Operation Manual

92-0631 Rev. 200522
Model 201BA BEVELMASTER™

TRI TOOL
BUILDING PERFORMANCE

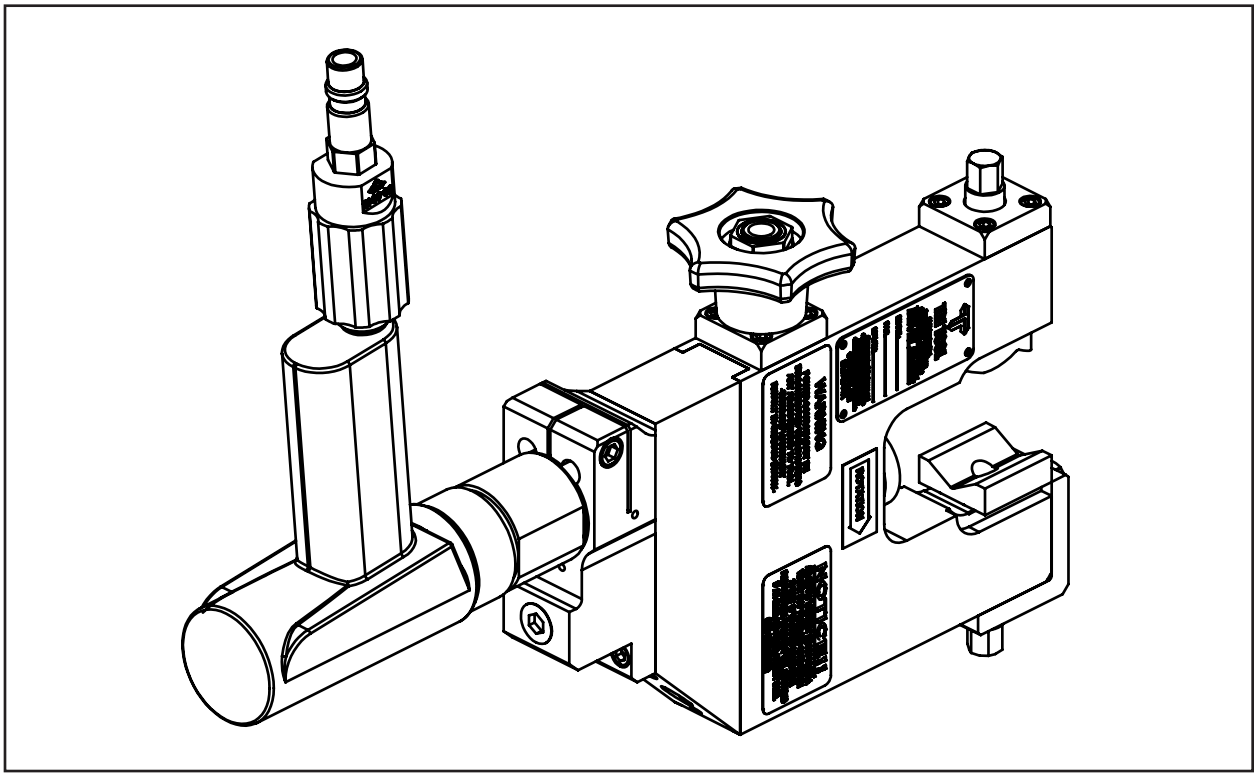
ABOUT TRI TOOL INC.

Tri Tool's extensive experience in the design, development and manufacture of portable machine tools and welding equipment has resulted in machinery that is designed to meet the highest standards of quality, safety, and performance. Our products are backed by a company totally committed to service, integrity, and customer satisfaction.

Tri Tool Services has developed a solid reputation as a trusted provider of dependable and cost-effective on-site service solutions including turnkey project management, machining services, and mechanized and manual code welding services using experienced and well-trained machinists and welders.

In addition to developing industry leading machining and welding equipment, Tri Tool's engineering team provides custom equipment design and manufacturing solutions to suit the most rigorous requirements of our customers' special applications.

Please contact us for more information on any of our products or services. Company representatives are available for demonstrations of most of our products at your facility.



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TRI TOOL INC. 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, unless Seller is instructed otherwise. Buyer is responsible for all shipping charges to and from Seller.

1. ABOUT THE MANUAL

1.1 Copyright

1.2 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 Inc. 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.

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

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

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

2. SAFETY PRECAUTIONS

2.1 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

WARNING: Do not override the dead-man switch on the power unit. Locking down, obstructing, or in any way defeating the dead-man switch on the power drive unit may result in serious injury.

2.2 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.

2.3 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.

2.4 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.

2.5 Area Equipment

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

Ensure that both sides of the pipe at the cut site is 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.

2.6 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.

2.7 Tool Use

Use the right tool and tool bit for the job. Contact Tri Tool 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 201BA (P/N 01-1320) BEVELMASTER™ is a Pipe Beveler designed for facing and/or beveling the ends of the pipe or tubing in preparation for welding.

These machining operations may be performed either simultaneously or separately.

Pipe weld end preparations that meet all existing conventional codes including the more stringent nuclear codes may be machined using the Model 201BA.

The various interchangeable Fixed Saddles working with the Clamping Saddle will secure the Model 201BA Pipe Beveler to pipe and tubing having an outside diameter of .250” to 2.000” (6.4 mm to 50.8 mm).

The Clamping Saddle/Fixed Saddle provides an accurate self-centering and alignment to the pipe or tubing to be machined.

The Adjustable Saddle Assembly features an adjustable Saddle for adjusting the centerline of a pipe or tubing working with the Clamping Saddle.

There are two sizes of Adjustable Saddles.

The Small Adjustable Saddle covers a range of .250” to .600” (6.4mm to 15.2 mm) diameter.

The Large Adjustable Saddle covers a range of .600” to 2.000” (15.2 mm to 50.8 mm) diameter.

There are two different Heads available:

The 1.45” DIA. Head Kit.
The 2.00” DIA. Head Kit.

The Model 201BA accepts the reaction torque generated by the machining operations through the Saddles.

No additional restraining devices are required.

4. SPECIFICATIONS

Model 201BA with an Air Motor:

Weight: 15 lbs. (6.8 kg)
Power Requirements: 32 cfm at 90 psi (15 L/s at 621 kPa)

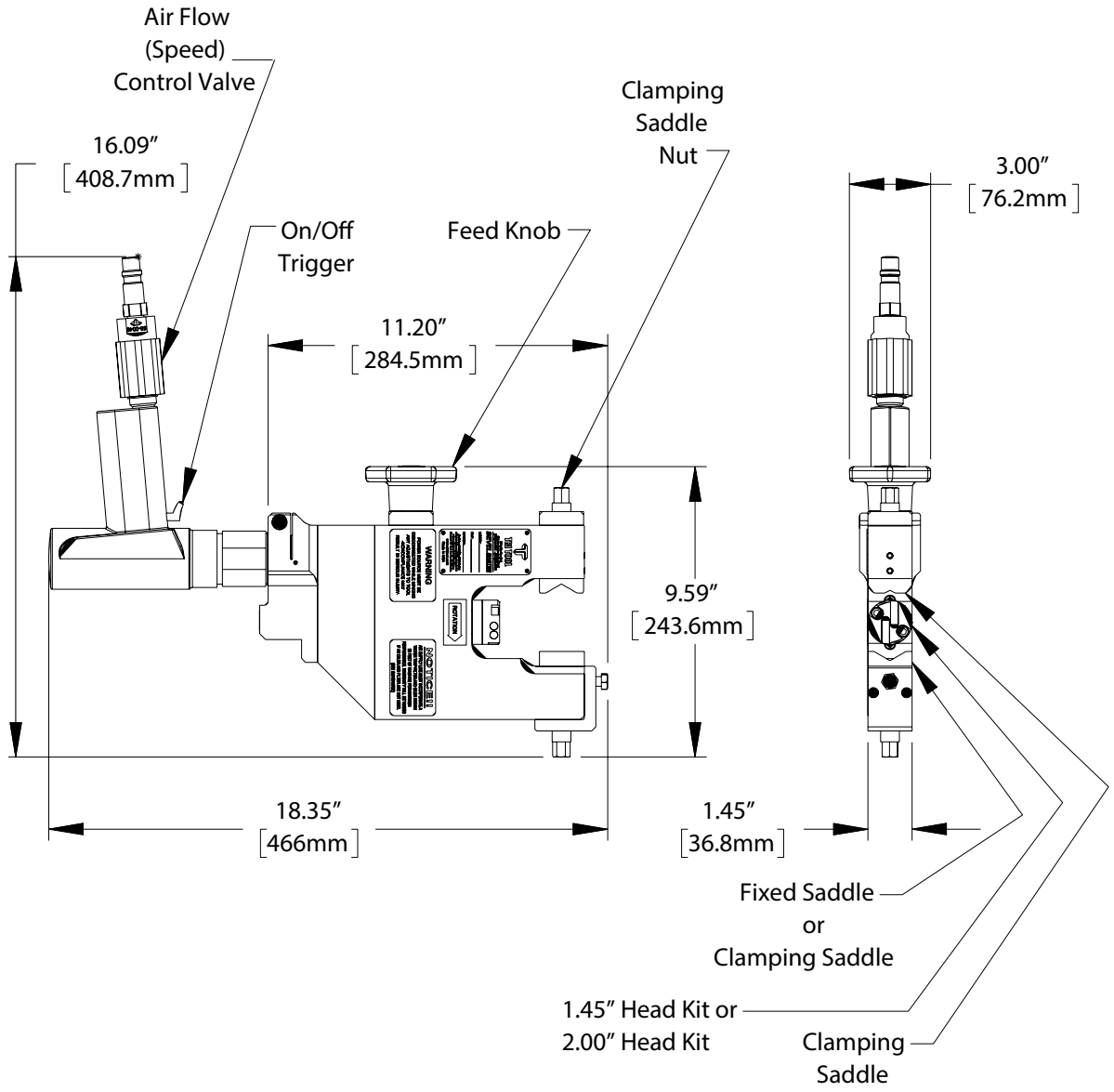


Figure 1: Envelope Drawing

PIPE CUTTING CAPACITIES

Basic Pipe Sizes

1/8” pipe through 1 1/2” pipe, all schedules

Basic Tube Sizes

Up to .400” (10.2 mm) wall tubing with a maximum OD of 2.00” (50.8mm) may be beveled with standard procedures.

No mounting limitations on the ID.

Wall Thickness Capacity

Wall thickness of all standard pipe schedules (.400” (10.2mm) maximum) in the range listed.

Contact TRI TOOL Inc. for heavier wall procedures.

MATERIAL CUTTING CAPABILITIES

Mild steels, chrome steels (Rc 35 maximum), stainless steel, copper-nickel and aluminum without limitations except size and wall thickness as specified in previous paragraph.

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 Inc. engineering department for details.

CUTTING HEAD SPEEDS

Maximum Cutting Head speed: 223 rpm

Cutting Head speed at maximum H.P.: 112 rpm

Functional speed range: 47 to 220 rpm

5. 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 as specified for the air motor.

Air supply for the Model 201BA with an Air Motor requires an adequate filter/regulator/lubricator (FRL) to be used.

A maximum of 90 PSI (621 kPa) line pressure is recommended.

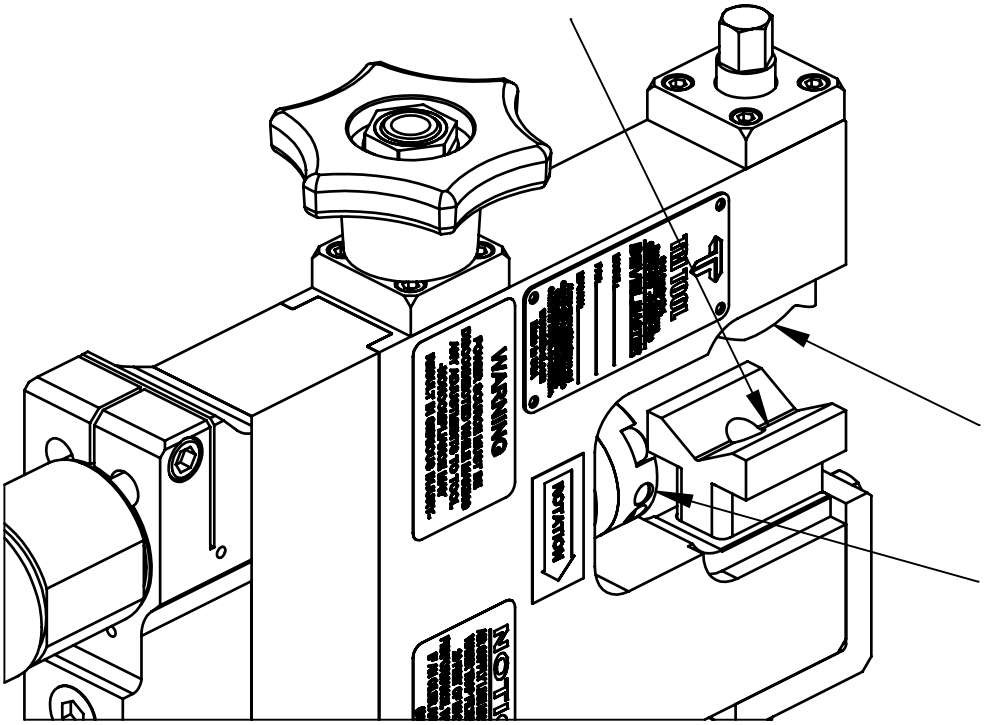


Figure 2: Clean Up

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

If the Model 201BA 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.

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

Verify that there is adequate grease in the gearbox.

Gears and Bearings are to be lubricated using a high string utility grease (P/N 68-0020).

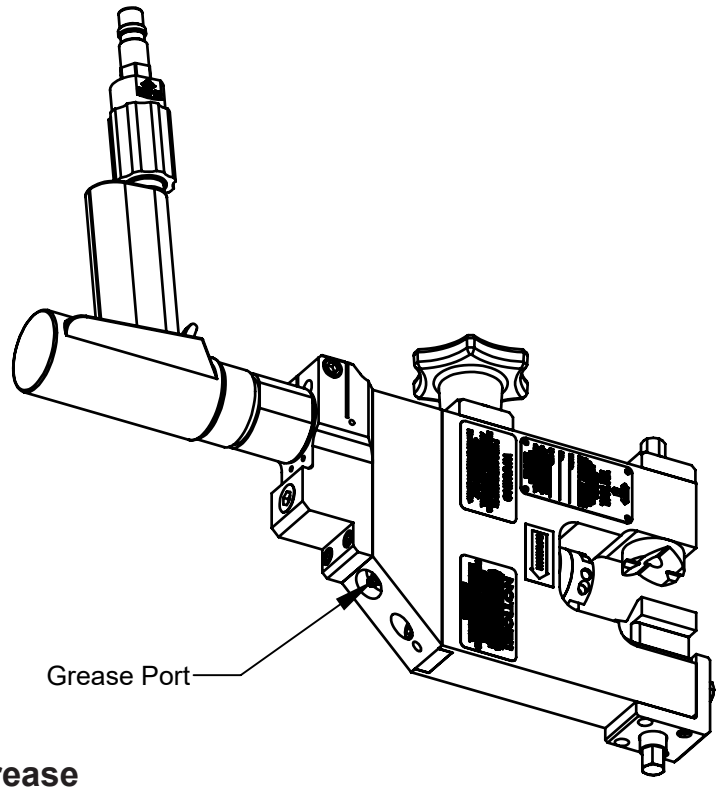


Figure 3: Grease

NOTE: Disassembly of a power unit voids warranty, except when performed by a Tri Tool Inc. designated repair technician. (A letter of designation is required.)

AIR MOTOR LUBRICATION

No direct maintenance is normally required on the Air Motor.

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

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

If the Model 201BA BEVELMASTER™ is to be left idle for 24 hours or more after being run on ‘wet’ air, it is advisable to squirt oil directly into the Air Motor inlet and run the Motor for 2 to 3 seconds.

This will prevent rusting and ‘freezing’ of the Rotor Vanes.

LUBRICANT RECOMMENDATIONS

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

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

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

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

The Drive Gears require a high string utility grease.

6. OPERATION

Read the operating instructions carefully before attempting to operate the Model 201BA BEVELMASTER™.

Use eye protection at all times when operating the Model 201BA.

Adjusting the Adjustable Saddle Kit to the required pipe or tube size.

Loosen the Hex Head Screw on the front of the Model 201BA.

Turn the Adjustment Feed Screw to raise or lower the Adjustable Saddle.

Select the line on the side of the Adjustable Saddle and adjust the height so that the desired line is even with the seat of the Main Housing.

One side of the Saddle is marked with pipe sizes and the other is marked with tube sizes.

Tighten the Hex Head Screw on the front of the Model 201BA once the desired location has been selected.

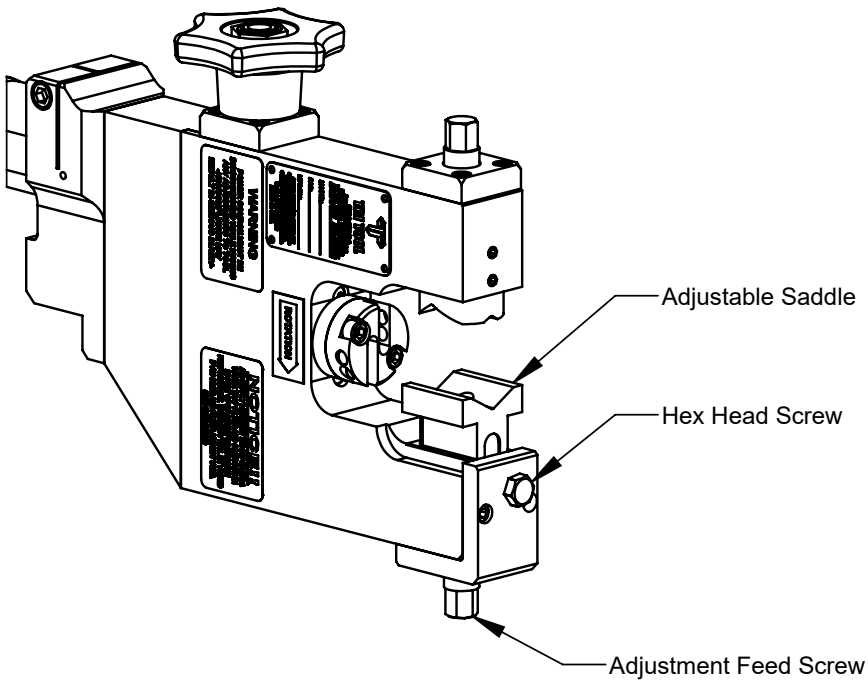


Figure 4: Operation of the Adjustable Saddle

Retract the Cutting Head by rotating the Feed Knob.

The pipe or tube to be end prepped may now be set into the Adjustable Saddle.

Turn the Clamping Saddle Nut to lower the Clamping Saddle.

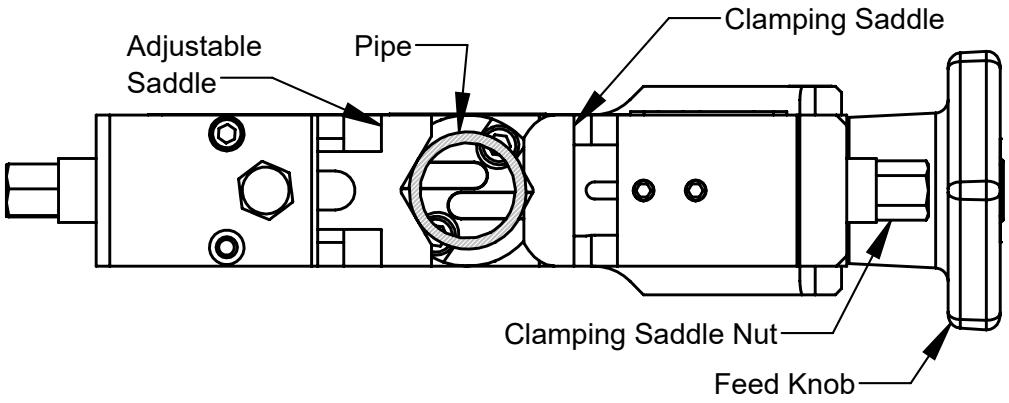


Figure 5: Pipe Position when seated between the Saddles

Continue this operation until the pipe or tube is clamped securely between the Adjustable Saddle and the Clamping saddle.

Verify a clearance of 1/8” (3.2mm) minimum between the Tool Bit and the pipe or tube face.

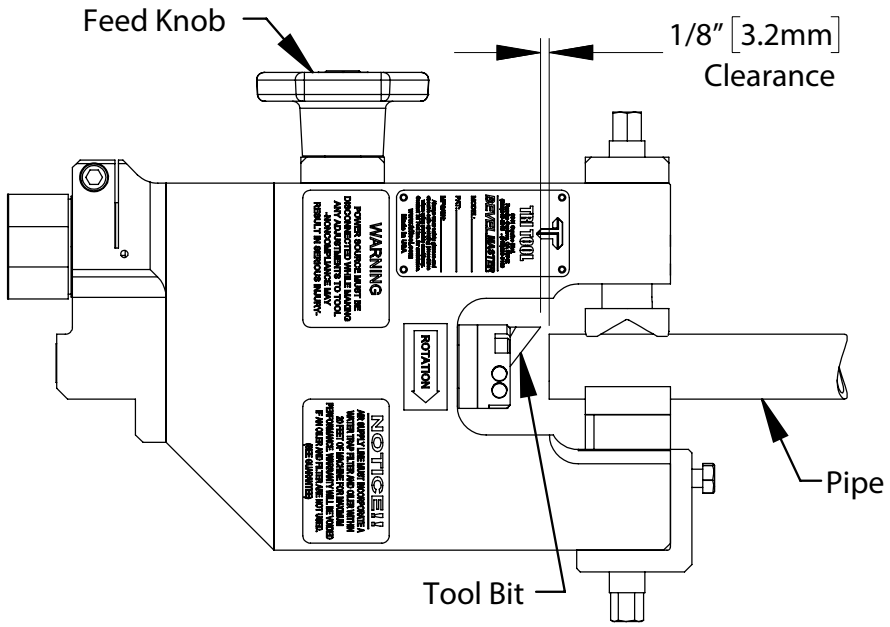


Figure 6: Tool Bit to pipe clearance

Select the Tool Bit(s) required to machine the pipe to the configuration desired. Refer to the section ‘Tool Bits’ for the Tool Bit selection chart.

WARNING

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

Insert the Tool Bit(s) into the Slot(s) in the Cutting Head.

CAUTION

CAUTION: The cutting edge of the Tool Bit(s) must be located on the radial centerline.

Make sure that there are not any Tool Bits installed backwards.

Make sure that there is a clearance between the Tool Bit(s) and the Saddles.

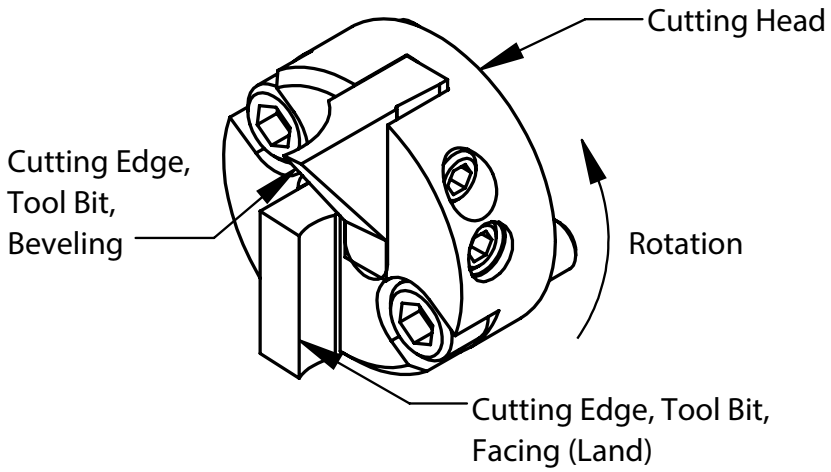


Figure 7: Tool Bit Positioning

Tighten the Set Screws to secure the Tool Bit(s) to the Cutting Head.

Attach the proper air supply line to the Model 201BA.

NOTE: Check that the filter/regulator/lubricator (FRL) is installed and set properly.

Depress the Air Motor Trigger.

Adjust the cutting speed by rotating the Flow Valve at the air connection. Refer to the section ‘Cutting Speeds’ for recommended cutting speeds.

Rotate the Feed Handle clockwise to bring the Tool Bit(s) and pipe or tube closer together.

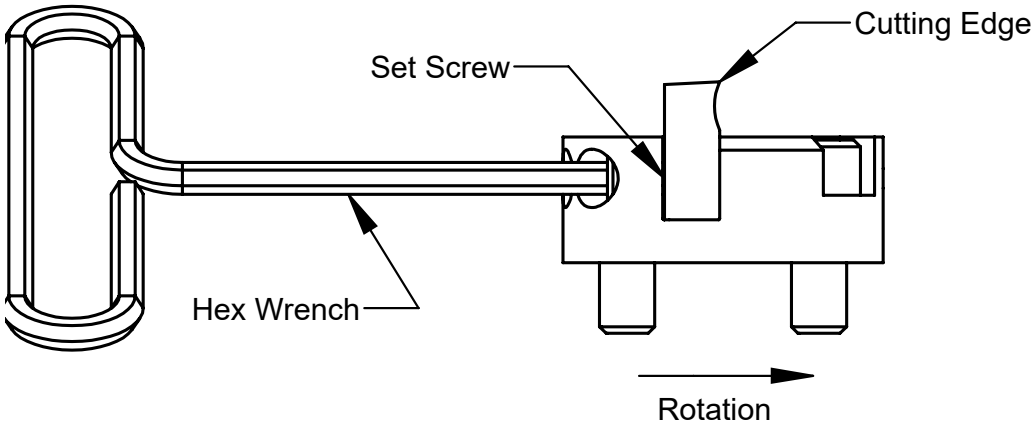


Figure 8: Tool Bit Tightening

CAUTION

CAUTION: The actual machining operation will begin when the first Tool Bit contacts the pipe.

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

To avoid Tool Bit damage, the feed rate should be very slow until the Tool Bit(s) is in contact with the pipe continually during at least one full revolution.

Continue rotating the Feed Handle clockwise until the end of the pipe is completely machined.

Discontinue feed and allow the Head to rotate 1 to 3 revolutions to improve finish of the prep surface.

Release the Air Motor Trigger to stop the Head rotation.

Rotate the Feed Handle counterclockwise to separate the Tool Bit(s) from the pipe.

Rotate the Feed Handle counterclockwise until the Head to Saddle relationship is the same as described in “The Clamping Saddle Nut is turned…”

Loosen the Clamping Saddle Nut on the Clamping Saddle to release the pipe or tube from the Model 201BA.

If the next bevel is to be identical to the previous bevel, follow the sequence starting with “The pipe or tube to be end prepped……”

If the next bevel is to be different than the previous bevel, then follow the sequence starting with “Adjusting the Adjustable Saddle Kit….”

Converting the Adjustable Saddle to the Fixed Saddle.

Remove the (4) four Cap Screws from the bottom of the Retaining Bracket Assy and (2) two Cap Screws from the front.

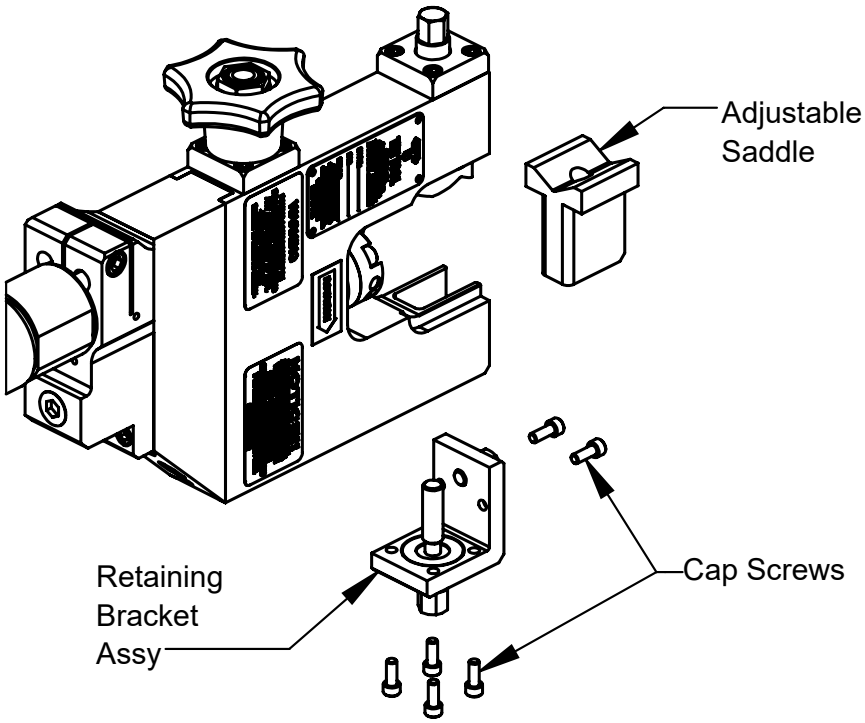


Figure 9: Removal of the Adjustable Saddle from the Model 201BA

Remove the Retaining Bracket Assy from the front of the Model 201BA.

Insert the Fixed Saddle Adapter into the front of the Model 201BA.

Attach the Fixed Saddle Adapter by using (4) four Cap Screws from the bottom and (2) two Cap Screws from the front.

Select the recommended Fixed Saddle for the pipe size to be machined. Refer to the Fixed Saddle selection chart in the section “Fixed Saddles”.

Gently set the Fixed Saddle into the Model 201BA locating it over the Slot.

Tighten the (2) two Captive Cap Screws which will secure the Fixed Saddle to the Model 201BA.

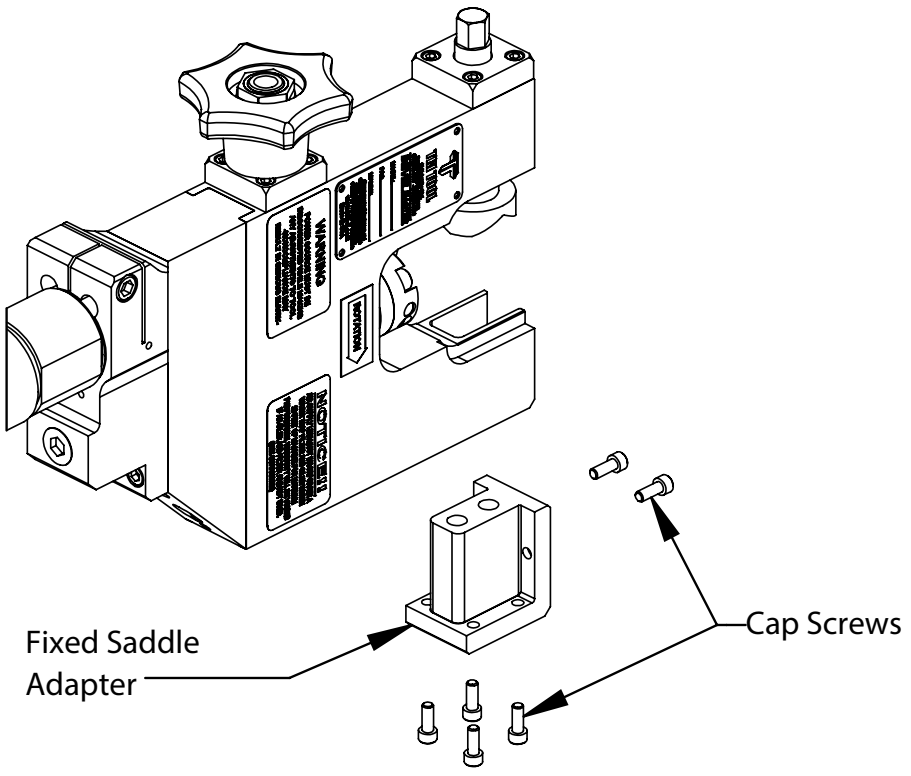


Figure 10: Installation of the Fixed Saddle Adaptor into the Model 201BA

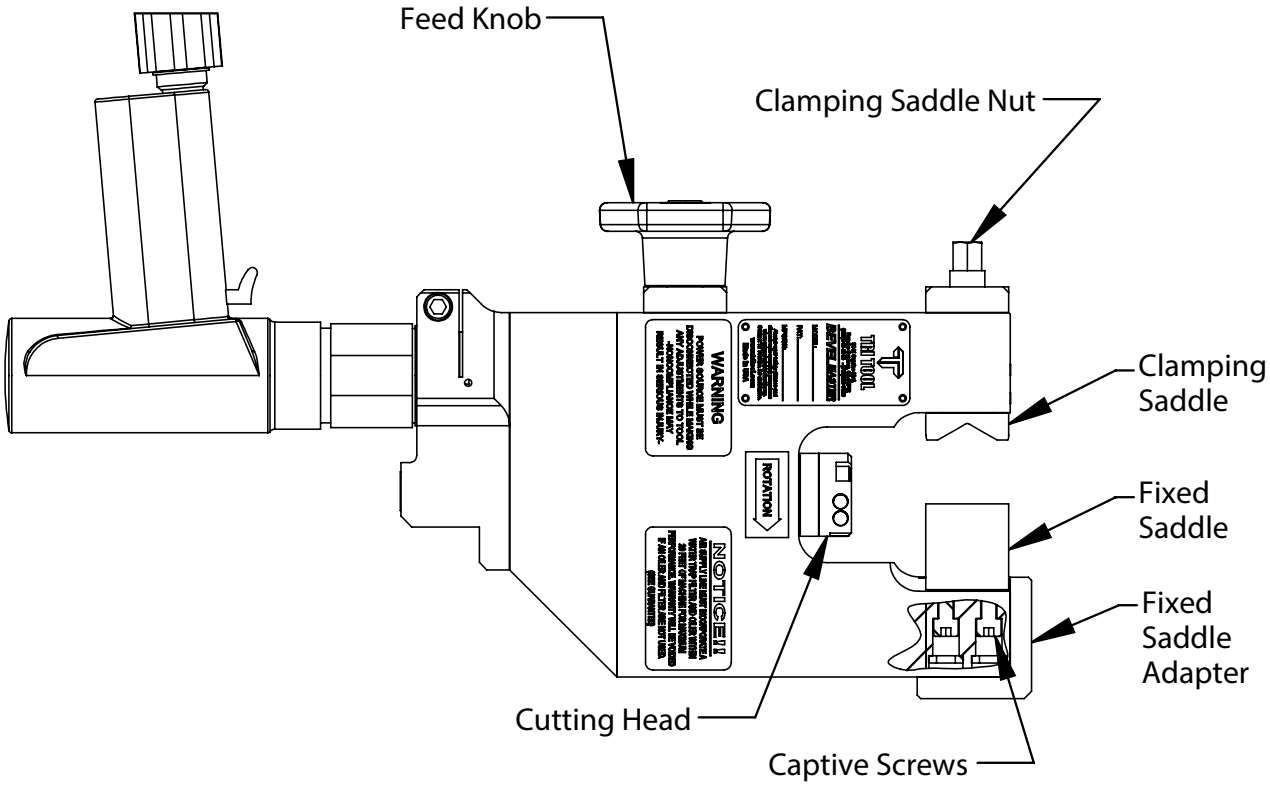


Figure 11: Installing the fixed Saddle into the Model 201BA

7. CUTTING SPEEDS

The chart shows RPM required to obtain specified Tool Bit surface cutting speed at the surface of the pipe or tube.

Cutting Speeds				
Nominal Pipe Size	**True Diameter**		**RPM for 200 in/min (508 cm/min)**	**RPM for 250 in/min (635 cm/min)**
	.250"	6.4 mm	255	318
	.375"	9.5 mm	170	212
1/8"	.405"	10.3 mm	157	196
	.500"	12.7 mm	127	159
1/4"	.540"	13.7 mm	118	147
3/8"	.675"	17.2 mm	94	118
	.750"	19.1 mm	85	106
1/2"	.840"	21.3 mm	76	95
	1.000"	25.4 mm	64	80
3/4"	1.050"	26.7 mm	61	76
	1.250"	31.8 mm	51	64
1"	1.315"	33.4 mm	48	61
	1.500"	38.1 mm	42	53
1 1/4"	1.660"	42.2 mm	38	48
	1.750"	44.5 mm	36	45
1 1/2"	1.900"	48.3 mm	34	42

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.

BASIC FEED RECOMMENDATIONS

Use very light feed for initial beveling or until a continuous cut is established.

This is very important for longer tool bit life when cutting through flame cut or out of square pipe ends.

Use adequate feed, .003” to .006” (.08mm to .15mm) per revolution thereafter, to establish a continuous chip cut.

If the feed is too light, only light stringer chips will be removed.

If the feed is too heavy the drive will start to overload and the chip will start to have a rough or torn appearance.

Stainless steel which work hardens, must be worked with a heavy enough feed to stay under the work hardened surface (.003” to .006” (.08mm to .15mm) feed). Never allow the Tool Bit to burnish the surface.

Reduced feed and speeds will normally minimize chatter problems.

8. TOOL BITS

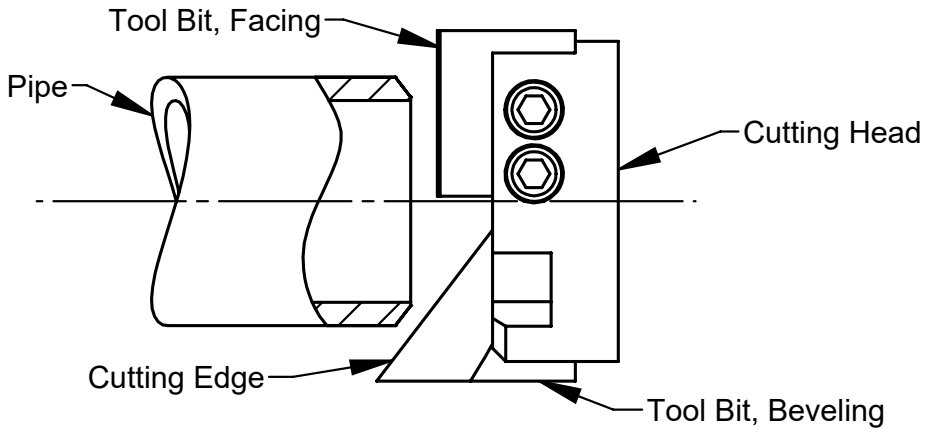


Figure 12: Beveling Tool Bit

37.5° BEVELING TOOL BITS			
For Beveling and Facing with the 1.45" dia Cutting Head (.355" (9.02 mm) maximum wall)			
Range	**Pipe or Tube Material**	**37.5° Beveling Tool Bit P/N**	**Facing Tool Bit P/N**
.125" thru .375" ID	Low Carbon	99-4032	99-4000
(3.2 mm thru 9.5 mm ID)	Stainless	99-4036	99-4040
.375" thru .638" ID	Low Carbon	99-4033	99-4000
(9.5 mm thru 16.2 mm ID)	Stainless	99-4037	99-4040
.630" thru .880" ID	Low Carbon	99-4034	99-4000
(16.0 mm thru 22.4 mm ID)	Stainless	99-4038	99-4040
.800" thru 1.050" ID	Low Carbon	99-4035	99-4000
(20.3 mm thru 26.7 mm ID)	Stainless	99-4039	99-4040
.900" thru 1.150" ID	Low Carbon	99-4132	99-4000
(22.9 mm thru 29.2 mm ID)	Stainless	99-4133	99-4040
1.150" thru 1.400" ID	Low Carbon	99-0944	99-4000
(29.2 mm thru 35.6 mm ID)	Stainless	99-3574	99-4040
*Cobalt High Heat Tool Bits are available			

37.5° BEVELING TOOL BITS			
For Beveling and Facing with the 2.00" dia Cutting Head (.355" (9.02 mm) maximum wall)			
Range	**Pipe or Tube Material**	**37.5° Beveling Tool Bit P/N**	**Facing Tool Bit P/N**
.125" thru .928" ID	Low Carbon	99-4032	99-4000
(3.2 mm thru 23.6 mm ID)	Stainless	99-4036	99-4040
.664" thru 1.470" ID	Low Carbon	99-4034	99-4000
(16.8 mm thru 37.3 mm ID)	Stainless	99-4038	99-4040
.900" thru 1.550" ID	Low Carbon	99-4132	99-4000
(22.9 mm thru 39.4 mm ID)	Stainless	99-4133	99-4040
1.220" thru 1.875" ID	Low Carbon	99-4132	99-0170
(31.1 mm thru 47.6 mm ID)	Stainless	99-4133	99-1963
*Cobalt High Heat Tool Bits are available			

37.5° BEVELING TOOL BITS			
For Beveling only with the 1.45"or 2.00" dia Cutting Head (.355" (9.02 mm) maximum wall)			
Range	**Pipe or Tube Material**	**37.5° Beveling Tool Bit P/N**	**Cutting Heas Diameter**
.125" ID thru 1.25" OD	Low Carbon	99-4033	1.45"
(3.2 mm ID thru 31.8 mm OD)	Stainless	99-4037	
.800" ID thru 1.500" OD	Low Carbon	99-0944	
(20.3 mm ID thru 38.1 mm OD)	Stainless	99-3574	
.125" ID thru 1.800" OD	Low Carbon	99-4033	2.00"
(3.2 mm ID thru 45.7 mm OD)	Stainless	99-4037	
.800" IDthru 2.00" ID	Low Carbon	99-0944	
(20.3 mm thru 50.8 mm OD)	Stainless	99-3574	
*Cobalt High Heat Tool Bits are available			

9. FIXED SADDLES

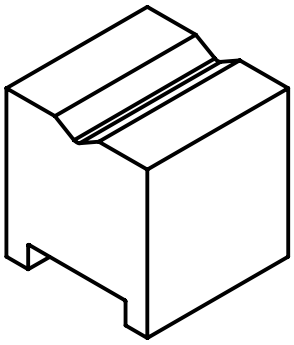


Figure 13: Fixed Saddle

FIXED SADDLES			
Pipe Size	**True Outside Diameter**		**Fixed Saddle P/N**
	.250"	6.35mm	26-1100
	.375"	9.53mm	26-1271
	.405"	10.29mm	26-1101
	.500"	12.70mm	26-1102
1/4"	.540"	13.72mm	26-1103
	.625"	15.88mm	26-1272
3/8"	.675"	17.15mm	26-1104
	.750"	19.05mm	26-1105
1/2"	.840"	21.34mm	26-1106
	.875"	22.23mm	26-1175
	1.000"	25.40mm	26-1107
3/4"	1.050"	26.67mm	26-1108
	1.125"	28.58mm	26-1273
	1.250"	31.75mm	26-1109
Contact TRI TOOL Inc. for sizes not listed.			

FIXED SADDLES			
Pipe Size	**True Outside Diameter**		**Fixed Saddle P/N**
1"	1.315"	33.40mm	26-1110
	1.375"	34.93mm	26-1274
	1.500"	38.10mm	26-1111
	1.625"	41.28mm	26-1275
1 1/4"	1.660"	42.16mm	26-1112
	1.750"	44.45mm	26-1113
	1.875"	47.63mm	26-1209
1 1/2"	1.900"	48.26mm	26-1114
	2.00"	50.80mm	26-1115
Contact TRI TOOL Inc. for sizes not listed.			

10. TROUBLESHOOTING

Problem: The Tool Bit Chatters

Probable causes:

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

Probable causes:

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

Problem: The surface finish is rough

Probable causes:

The tool bit is dull, chipped, etc.
Metal buildup 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

Probable causes:

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

Problem: There is a loss of air power

Probable causes:

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

Problem: There is a loss of hydraulic power

Probable causes:

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

Problem: The tool bit will not reach the work

Probable causes:

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

Problem: The hydraulic motor will not start

Probable causes:

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

11. ACCESSORIES

The following accessories are recommended for use with the Model 201BA Pipe Beveler and are available from Tri Tool Inc.:

1. Portable Air Filter Caddy (P/N 75-0115)
   A Filter/Regulator/Lubricator (FRL) is required to protect the warranty on all Tri Tool Inc. Air Driven Tools.

2. Tool Bits (Refer to 'Tool Bit' Section)

3. Headstock Kits
   1.45" DIA Head Kit (P/N 03-0037)
   2.00" DIA Head Kit (P/N 03-0038)

4. Adjustable Saddle Kits:

   Small Adjustable Saddle Kit (P/N 05-0241)
   (Diameter range: .250" to .600")
   (Diameter range: 6.4mm to 15.2mm)

   Large Adjustable Saddle Kit (P/N 05-0242)
   (Diameter range: .600" to 2.000")
   (Diameter range: 15.2mm to 50.8 mm)

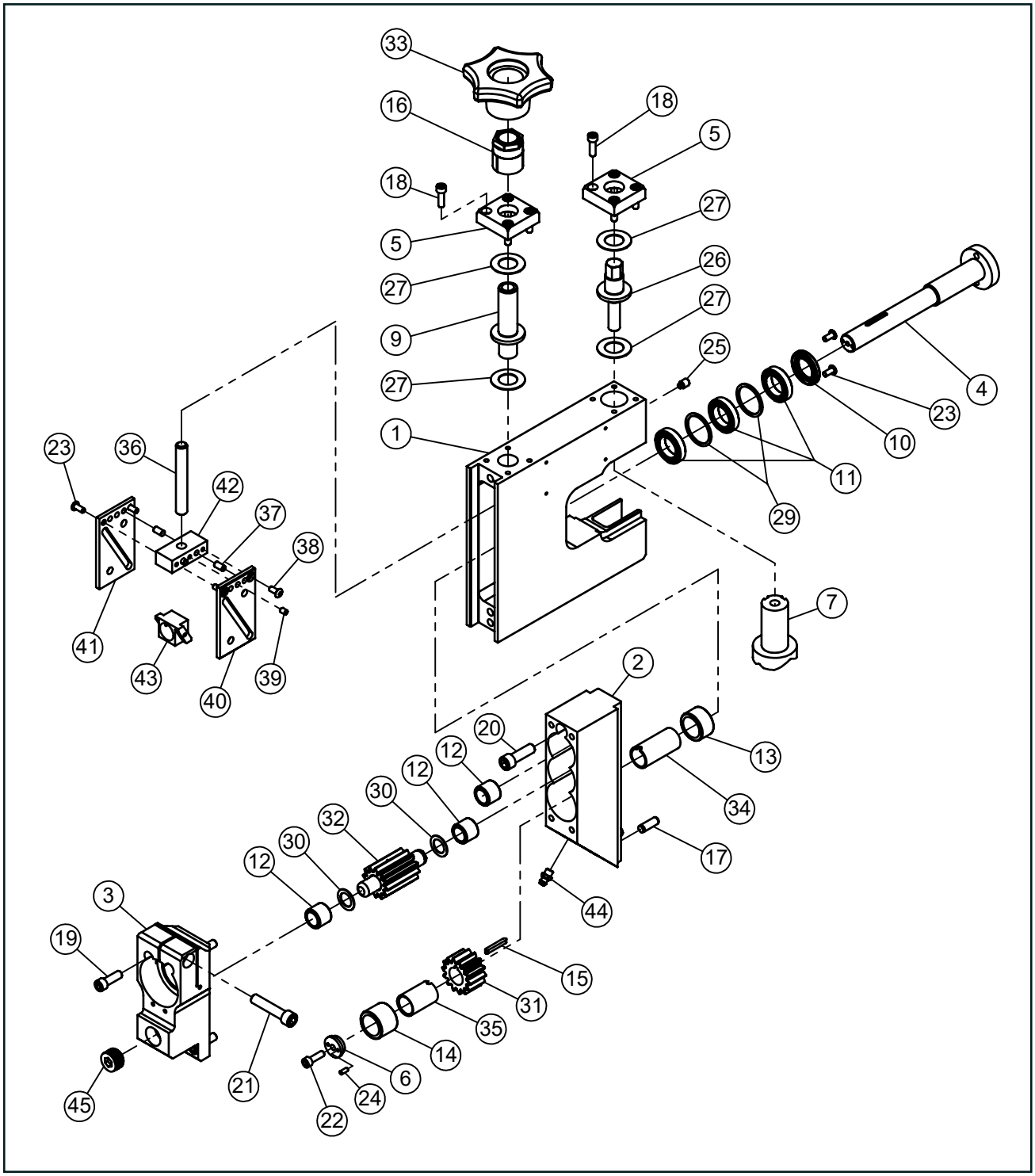
   Full Range Adjustable Saddle Kit (P/N 05-0243)
   (Diameter range: .250" to 2.000")
   (Diameter range: 6.4mm to 50.8mm)

5. Fixed Saddle Adapter Kit (P/N 05-0244)

   Fixed Saddles (Refer to 'Fixed Saddles' section)

12. ILLUSTRATED PARTS BREAKDOWN

MODEL 201BA, BEVELMASTER™ SUB-ASSEMBLY (P/N 02-2217)



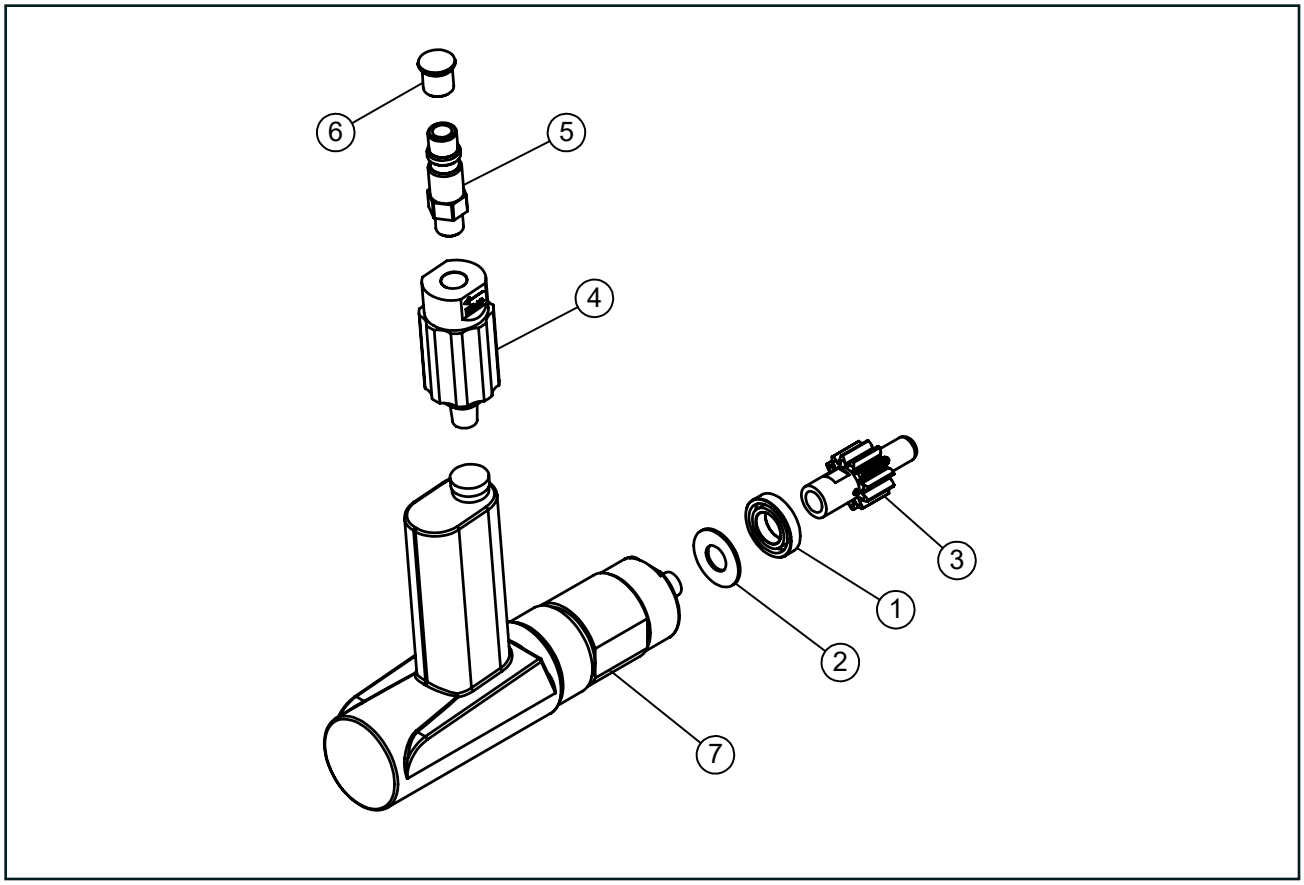
Parts List, Model 201BA, BEVELMASTER™ Sub-Assembly (P/N 02-2217)

Item No.	Part No.	Description	Qty
1.	19-0690	HOUSING, MAIN	1
2.	19-0521	HOUSING, DRIVE	1
3.	19-0522	HOUSING, CLAMP	1
4.	20-0441	SHAFT, DRIVE	1
5.	24-0996	PLATE, RETAINING	2
6.	24-1024	PLATE, END	1
7.	26-1099	SADDLE, CLAMPING	1
8.			
9.	27-0362	ADAPTER, FEED	1
10.	28-0218	SEAL, GREASE	1
11.	29-0080	BEARING, BALL	3
12.	29-0255	BEARING, ROLLER	3
13.	29-0256	BEARING, ROLLER	1
14.	29-0257	BEARING, ROLLER	1
15.	31-0115	KEY, SQUARE	1
16.	30-1790	BUSHING, KEYLESS	1
17.	32-0140	PIN, DOWEL	1
18.	33-0029	SCREW, CAP, #10-24 X 5/8	8
19.	33-0040	SCREW, CAP, 1/4-20 X 3/4	4
20.	33-0056	SCREW, CAP, 5/16-18 X 1	2
21.	33-0058	SCREW, CAP, 5/16-18 X 1 1/2	1
22.	33-2017	SCREW, CAP, #10-32 X 5/8	1
23.	33-0273	SCREW, CAP, #10-32 X 3/8	2
24.	33-0459	SCREW, SET, #10-40 X 5/16, CUP PT	1
25.	33-0928	SCREW, SET, 1/4-20 X 3/8, H DOG	2
26.	33-1654	SCREW, FEED, LH	1
27.	34-0192	WASHER, THRUST	4
29.	34-0245	WASHER, FLAT	2
30.	34-0247	WASHER, THRUST	2
31.	39-0575	GEAR, DRIVE	1
32.	39-0576	GEAR, IDLER	1
33.	42-0123	KNOB, FEED	1
34.	45-0176	BUSHING	1
35.	45-0177	BUSHING	1
	48-0634	YOKE ASSY, FEED	1
36.	23-0235	ROD, FEED	1
37.	32-0200	PIN, DOWEL	4

Parts List, Model 201BA, BEVELMASTER™ Sub-Assembly (P/N 02-2217)

Item No.	Part No.	Description	Qty
38.	33-0273	SCREW, BUTTON, #8-32 X 3/8	4
39.	33-0478	SCREW, SET, #8-32 X 1/4, CUP PT	1
40.	24-0991	PLATE, FEED, RH	1
41.	24-0992	PLATE, FEED, LH	1
42.	24-0994	PLATE, SPACER	1
43.	48-0633	YOKE, FEED	1
44.	54-0375	FITTING, GREASE	1
45.	54-0304	PLUG, PRESSURE	1
	NOT SHOWN:		
	36-0001	WRENCH, L, 1/16” HEX	1
	36-0008	WRENCH, L, 3/16” HEX	1
	36-0010	WRENCH, L, 1/4” HEX	1
	36-0011	WRENCH, L, 5/16” HEX	1
	36-0018	WRENCH, T, 1/8” HEX	1
	36-0020	WRENCH, T, 5/32” HEX	1
	36-0075	WRENCH, COMBINATION, 1/2”	1
	86-0170	CASE, CUSTOM CARRYING	1

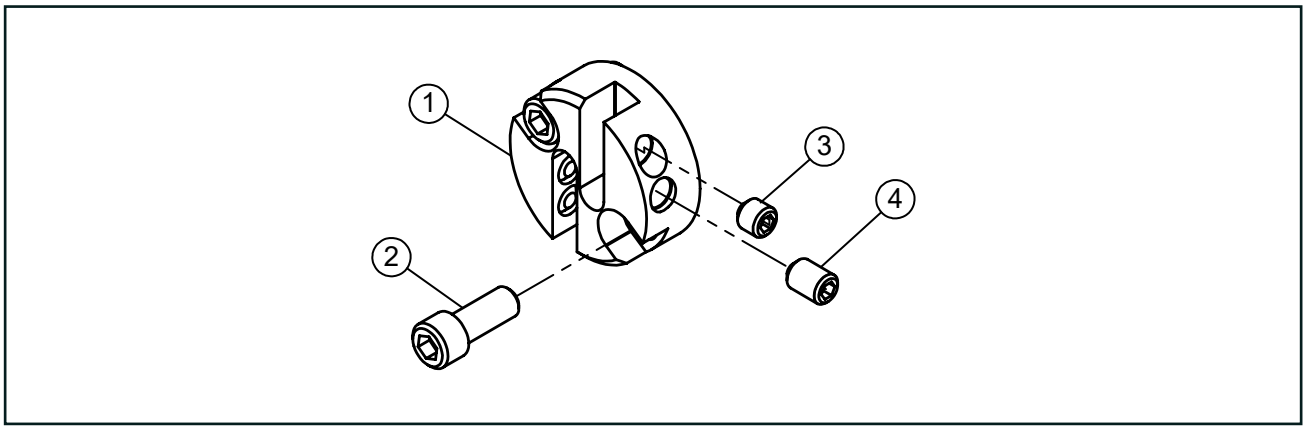
AIR MOTOR ASSEMBLY (P/N 57-0156)



Parts List, Motor Assy, Air (P/N 57-0156)

Item No.	Part No.	Description	Qty
1.	28-0219	SEAL, GREASE	1
2.	34-0246	WASHER, FLAT	1
3.	39-0582	GEAR ASSY, PINION	1
4.	53-0045	VALVE, AIR FLOW CONTROL	1
5.	54-0149	COUPLING, MALE, QD	1
6.	54-0201	CAP, YELLOW	1
7.	57-0077	MOTOR, AIR	1

CUTTING HEAD KITS (P/N 03-003X)



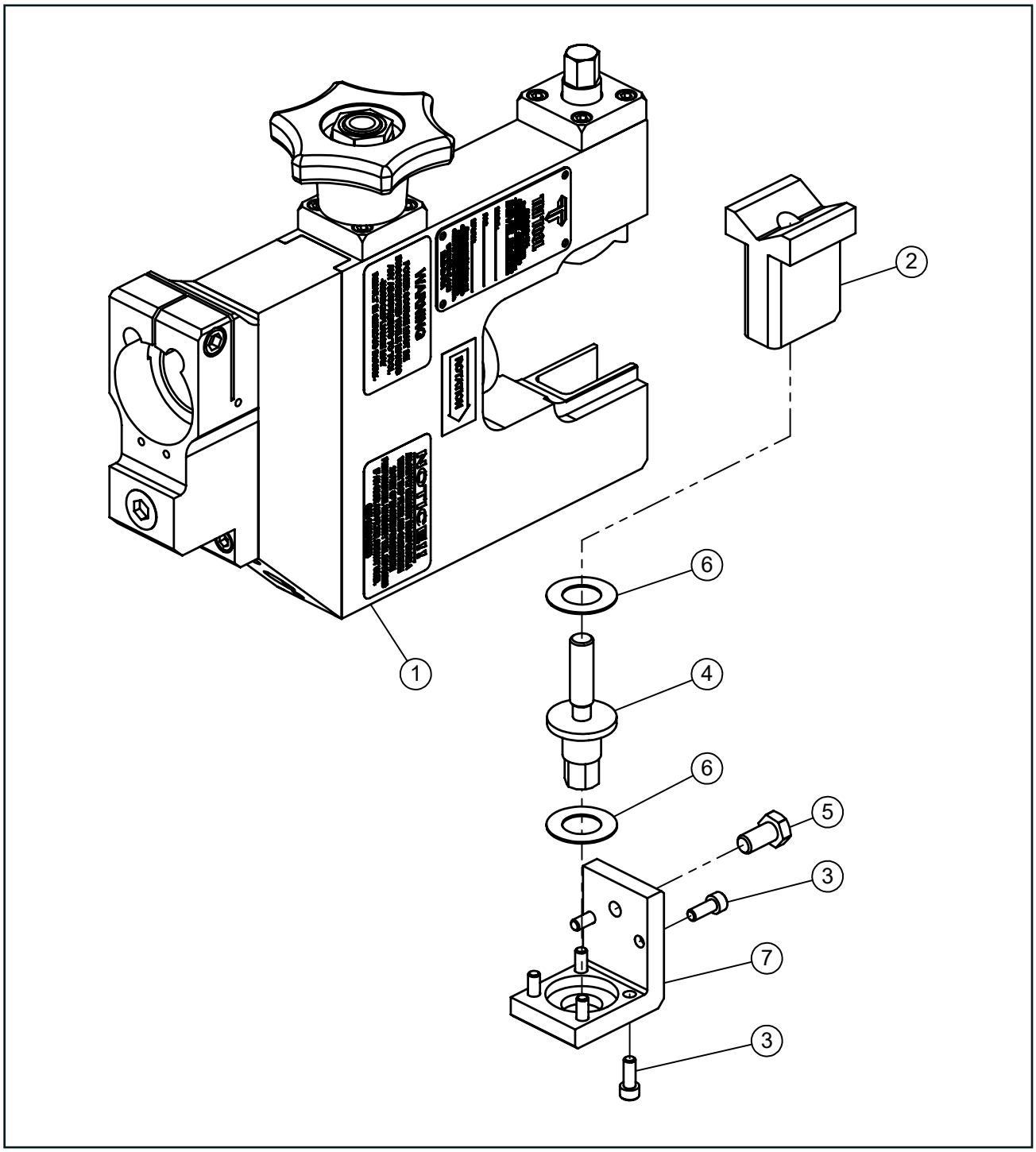
Parts List, Cutting Head Kit, 1.45" DIA (P/N 03-0037)

Item No.	Part No.	Description	Qty
1.	21-0325	HEAD, 1.45" DIA	1
2.	33-0039	SCREW, CAP, 1/4-20 X 5/8	2
3.	33-0499	SCREW, SET, 1/4-20 X 1/4, CUP PT	2
4.	33-0501	SCREW, SET, 1/4-20 X 3/8 , CUP PT	2

Parts List, Cutting Head Kit, 2.00" DIA (P/N 03-0038)

Item No.	Part No.	Description	Qty
1.	21-0326	HEAD, 2.00" DIA	1
2.	33-0039	SCREW, CAP, 1/4-20 X 5/8	2
3.	33-0499	SCREW, SET, 1/4-20 X 1/4, CUP PT	2
4.	33-0503	SCREW, SET, 1/4-20 X 1/2 , CUP PT	4

ADJUSTABLE SADDLE KIT (P/N 05-024X)



Parts List, Saddle Kit, Adjustable, Small (P/N 05-0241)

Item No.	Part No.	Description	Qty
1.	19-0690	HOUSING, MAIN	REF
2.	26-1401	SADDLE, ADJUSTABLE, SMALL	1
3.	33-0028	SCREW, CAP, #10-24 X 1/2	6
4.	33-1654	SCREW, FEED, LH	1
5.	33-1951	SCREW, HEX HD CAP, 5/16-18 X 5/8	1
6.	34-0192	WASHER, THRUST	2
7.	47-0972	BRACKET, RETAINING	1

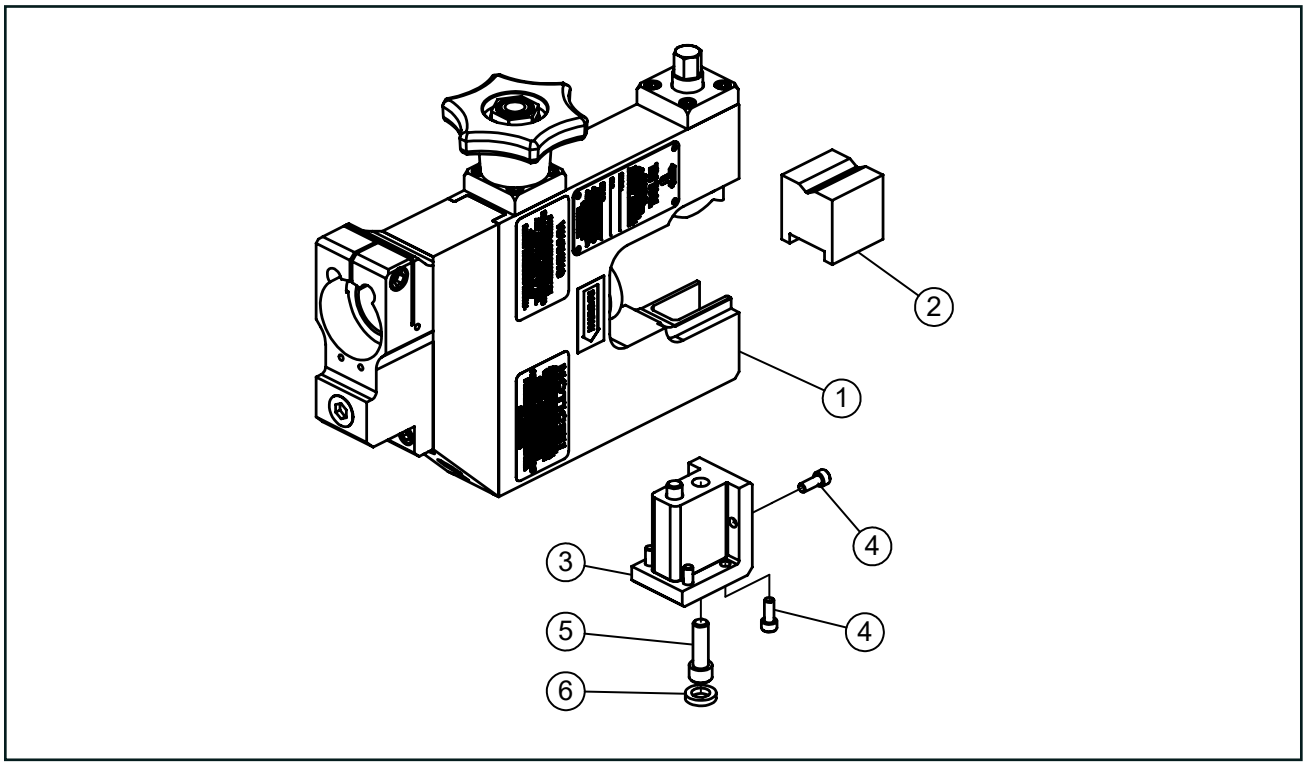
Parts List, Saddle Kit, Adjustable, Large (P/N 05-0242)

Item No.	Part No.	Description	Qty
1.	19-0690	HOUSING, MAIN	REF
2.	26-1376	SADDLE, ADJUSTABLE, LARGE	1
3.	33-0028	SCREW, CAP, #10-24 X 1/2	6
4.	33-1654	SCREW, FEED, LH	1
5.	33-1951	SCREW, HEX HD CAP, 5/16-18 X 5/8	1
6.	34-0192	WASHER, THRUST	2
7.	47-0972	BRACKET, RETAINING	1

Parts List, Saddle Kit, Adjustable, Full Range (P/N 05-0243)

Item No.	Part No.	Description	Qty
1.	19-0690	HOUSING, MAIN	REF
2.	26-1376	SADDLE, ADJUSTABLE, LARGE	1
	26-1401	SADDLE, ADJUSTABLE, SMALL	1
3.	33-0028	SCREW, CAP, #10-24 X 1/2	6
4.	33-1654	SCREW, FEED, LH	1
5.	33-1951	SCREW, HEX HD CAP, 5/16-18 X 5/8	1
6.	34-0192	WASHER, THRUST	2
7.	47-0972	BRACKET, RETAINING	1

FIXED SADDLE ADAPTOR KIT (05-0244)



Parts List, Adaptor Kit, Fixed Saddle (P/N 05-0244)

Item No.	Part No.	Description	Qty
1.	19-0690	HOUSING, MAIN	REF
2.	26-XXXX	SADDLE, FIXED	-
		REFER TO 'FIXED SADDLE' SECTION	REF
3.	27-0490	ADAPTER, SADDLE, FIXED	1
4.	33-0028	SCREW, CAP, #10-24 X 1/2	6
5.	33-0056	SCREW, CAP, 5/16-18 X 1	2
6.	34-0233	WASHER, THRUST	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!

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