

TABLE OF CONTENTS

CUSTOMER MESSAGE	Inside Front Cover
SAFETY PRECAUTIONS	3
GENERAL DESCRIPTION	6
SPECIFICATIONS	7
SETUP AND OPERATION	9
CUTTING SPEEDS	18
TOOL BITS	19
MAINTENANCE	21
TROUBLESHOOTING	22
ILLUSTRATED PARTS BREAKDOWN	24
TOOL BIT RESHARPENING POLICY	Inside Back Cover
WARRANTY INFORMATION	Inside Back Cover

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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 the 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 your 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.

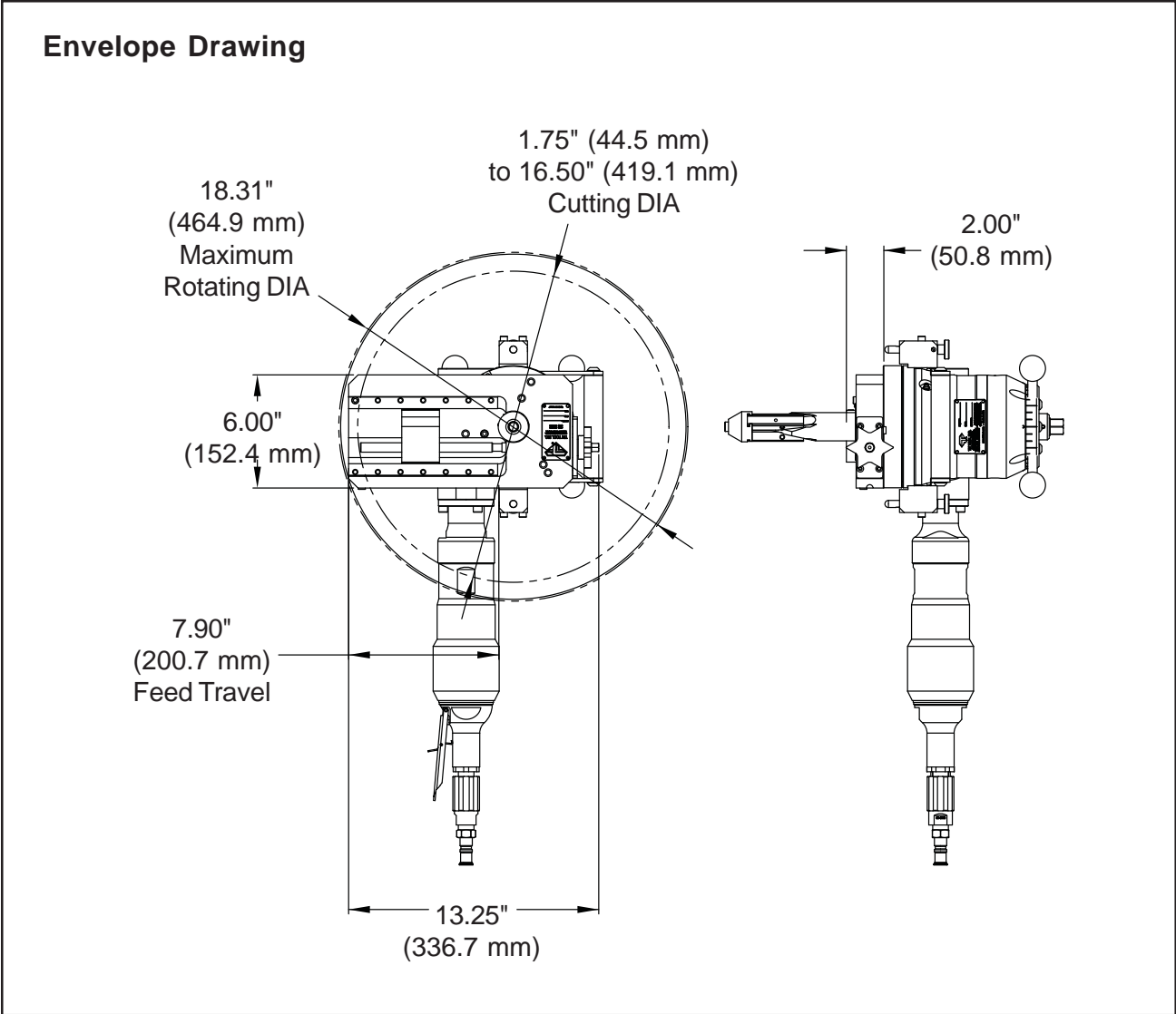
Store idle tools properly. Disconnect tools from the power source and store in a safe place. Remove tool bits for safe handling of the tool.

GENERAL DESCRIPTION

The Model 208B FF (Flange Facer) is supplied as a kit to provide the Model 208B BEVELMASTER® with Flange Facing capabilities over a cutting range of 1.75" (44.5 mm) to 16.50" (419.1 mm).

The kit allows for quick easy field conversion of the Model 208B BEVELMASTER® from a Beveling configuration to a Flange Facer configuration and back again as required.

SPECIFICATIONS



WEIGHT

TBD

CLEARANCE AND DIMENSIONS (W/208B ATTACHED)

Max. Rotating Parts DIA

18.31" (464.9 mm)

Radial (Max. from Center Line)

9.16" (232.5 mm)

Feed Travel (Auto)

7.90" (200.7 mm)

CUTTING CAPACITY

Max. Chip Width

.020" (.51 mm)

Range

1.75" (44.5 mm) to 16.50" (419.1 mm)

MATERIAL CUTTING CAPABILITY

Most stainless steels, carbon steels, inconels, etc., provided the Rockwell hardness is less than Rc 35.

FEED RATE

.013" (.33 mm) to .026" (.66 mm) per revolution.

MOUNTING

ID Range

1.63" (41.4 mm) to 8.63" (219.2 mm)

SETUP AND OPERATION

Always read the operating instructions carefully/completely before attempting to operate the Model 208B FF.

When operating any/all Tri Tool Inc. equipment follow the 'Note' statements through the manual for equipment safety and the 'Warning' and/or 'Caution' notes for operator safety.

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

For Hydraulic Motors refer to their 'Operator's Manual' for specifics.

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.

ATTACHING THE FF KIT TO THE 208B

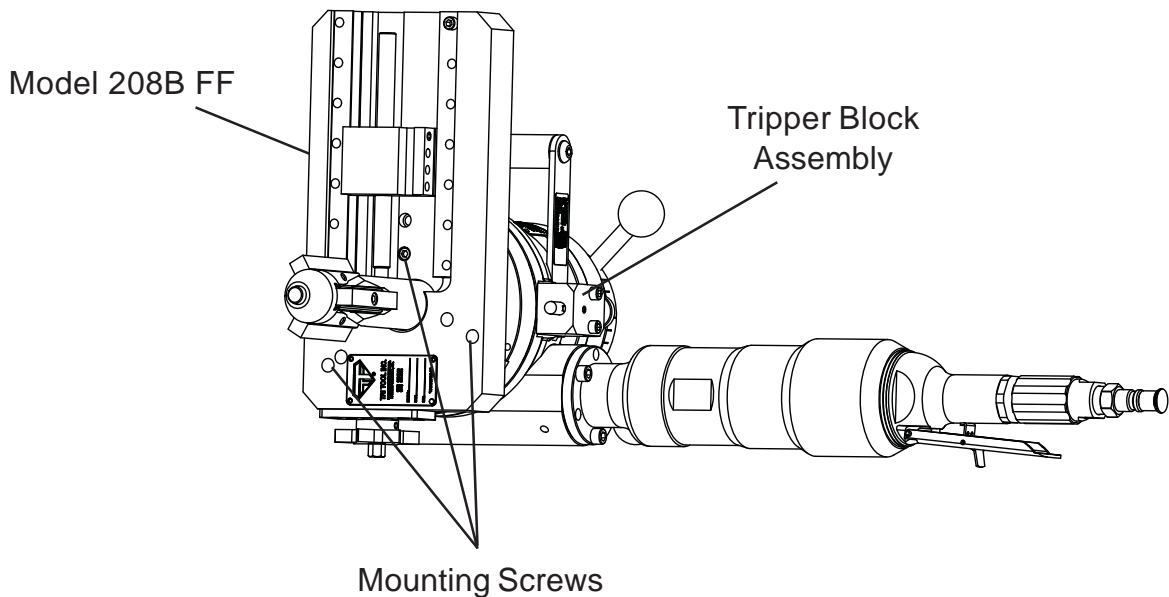
Remove the three (3) tool holders and mandrel from the Model 208B BEVELMASTER®.

Mount the Model 208B FF (Flange Facer) kit to the Model 208B BEVELMASTER® and attach it with the six (6) mounting screws provided.

Reinstall the mandrel.

Attach the two (2) tripper block assemblies to the side of the 208B BEVELMASTER®. Position and clamp the Model 208B to the ID of the pipe.

Attaching the Model 208B FF to the Model 208B



CONFIGURATION

Reference the Model 208B BEVELMASTER® “Operators’ Manual” for setup instructions.

Check the position of the Tool Block.

Positioning the Tool Block

Turn the feed sprocket clockwise to feed the tool holder in.

The Tool holder feed travel is from OD to ID of the pipe.

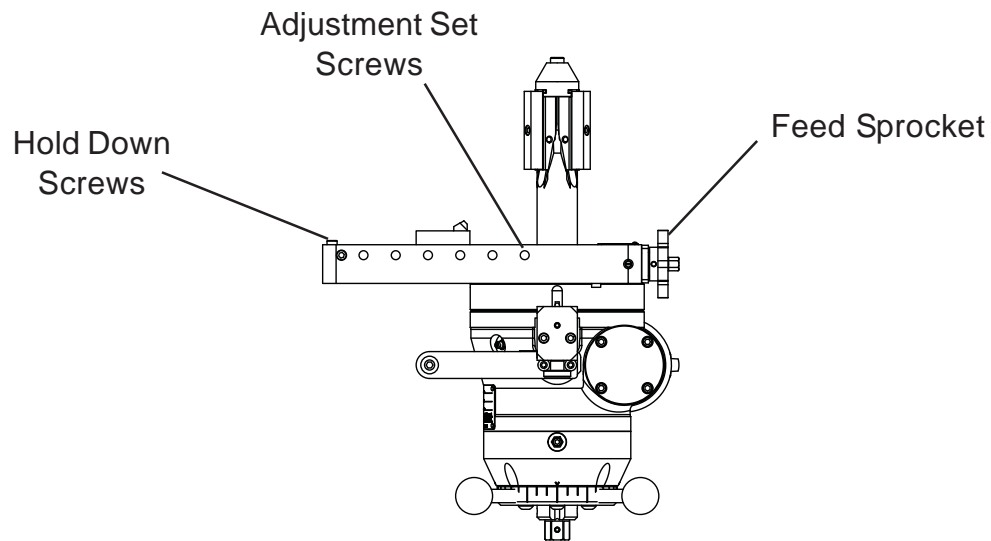
Tool Block Adjustment

Loosen the hold-down screws on the adjustable slide rail.

Run the tool holder to the most outward position.

Using the adjustment set screw(s), apply a light force to the side of the adjustable slide rail so that it is in positive contact with the tool holder.

Location of the Various Screws



Tighten the hold down screws to about 12 in/lbs (1.4 Nm) to 24 in/lbs (2.7 Nm); Finger tighten using a hex key.

Using the 1/4" drive ratchet, run the tool holder to the inward most position.

Note any changes in the feed pressure.

Some drag from the slide rails should be felt, but only a very light torque should be required to move the tool holder.

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.

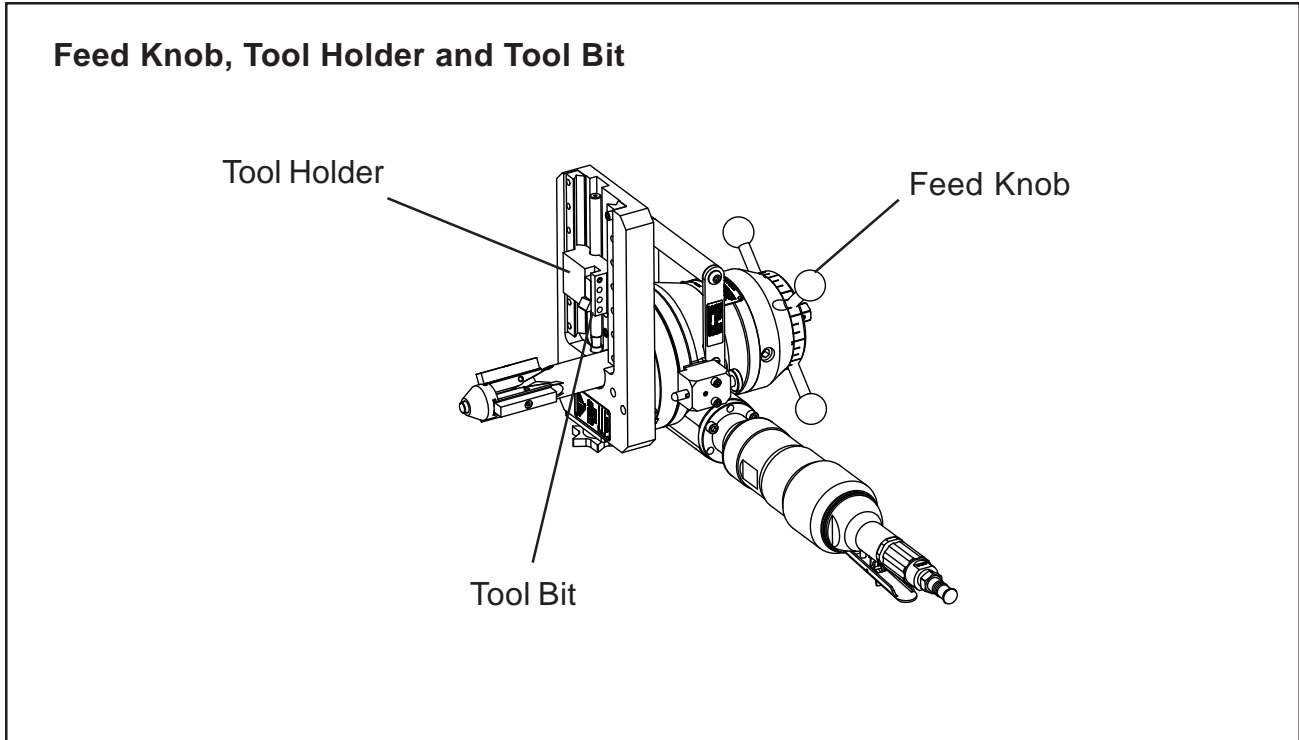
Check that the tool holder runs smoothly and evenly for the full length of travel.

Readjust as necessary.

Check the position of the Tool Bit to the Flange.

Tool Bit Depth of Cut

To adjust the depth of cut of the tool bit to flange, rotate the feed knob on the Model 208B until the desired position is achieved.



Depth of Cut Recommendations

Roughing Cut

.030" (.76 mm) max. depth

Finish Cut

.010" (.25 mm) depth

Roughing or Record Finish

.026" (.66 mm) feed (both trippers engaged)

Smooth Finish

.013" (.33 mm) feed (one tripper engaged)

Tool Bit Installation

To select the appropriate tool bit(s) refer to the "Tool Bits" section of this manual.

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.

Slide the tool bit into the tool bit holder slot on the tool block.

Lock the tool bit position with the set screws on the side of the tool block.

Lock the mandrel in place using the mandrel lock set screw located in the back of the handle feed plate.

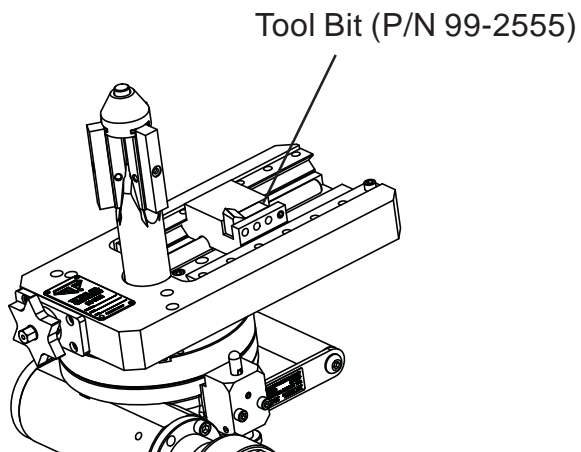
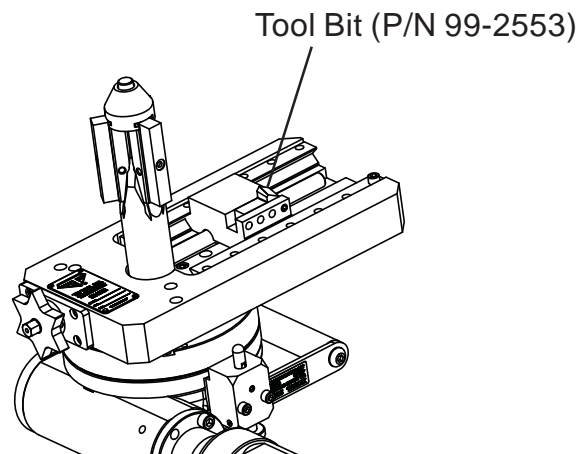
Tool life may be severely shorted, unless the chips/debris deposited on the cutting head during the operation are removed.

To avoid tool bit damage, the tool bit must clear the highest point of the flange on the first revolution.

Damaged or worn tool bits are evident by increased feed pressure, visual observations, poor surface finish, etc.

Check the position of the Tripper Shaft for Feed Rate.

Tool Bit Installation

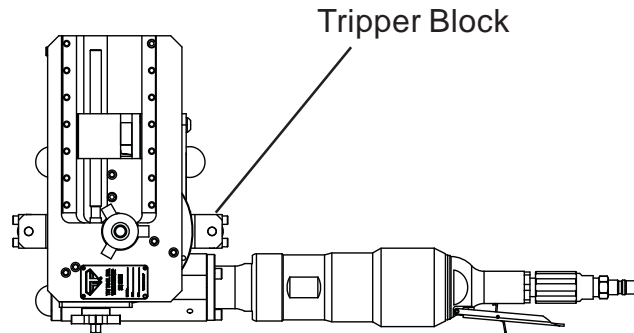


Feed Rate

The feed rate is .013" (.33 mm) per revolution per tripper block.

Two (2) tripper blocks are supplied with the kit.

Location of the Tripper Blocks



OPERATION

Position and clamp the Model 208B to the ID of the pipe.

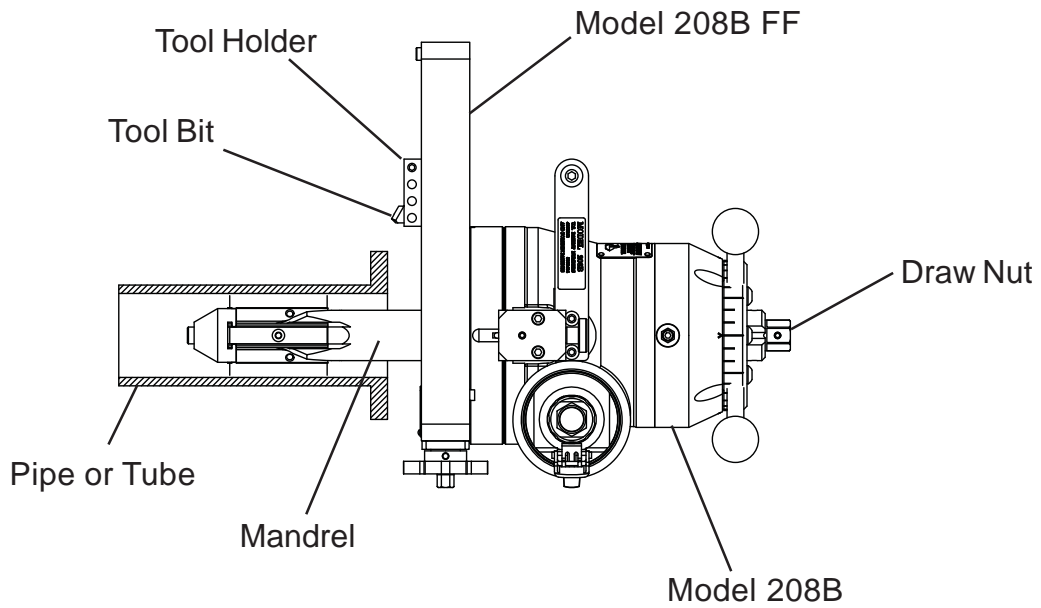
Attach the power supply line to the Model 208B.

Turn the motor on and use the manual feed to advance the tool bit to the flange of the pipe.

The actual machining operation will begin when the cutting surface of the tool bit comes in contact with the flange.

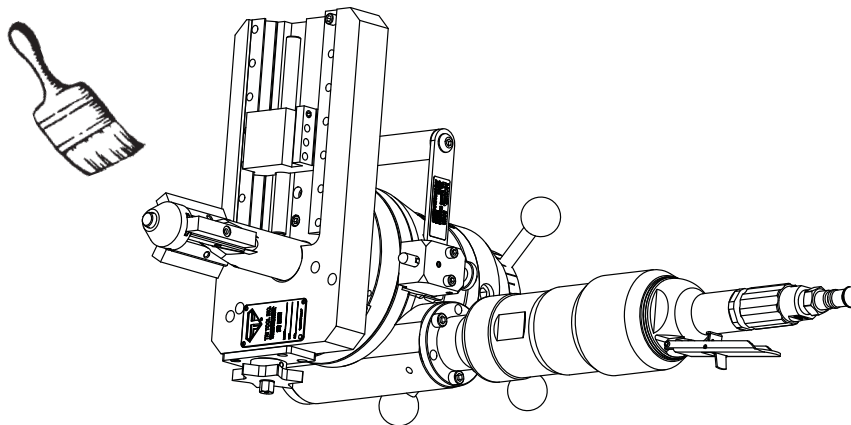
If the pipe is out of round, the cutting will contact only a small segment of the flange during each revolution.

Positioning the Model 208B in a Pipe or Tube



If the Model 208B BEVELMASTER® with the Model 208B FF (Flange Facer) is operated in the vertical position, cutting head up, the chips/debris should be removed after each pass has been completed.

Chip/Debris Removal



If the next flange is the same as the previous flange, install the machine on the pipe and proceed with the flange.

If the next flange is different than the previous flange, then start back at the beginning with "CONFIGURATION".

CUTTING SPEEDS

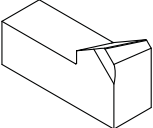
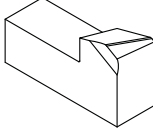
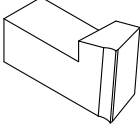
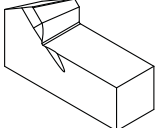
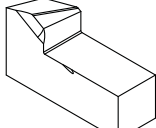
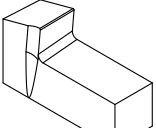
The feed rate is .013" (.33 mm) per revolution per tripper block.

Two (2) tripper blocks are supplied with the kit.

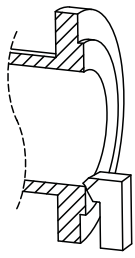
When facing over a mounting hole pattern in a flange, machine speed should be reduced to lessen the impact on the cutting edge of the tool bit and to prevent ripping the edge of the holes.

TOOL BITS

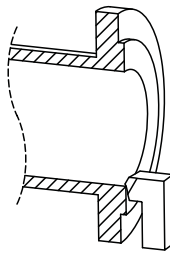
Parts List, Tool Bits

Item No.	Part No.	Description	Qty	Part
1.	99-2553	FF, INSIDE RECORD FINISH	1	
2.	99-2554	FF, INSIDE SMOOTH FINISH	1	
3.	99-2089	FF, INSIDE RECESSED FACE	1	
4.	99-2555	FF, OUTSIDE RECORD FINISH	1	
5.	99-2556	FF, OUTSIDE SMOOTH FINISH	1	
6.	99-2423	FF, OUTSIDE RECESSED FACE	1	

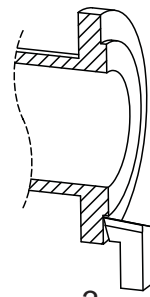
Tool Bit Usage



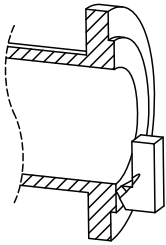
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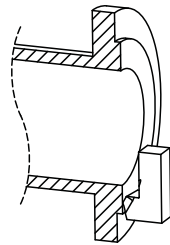
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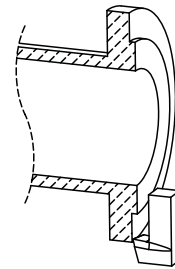
3



4



5



6

OD Range	Tool Bit P/N	
1.75" thru 11.00" (44.5 mm thru 279.4 mm)	1	99-2553
1.75" thru 11.00" (44.5 mm thru 279.4 mm)	2	99-2554
1.75" thru 11.00" (44.5 mm thru 279.4 mm)	3	99-2089
4.75" thru 16.50" (120.0 mm thru 419.1 mm)	4	99-2555
4.75" thru 16.50" (120.0 mm thru 419.1 mm)	5	99-2556
4.75" thru 16.50" (120.0 mm thru 419.1 mm)	6	99-2423

MAINTENANCE

DAILY BEFORE/AFTER OPERATION

Visually inspect all parts for damage due to chips, impact or improper use.

Repair or replace broken or damaged parts as necessary.

Wipe the machine clean of cutting fluids, dirt and grime and then coat it with a light film of oil.

TROUBLESHOOTING

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's 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 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 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's 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: The Air Motor Will Not Start

The air power supply is shut off.
The air motor is damaged and will not run free.
The air motor needs lubrication.
Add lubrication and do not run the air motor for a few minutes, then try running the 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: There's 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 Hydraulic Motor Will Not Start

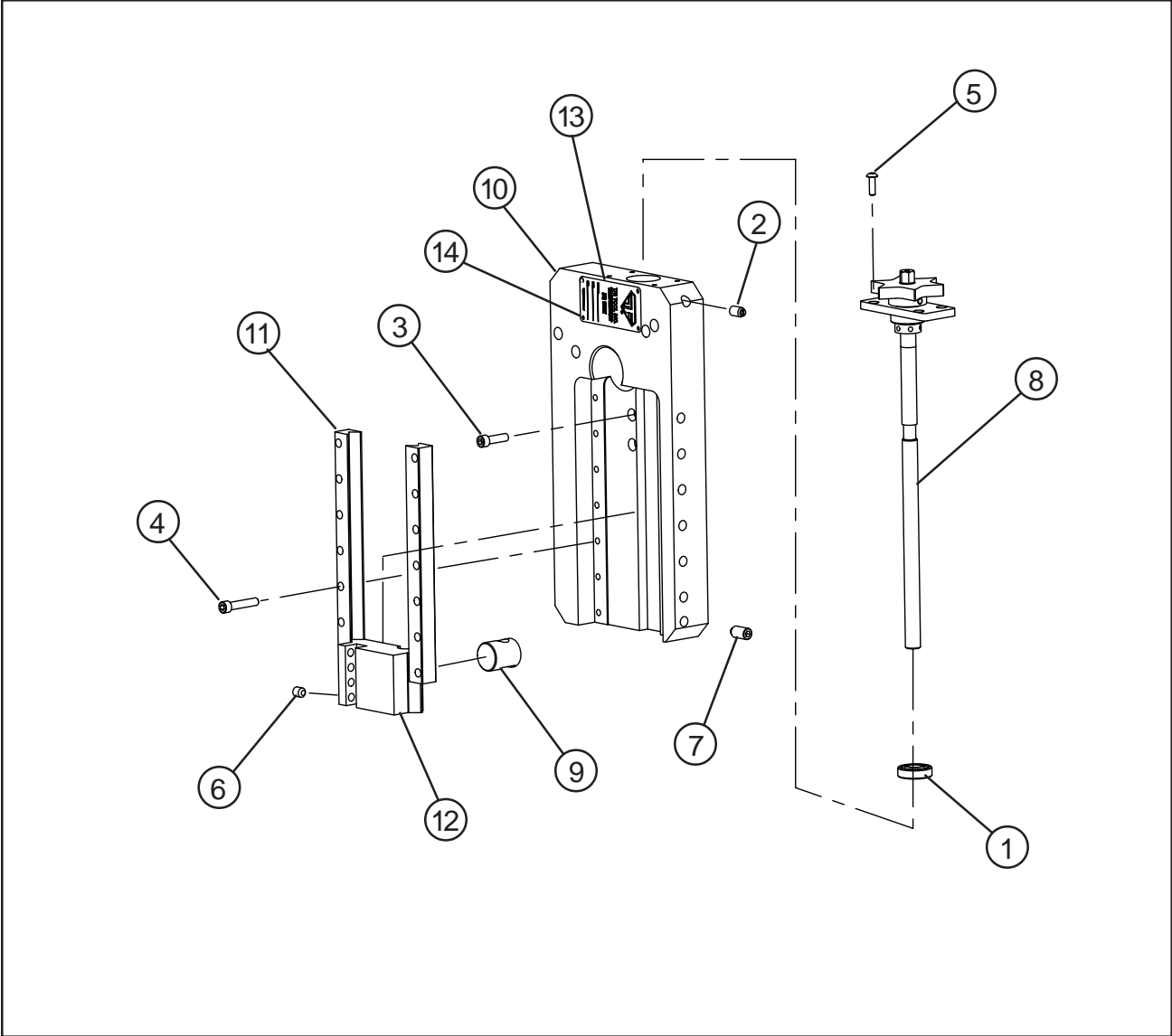
The hydraulic power supply is shut off.
The hydraulic motor is damaged and will not run free.

ILLUSTRATED PARTS BREAKDOWN

Parts List, Flange Facer Kit (P/N 05-0604)

Item No.	Part No.	Description	Qty
1.	30-0514	BRUSH,CHIP	1
2.	30-0727	LABEL,CASE	1
3.	30-2061	LABEL,TRI TOOL	1
4.	36-0020	WRENCH,T,5/32 HEX	1
5.	36-0021	WRENCH,T,3/16 HEX	1
6.	36-0091	WRENCH,RATCHET,1/4 DRIVE	1
7.	36-0144	SOCKET,1/4 DRIVE X 7/16 HEX	1
8.	48-0478	BLOCK ASSY,TRIPPER	2
9.	82-0220	FLANGE FACER ASSY, 208B	1
10.	86-0302	CASE, 208B-FF	1
11.	99-2555	TOOL BIT,F/FACE,REC.FIN.,OUT	1
12.	99-2556	USN-1064 FLNG FACNG BIT OUT-SD	1

MODEL 208B FF [FLANGE FACE] (P/N 82-0220)

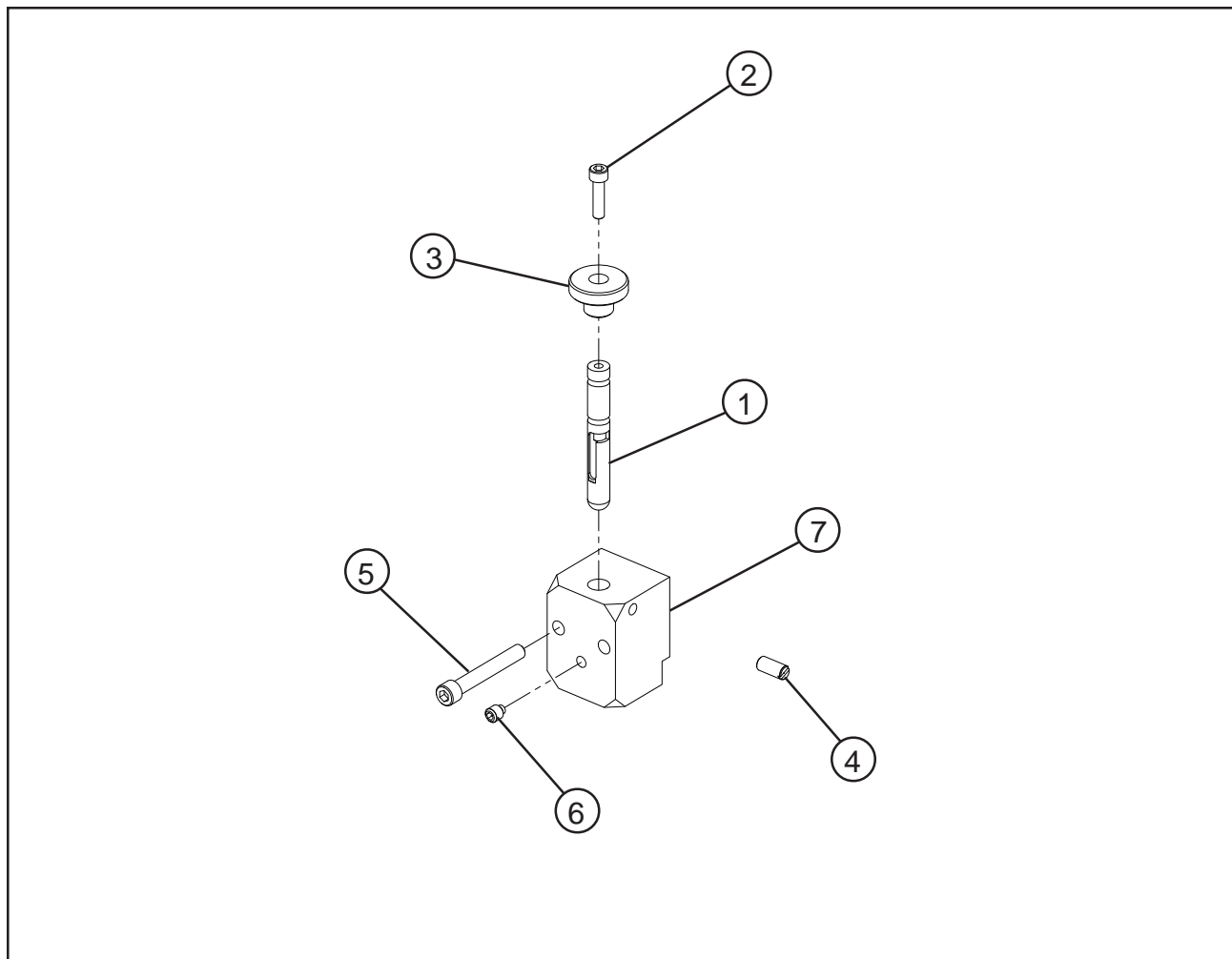


TRI TOOL INC.

Parts List, Model 208B FF [Flange Facer] (P/N 82-0220)

Item No.	Part No.	Description	Qty
1.	29-0182	BEARING, BALL	1
2.	30-0464	PLUNGER, BALL	1
3.	33-0041	SCREW, CAP, 1/4-20 X 7/8	6
4.	33-0043	SCREW, CAP, 1/4-20 X 1 1/4	14
5.	33-0280	SCREW, BUTTON, #10-24 X 5/8	4
6.	33-0514	SCREW,SET,5/16-18 X 3/8 CUP PT	4
7.	33-1269	SCREW,SET,3/8-24 X 5/8,HDOG	8
8.	33-2811	SCREW, FEED, ASSY	1
9.	35-0266	NUT, FEED	1
10.	47-1905	BRACKET, CARRIER, 208B	1
11.	48-2488	BLOCK, GUIDE, 208B	2
12.	49-0088	HOLDER, TOOL	1
13.	30-0922	PLATE,DATA,GENERIC-1	1
14.	33-0995	SCREW,DRIVE,#2 X 3/16	4

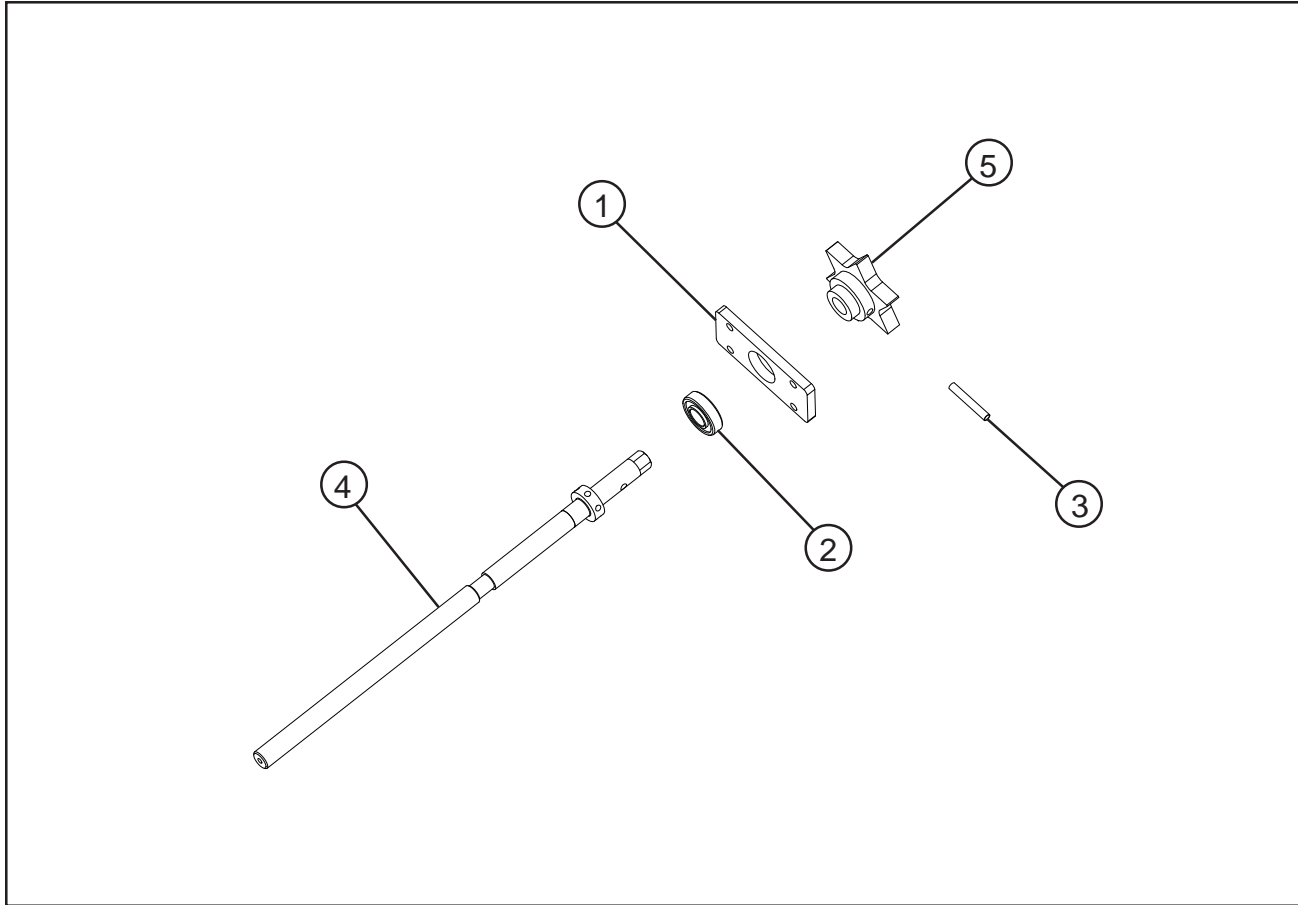
TRIPPER BLOCK ASSEMBLY (P/N 48-0478)



Parts List, Trippler Block Assembly (P/N 48-0478)

Item No.	Part No.	Description	Qty
	14-0044	SHAFT ASSEMBLY, TRIPPER	1
1.	20-0359	SHAFT, TRIPPER	1
2.	33-0030	SCREW, CAP, #10-24 X 3/4"	1
3.	42-0023	KNOB, ROUND	1
3.	30-0125	BALL PLUNGER	1
4.	33-0045	SCREW, CAP, 1/4-20 X 1 3/4"	2
5.	33-0903	SCREW, SET, 1/4-20 X 5/16, HDOG	1
6.	48-0479	BLOCK, TRIPPER	1

FEED SCREW ASSEMBLY (P/N 33-2811)



Parts List, Feed Screw Assembly (P/N 33-2811)

Item No.	Part No.	Description	Qty
1.	24-0728	PLATE, RETAIN	1
2.	29-0182	BRG,BALL,1/2 X 1-1/8 X 3/8	1
3.	32-0043	PIN,ROLL,3/16 DIA X 1-1/4	1
4.	33-2810	SCREW, FEED 1/2-13	1
5.	38-0080	SPROCKET, FEED	1