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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 103 REP™ Rapid End Prep Machine is a small, lightweight, beveling tool designed for beveling the ends of pipe or tubing in preparation for welding.

The Model 103 REP™ Rapid End Prep Machine is mounted to the inside diameter of the pipe or tube by means of a rigid, self-centering Pilot Mandrel.

There are various Pilot Mandrels which are available that will position the Model 103 REP™ Rapid End Prep Machine to pipe and/or tubing having an inside diameter range from .42" through 3.16" (10.7 mm through 80.3 mm).

The Model 103 REP™ generates low torque during the machining operations.

The Model 103 REP™ features a Cutting Head Spindle offset from the motor to allow installation and cutting of boiler tubes in a water wall panel.

The Model 103 REP™ features eight different diameter Cutting Heads which allow the operator to select the optimum size head for the operation.

The smallest is the 1.85" (47.0 mm) dia Cutting Head which provides for a minimum radial clearance.

The largest is the 3.60" (91.4 mm) dia Cutting Head which requires the most radial clearance, but increases the Tool Bit capabilities and size of pipe or tubing which may be effectively end prepped.

The end prep geometry is built into the Cutting Heads.

A Chip Deflection Shield is supplied with each Cutting Head.

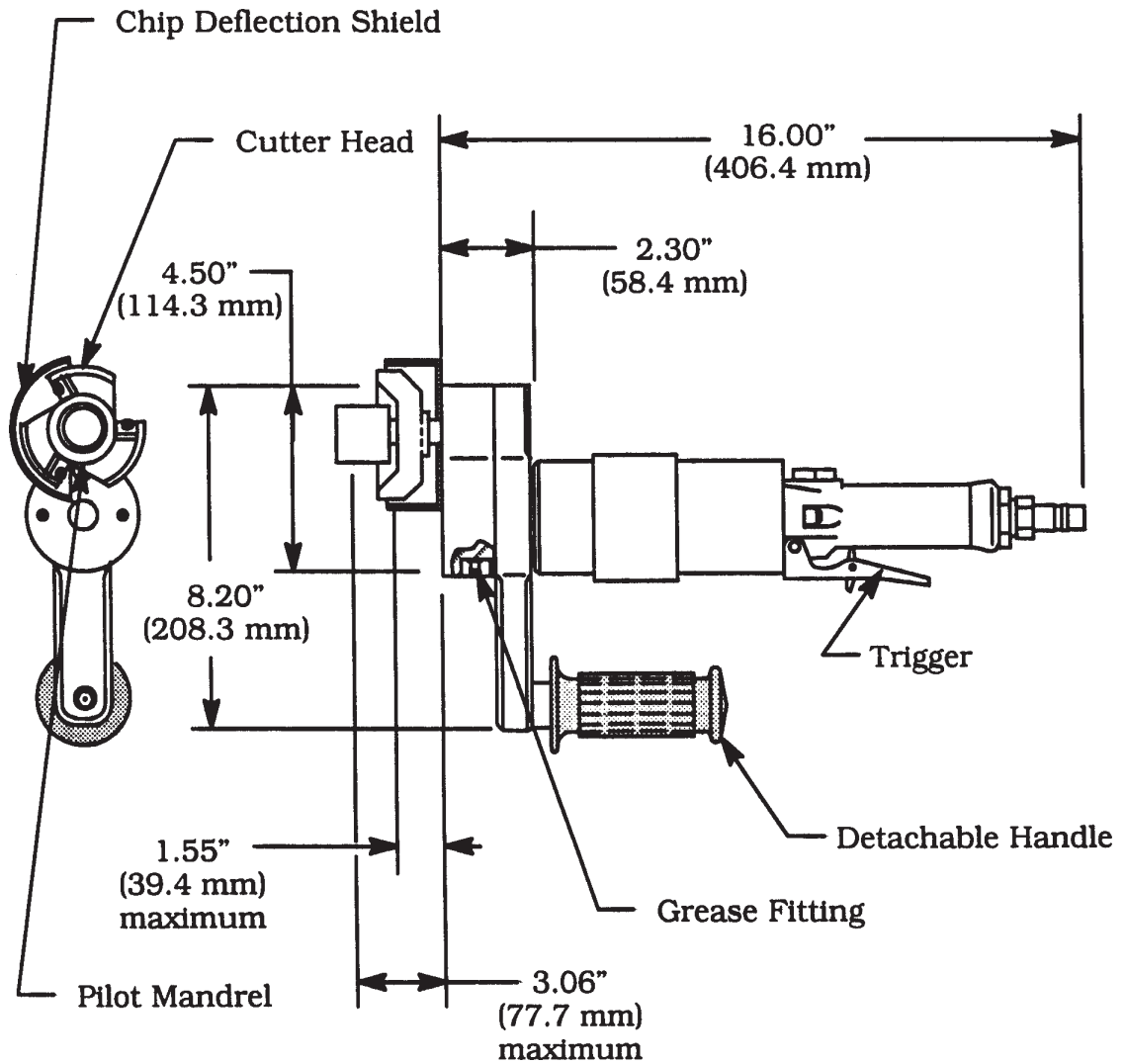
SPECIFICATIONS

Model 103 REP with an Air Motor

Weight: 9 to 15 pounds (4 to 7 kg), depending on Cutting Head and Pilot size

Power Requirements: 75 cfm at 90 psi (35 L/s at 621 kPa)

Envelope, Model 103REP, Rapid End Prep Machine



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, or oil which is specified for the Air Motor.

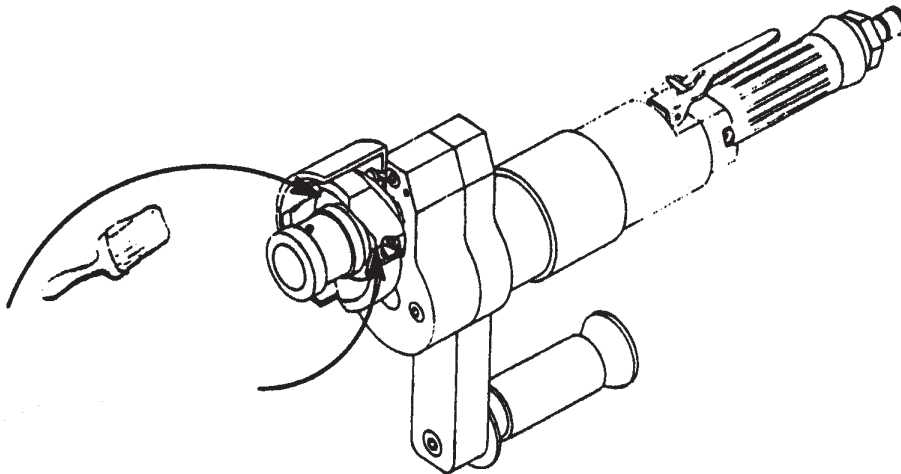
AIR SUPPLY FOR THE MODEL 103 REP™ WITH AIR MOTOR

An adequate filter, regulator, and lubricator must be used in the air supply line.

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

If the Model 103 REP™ is operated in the vertical position (Cutting Head up), it should be turned upside down and the chips and/or other debris removed after each bevel has been completed.

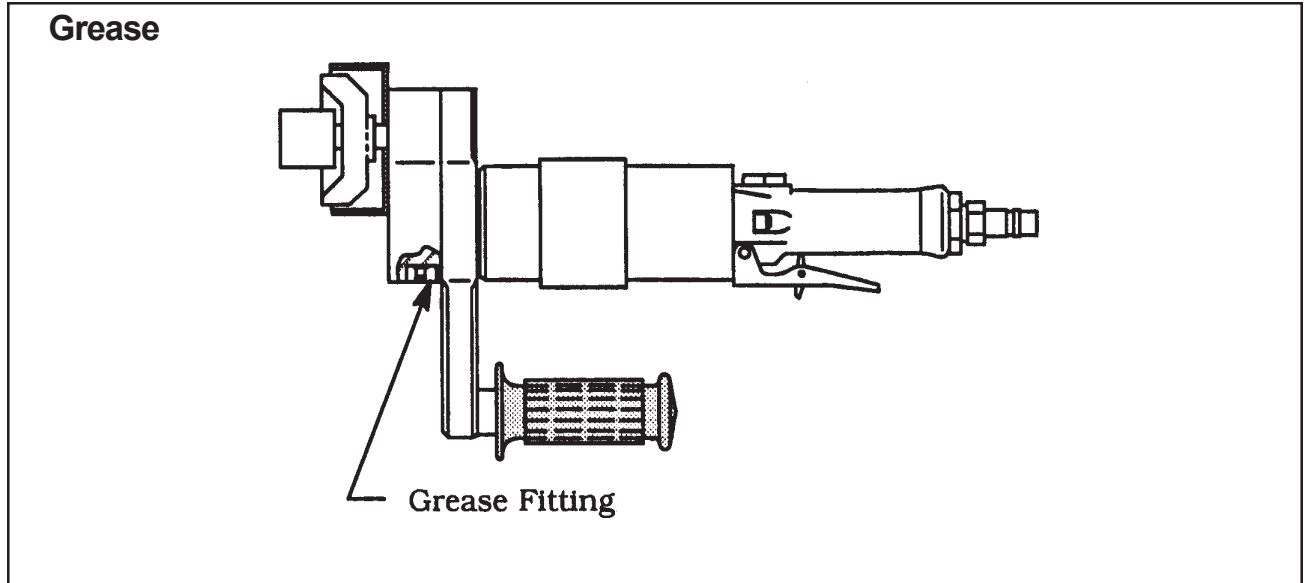
Clean Up



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

After every 10 hours of operation the Drive Gears should be re-lubricated. See the picture 'Grease'.

NOTE: Use TRI TOOL Inc. Lubricant (P/N 68-0019), this is a Lithium base white grease.



In order to lubricate the Gears, a grease fitting has been provided.

After every 50 hours of operation, the Model 103 REP™ should be disassembled and inspected for worn parts.

All Gears and Bearings should be cleaned and re-lubricated with a Lithium base white grease, such as TRI TOOL Inc. lubricant (P/N 68-0019).

OPERATION

Read the operation instructions carefully before attempting to operate the Model 103 REP™.

Use eye protection at all times when operating the Model 103 REP™.

Select the recommended Cutter Head Kit for the outside diameter to be machined. Refer to the section on Cutter Head Kits.

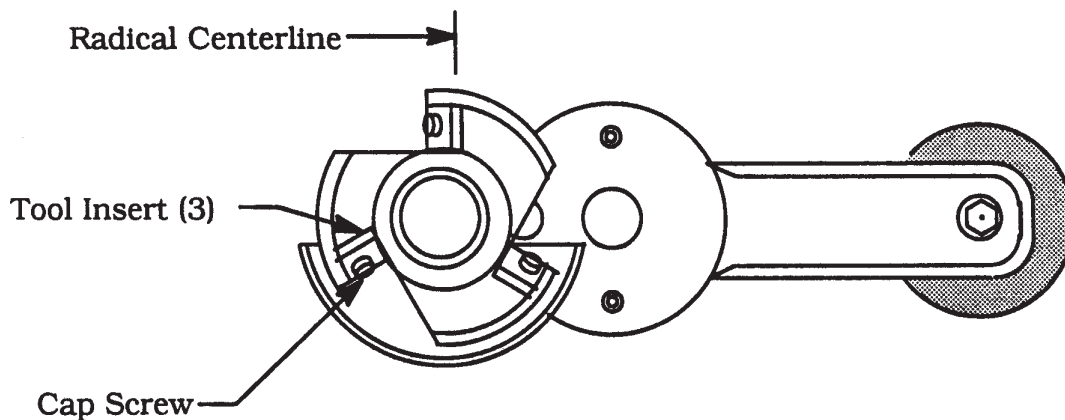
Select the recommended Pilot Mandrel for the pipe size to be machined. Refer to the section on Pilot Mandrels.

NOTE: Pilot Mandrels are recommended based on the inside diameters of the pipe or tubing to be machined.

For special applications, i.e., very thin wall, extra heavy wall or tough materials, please contact TRI TOOL Inc. for assistance in the selection.

Attach the cover (part of the Cutter Head Kit) by using the two Button Head Screws which fit into the slots.

Tool Insert Positioning



Screw the Cutter Head onto the threaded output shaft of the Model 103 REP™ Rapid End Prep Machine.

Use the 11/16" Wrenches (supplied) to tighten.

Screw the Pilot Mandrel into the Cutter Head and tighten with the 11/16" wrench and 1/4" Wrench (supplied).

Insert the 1/4-20 UNC left-hand thread Screw (supplied with Cutter Head Kit) through the Pilot Mandrel and the Cutter Head into the Cutter Shaft.

This Screw prevents the Pilot Mandrel from spinning off during deceleration of the Cutter Head.

CAUTION: Never attempt to run the Model 103 REP™ without the Pilot Mandrel and Lock Screw installed.

The Cutter Head may spin off.

Select the Tool Inserts required to machine the pipe. Refer to the Tool Insert list in the section 'Cutter Head Kits'.

WARNING: Use of dull or improperly designed Tool Inserts may result in poor performance and may constitute abuse of this machine and therefore voids the TRI TOOL Inc. factory warranty.

Insert the Tool Inserts into the slots in the Cutting Head.

CAUTION: The cutting edge of the Tool Inserts must be located on the radial centerline. Refer to the picture 'Tool Insert positioning'.

CAUTION: Check each Tool Insert for proper installation. Refer to the picture 'Tool Insert positioning'.

Tighten the Cap Screws to secure the Tool Inserts to the Cutting Head. Refer to the picture 'Tool Insert positioning'.

Insure that there is rotational clearance between the Pilot Mandrel and Tool Inserts.

Attach the proper air supply line to the Model 103 REP™ Rapid End Prep Machine.

NOTE: Use an Adequate in-line filter, regulator, and lubricator.

Slide the Model 103 REP™ with the Pilot Mandrel installed, Pilot Mandrel end first into the pipe or tube to receive the end preparation. Refer to the picture 'Mounting the Model 103 REP™ on a water wall'.

Make sure that the Tool Inserts are not contacting the end of the pipe or tube before the Model 103 REP™ Rapid End Prep Machine begins the end prep.

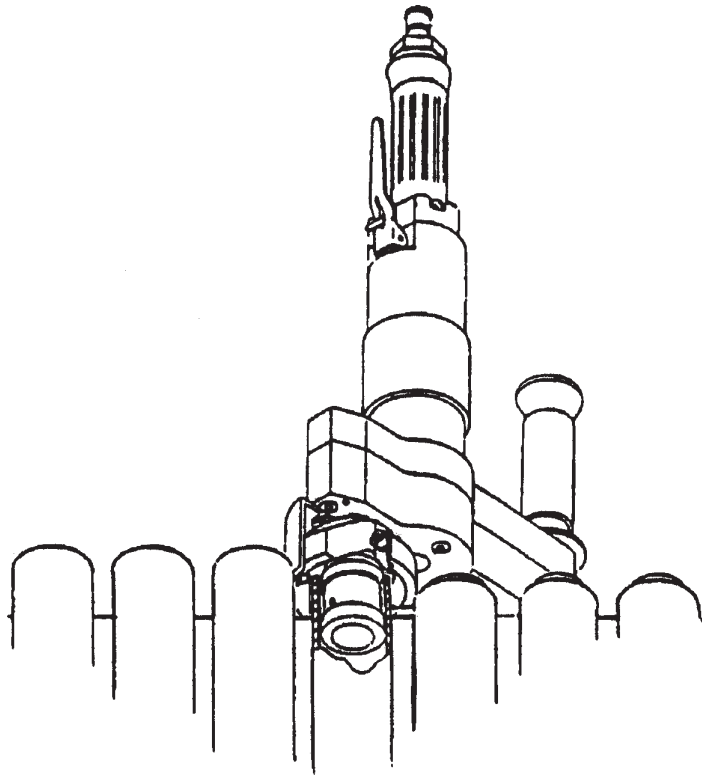
Depress the Air Motor Hand Lever.

Lower the Model 103 REP™ into the pipe or tube.

CAUTION: The actual machining operation will begin when the Tool Inserts contact the pipe.

If the pipe end is not square to the pipe axis, the Tool Inserts will contact only a small segment of the pipe during each revolution.

Mounting the Model 103 REP on a water wall



To avoid Tool Insert damage, the feed rate should be very slow until the Tool Inserts are contacting the pipe continually during at least one full revolution.

Continue feeding the Model 103 REP™ into the pipe or tube until the end is completely machined.

Stop feeding and allow the Cutting Head to rotate to improve the finish of the prep surface.

Stop the tool rotation.

Release the Air Motor Hand Lever.

Remove the Model 103 REP™ completely from the pipe or tube.

If the next bevel is to be identical to the previous bevel, follow the sequence starting at the beginning of this section, beginning at 'Attach the proper air supply line'.

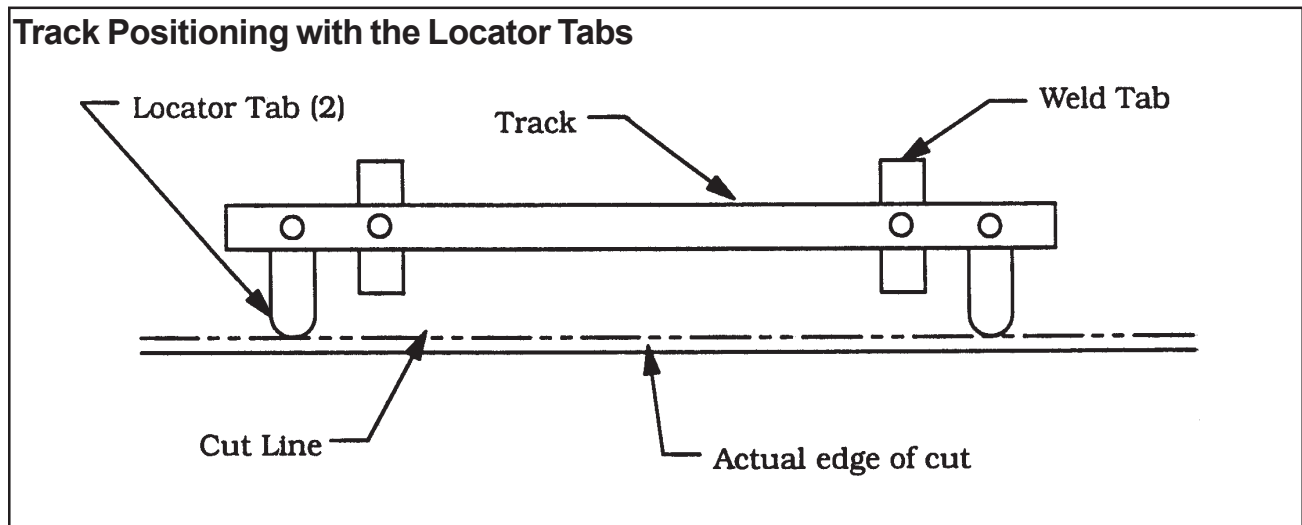
If the next bevel is to be different than the previous bevel, follow the sequence starting at the beginning of this section, beginning 'Select the recommended Cutter Head Kit'.

OPERATION USING THE CROSS TRACK ASSY.

If the Model 512A1 Panel Saw has been used to cut a window in the water wall and the 64" (1.6 mm) Track is still in place than go ahead to 'Slide the Cross Track Assy'.

INSTALLING THE TRACK ONTO THE WORK.

Bolt a Locator Tab onto the Track at each end perpendicular to the Track.



Bolt a Weld Tab onto both ends of the Track in the next position toward the center from the Locator tab.

Place the Track on the work.

Line up the Locator Tabs perpendicular to and touching the cut line.

Weld both of the Weld Tabs down. Refer to the picture 'Weld Tab locations on the Track'.

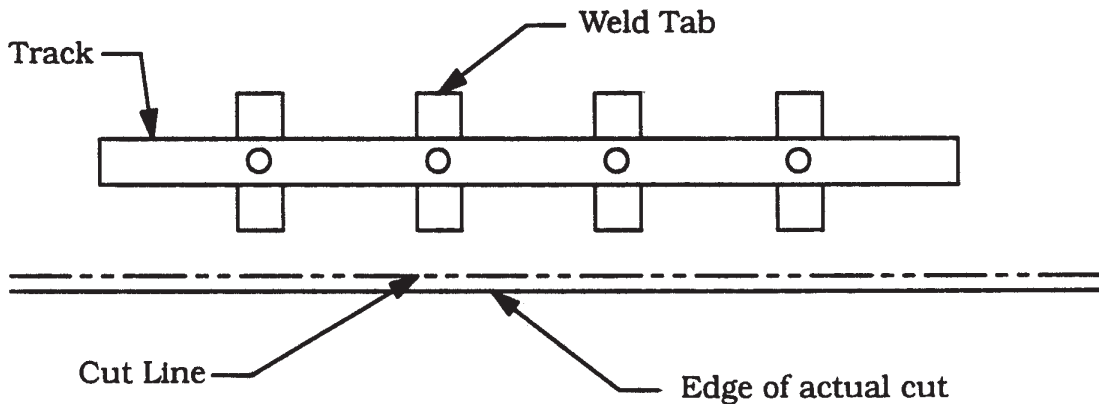
Weld Tabs may be rotated as required to make contact with the tops of the tubes.

NOTE: When welding Weld Tabs to tubes is not permissible, small stacks (not supplied) may be welded to the membrane and then to the Weld Tabs.

The Weld Tabs do not have to be 90° to the Track.

Remove the Locator Tabs from the Track.

Weld Tab Locations on the Track

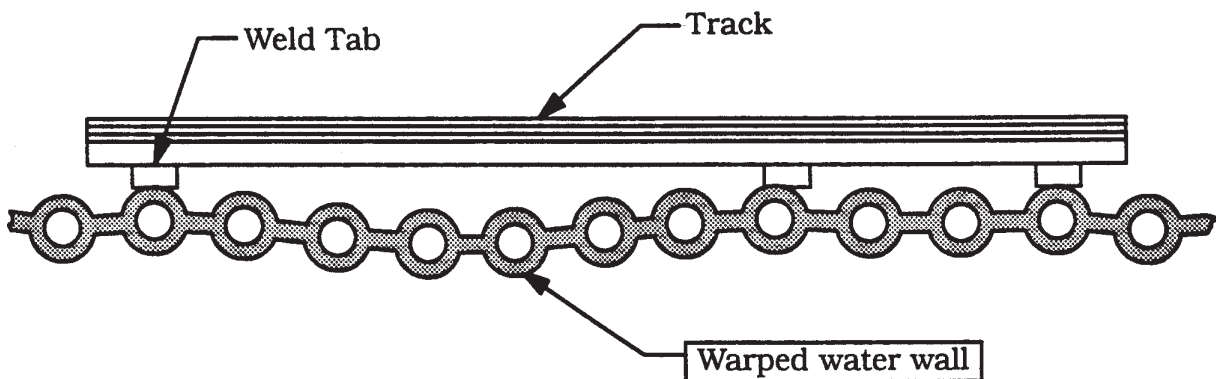


Bolt Weld tabs to the Track at the remaining positions, as required.

Weld the Weld Tabs to the work where possible.

Slide the Cross-Track Assy onto the 64" (1.6 m) Track.

Track Set-up on a Warped Water Wall



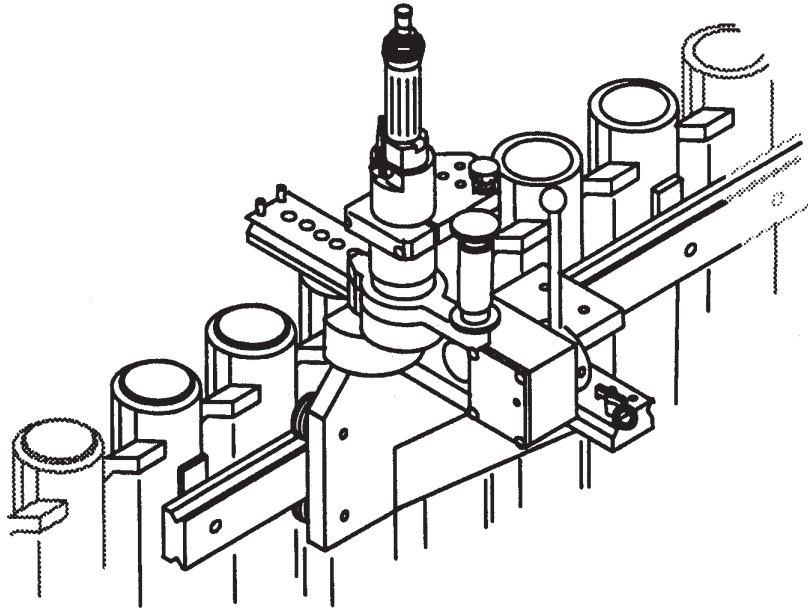
It may be required to remove the 23" (.6 m) Track from the top of the Cross-Track Assy in order to put the Cross-Track Assy onto the 64" (1.6 m) Track.

Remove the two Cap Screws which retain the 23" (.6 m) Track to the top of the Cross-Track Assy.

LOADING THE MODEL 103 REP™ ONTO THE REP ADAPTOR ASSY.

If the Model 103 REP™ is already loaded into the REP Adapter Assy then go to 'Slide the Track Adapter Assy onto the Cross Track Assy'.

Rapid End Prep Machine Mounted on the Adaptor Assembly



First prepare the Model 103 REP™ in the configuration required for the job at hand. Refer to the Operating Instructions; 'Select the recommended Pilot Mandrel'.

Loosen the two Cap Screws, which hold the Clamping Plate together.

Remove the part of the Clamping Plate in which the Cap Screws are held.

Install the Model 103 REP™ into the Clamping Plate and reinstall the other part of the Clamping Plate and tighten the Cap Screws to hold the Model 103 REP™ in place.

SLIDE THE TRACK ADAPTER ASSY ONTO THE CROSS-TRACK ASSY

Slide the Cross-Track Assy along the 64" (1.6 m) Track to the desired location.

Slide the Track Adapter Assy along the 23" (.6 m) Track until the Model 103 REP™ is located directly over the tube to be worked on.

Rotating the Handle on the REP Adapter Assy will cause the Model 103 REP™ to be lowered into the end of the tube.

See the Previous Section for the machining operation.

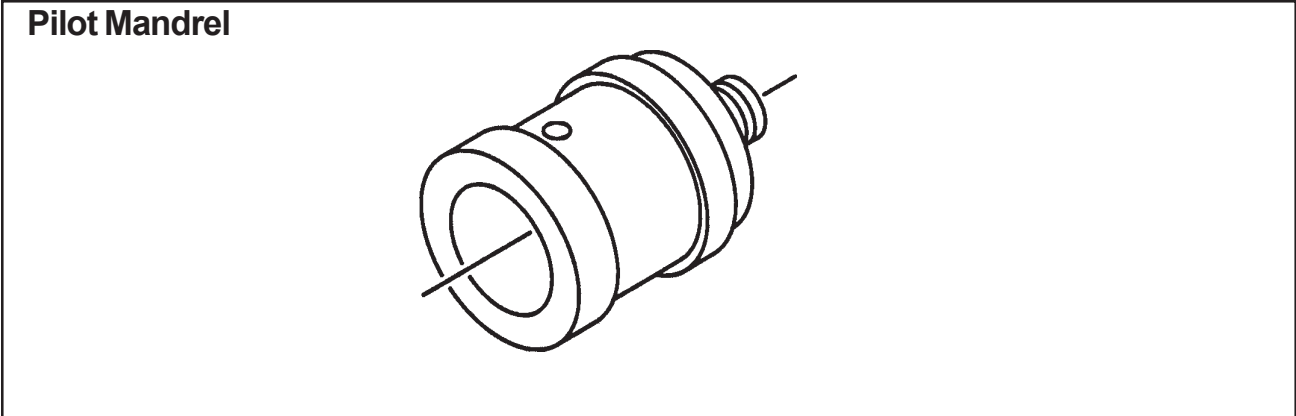
PILOT MANDREL & CUTTER HEAD KIT USAGE CHART

Recommended clearance of Pilot Mandrel to actual I.D. of pipe or tube is .015" (.38 mm) minimum to .050" (1.27 mm) maximum.

WALL THICKNESS CAPACITY

- .35" (8.9 mm) with #1 and #2 Cutter Heads
- .45" (11.4 mm) with #3 through #8 Cutter Heads

If radial clearance is a problem, use smallest Cutter Head available for Pilot Mandrel selected.



Pilot Mandrel Per Cutting Head Function

Pilot P/N	Pilot Size		Functions with Cutting Head Kit Numbers	
	Size	mm	Kit #	Count
13-0080	.420"	10.7 mm	1	
13-0081	.435"	11.0 mm	1	
13-0082	.450"	11.4 mm	1	
13-0083	.465"	11.8 mm	1	
13-0084	.480"	12.2 mm	1	
13-0085	.495"	12.6 mm	1	
13-0086	.510"	13.0 mm	1	
13-0087	.525"	13.3 mm	1	
13-0088	.540"	13.7 mm	1	
13-0089	.555"	14.1 mm	1	

Chart Continued on next page

Pilot Mandrel Per Cutting Head Function

Pilot P/N	Pilot Size		Functions with Cutting Head Kit Numbers			
			1	2	3	
13-0090	.570"	14.5 mm	1			
13-0091	.585"	14.9 mm	1			
13-0092	.600"	15.2 mm	1			
13-0093	.615"	15.6 mm	1			
13-0094	.630"	16.0 mm	1			
13-0095	.645"	16.4 mm	1			
13-0096	.660"	16.8 mm	1			
13-0097	.675"	17.1 mm	1			
13-0098	.690"	17.5 mm	1			
13-0099	.705"	17.9 mm	1			
13-0100	.720"	18.3 mm	1			
13-0101	.735"	18.7 mm	1			
13-0102	.745"	18.9 mm	1			
13-0103	.750"	19.1 mm	1			
13-0104	.760"	19.3 mm	1			
13-0105	.775"	19.7 mm	1			
13-0106	.790"	20.1 mm	1			
13-0107	.805"	20.4 mm	1			
13-0108	.820"	20.8 mm	1			
13-0109	.835"	21.2 mm	1			
13-0110	.850"	21.6 mm	1			
13-0111	.865"	22.0 mm	1			
13-0112	.880"	22.4 mm	1			
13-0113	.895"	22.7 mm	1			
13-0114	.910"	23.1 mm	1			
13-0115	.925"	23.5 mm	1			
13-0116	.940"	23.9 mm	1			
13-0117	.955"	24.3 mm	1			
13-0118	.970"	24.6 mm	1			
13-0119	.985"	25.0 mm	1			
13-0120	.995"	25.3 mm	1	2	3	

Chart Continued on next page

Pilot Mandrel Per Cutting Head Function

Pilot P/N	Pilot Size		Functions with Cutting Head Kit Numbers			
			1	2	3	
13-0121	1.000"	25.4 mm	1	2	3	
13-0122	1.010"	25.7 mm	1	2	3	
13-0123	1.025"	26.0 mm	1	2	3	
13-0124	1.040"	26.4 mm	1	2	3	
13-0125	1.055"	26.8 mm	1	2	3	
13-0126	1.070"	27.2 mm	1	2	3	
13-0127	1.085"	27.6 mm	1	2	3	
13-0128	1.100"	27.9 mm	1	2	3	
13-0129	1.115"	28.3 mm	1	2	3	
13-0130	1.130"	28.7 mm	1	2	3	
13-0131	1.145"	29.1 mm	1	2	3	
13-0132	1.160"	29.5 mm	1	2	3	
13-0133	1.175"	29.8 mm	1	2	3	
13-0134	1.190"	30.2 mm	1	2	3	
13-0135	1.205"	30.6 mm	1	2	3	
13-0136	1.220"	31.0 mm	1	2	3	
13-0137	1.235"	31.4 mm	1	2	3	
13-0138	1.245"	31.6 mm	1	2	3	4
13-0139	1.250"	31.8 mm	1	2	3	4
13-0140	1.260"	32.0 mm	1	2	3	4
13-0141	1.275"	32.4 mm	1	2	3	4
13-0142	1.290"	32.8 mm	1	2	3	4
13-0143	1.305"	33.1 mm	1	2	3	4
13-0144	1.320"	33.5 mm	1	2	3	4
13-0145	1.335"	33.9 mm	1	2	3	4
13-0146	1.350"	34.3 mm	1	2	3	4
13-0147	1.365"	34.7 mm	1	2	3	4
13-0148	1.380"	35.1 mm	1	2	3	4
13-0149	1.395"	35.4 mm	1	2	3	4
13-0150	1.410"	35.8 mm		2	3	4
13-0151	1.425"	36.2 mm		2	3	4

Chart Continued on next page

Pilot Mandrel Per Cutting Head Function

Pilot P/N	Pilot Size		Functions with Cutting Head Kit Numbers					
			2	3	4	5		
13-0152	1.440"	36.6 mm		2	3	4		
13-0153	1.455"	37.0 mm		2	3	4		
13-0154	1.470"	37.3 mm		2	3	4		
13-0155	1.485"	37.7 mm		2	3	4		
13-0156	1.495"	38.0 mm		2	3	4		
13-0157	1.500"	38.1 mm		2	3	4	5	
13-0158	1.510"	38.4 mm		2	3	4	5	
13-0159	1.525"	38.7 mm		2	3	4	5	
13-0160	1.540"	39.1 mm		2	3	4	5	
13-0161	1.555"	39.5 mm		2	3	4	5	
13-0162	1.570"	39.9 mm		2	3	4	5	
13-0163	1.585"	40.3 mm		2	3	4	5	
13-0164	1.600"	40.6 mm		2	3	4	5	
13-0165	1.615"	41.0 mm		2	3	4	5	
13-0166	1.630"	41.4 mm		2	3	4	5	
13-0167	1.645"	41.8 mm		2	3	4	5	
13-0168	1.660"	42.2 mm		2	3	4	5	
13-0169	1.675"	42.5 mm			3	4	5	
13-0170	1.690"	42.9 mm			3	4	5	
13-0171	1.705"	43.3 mm			3	4	5	
13-0172	1.720"	43.7 mm			3	4	5	
13-0173	1.735"	44.1 mm			3	4	5	
13-0174	1.745"	44.3 mm			3	4	5	6
13-0175	1.750"	44.5 mm			3	4	5	6
13-0176	1.760"	44.7 mm			3	4	5	6
13-0177	1.775"	45.1 mm			3	4	5	6
13-0178	1.790"	45.5 mm			3	4	5	6
13-0179	1.805"	45.8 mm			3	4	5	6
13-0180	1.820"	46.2 mm			3	4	5	6
13-0181	1.835"	46.6 mm			3	4	5	6
13-0182	1.850"	47.0 mm			3	4	5	6

Chart Continued on next page

Pilot Mandrel Per Cutting Head Function

Pilot P/N	Pilot Size		Functions with Cutting Head Kit Numbers					
			4	5	6			
13-0183	1.865"	47.4 mm		4	5	6		
13-0184	1.880"	47.8 mm		4	5	6		
13-0185	1.895"	48.1 mm		4	5	6		
13-0186	1.910"	48.5 mm		4	5	6		
13-0187	1.925"	48.9 mm		4	5	6		
13-0188	1.940"	49.3 mm		4	5	6		
13-0189	1.955"	49.7 mm		4	5	6		
13-0190	1.970"	50.0 mm		4	5	6		
13-0191	1.985"	50.4 mm		4	5	6		
13-0192	1.995"	50.7 mm		4	5	6	7	
13-0193	2.000"	50.8 mm		4	5	6	7	
13-0194	2.010"	51.1 mm		4	5	6	7	
13-0195	2.025"	51.4 mm		4	5	6	7	
13-0196	2.040"	51.8 mm		4	5	6	7	
13-0197	2.055"	52.2 mm		4	5	6	7	
13-0198	2.070"	52.6 mm		4	5	6	7	
13-0199	2.085"	53.0 mm		4	5	6	7	
13-0200	2.100"	53.3 mm			5	6	7	
13-0201	2.115"	53.7 mm			5	6	7	
13-0202	2.130"	54.1 mm			5	6	7	
13-0203	2.145"	54.5 mm			5	6	7	
13-0204	2.160"	54.9 mm			5	6	7	
13-0205	2.175"	55.2 mm			5	6	7	
13-0206	2.190"	55.6 mm			5	6	7	
13-0207	2.205"	56.0 mm			5	6	7	
13-0208	2.220"	56.4 mm			5	6	7	
13-0209	2.235"	56.8 mm			5	6	7	
13-0210	2.245"	57.0 mm			5	6	7	8
13-0211	2.250"	57.2 mm			5	6	7	8
13-0212	2.260"	57.4 mm			5	6	7	8
13-0213	2.275"	57.8 mm			5	6	7	8

Chart Continued on next page

Pilot Mandrel Per Cutting Head Function

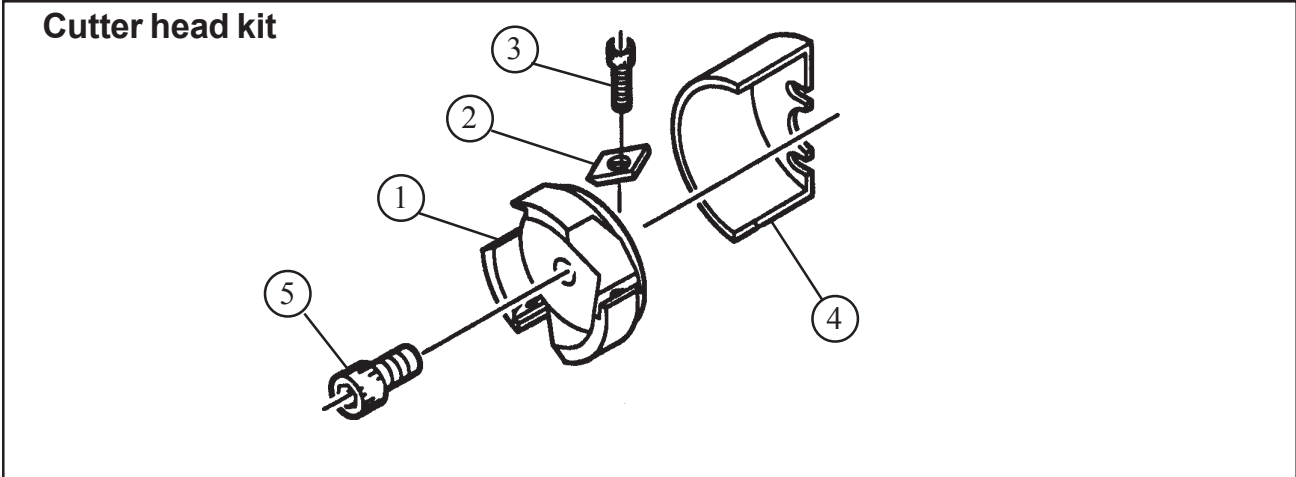
Pilot P/N	Pilot Size		Functions with Cutting Head Kit Numbers				
			5	6	7	8	
13-0214	2.290"	58.2 mm		5	6	7	8
13-0215	2.305"	58.5 mm		5	6	7	8
13-0216	2.320"	58.9 mm		5	6	7	8
13-0217	2.335"	59.3 mm			6	7	8
13-0218	2.350"	59.7 mm			6	7	8
13-0219	2.365"	60.1 mm			6	7	8
13-0220	2.380"	60.5 mm			6	7	8
13-0221	2.395"	60.8 mm			6	7	8
13-0222	2.410"	61.2 mm			6	7	8
13-0223	2.425"	61.6 mm			6	7	8
13-0224	2.440"	62.0 mm			6	7	8
13-0225	2.455"	62.4 mm			6	7	8
13-0226	2.470"	62.7 mm			6	7	8
13-0227	2.485"	63.1 mm			6	7	8
13-0228	2.495"	63.4 mm			6	7	8
13-0229	2.500"	63.5 mm			6	7	8
13-0230	2.510"	63.8 mm			6	7	8
13-0231	2.525"	64.1 mm			6	7	8
13-0232	2.540"	64.5 mm			6	7	8
13-0233	2.555"	64.9 mm			6	7	8
13-0234	2.570"	65.3 mm			6	7	8
13-0235	2.585"	65.7 mm			6	7	8
13-0236	2.600"	66.0 mm			6	7	8
13-0237	2.615"	66.4 mm				7	8
13-0238	2.630"	66.8 mm				7	8
13-0239	2.645"	67.2 mm				7	8
13-0240	2.660"	67.6 mm				7	8
13-0241	2.675"	67.9 mm				7	8
13-0242	2.690"	68.3 mm				7	8
13-0243	2.705"	68.7 mm				7	8
13-0244	2.720"	69.1 mm				7	8

Chart Continued on next page

Pilot Mandrel Per Cutting Head Function

Pilot P/N	Pilot Size		Functions with Cutting Head Kit Numbers	
			7	8
13-0245	2.735"	69.5 mm	7	8
13-0246	2.750"	69.9 mm	7	8
13-0247	2.760"	70.1 mm	7	8
13-0248	2.775"	70.5 mm	7	8
13-0249	2.790"	70.9 mm	7	8
13-0250	2.805"	71.2 mm	7	8
13-0251	2.820"	71.6 mm	7	8
13-0252	2.835"	72.00 mm	7	8
13-0253	2.850"	72.4 mm		8
13-0254	2.865"	72.8 mm		8
13-0255	2.880"	73.2 mm		8
13-0256	2.895"	73.5 mm		8
13-0257	2.910"	73.9 mm		8
13-0258	2.925"	74.3 mm		8
13-0259	2.940"	74.7 mm		8
13-0260	2.955"	75.1 mm		8
13-0261	2.970"	75.4 mm		8
13-0262	2.985"	75.8 mm		8
13-0263	3.000"	76.2 mm		8
13-0264	3.010"	76.5 mm		8
13-0265	3.025"	76.8 mm		8
13-0266	3.040"	77.2 mm		8
13-0267	3.055"	77.6 mm		8
13-0268	3.070"	78.0 mm		8
13-0269	3.085"	78.4 mm		8
13-0270	3.100"	78.7 mm		8
13-0271	3.115"	79.1 mm		8
13-0272	3.130"	79.5 mm		8
13-0273	3.145"	79.9 mm		8
13-0274	3.160"	80.3 mm		8

CUTTER HEAD KITS



#1 Cutter Head Kit, (P/N 05-0107)

Cutting Range .70" to 1.50" (17.8 mm to 38.1 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0162	HEAD, CUTTER	1
2.	30-0784	INSERT CARBIDE 1/2"	3
3.	33-0200	SCREW, CAP, 10-32 X 1/2"	3
4.	43-0281	COVER, WELDMENT	1
5.	33-1468	SCREW, CAP, 1/4-20 X 2 3/4, LEFT HD	3
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

#2 Cutter Head Kit, (P/N 05-0108)

Cutting Range 1.00" to 1.75" (25.4 mm to 44.5 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0168	HEAD, CUTTER	1
2.	30-0784	INSERT CARBIDE 1/2"	3
3.	33-0200	SCREW, CAP, 10-32 X 1/2"	3
4.	43-0281	COVER, WELDMENT	1
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

Model 103 REP™, Rapid End Prep Machine

#3 Cutter Head Kit, (P/N 05-0109)

Cutting Range 1.00" to 1.95" (25.4 mm to 49.5 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0167	HEAD, CUTTER	1
2.	30-0785	INSERT CARBIDE 5/8"	3
3.	33-0041	SCREW, CAP, 1/4-20 X 7/8"	3
4.	43-0282	COVER, WELDMENT	1
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

#4 Cutter Head Kit, (P/N 05-0110)

Cutting Range 1.25" to 2.20" (31.8 mm to 55.9 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0166	HEAD, CUTTER	1
2.	30-0785	INSERT CARBIDE 5/8"	3
3.	33-0041	SCREW, CAP, 1/4-20 X 7/8"	3
4.	43-0282	COVER, WELDMENT	1
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

#5 Cutter Head Kit, (P/N 05-0111)

Cutting Range 1.50" to 2.44" (38.1 mm to 62.0 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0165	HEAD, CUTTER	1
2.	30-0785	INSERT CARBIDE 5/8"	3
3.	33-0041	SCREW, CAP, 1/4-20 X 7/8"	3
4.	43-0283	COVER, WELDMENT	1
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

TRI TOOL INC.

#6 Cutter Head Kit, (P/N 05-0112)
Cutting Range 1.75" to 2.70" (44.5 mm to 68.6 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0164	HEAD, CUTTER	1
2.	30-0785	INSERT CARBIDE 5/8"	3
3.	33-0041	SCREW, CAP, 1/4-20 X 7/8"	3
4.	43-0283	COVER, WELDMENT	1
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

#7 Cutter Head Kit, (P/N 05-0113)
Cutting Range 2.00" to 2.94" (50.8 mm to 74.7 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0170	HEAD, CUTTER	1
2.	30-0785	INSERT CARBIDE 5/8"	3
3.	33-0041	SCREW, CAP, 1/4-20 X 7/8"	3
4.	43-0284	COVER, WELDMENT	1
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

#8 Cutter Head Kit, (P/N 05-0114)
Cutting Range 2.25" to 3.25" (57.2 mm to 82.6 mm) dia

Item No.	Part No.	Description	Qty
1.	21-0163	HEAD, CUTTER	1
2.	30-0785	INSERT CARBIDE 5/8"	3
3.	33-0041	SCREW, CAP, 1/4-20 X 7/8"	3
4.	43-0284	COVER, WELDMENT	1
5.	33-1469	SCREW, CAP, 1/4-20 X 1 1/4, LEFT HD	3

TOOL INSERTS

TOOL INSETS

Item No.	Part No.	Description	Qty
1.	30-0784	INSERT, TOOL (FOR CUTTER HEAD KITS #1 AND #2)	3
2.	30-0785	INSERT, TOOL (FOR CUTTER HEAD KITS #3 THROUGH #8)	3

TROUBLE SHOOTING

Problem: The Tool Bit Chatters

The tool bit is loose or overextended.
The tool bit is damaged.
The tool holder is too loose in the 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

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

Problem: The surface finish is rough

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

Problem: The tool holder is not feeding

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

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

Problem: There is a loss of hydraulic power

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

Problem: The tool bit will not reach the work

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

Problem: The hydraulic motor will not start

The hydraulic power supply is shut off.
The hydraulic motor is damaged and will not run free.

ACCESSORIES

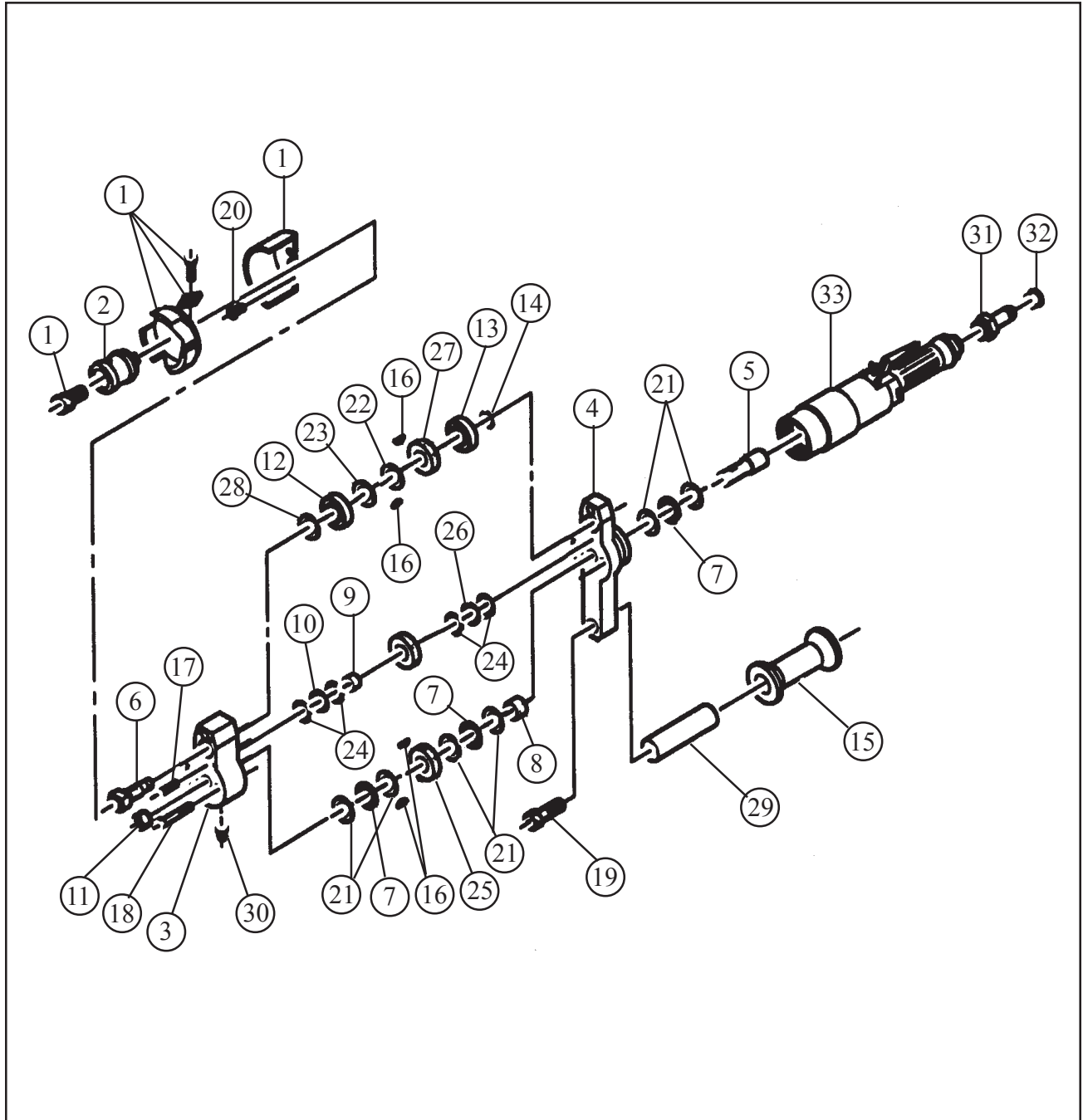
The following accessories are recommended for use with the Model 103 REP Rapid End Prep Machine and are available from TRI TOOL INC.

1. Portable Air Caddy (P/N 75-0115)
2. Over two hundred different Pilot Mandrels. Refer to the section 'Pilot Mandrels'.
3. Eight Cutter Head Kits. Refer to the section 'Cutter Head Kits'.
4. Two Tool Inserts. Refer to the section 'Cutter Head Kits'.
5. Cross Track Assy (P/N 66-0070)
 - 64" (1.6 m) Track Assy (P/N 66-0077)
 - Locator Tab (P/N 47-0360)
 - Weld Tab (P/N 47-0359)
6. Case, Custom Carrying (P/N 86-0075)

A Filter/Regulator/Lubricator (FRL) is required to protect the warranty on all TRI TOOL INC air driven tools.

ILLUSTRATED PARTS BREAKDOWN

MODEL 103 REP RAPID END PREP MACHINE (P/N 01-1117)

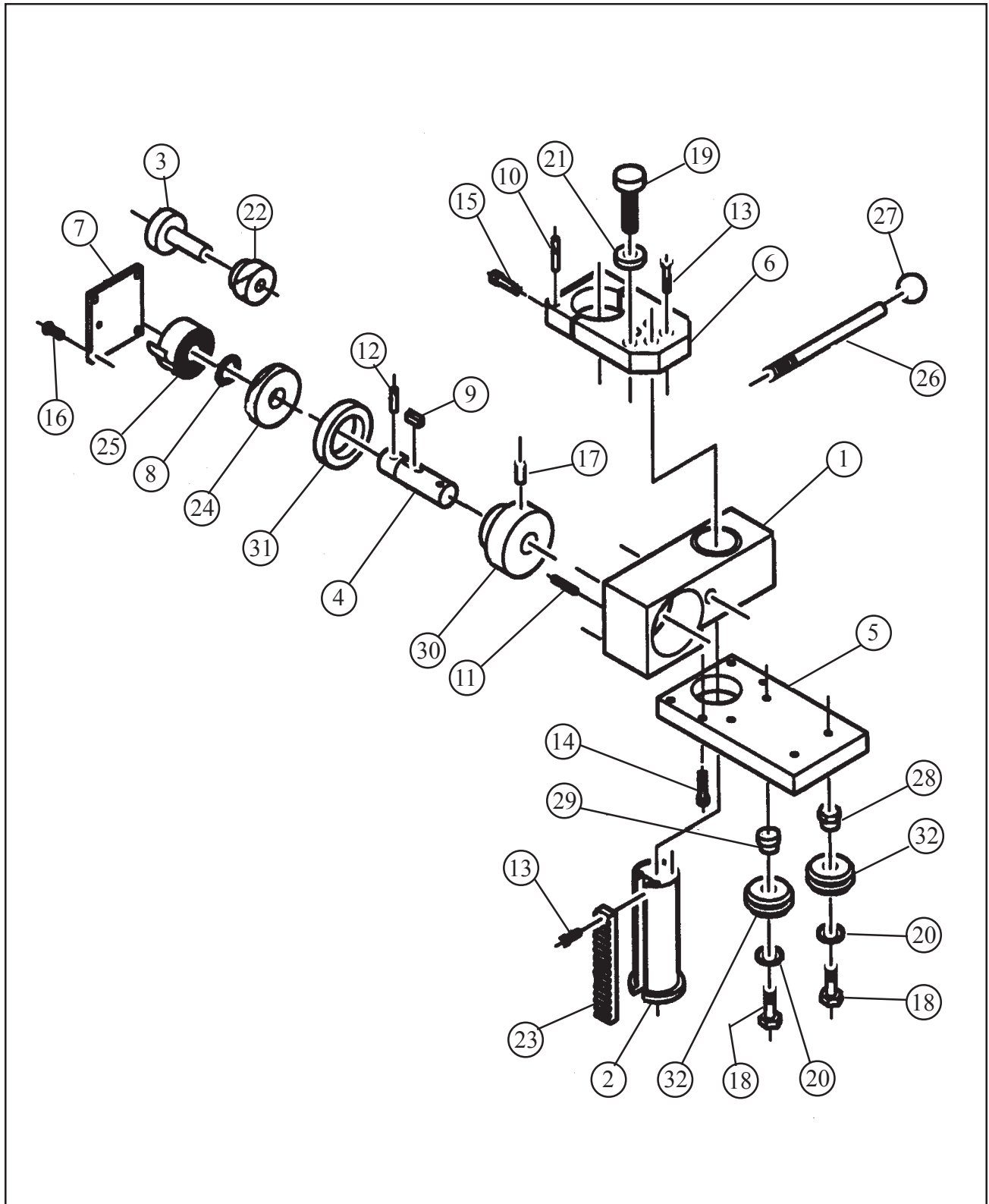


TRI TOOL INC.

Parts List, Model 103 REP Rapid End Prep Machine (P/N 01-1117)

Item No.	Part No.	Description	Qty
1.		HEAD KIT, CUTTER (REFER TO THE SECTION ON CUTTER HEAD KITS)	
2.		MANDREL, PILOT (REFER TO THE SECTION ON PILOT MANDRELS)	
3.	19-0364	HOUSING, UPPER	1
4.	19-0365	HOUSING, LOWER	1
5.	20-0318	SHAFT, DRIVE	1
6.	20-0319	SHAFT, CUTTER	1
7.	29-0107	BEARING, THRUST	3
8.	29-0188	BEARING, ROLLER, NEEDLE	1
9.	29-0189	BEARING, ROLLER, NEEDLE	1
10.	29-0190	BEARING, THRUST	2
11.	29-0191	BEARING, ROLLER, NEEDLE	1
12.	29-0193	BEARING	1
13.	29-0194	BEARING	1
14.	30-0771	RING, RETAINING, EXTERNAL	1
15.	30-0786	GRIP, RUBBER, BLACK	1
16.	31-0004	KEY, WOODRUFF	4
17.	32-0104	PIN, DOWEL, 5/16 DIA X 2"	1
18.	33-0044	SCREW, CAP, 1/4-20 X 1 1/2"	3
19.	33-0072	SCREW, CAP, 3/8-16 X 1 1/4"	1
20.	33-0278	SCREW, BUTTON HEAD, #10-24 X 3/8"	2
21.	34-0162	WASHER, THRUST	6
22.	34-0163	WASHER, THRUST	1
23.	34-0185	WASHER, THRUST	1
24.	34-0202	WASHER, THRUST	4
25.	39-0401	GEAR, SPUR, DRIVE	1
26.	39-0402	GEAR, SPUR, IDLER	1
27.	39-0403	GEAR, SPUR, CUTTER	1
28.	40-0156	SPRING, WAVE	1
29.	41-0062	HANDLE	1
30.	54-0375	FITTING, GREASE	1
31.	54-0126	FITTING, QUICK DISCONNECT	1
32.	54-0201	CAP, PLASTIC	1
33.	57-0121	MOTOR, AIR, INLINE	1

REP ADAPTOR ASSY (P/N 27-0254)

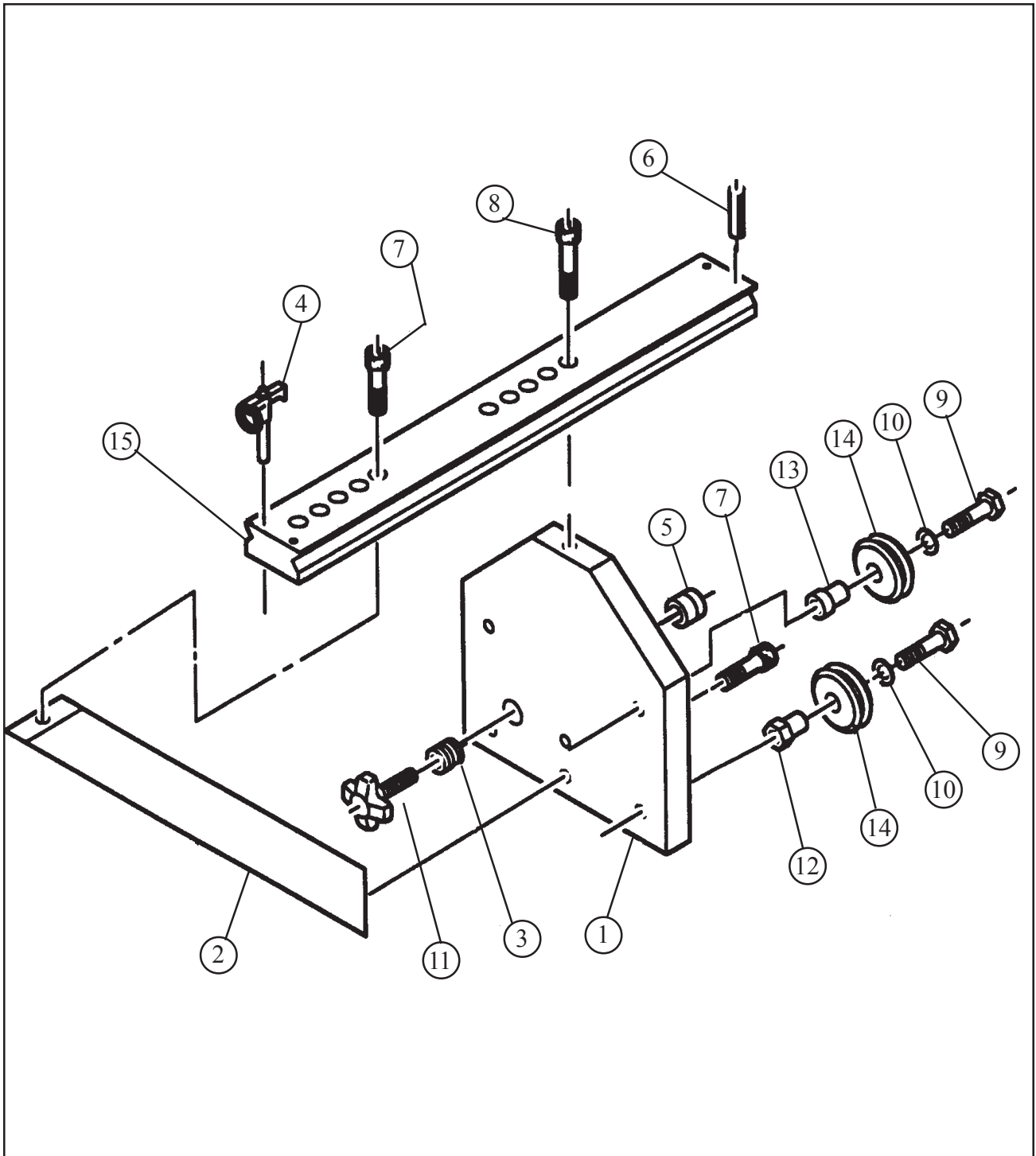


TRI TOOL INC.

Parts List, REP Adaptor Assy (P/N 27-0254)

Item No.	Part No.	Description	Qty
1.	19-0379	HOUSING ASSY, GEAR	1
2.	20-0326	SHAFT, CYLINDER	1
3.	20-0327	SHAFT, GEAR	1
4.	20-0328	SHAFT ASSY, REP ADAPTOR	1
5.	24-0617	PLATE, MOUNTING	1
6.	24-0618	PLATE, CLAMPING	1
7.	24-0621	PLATE, TOP	1
8.	30-0411	RING, RETAINING, EXTERNAL	1
9.	31-0072	KEY, SQUARE	1
10.	32-0015	PIN, ROLL, 3/32 DIA X 5/16	2
11.	32-0043	PIN, ROLL, 3/16 DIA X 1 1/4"	1
12.	32-0283	PIN, GROOVED	1
13.	33-0028	SCREW, CAP, #10-24 X 1/2"	3
14.	33-0043	SCREW, CAP, 1/4-20 X 1 1/4"	8
15.	33-0057	SCREW, CAP, 5/16-18 X 1 1/4"	2
16.	33-0287	SCREW, FLAT HEAD, 1/4-20 X 3/4"	4
17.	33-1144	SCREW SET, 3/8-16 X 1", HDOG	1
18.	33-1445	SCREW, HEX HEAD, 3/8-16 X 1 3/4"	4
19.	33-1467	SCREW, THUMB, 1/2-13	1
20.	34-0018	WASHER, FLAT	4
21.	35-0248	NUT, CHECK	1
22.	39-0153	GEAR, SPUR	1
23.	39-0428	RACK	1
24.	39-0429	GEAR, CHANGE	1
25.	40-0155	SPRING, RETURN	1
26.	41-0070	HANDLE	1
27.	42-0017	KNOB, SPHERICAL	1
28.	45-0110	BUSHING, ADJUSTABLE	2
29.	45-0111	BUSHING, STATIONARY	2
30.	45-0120	KNOB	1
31.	45-0121	BUSHING	1
32.	61-0019	JOURNAL	4

CROSS TRACK ASSY (P/N 66-0070)



TRI TOOL INC.

Parts List, Cross Track Assy (P/N 66-0070)

Item No.	Part No.	Description	Qty
1.	24-0615	PLATE, BASE	1
2.	24-0616	PLATE, GUSSET	1
3.	30-0031	KEENSERT	1
4.	30-0356	PIN, LOCK	1
5.	30-0817	NUT, SWIVEL	1
6.	32-0057	PIN, ROLL, 1/4" DIA X 2"	2
7.	33-0072	SCREW, CAP, 3/8-16 X 1 1/4"	2
8.	33-0074	SCREW, CAP, 3/8-16 X 1 3/4"	2
9.	33-1445	SCREW, HEX HEAD, 3/8-16 X 1 3/4"	4
10.	34-0018	WASHER, FLAT	4
11.	42-0090	KNOB ASSY, HAND	1
12.	45-0110	BUSHING, ADJUSTABLE	2
13.	45-0111	BUSHING, STATIONARY	2
14.	61-0019	JOURNAL, DUAL VEE	4
15.	66-0068	TRACK, 23" (.6m)	1