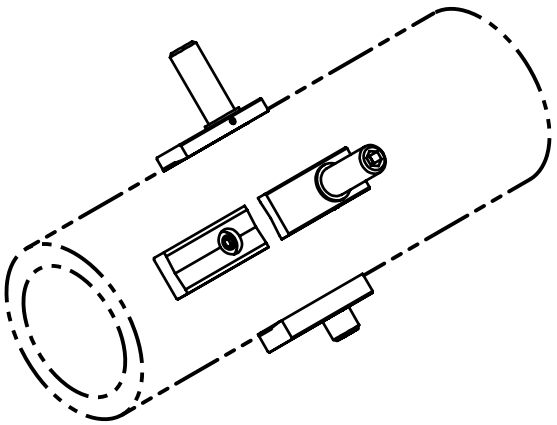
604SB Clamping Pad Sets



Pipe Size	True OD		Pad Set Part No	Adjustable Bar Assy (2 req'd)	Fixed Bar Assy (2 req'd)
4"	4.500"	114.3mm	67-3028	26-0246	26-0244
	4.250"	108.0mm	67-3057	26-0290	26-0276
3 1/2"	4.000"	101.6mm	67-3058	26-0292	26-0278
	3.750"	95.3mm	67-3059	26-0294	26-0280
3"	3.500"	88.9mm	67-4440	26-0274	26-1546
	3.250"	82.6mm	67-3061	26-0296	26-0282
	3.000"	76.2mm	67-3062	26-0298	26-0284
2 1/2"	2.875"	73.0mm	67-3036	26-0258	26-0236
	2.750"	69.6mm	67-3063	26-0300	26-0286
	2.500"	63.5mm	67-3064	26-0302	26-0288
2"	2.375"	60.3mm	67-3038	26-0262	26-0234

Contact Tri Tool Technologies for sizes not listed

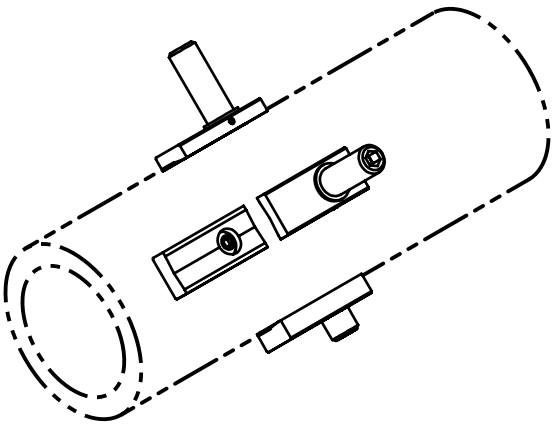
606SB Clamping Pad Sets



Pipe Size	True OD		Pad Set Part No	Adjustable Bar Assy (2 req'd)	Fixed Bar Assy (2 req'd)
6"	6.625"	168.3mm	67-3028	26-0246	26-0244
	6.500"	165.1mm	67-3029	26-0246	26-0243
	6.250"	158.8mm	67-3030	26-0248	26-0242
	6.000"	152.4mm	67-3031	26-0250	26-0241
	5.750"	146.1mm	67-3032	26-0252	26-0240
5"	5.563"	141.3mm	67-3033	26-0254	26-0239
	5.500"	139.7mm	67-3034	26-0254	26-0238
	5.250"	133.4mm	67-3035	26-0256	26-0237
	5.000"	127.0mm	67-3036	26-0258	26-0236
	4.750"	120.7mm	67-3037	26-0260	26-0235
4"	4.500"	114.3mm	67-3038	26-0262	26-0234
	4.250"	108.0mm	67-3039	26-0264	26-0233
3 1/2"	4.000"	101.6mm	67-3040	26-0266	26-0232
	3.750"	95.3mm	67-3483	26-1213	26-1211
3"	3.500"	88.9mm	67-3213	26-0414	26-0704
	3.250"	85.6mm	67-3989	26-0745	26-1493
	3.000"	76.2mm	67-3447	26-1083	26-1083
2 1/2"	2.875"	73.0mm	67-3496	26-1422	26-1420
2"	2.375"	60.3mm	67-3476	26-0894	26-1161

Contact Tri Tool Technologies for sizes not listed

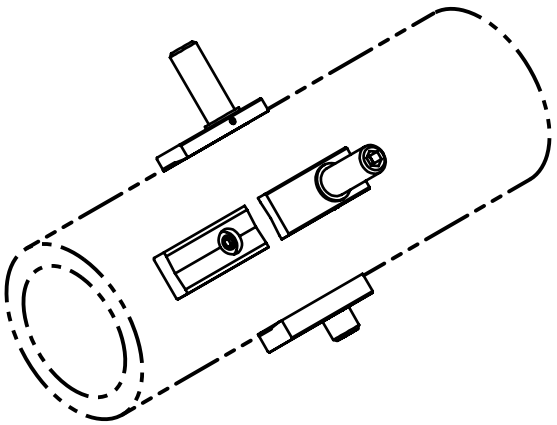
608SB Clamping Pad Sets



Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (2 req'd)	Fixed Bar Assy (2 req'd)
8"	8.625"	219.1mm	67-3007	26-0386	26-0243
	8.500"	215.9mm	67-3080	26-0388	26-0276
	8.250"	209.6mm	67-3081	26-0390	26-0278
	8.000"	203.2mm	67-3082	26-0392	26-0280
	7.750"	196.9mm	67-3083	26-0394	26-0272
	7.625"	193.7mm	67-3076	26-0274	26-0238
	7.500"	190.5mm	67-3084	26-0396	26-0282
	7.250"	184.2mm	67-3085	26-0398	26-0284
	7.000"	177.8mm	67-3086	26-0400	26-0286
	6.750"	171.5mm	67-3087	26-0402	26-0288
6"	6.625"	168.3mm	67-3008	26-0302	26-0234
	6.500"	165.1mm	67-3088	26-0404	26-0376
	6.250"	158.8mm	67-3089	26-0408	26-0378
	6.000"	152.4mm	67-3090	26-0410	26-0380
	5.750"	146.1mm	67-3091	26-0412	26-0382
5"	5.563"	141.3mm	67-3009	26-0414	26-0384
	5.000"	127.0mm	67-3261	26-0788	26-0786
4"	4.500"	114.3mm	67-3094	26-0894	26-0999

Contact Tri Tool Technologies for sizes not listed

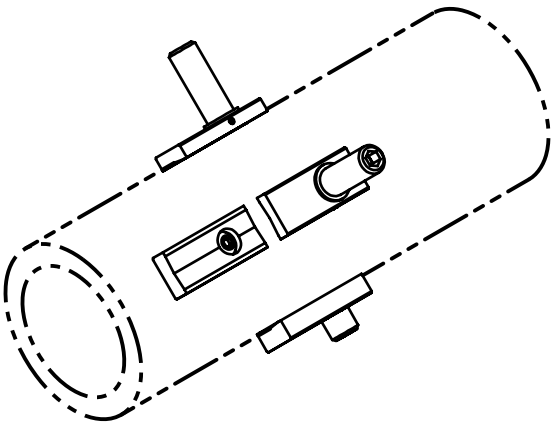
610SB Clamping Pad Sets



Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (3 req'd)	Fixed Bar Assy (2 req'd)
10"	10.750"	273.1mm	67-3093	26-0388	26-0242
	10.500"	266.7mm	67-3095	26-0390	26-0241
	10.250"	260.4mm	67-3096	26-0392	26-0240
	10.000"	254.0mm	67-3097	26-0394	26-0238
	9.750"	247.7mm	67-3098	26-0396	26-0237
	9.500"	241.3mm	67-3099	26-0398	26-0236
	9.250"	235.0mm	67-3100	26-0400	26-0235
	9.000"	228.6mm	67-3101	26-0402	26-0234
	8.750"	222.3mm	67-3102	26-0404	26-0233
8"	8.625"	219.1mm	67-3010	26-0406	26-0378
	7.750"	196.9mm	67-3244	26-0749	26-0747
	7.625"	193.7mm	67-3243	26-0745	26-0743
	7.000"	177.8mm	67-3242	26-0741	26-0739
6"	6.625"	168.3mm	67-3384	26-0823	26-0995

Contact Tri Tool Technologies for sizes not listed

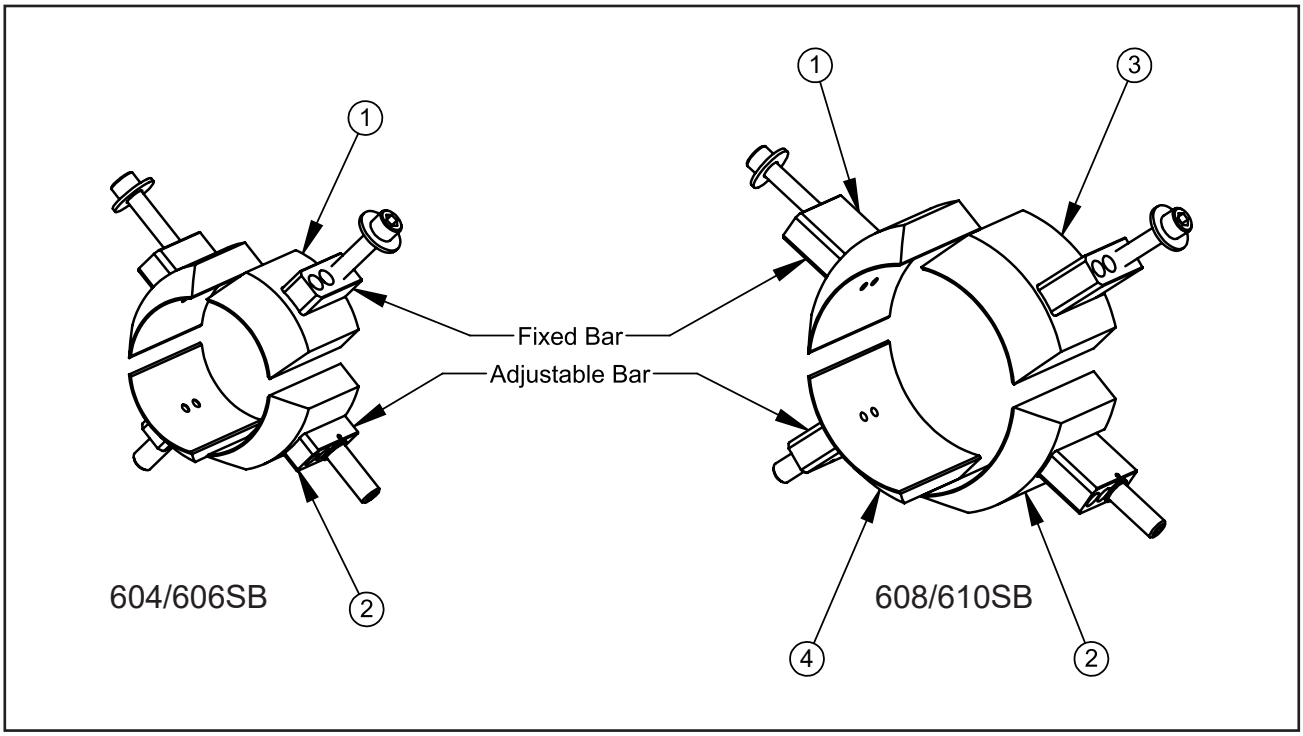
612SB Clamping Pad Sets



Pipe Size	True OD		Pad Set Part No.	Adjustable Bar Assy (3 req'd)	Fixed Bar Assy (2 req'd)
12"	12.750"	323.9mm	67-3093	26-0388	26-0242
	12.500"	317.5mm	67-3095	26-0390	26-0241
	12.250"	311.2mm	67-3096	26-0392	26-0240
	12.000"	304.8mm	67-3097	26-0394	26-0238
	11.750"	298.5mm	67-3098	26-0396	26-0237
	11.500"	292.1mm	67-3099	26-0398	26-0236
	11.250"	285.8mm	67-3100	26-0400	26-0235
	11.000"	279.4mm	67-3101	26-0402	26-0234
10"	10.750"	273.1mm	67-3102	26-0404	26-0233
8"	8.625"	219.1mm	67-3462	26-0796	26-1124

Contact Tri Tool Technologies for sizes not listed

9. FULL SUPPORT PAD KITS



Machine Size	Pipe OD	Pad Set	Item #1 Fixed Pad Assy	Fixed Bar	Item #2 Adjust. Pad Assy	Adjustable Bar	Item #3 Alt. Fixed Pad Assy	Item #4 Alt. Adjus. Pad Assy
604SB	2.375" (60.3mm)	05-1527	67-5372	26-2041 (1.138")	67-5377	26-2050 (0.969")	-	-
	2.875" (73.0mm)	05-1528	67-5373	26-2042 (0.888")	67-5378	26-2051 (0.719")	-	-
606SB	2.875" (73.0mm)	05-1529	67-5374	26-2036 (1.951")	67-5379	26-2046 (1.782")	-	-
	3.500" (88.9mm)	05-1530	67-5375	26-2038 (1.638")	67-5380	26-2048 (1.469")	-	-
	4.500" (114.3mm)	05-1531	67-5376	26-2041 (1.138")	67-5381	26-2050 (0.969")	-	-
608SB	4.500" (114.3mm)	05-1532	67-5356	26-2035 (2.210")	67-5362	26-2045 (2.027")	67-5359	67-5365
	5.563" (141.3mm)	05-1533	67-5357	26-2037 (1.679")	67-5363	26-2047 (1.496")	67-5360	67-5366
	6.625" (168.3mm)	05-1534	67-5358	26-2040 (1.148")	67-5364	26-2050 (0.969")	67-5361	67-5367
610SB	5.563" (141.3mm)	05-1535	67-5338	26-2033 (2.814")	67-5344	26-2043 (2.594")	67-5341	67-5347
	6.625" (168.3mm)	05-1536	67-5339	26-2034 (2.283")	67-5345	26-2044 (2.063")	67-5342	67-5348
	8.625" (219.1mm)	05-1537	67-5340	26-2039 (1.283")	67-5346	26-2049 (1.063")	67-5343	67-5349

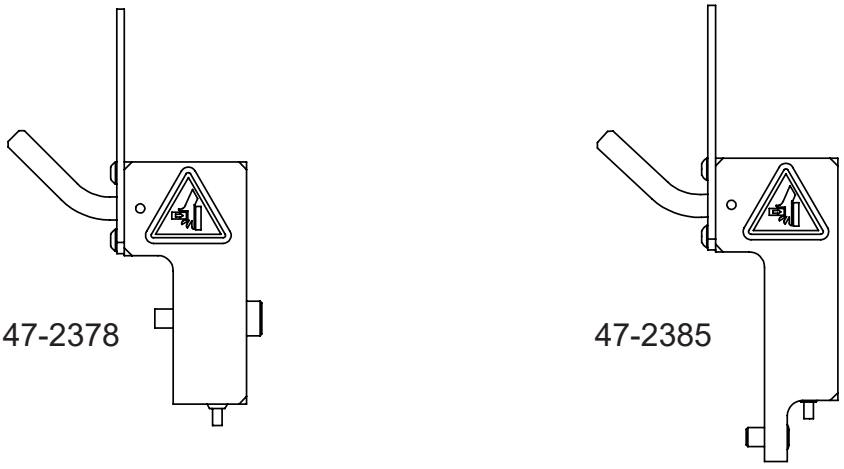
Mounting Instructions for Full Support Pad Kits

1. Remove all four (4) Fixed and Adjustable Bar Assemblies to allow for mounting the Fixed and Adjustable Full Support Pads.
2. Mount the two (2) Fixed Full Support Pad Assemblies by fastening the 1/2-13 cap screw to the spacer block through the clamshell housing.
3. To mount the two (2) Adjustable Full Support Pad Assemblies thread them into the clamshell housing the same as the standard Adjustable Bar Assemblies.
4. Fully retract the Adjustable Full Support Pad Assemblies prior to mounting the 600 series clamshell on a pipe.

10. TRIPPER BLOCK ASSEMBLIES

WARNING

WARNING: Ensure that you are using the correct tripper block assembly to decrease the risk of serious personal injury and equipment damage.

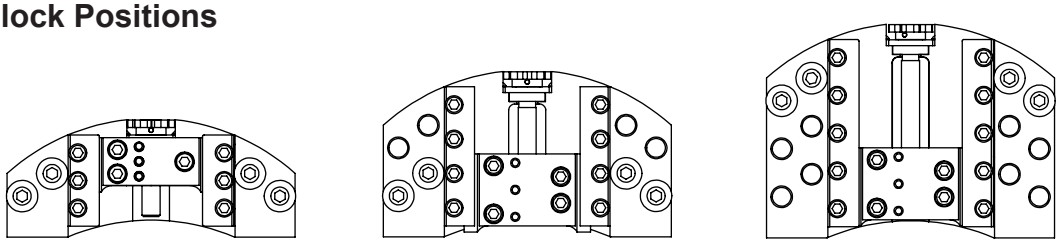


Tool Block Assemblies

Tripper Block Assemblies

Part Number	Position 1	Position 2	Position 3
08-0037	47-2378	NA	NA
08-0040	47-2378	47-2378	NA
08-0214	47-2378	47-2378	47-2385

Tool Block Positions

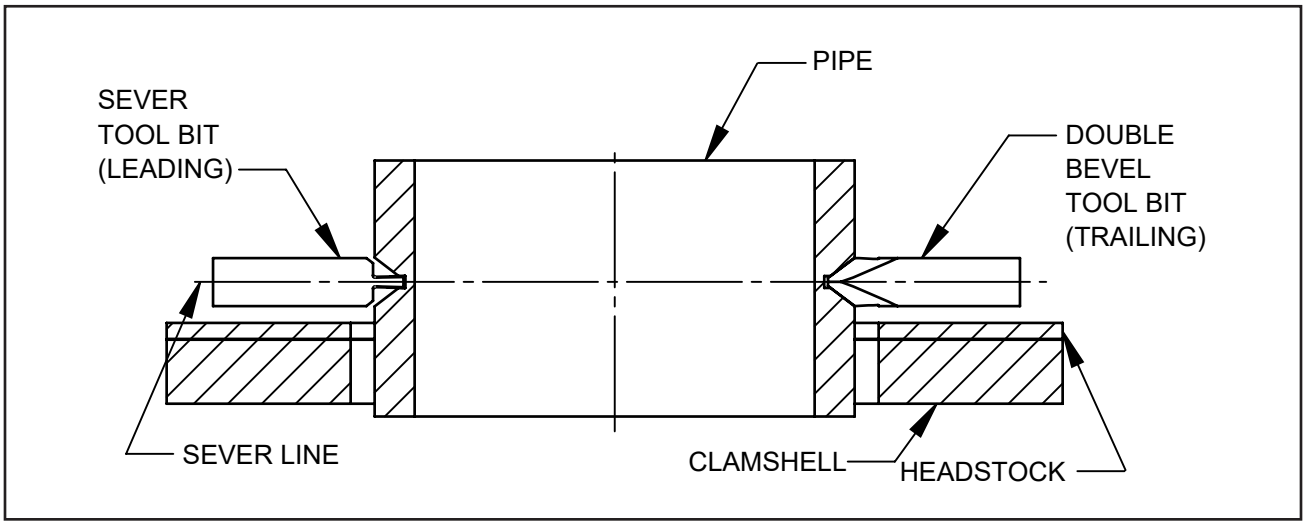


08-0037 08-0040 08-0214

11. TOOL BITS

Sever and Double Bevel Tool Bit Sets

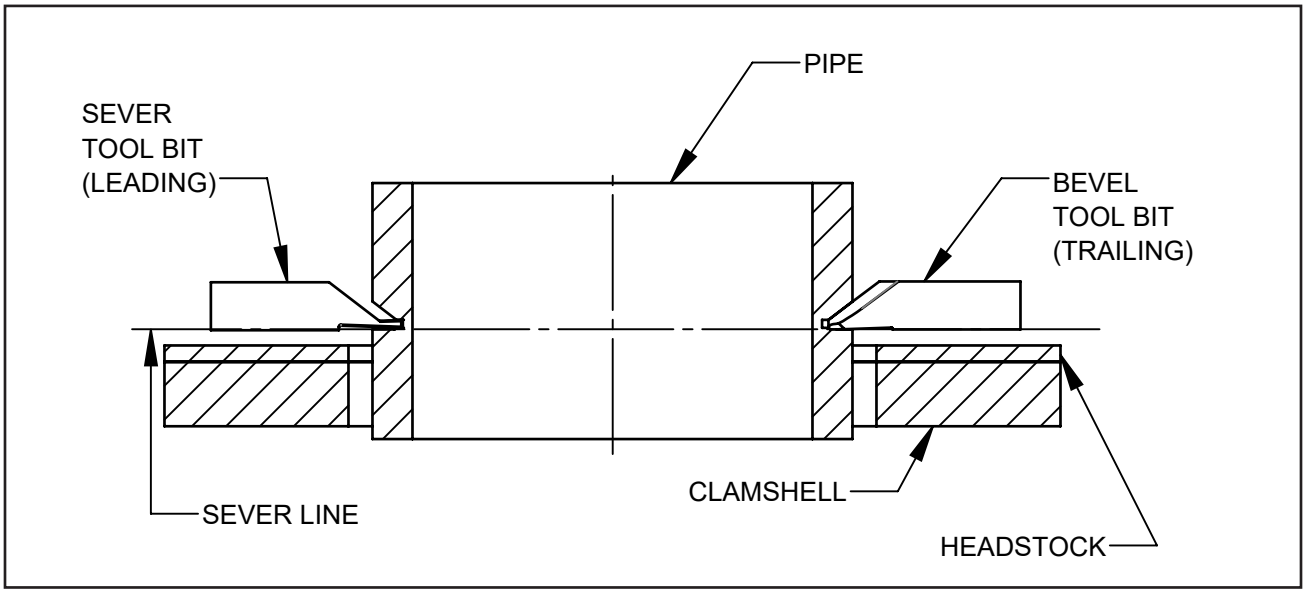
Sever and Double Bevel Tool Bit Sets leave a bevel on both pieces of pipe or tube which has been severed.



Range	Max Wall Thickness	Pipe or Tube Material	Double Bevel Tool Bit P/N	Sever Tool Bit P/N	Tool Bit Length
Sever and Double 37.50 Bevel Tool Bits for use with the Extended Tool Block (P/N 08-0040)					
2" & 2 1/2" pipe Sch 5 thru 160 3" thru 5" pipe Sch 5 thru 80 6" thru 12" pipe Sch 5 thru 40	.400" (10.2mm)	CS, SS	99-0466	99-0467	3.00" (76.2mm)
Sever and Double 37.50 Bevel Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)					
2 1/2" pipe Sch 5 only 3" thru 4" pipe Sch 5 thru 80 5" & 6" pipe Sch 5 thru 40 8" pipe Sch 5 thru 60	.400" (10.2mm)	CS, SS	99-1642	99-1643	2.000" (50.8mm)
10" & 12" pipe Sch 5 thru 40	.400" (10.2mm)	CS, SS	99-0987	99-0986	2.38" (60.5mm)

Left Hand Sever and Bevel Tool Bit Sets

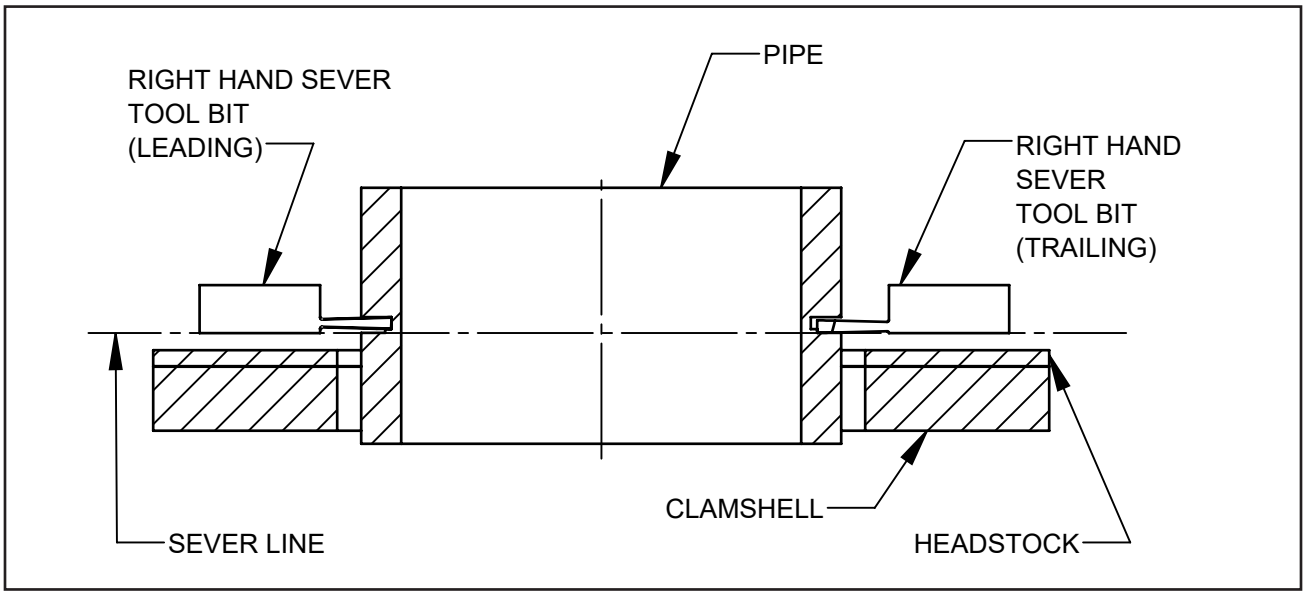
The Left Hand Sever and Bevel Tool Bit Sets bevel the end of the pipe or tube which is cut from the pipe or tube on which the Clamshell is mounted.



Range	Max Wall Thickness	Pipe or Tube Material	LH Bevel Tool Bit P/N	LH Sever Tool Bit P/N	Tool Bit Length
Left Hand Sever and 37.50 Bevel Tool Bits for use with the Extended Tool Block (P/N 08-0040)					
2" thru 5" all Sch 6" pipe Sch 5 thru 160 8" pipe Sch 5 thru 120 10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800" (20.3mm)	CS, SS	99-1256	99-1257	3.00" (76.2mm)
Left Hand Sever and 37.50 Bevel Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)					
2 1/2" pipe Sch 5 only 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	.800" (20.3mm)	CS, SS	99-1646	99-1647	2.000" (50.8mm)
10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800" (20.3mm)	CS, SS	99-1264	99-1265	2.38" (60.5mm)

Right Hand Sever and Bevel Tool Bit Sets

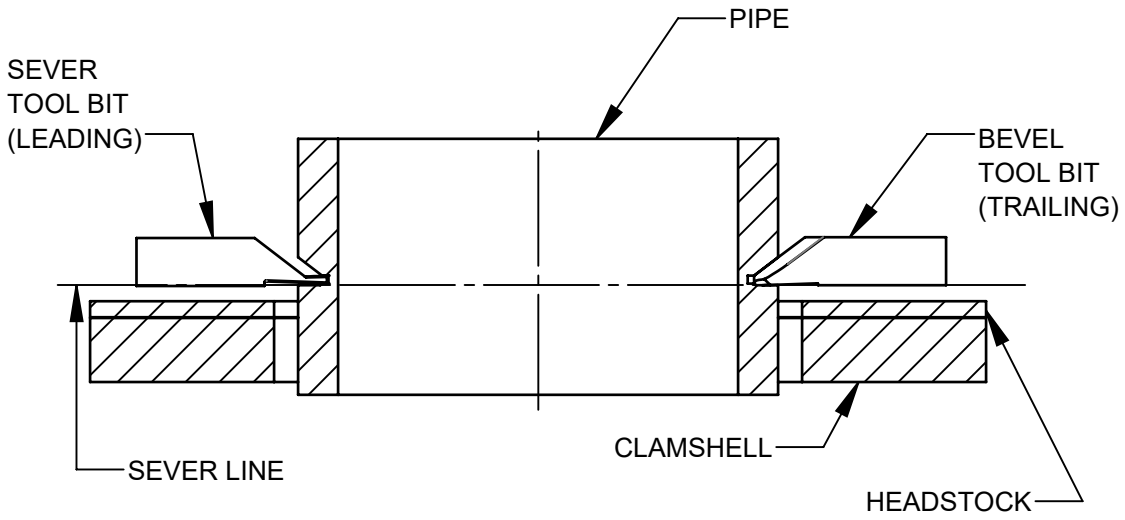
Right Hand Sever and Bevel Tool Bit Sets bevel the end of the pipe or tube on which the Clamshell is mounted.



Range	Max Wall Thickness	Pipe or Tube Material	RH Bevel Tool Bit P/N	RH Sever Tool Bit P/N	Tool Bit Length
Right Hand Sever and 37.50 Bevel Tool Bits for use with the Extended Tool Block (P/N 08-0040)					
2" thru 5" all Sch 6" pipe Sch 5 thru 160 8" pipe Sch 5 thru 120 10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800" (20.3mm)	CS, SS	99-1258	99-1259	3.00" (76.2mm)
Right Hand Sever and 37.50 Bevel Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)					
2 1/2" pipe Sch 5 only 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	.800" (20.3mm)	CS, SS	99-1644	99-1645	2.00" (50.8mm)
10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800” (20.3mm)	CS, SS	99-1266	99-1267	2.38" (60.5mm)

Left Hand Sever Tool Bit Sets

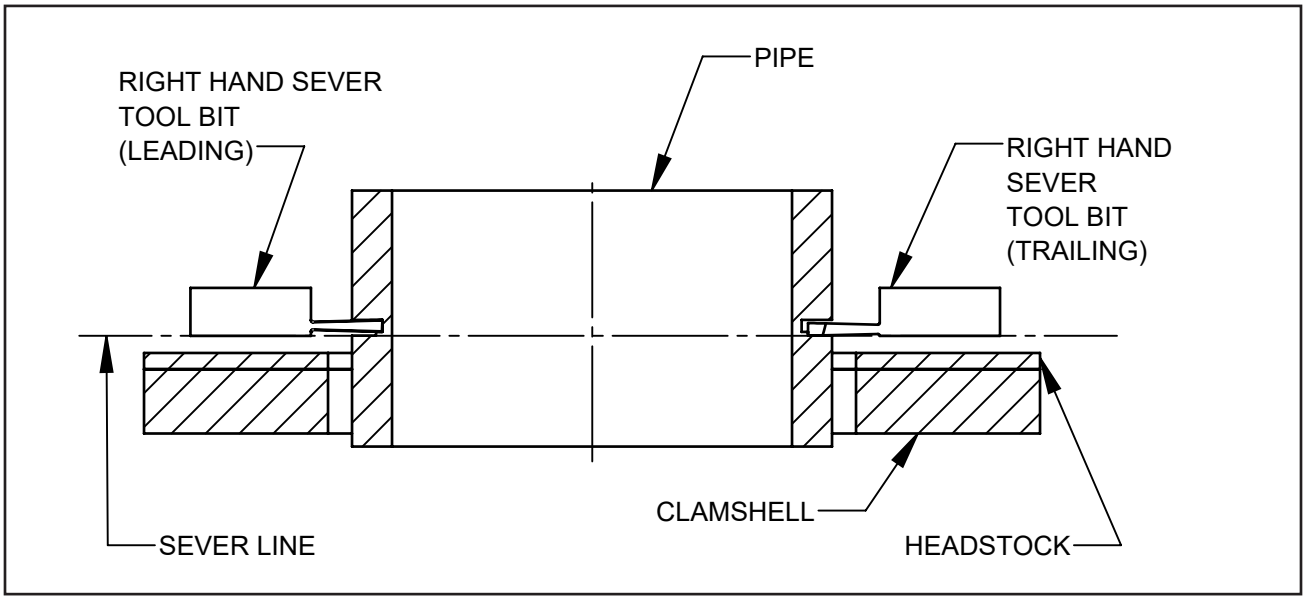
The Left Hand Sever Tool Bit Sets sever the pipe or tube away from the clamshell relative to the Tool Holder.



Range	Max Wall Thickness	Pipe or Tube Material	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 8" pipe Sch 5 thru 140 10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800" (20.3mm)	CS, SS	99-0502	99-0501	3.00" (76.2mm)
Left Hand Sever Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)					
2 1/2" pipe Sch 5 only 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	.800" (20.3mm)	CS, SS	99-1638	99-1639	2.00" (50.8mm)
10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800" (20.3mm)	CS, SS	99-1596	99-1595	2.38" (60.5mm)

Right Hand Sever Tool Bit Sets

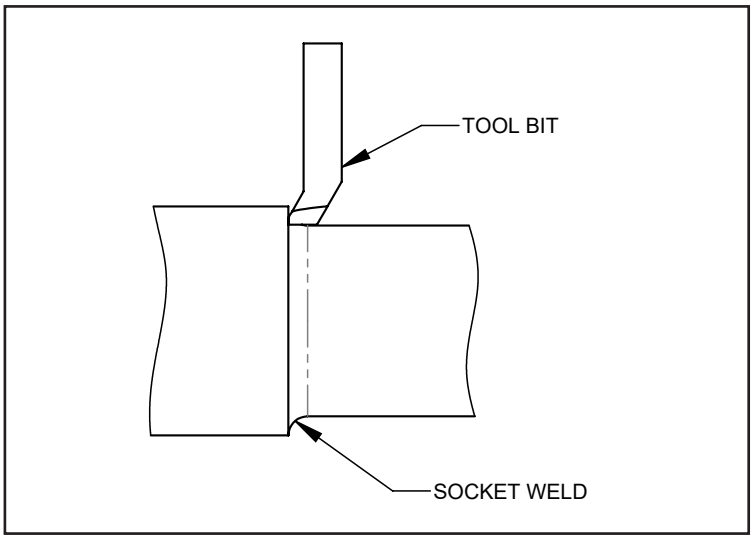
The Right Hand Sever Tool Bit Set severs the pipe or tube close to the clamshell relative to the Tool Holder.



Range	Max Wall Thickness	Pipe or Tube Material	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 8" pipe Sch 5 thru 140 10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800" (20.3mm)	CS, SS	99-1023	99-1022	3.00" (76.2mm)
Right Hand Sever Tool Bits for use with the Low Profile Tool Block (P/N 08-0037)					
2 1/2" pipe Sch 5 only 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	.800" (20.3mm)	CS, SS	99-1640	99-1641	2.00" (50.8mm)
10" pipe Sch 5 thru 100 12" pipe Sch 5 thru 80	.800" (20.3mm)	CS, SS	99-1597	99-1598	2.38" (60.5mm)

Special Tool Bit Sets

A Socket Weld Removal Bit removes the weld from a weld type socket joint.



Socket Weld Removal Tool Bits

Range	Machine	Pipe or Tube Material	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)

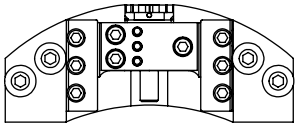
2.375" (60.3mm) min OD 4.500" (114.3mm) max OD	604SB	CS, SS	99-1600	2.38" (60.5mm)
4.000" (101.6mm) min OD 6.625" (168.3mm) max OD	606SB			
5.563" (141.3mm) min OD 8.625" (219.1mm) max OD	608SB			
8.625" (219.1mm) min OD 10.750" (273.1mm) max OD	610SB			
10.750" (273.0mm) min OD 12.750" (323.8mm) max 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)

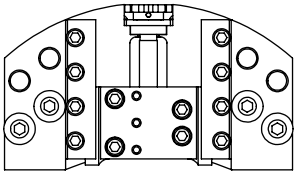
2.375" (60.3mm) min OD 4.500" (114.3mm) max OD	604SB	CS, SS	99-1600	2.38" (60.5mm)
4.000" (101.6mm) min OD 6.625" (168.3mm) max OD	606SB			
6.120" (155.4mm) min OD 8.625" (219.1mm) max OD	608SB			
8.625" (219.1mm) min OD 10.750" (273.1mm) max OD	610SB			
10.750" (273.0mm) min OD 12.750" (323.8mm) max OD	612SB			

12. TOOL BLOCKS

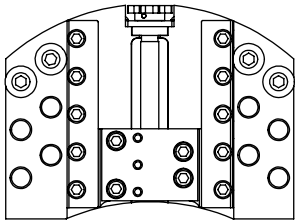
Tool Blocks



08-0037



08-0040

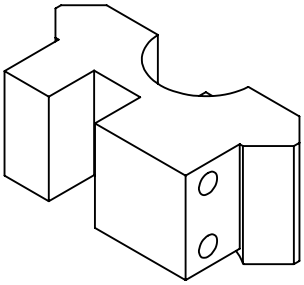


08-0214

Tool Blocks

Part No.	Description
08-0037	TOOL BLOCK, LOW PROFILE
08-0040	TOOL BLOCK, EXTENDED RANGE
08-0214	TOOL BLOCK, 3-POSITION

Socket Weld Removal



Tool Holder, Socket Weld Removal

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

13. TROUBLESHOOTING

Problem: Tool Bit Chatters

The tool bit is loose or overextended.

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: 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: Rough Surface Finish

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: Tool Bit Is Diving and Clamshell Is Stalling

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: Tool Bit Does Not Reach Work

Incorrect tool blocks are installed for the size of the pipe or tube being worked on.

Incorrect tool bit is installed.

Problem: Clamshell Is Slipping On The Pipe Or Tube (Fixed Pads)

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 prevent 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: 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: Clamshell Will Not Center On The Pipe Or Tube (Fixed Pads)

Incorrect Clamping Pad Set is installed.

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

Once of the Clamping Pads is on a seam.

The pipe or tube has an out-of-round condition or is oversized or undersized.

Problem: Air Motor Does 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 motor.

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: Hydraulic Motor Does Not Start

The hydraulic power supply is shut off.

The hydraulic motor is damaged and will not run free.

14. ACCESSORIES

The following accessories for the Model 600SB Clamshells are available from Tri Tool Technologies.

- Portable Air Filter (P/N 75-0115)

  A Filter/Regulator/Lubricator (FRL) is required to protect the warranty on all Tri Tool Technologies air-driven tools.
- Counterboring Module Kit CBM-2 (P/N 05-0116)
- Counterboring Module Kit CBM-3 (P/N 05-0405)
- Tool Bits (Refer to TOOL BITS section)
- Tool Blocks (Refer to TOOL BLOCKS section)
- Clamping Pad Sets (Refer to CLAMPING PAD SETS section)
- Air Motor, 1.5 HP (P/N 57-0072
- Air Motor, 2.25 HP (P/N 57-0162)
- Air Motor, 3.0 HP (P/N 57-0163)

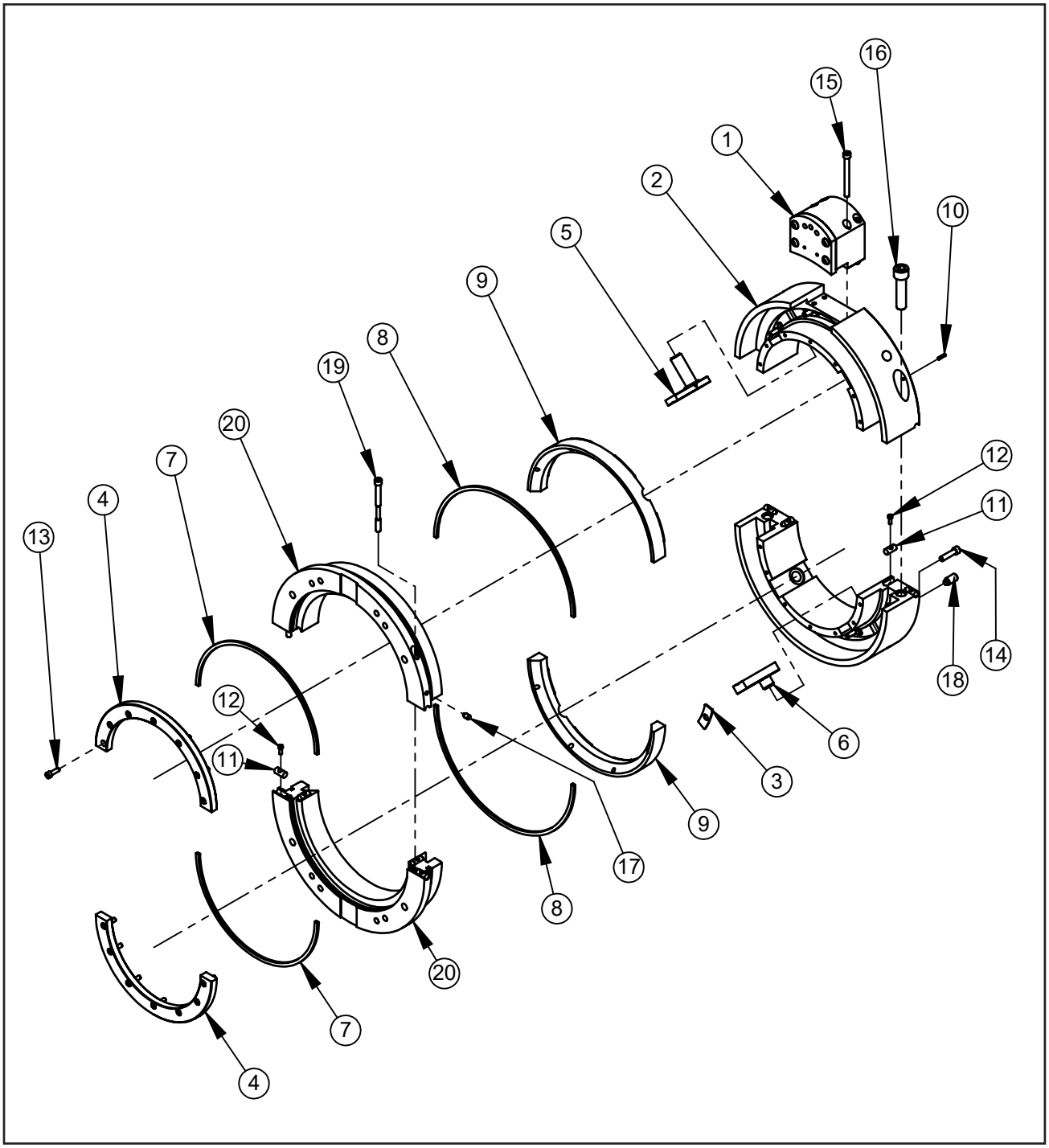
  A Heavy Duty Motor is recommended for use when beveling carbon steel pipe with a wall thickness greater than .75” (19.1mm) or when beveling stainless steel pipe with a wall thickness greater than .50” (12.7mm)
  (See SPECIFICATIONS section for motor selection)
- Electric Drive Kit, 110V (Milwaukee) (P/N 05- 0123)
- HD, Electric Drive Kit, 115V (Unitec) (P/N 05-0434)
- HD, Electric Drive Kit, 230V (Unitec) (P/N 05-0414)
- Hydraulic Drive Kit (P/N 05-0358)
- Reverse Drive Housing Kit (P/N 05-0804)
- Repair Kit (P/N 05-0135) for the Standard Tool Module (P/N 08-0037)
- Repair Kit (P/N 05-0136) for the Extended Tool Module (P/N 08-0040)
- Lathe Stand Kits:

  (Note: Lathe Stand Kits work with Standard and Extended Tool Blocks only)

  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)
- HD Tool Module Kit (P/N 05-0440)
- Sever Tool Holder Kit (Iscar) (P/N 05-1357)
- An ASO (Automatic Shut Off) *(Special order only)*

15. ILLUSTRATED PARTS BREAKDOWN

MODEL 600SB CLAMSHELL SUB-ASSEMBLY (P/N 02-XXXX)



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

Item No	Part No	Description	Qty
1	19-0201	HOUSING ASSEMBLY, DRIVE, 604/612SB	1
2	19-0194	HOUSING, MAIN, 604SB	1 SET
3	24-0366	PLATE, BRG, BACKING	8
4	24-0346	PLATE, THRUST, 604SB	1 SET
5		BAR ASSEMBLY, ADJUSTABLE*	2
6		BAR ASSEMBLY, FIXED*	2
7	28-0057	SEAL, FELT	20” (51cm)
8	28-0057	SEAL, FELT	28” (72cm)
9	29-0128	BEARING, MAIN	1 SET
10	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
11	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
12	33-0012	SCREW, CAP, #6-32 X 3/8	8
13	33-0029	SCREW, CAP, 10-24 X 5/8	14
14	33-0042	SCREW, CAP, 1/4-20 X 1	8
15	33-0048	SCREW, CAP, 1/4-20 X 2-1/2	4
16	33-0108	SCREW, CAP, 1/2-13 X 1 3/4	2
17	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
18	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	16
19	33-1284	SCREW, SPLITLINE, 1/4-20 X 2 1/2	2
20	39-0195	GEAR, HEADSTOCK	1 SET

**Refer to CLAMPING PADS section for options*

Parts List, Shipping Kit, 600SB (P/N 05-1076) *Not Shown*

Part No	Description	Qty
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-Assembly (P/N 02-2253)

Item No	Part No	Description	Qty
1	19-0201	HOUSING ASSEMBLY, DRIVE, 604/612SB	1
2	19-0204	HOUSING, MAIN, 606SB	1 SET
3	24-0366	PLATE, BRG, BACKING	8
4	24-0365	PLATE, THRUST, 606SB	1 SET
5		BAR ASSEMBLY, ADJUSTABLE*	2
6		BAR ASSEMBLY, FIXED*	2
7	28-0057	SEAL, FELT	28” (71cm)
8	28-0057	SEAL, FELT	35” (89cm)
9	29-0129	BEARING, MAIN	1 SET
10	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
11	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
12	33-0012	SCREW, CAP, #6-32 X 3/8	8
13	33-0029	SCREW, CAP, 10-24 X 5/8	14
14	33-0042	SCREW, CAP, 1/4-20 X 1	8
15	33-0048	SCREW, CAP, 1/4-20 X 2-1/2	4
16	33-0109	SCREW, CAP, 1/2-13 X 2	2
17	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
18	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	16
19	33-1263	SCREW, SPLITLINE, 1/4-20 X 3	2
20	39-0195	GEAR, HEADSTOCK	1 SET

**Refer to CLAMPING PADS section for options*

Parts List, Shipping Kit, 600SB (P/N 05-1076) *Not Shown*

Part No	Description	Qty
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 608SB Clamshell Sub-Assembly (P/N 02-2254)

Item No	Part No	Description	Qty
1	19-0201	HOUSING ASSEMBLY, DRIVE, 604/612SB	1
2	19-0222	HOUSING, MAIN, 608SB	1 SET
3	24-0382	PLATE, BRG, BACKING	10
4	24-0385	PLATE, THRUST, 608SB	1 SET
5		BAR ASSEMBLY, ADJUSTABLE*	2
6		BAR ASSEMBLY, FIXED*	2
7	28-0057	SEAL, FELT	35” (89cm)
8	28-0057	SEAL, FELT	42” (107cm)
9	29-0139	BEARING, MAIN	1 SET
10	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
11	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
12	33-0012	SCREW, CAP, #6-32 X 3/8	8
13	33-0029	SCREW, CAP, 10-24 X 5/8	16
14	33-0042	SCREW, CAP, 1/4-20 X 1	10
15	33-0048	SCREW, CAP, 1/4-20 X 2-1/2	4
16	33-0109	SCREW, CAP, 1/2-13 X 2	2
17	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
18	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	20
19	33-1263	SCREW, SPLITLINE, 1/4-20 X 3	2
20	39-0226	GEAR, HEADSTOCK	1 SET

**Refer to CLAMPING PADS section for options*

Parts List, Shipping Kit, 600SB (P/N 05-1076) *Not Shown*

Part No	Description	Qty
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 610SB Clamshell Sub-Assembly (P/N 02-2255)

Item No	Part No	Description	Qty
1	19-0201	HOUSING ASSEMBLY, DRIVE, 604/612SB	1
2	19-0221	HOUSING, MAIN, 610SB	1 SET
3	24-0382	PLATE, BRG, BACKING	12
4	24-0383	PLATE, THRUST, 610SB	1 SET
5		BAR ASSEMBLY, ADJUSTABLE*	3
6		BAR ASSEMBLY, FIXED*	2
7	28-0057	SEAL, FELT	42” (107cm)
8	28-0057	SEAL, FELT	50” (127cm)
9	29-0138	BEARING, MAIN	1 SET
10	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
11	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
12	33-0012	SCREW, CAP, #6-32 X 3/8	8
13	33-0029	SCREW, CAP, 10-24 X 5/8	20
14	33-0042	SCREW, CAP, 1/4-20 X 1	12
15	33-0048	SCREW, CAP, 1/4-20 X 2-1/2	4
16	33-0112	SCREW, CAP, 1/2-13 X 2 3/4	2
17	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
18	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	24
19	33-1287	SCREW, SPLITLINE, 1/4-20 X 2 1/2	2
20	39-0225	GEAR, HEADSTOCK	1 SET

**Refer to CLAMPING PADS section for options*

Parts List, Shipping Kit, 600SB (P/N 05-1076) *Not Shown*

Part No	Description	Qty
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 612SB Clamshell Sub-Assembly (P/N 02-2256)

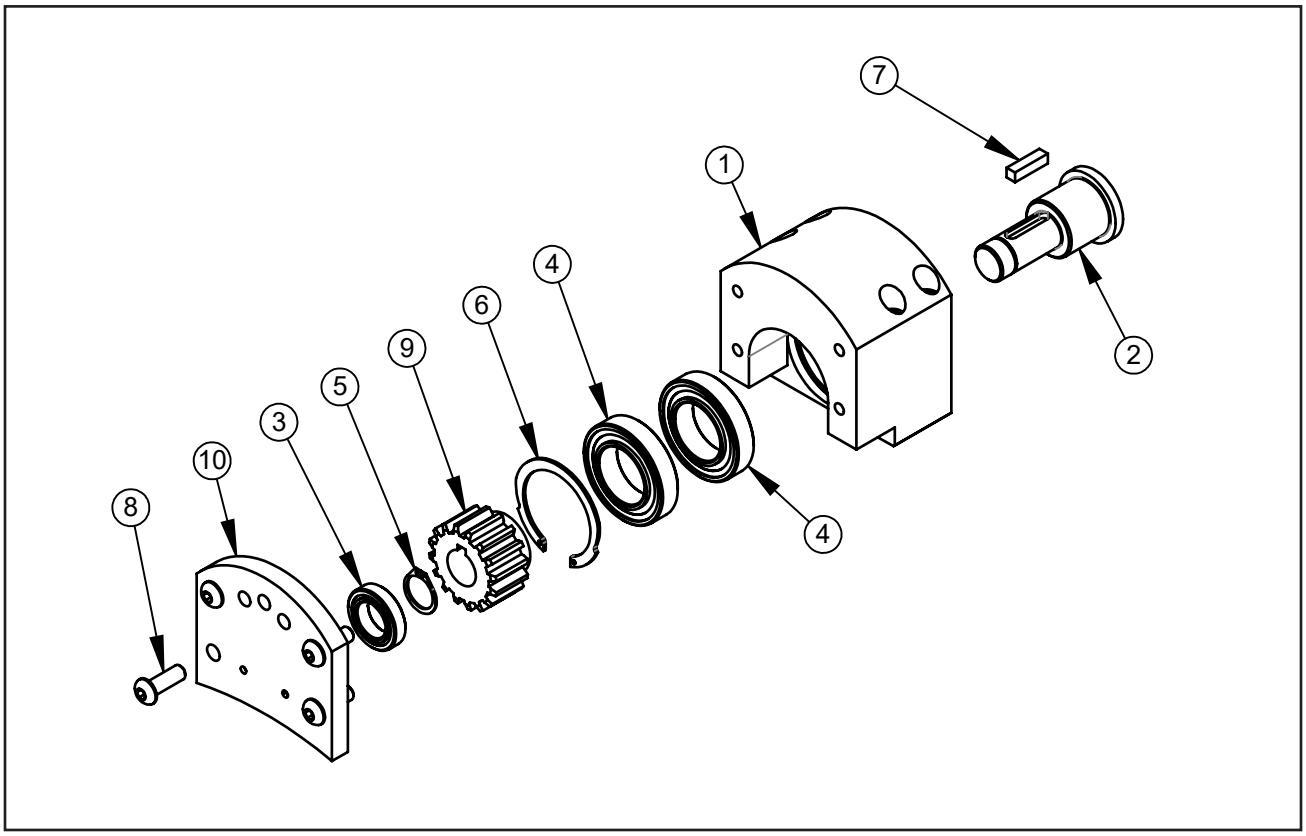
Item No	Part No	Description	Qty
1	19-0201	HOUSING ASSEMBLY, DRIVE, 604/612SB	1
2	19-0198	HOUSING, MAIN, 612SB	1 SET
3	24-0382	PLATE, BRG, BACKING	12
4	24-0361	PLATE, THRUST, 612SB	1 SET
5		BAR ASSEMBLY, ADJUSTABLE*	3
6		BAR ASSEMBLY, FIXED*	2
7	28-0057	SEAL, FELT	48” (122cm)
8	28-0057	SEAL, FELT	56” (142cm)
9	29-0126	BEARING, MAIN	1 SET
10	32-0024	PIN, ROLL, 1/8 DIA X 1/2	2
11	32-0209	PIN, ALIGNMENT, 5/16 DIA X 5/8	8
12	33-0012	SCREW, CAP, #6-32 X 3/8	8
13	33-0029	SCREW, CAP, 10-24 X 5/8	20
14	33-0042	SCREW, CAP, 1/4-20 X 1	12
15	33-0048	SCREW, CAP, 1/4-20 X 2-1/2	4
16	33-0113	SCREW, CAP, 1/2-13 X 2 3	2
17	33-0928	SCREW, SET, 1/4-20 X 3/8, HDOG	2
18	33-1261	SCREW, SET, 3/8-24 X 3/4, HDOG	24
19	33-1252	SCREW, SPLITLINE, 1/4-20 X 4	2
20	39-0198	GEAR, HEADSTOCK	1 SET

**Refer to CLAMPING PADS section for options*

Parts List, Shipping Kit, 600SB (P/N 05-1076) *Not Shown*

Part No	Description	Qty
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

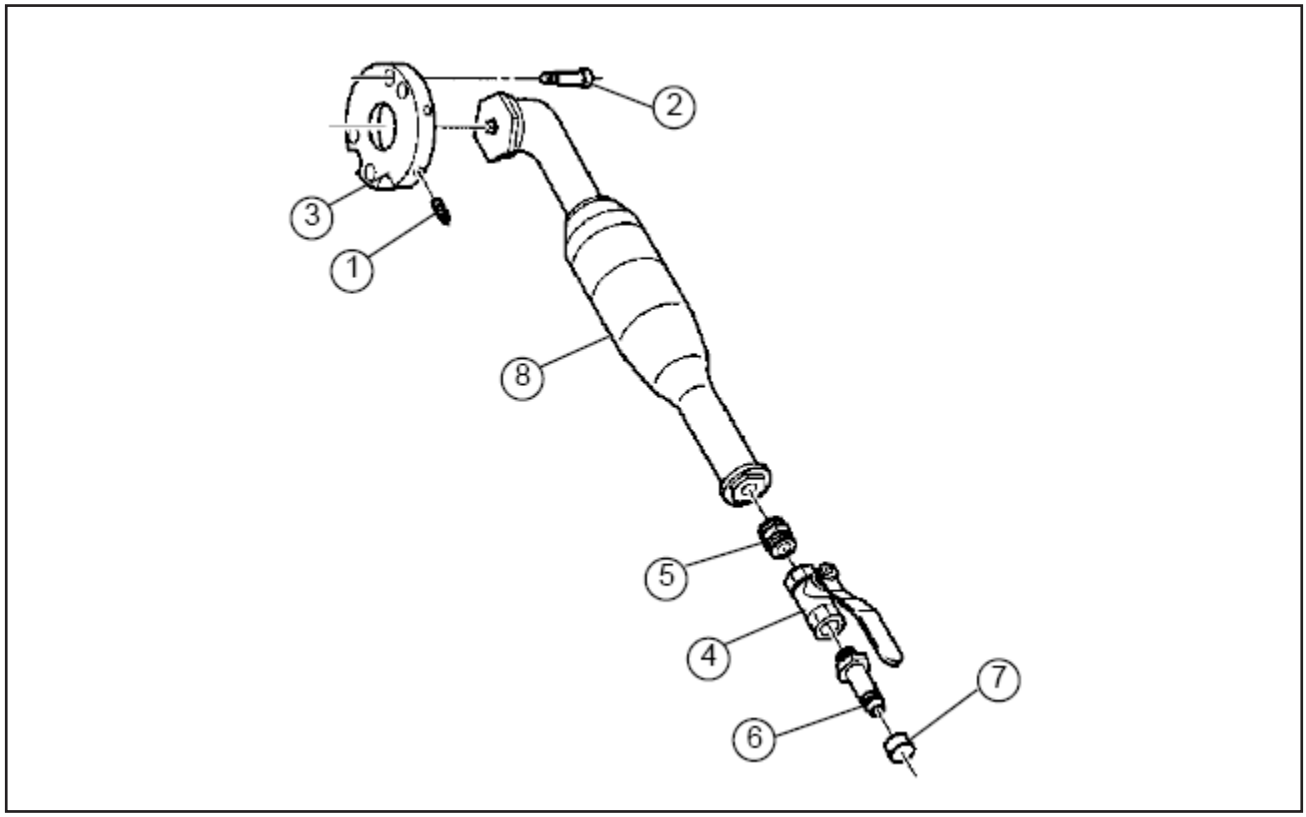
HOUSING ASSEMBLY, DRIVE (P/N 19-0201)



Parts List, Housing Assembly, 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	33-0287	SCREW, BUTTON, 1/4-20 X 3/4	4
9	39-0230	GEAR PINION	1
10	43-0206	COVER	10

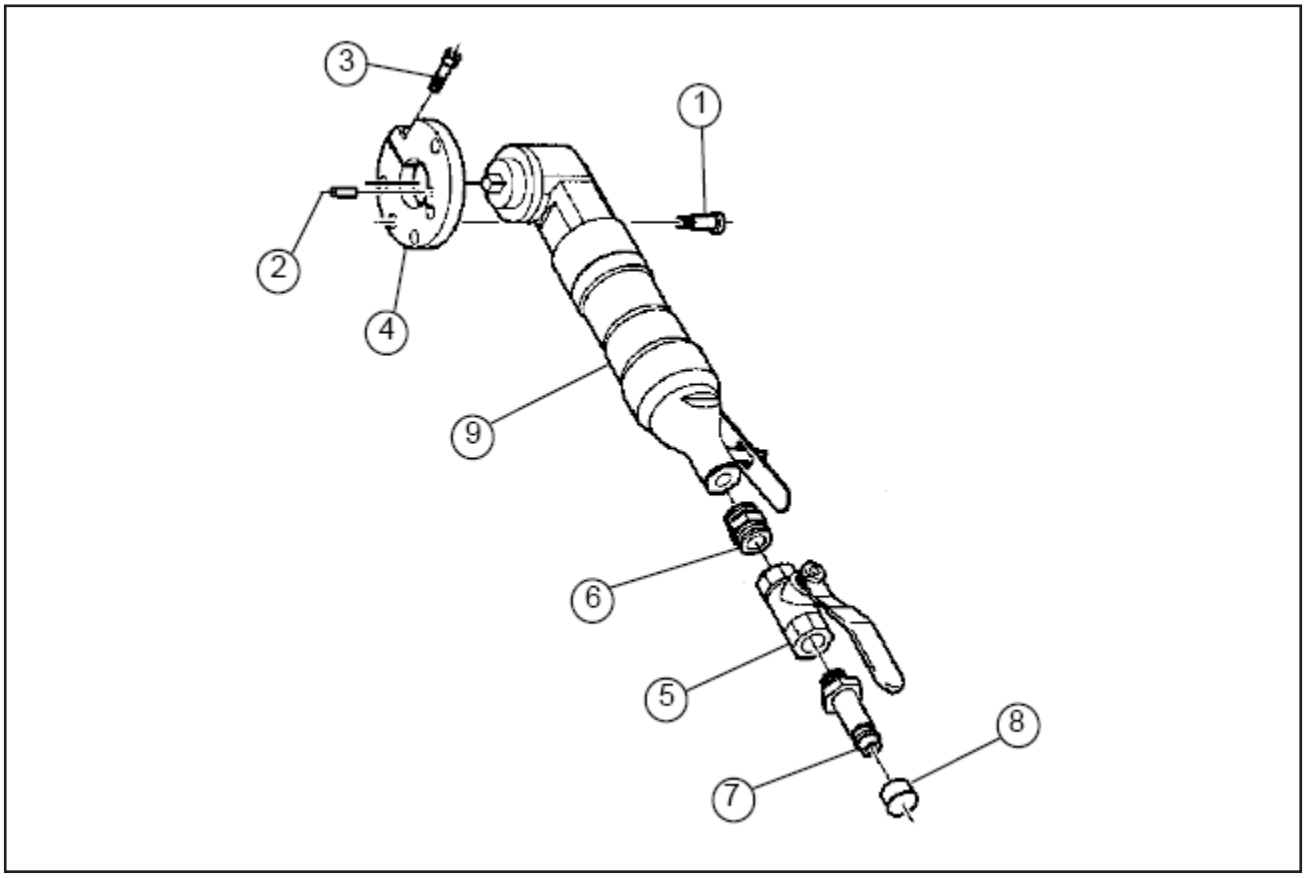
MOTOR ASSEMBLY, AIR, 1.5 HP (P/N 57-0072)



Parts List, Motor Assembly, 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 ASSEMBLY, 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

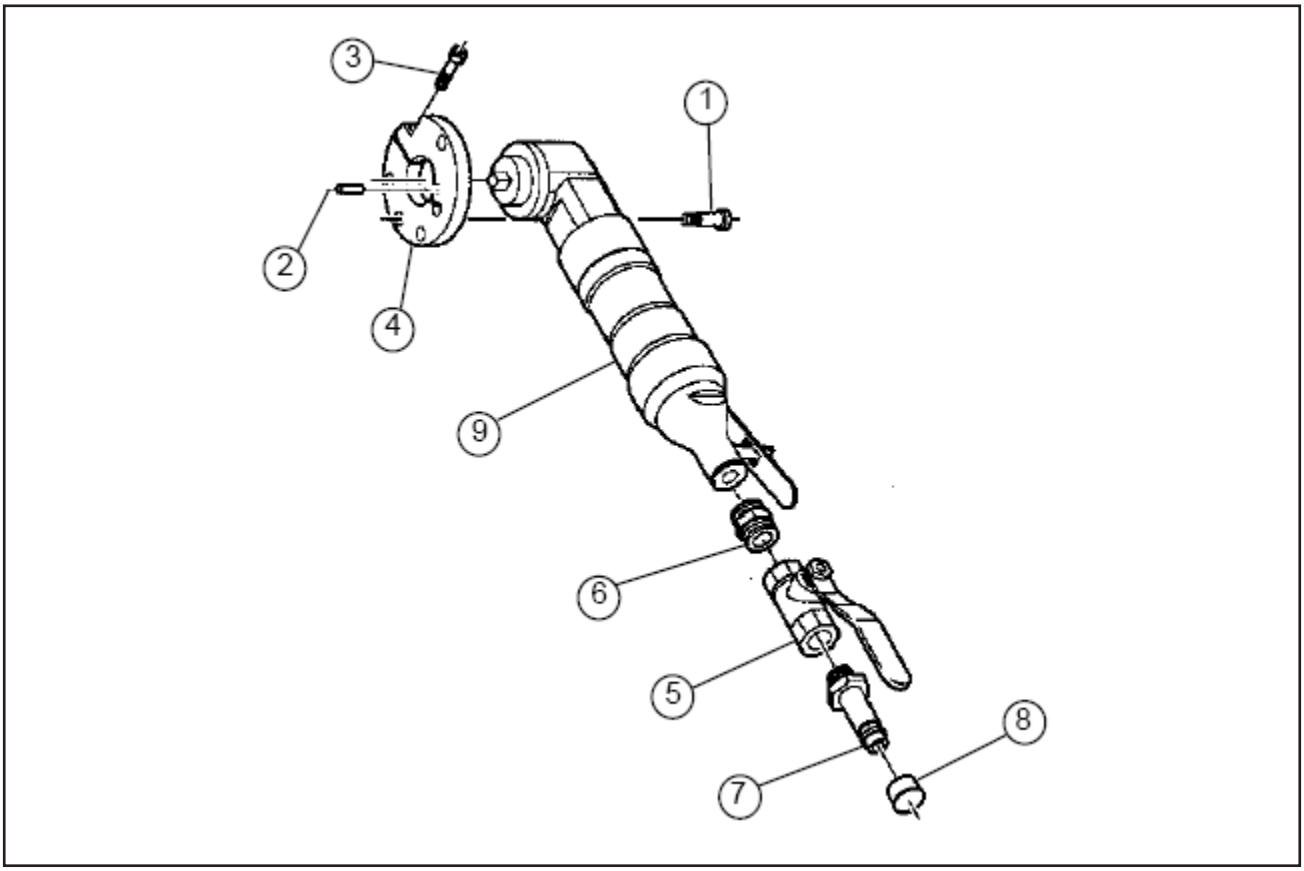
MOTOR ASSEMBLY, AIR, 2.25 HP (P/N 57-0162)



Parts List, Motor Assembly, 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	BRKT ASSY, TRQ RESTRAINT, SMALL	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	VALUE ASSY, FLOW CONTROL, AIR	1
5	53-0016	VALVE, BALL SHUTOFF, 1/2"PIPE	1
6	54-0019	NIPPLE, 1/2 EPIPE TO 1/2 EPIPE	1
7	54-0126	COUPLING, MALE QD TO 1/2 EPIPE	1
8	54-0201	CAP, YELLOW	1
9	57-0157	AIR MOTOR, R.A., 1/2" SQ, 200 RPM	1

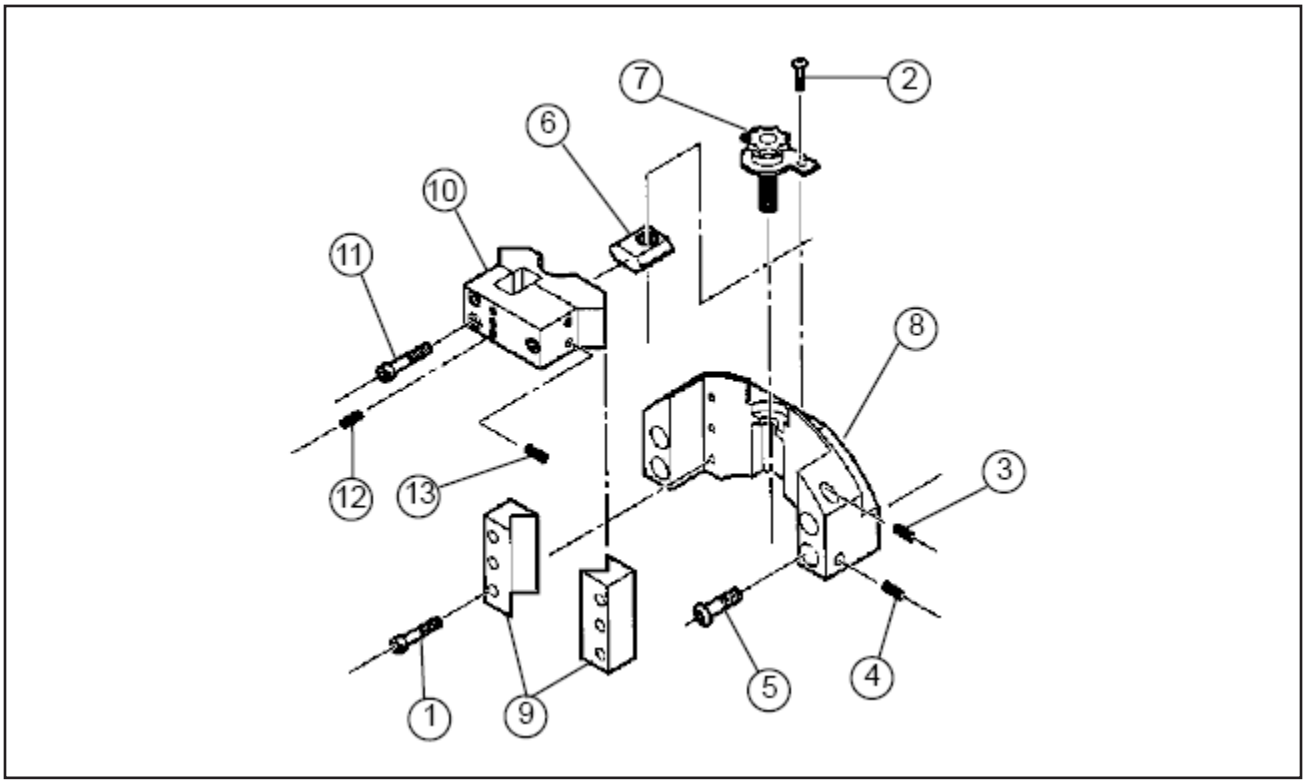
MOTOR ASSEMBLY, AIR, 3.0 HP (P/N 57-0163)



Parts List, Motor Assembly, 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	BRKT ASSEMBLY, TRQ RESTRAINT, SMALL	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	VALUE ASSY, FLOW CONTROL, AIR	1
5	53-0016	VALVE, BALL SHUTOFF, 1/2" PIPE	1
6	54-0019	NIPPLE, 1/2 EPIPE TO 1/2 EPIPE	1
7	54-0126	COUPLING, MALE QD TO 1/2 EPIPE	1
8	54-0201	CAP, YELLOW	1
9	57-0158	AIR MOTOR, R.A., 1/2" SQ, 145 RPM	1

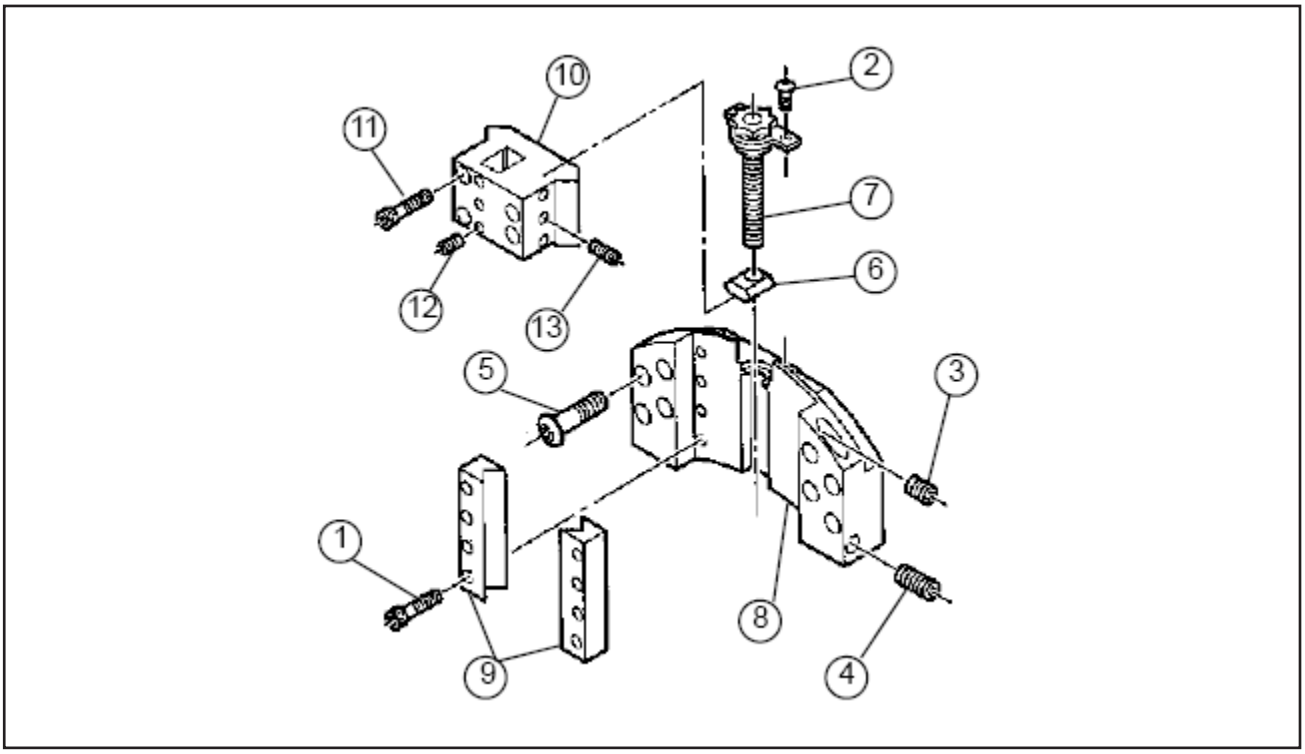
TOOL BLOCK, LOW PROFILE (P/N 08-0037)



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, 3/8-40 X 5/16	1
7	38-0289	SCREW ASSEMBLY, LEAD 600SB LOW PRO	1
8	47-0226	BRACKET, MOUNT TOOL BLOCK	1
9	48-0194	BLOCK, GUIDE	2
10	49-0018	HOLDER ASSEMBLY, TOOL BIT	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

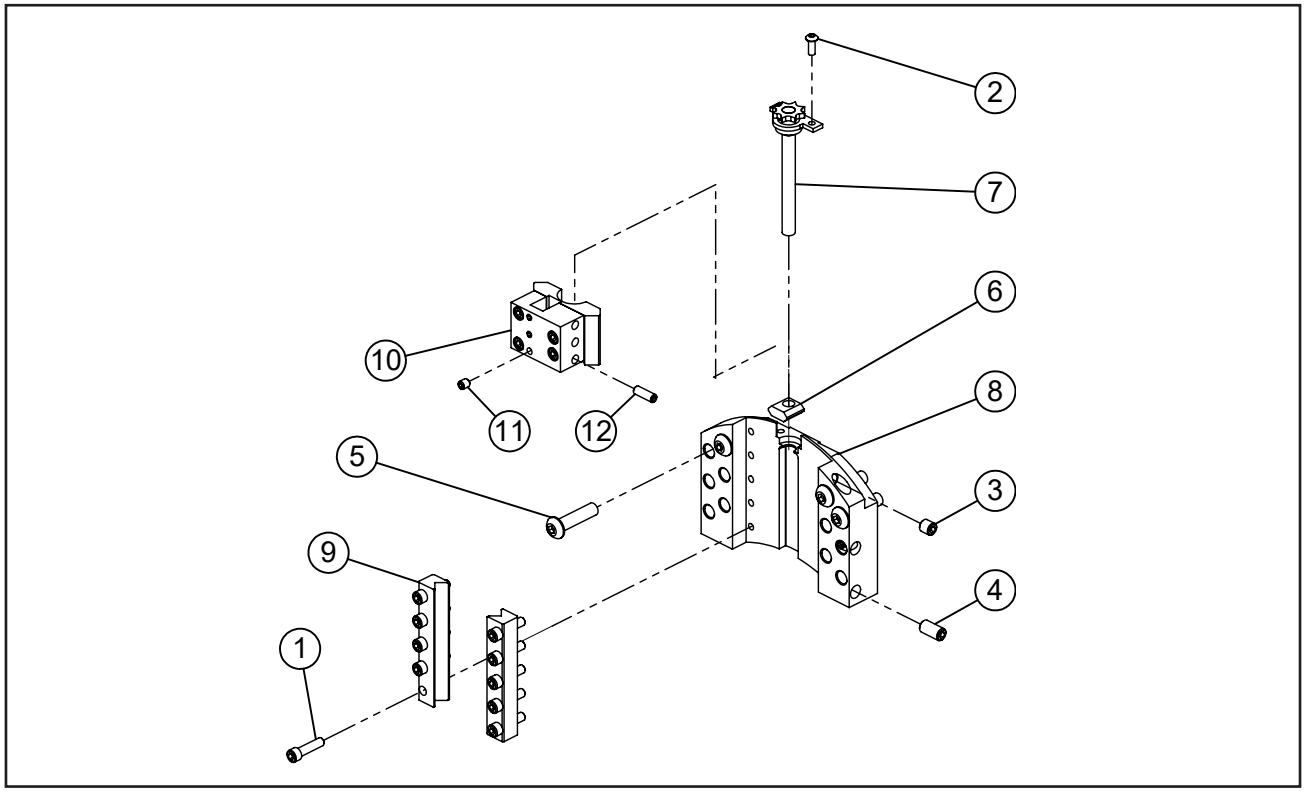
TOOL BLOCK, EXTENDED (P/N 08-0040)



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, 3/8-40 X 5/16	1
7	38-0290	SCREW ASSEMBLY, LEAD 600SB EXT RANGE	1
8	47-0232	BRACKET, FEED, EXT	1
9	48-0215	BLOCK, GUIDE, EXTEND	2
10	49-0019	HOLDER ASSEMBLY, TOOL BIT	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
	NOT SHOWN		
	30-5630	LABEL, WARNING STRIPE	1

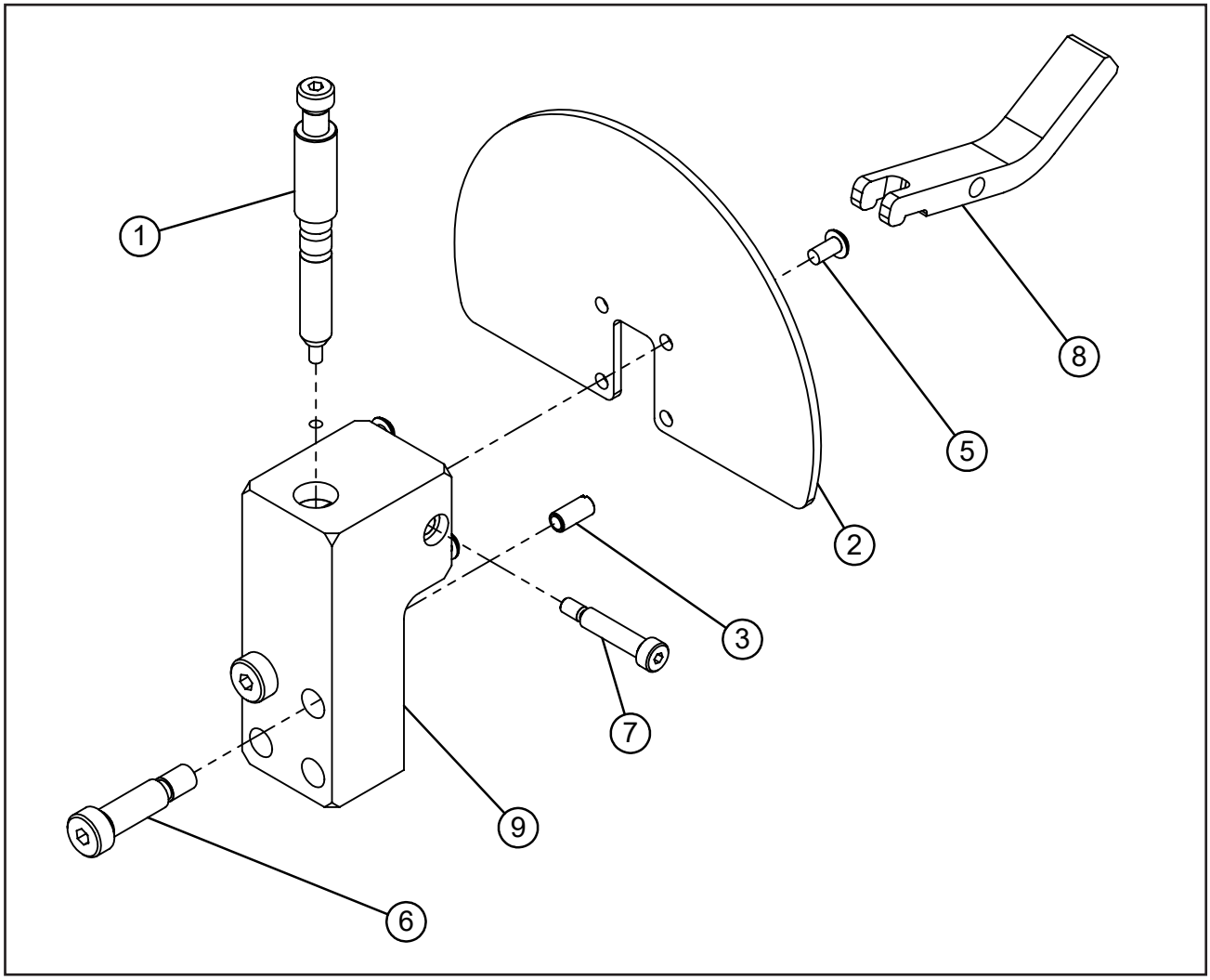
TOOL BLOCK, 3 POSITION (P/N 08-0214)



Parts List, Tool Block, 3 Position (P/N 08-0214)

Item No	Part No.	Description	Qty
1	33-0042	SCREW, CAP, 1/4-20 X 1	10
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	2
5	33-1243	SCREW, BUTTON, 3/8-16 X 1-1/2	4
6	35-0176	NUT, FEED, 3/8-40 X 5/16	1
7	38-0291	SCREW ASSEMBLY, LEAD 600SB 3 POSITION	1
8	47-0543	BRACKET, FEED, 3 POSITION	1
9	48-0551	BLOCK,GUIDE,	2
10	49-0019	HOLDER ASSEMBLY,TOOL BIT	1
11	33-0500	SCREW, SET, 1/4-20 X 5/16, CUP PT	3
12	33-0505	SCREW, SET, 1/4-20 X 3/4, CUP PT	3
	NOT SHOWN		
	30-5630	LABEL, WARNING STRIPE	1

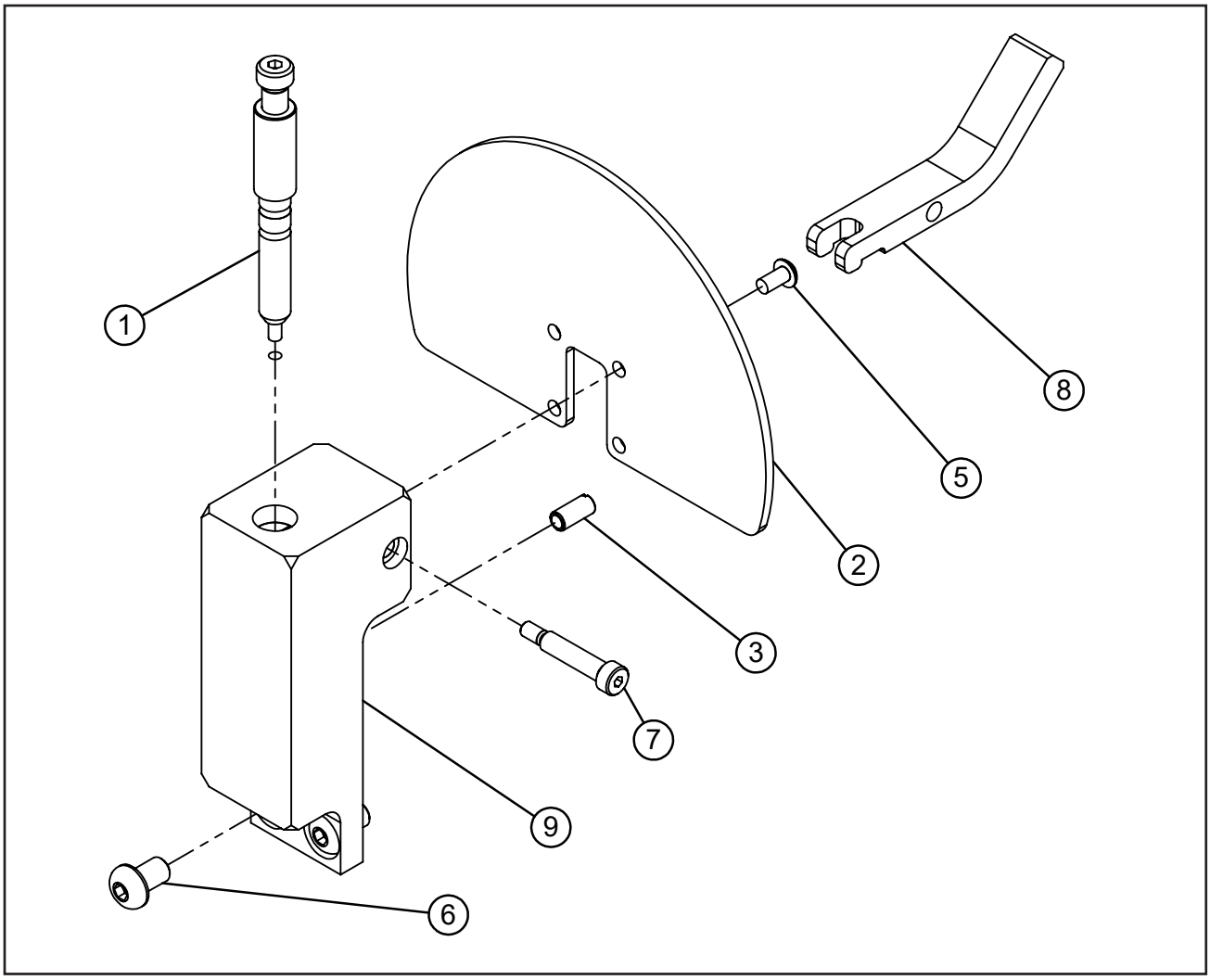
BLOCK ASSEMBLY, TRIPPER (P/N 47-2378)



Parts List, Block Assembly, Tripper (P/N 47-2378)

Item No	Part No.	Description	Qty
1	14-0138	SHAFT ASSEMBLY, TRIPPER, SB	1
2	24-3901	GUARD, TRIPPER, SB	1
3	30-0125	PLUNGER, BALL, 1/4-20 X 17/32	1
4	30-5686	LABEL, HAND CRUSH/TRIANGLE	1
5	33-0278	SCREW, BUTTON, 10-24 X 3/8	4
6	33-0952	SCREW, SHOULDER, 3/8 X 1	2
7	33-1303	SCREW, SHOULDER, 1/4 X 1	1
8	41-0246	LEVER HANDLE, TRIPPER, SB	1
9	47-2376	BLOCK, TRIPPER	1

BLOCK ASSEMBLY, TRIPPER (P/N 47-2385)



Parts List, Block Assembly, Tripper (P/N 47-2385)

Item No	Part No.	Description	Qty
1	14-0138	SHAFT ASSEMBLY, TRIPPER, SB	1
2	24-3901	GUARD, TRIPPER, SB	1
3	30-0125	PLUNGER, BALL, 1/4-20 X 17/32	1
4	30-5686	LABEL, HAND CRUSH/TRIANGLE	1
5	33-0278	SCREW, BUTTON,10-24 X 3/8	4
6	33-0291	SCREW, BUTTON, 5/16-18 X 1/2	2
7	33-1303	SCREW, SHOULDER, 1/4 X 1	1
8	41-0246	LEVER HANDLE, TRIPPER, SB	1
9	47-2386	BLOCK, TRIPPER, EXTENDED	1

16. OPTIONAL DRIVE KITS - IPBs

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

Motor Specifications

Voltage Input	115 VAC, 60 Hz
Power Requirements	7.5 amp
No load RPM	300 RPM

Material Cutting Capacities For Intermittent Non-Continuous Use

Note: The capacity exceeds the maximum wall thickness for small pipe sizes

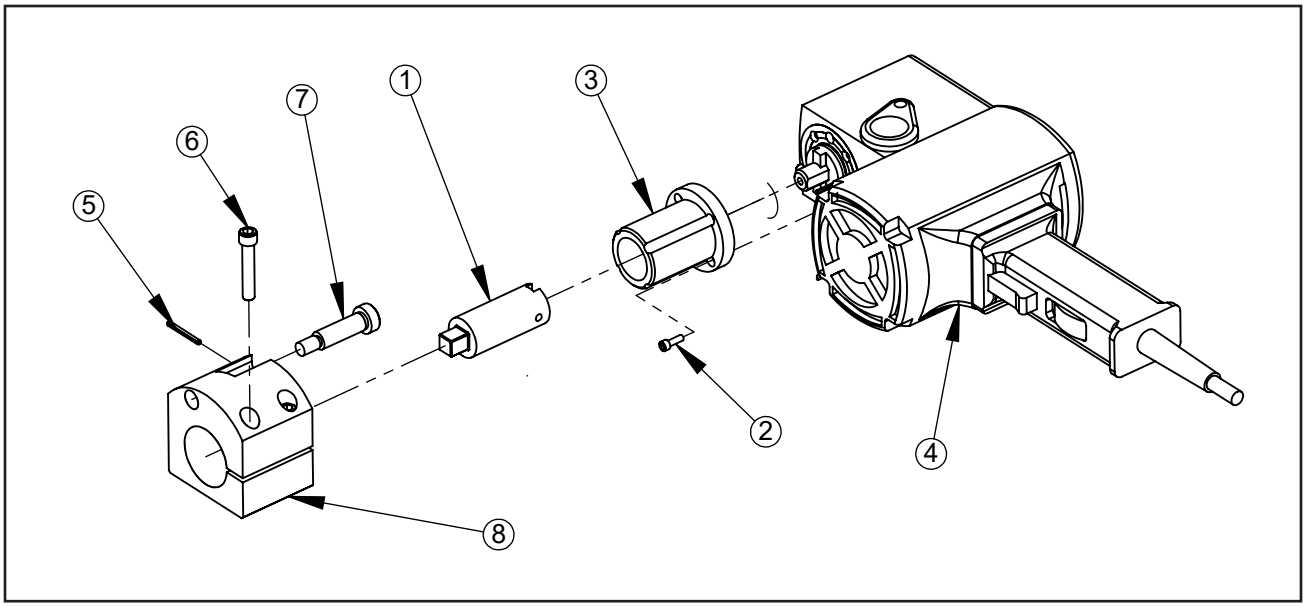
Severing with Standard Procedures	.75" (19 mm) wall
Severing and Single Beveling	.50" (13 mm) wall
Severing and Double Beveling	.38" (9 mm) wall

Materials include, but are not limited to: carbon steel, low alloy steel, chrome steel (20% maximum), chrome/molly alloys (Rc 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.

Contact the Tri Tool Technologies Engineering Department for more information.

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



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

Item No	Part No.	Description	Qty
	04-0129	DRIVE ASSEMBLY, ELECTRIC, 110V	1
1	27-1128	ADAPTER, DRIVE	1
2	33-0020	SCREW, CAP, #8-32 X 1/2	4
3	46-0115	SLEEVE, MOUNTING	1
4	58-0203	MOTOR, ELECTRIC	1
	47-0381	BRACKET ASSEMBLY, 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

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 Intermittent non-continuous uses

Material Cutting Capacities Intermittent Non-Continuous Use

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

Contact the Tri Tool Technologies Engineering Department for more information.

Unitec Motor* Summary
Maximum Wall Thickness for Continuous Duty

Pipe Size	604SB	606SB	608SB	610SB	612SB
2"	0.84 inch				
3"	SCH 160 (.438")				
4"	SCH 120 (.438")	SCH 160 (.531")			
5"		SCH 40 (.258")	SCH 80 (.375")		
6"		SCH 40 (.280")	SCH 40 (.280")		
8"			SCH 20 (.250")	SCH 60 (.406")	
10"				SCH 40 (.365")	SCH 40 (.365")
12"					SCH 30 (.330")
14"					

For reference only: this data is calculated from test results in a controlled environment on carbon steel pipe, sever and single 37 degree bevel with high speed tooling, and without the use of coolant. Actual environment, pipe material, tooling, and operating conditions will impact motor performance.

**Applies to Unitec Model EBH 32/2.2 110VAC & 220VAC (58-0165 & 58-0189 base part numbers)*

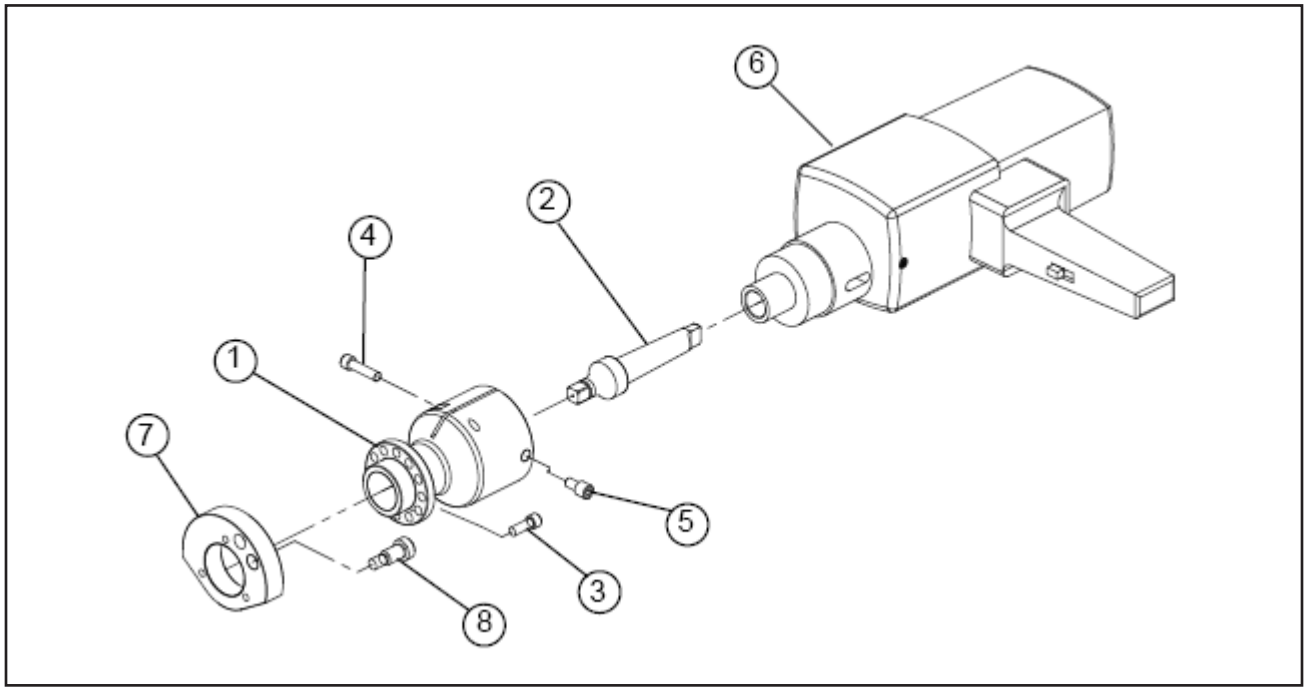
Unitec Motors/Kits

Model 604-612SB

110V P/N 05-0434

220V P/N 05-0414

HD ELECTRIC DRIVE KIT 115V (P/N 05-0434) & 230V (P/N 05-0414)



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

Item No	Part No.	Description	Qty
	58-0167	MOTOR ASSEMBLY, ELECTRIC DRIVE, 115V	1
1	27-0826	ADAPTER, 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, 115V, MOD.	1
7	27-0846	ADAPTER, MOTOR	1
8	33-0945	SCREW, SHOULDER, 1/2 X 3/4	1

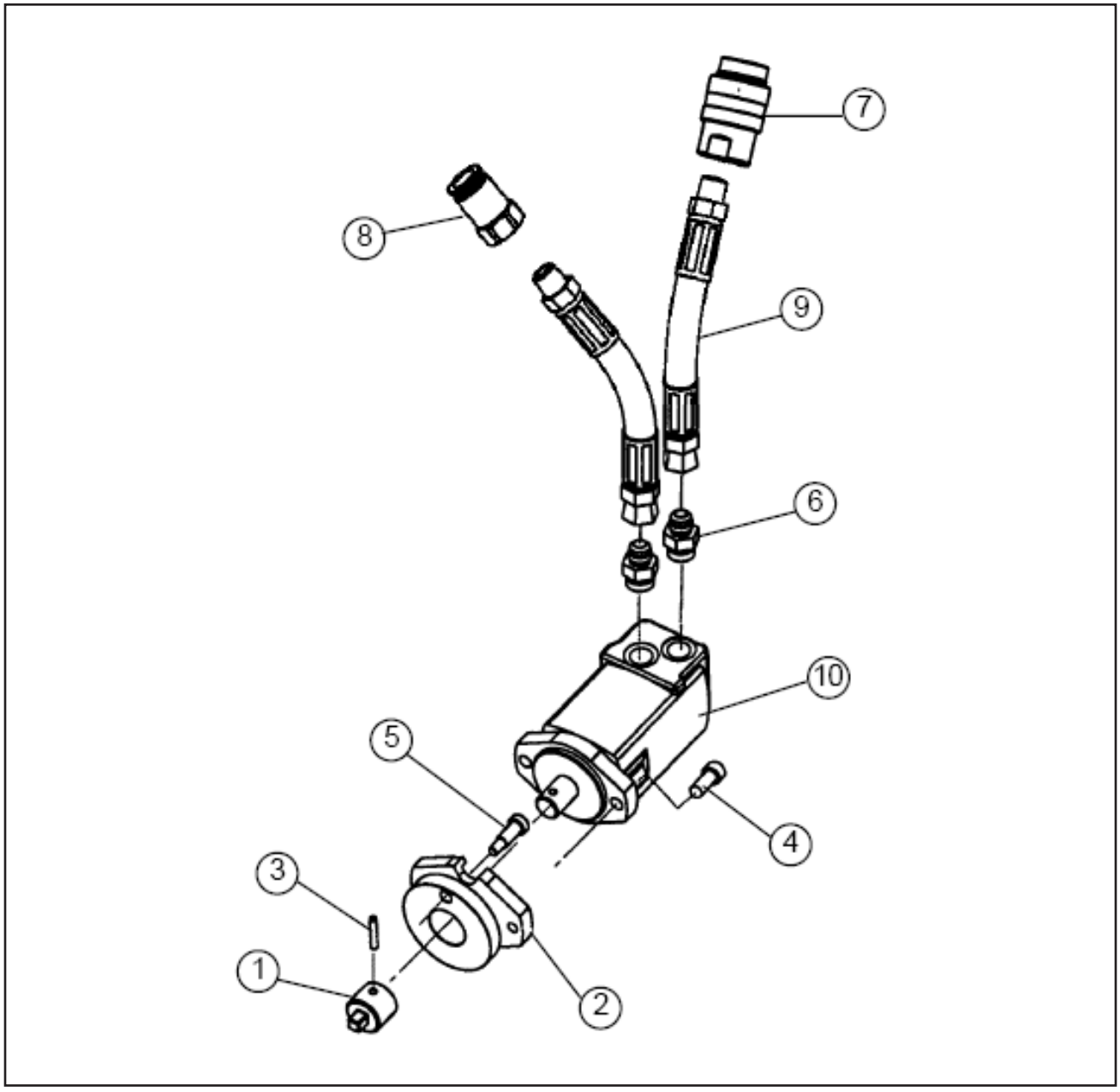
Parts List, HD Electric Drive Kit 230V (P/N 05-0414)

Item No	Part No.	Description	Qty
	58-0174	MOTOR ASSEMBLY, ELECTRIC DRIVE, 230V	1
1	27-0826	ADAPTER, 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, 230V, MOD.	1
7	27-0846	ADAPTER, 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, Hydraulic Drive Motor Kit (P/N 05-0358)

Item No	Part No.	Description	Qty
1	27-0237	ADAPT, DRIVE	1
2	27-0610	ADAPTER, MOTOR, HYDRAULIC	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 X 1	1
6	54-0002	ADAPTER, 7/8 O-RING TO 1/2-37D	2
7	54-0333	COUPLER, QD, HYDRAULIC, DRIPLESS, FEMALE	1
8	54-0334	NIPPLE, QD, HYDRAULIC, DRIPLESS, MALE	1
9	55-0156	HOSE ASSEMBLY, HYDRAULIC; 3/4 MP - 5/8 HOSE; 11" LG	2
10	56-0106	MOTOR, MOD, HYDRAULIC	1
	NOT SHOWN		
	36-0178	WRENCH, L, 1/4 HEX, MOD	1
	54-0335	DUST PLUG, DRIPLESS	2

17. SPARE PARTS

Recommended Spares for the Model 600SB Clamshell

Item No	Part No.	Description	Qty
1	14-0138	SHAFT ASSEMBLY	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

WARNING

Read the manual and be familiar with all safety precautions before operating equipment. The following are general warnings for industrial equipment with moving parts. Refer to the manual for specific warnings applicable to your equipment.

EYE HAZARD - Always wear appropriate eye protection while operating the equipment.

PINCH HAZARD - Keep your hands and clothing away from moving parts.

CRUSH HAZARD - The machinery, pipe, or work piece can shift, separate, lurch, or fall.

CHIP HAZARD - Metal chips may be hot and sharp. Be careful when you clear the tooling path or clean up chips.

TIE DOWN HAZARD - Deliberate overriding of safety triggers can result in serious injury. Never lock or tie down any safety triggers.

SHOCK HAZARD - Ensure that the equipment is properly installed and grounded. Ensure that the equipment is not damaged and that the power cord is intact.

OTHER HAZARDS

• Tool bits are sharp and can cause serious injury.
• Do not defate or modify safety features.
• Disconnect power sources before servicing or moving the equipment.
• Remove all loose articles of clothing and jewelry before operating the equipment.

Be Safety Conscious!

TRI TOOL TECHNOLOGIES

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