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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 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

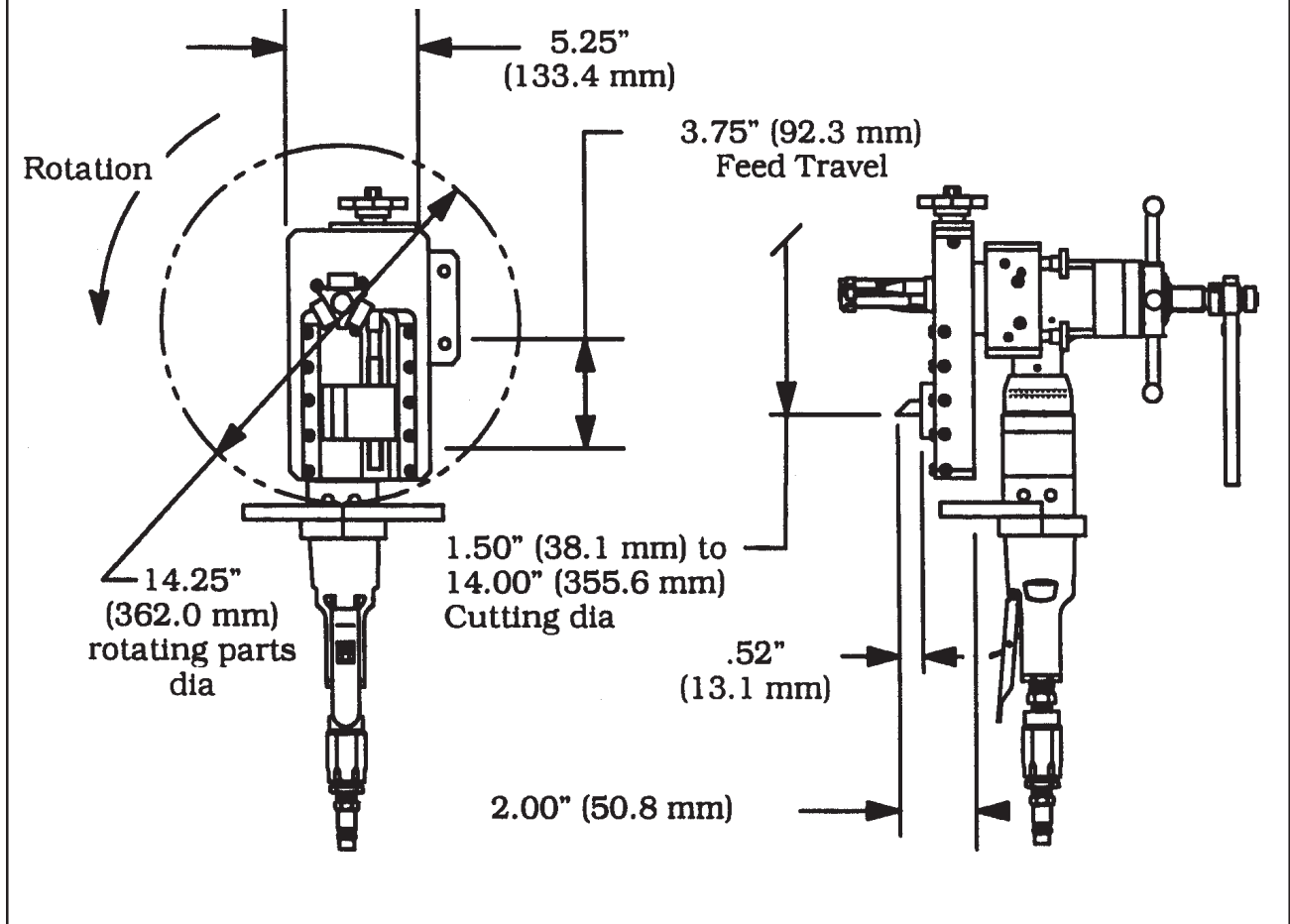
IN GENERAL

The Model 204B-FF, Flange Facer Kit is supplied as a kit to provide the Model 204B BEVELMASTER™ with flange facing capabilities over a cutting range of 1.50" (38.1 mm) to 14.00" (355.6 mm) diameters.

This kit allows a quick, easy field conversion of the Model 204B BEVELMASTER™, from a beveling configuration to a flange facer configuration, and back again as required after modification of the main housing for the tripper block.

SPECIFICATIONS

Envelope, Model 204B-FF, Flange Facer



CUTTING CAPACITIES

Range: 1.50" to 14.00" diameter (38.1 mm to 355.6 mm)

Auto Feed Travel: 3.75" (95.3 mm)

Feed Rate: .013" or .026" per revolution (.3 mm or .7 mm)

Maximum chip width: .200" (5.1 mm)

MATERIALS

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

MOUNTING RANGE

The Mandrel for the Model 204B is used to provide a mounting range from 1.25" (31.8 mm) to 4.33" (110.0 mm) inside diameter.

CLEARANCES (with the Model 204B attached)

Rotating Parts Diameter: 14.25" (362.0 mm)

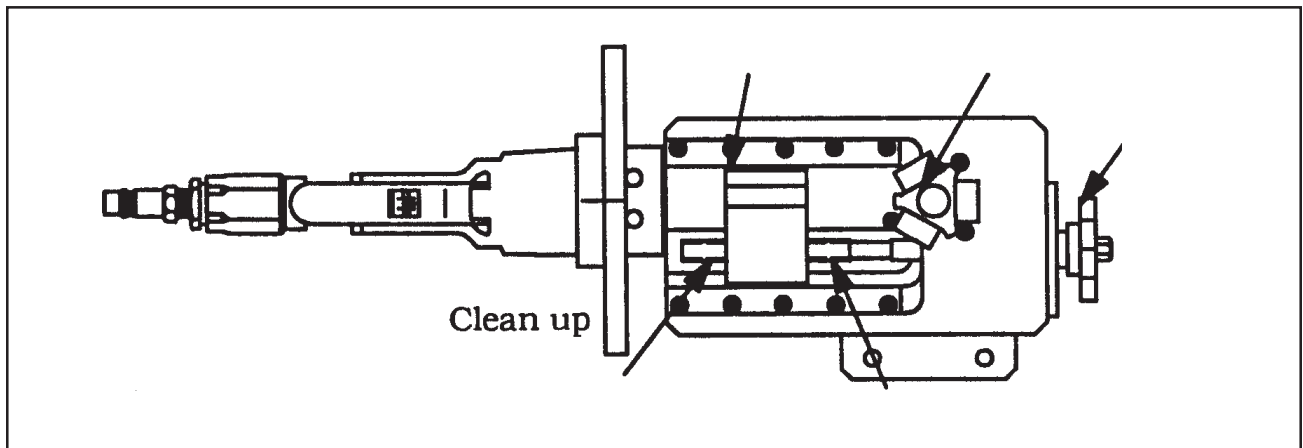
MAINTENANCE

IN GENERAL

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.

If the Model 204B BEVELMASTER™ with the Model 204B-FF Flange Facer is operated in the vertical position (cutting head up), the chips and/or other debris should be removed after each pass 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 operation are removed.

DAILY MAINTENANCE

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

Repair or replace broken or damaged parts as necessary.

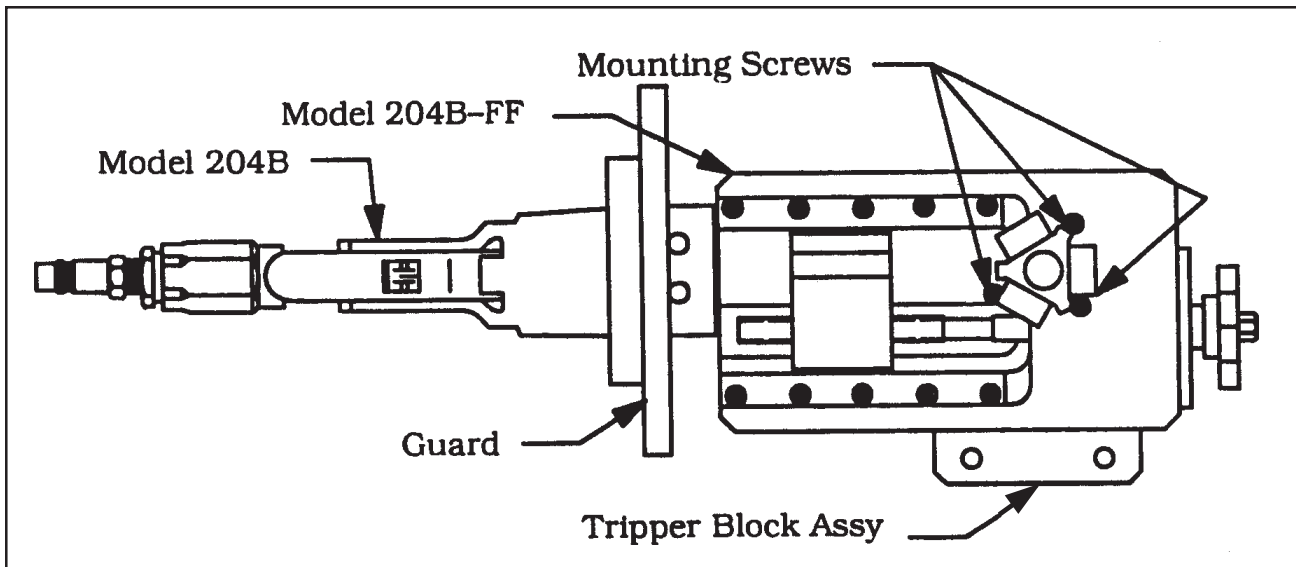
Wipe the machine clean of cutting fluids, dirt and grime and then coat it with a light film of oil.

OPERATION

ATTACHING THE MODEL 204B-FF TO THE MODEL 204B

Remove the cutting head from the Model 204B BEVELMASTER™.

Mount the Model 204B-FF Flange Facer to the 204B BEVELMASTER™ and attach with the three mounting screws provided.



Attach the tripper block assembly to the side of the Model 204B BEVELMASTER™.

Attach guard to the motor assembly.

IN GENERAL

Read the operating instructions carefully before attempting to operate the 204B-FF.

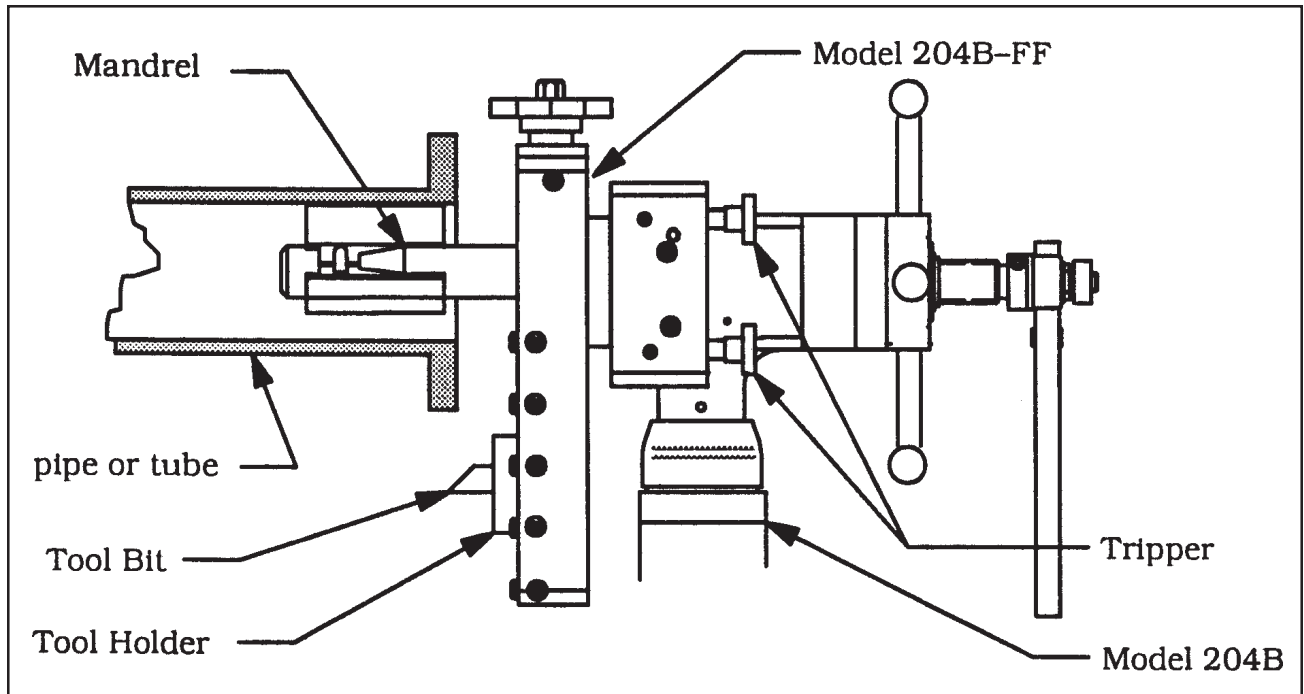
Use eye protection at all times when operating the Model 204B-FF.

INSTALLATION

Configure the machine for the proper task. (Refer to the Model 204B Operator's Manual.)

Attach the Model 204B-FF to the Model 204B.

Position and clamp the Model 204B to the I.D. of the pipe.



Check for the proper position of the tool holder.

Check for the proper position of the tool bit to the flange.

Check the position of the tripper shaft for feed rate.

Attach the proper power supply line to the model 204B.

NOTE:

If using an air driven assembly, use an adequate in-line filter, regulator and lubricator.

MACHINING SEQUENCE

Turn the motor on.

CAUTION:

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.

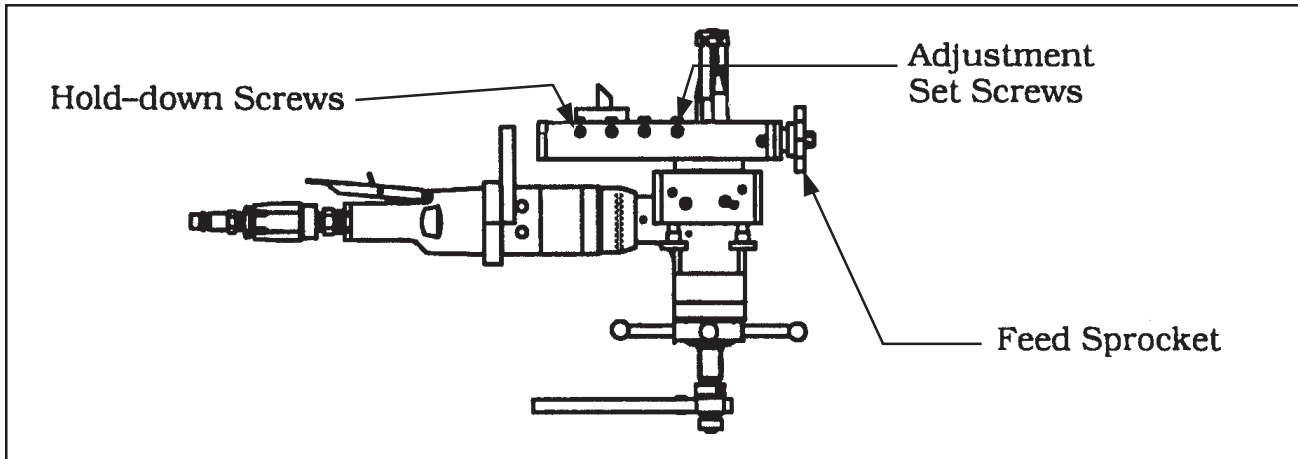
To avoid tool bit damage, the tool bit must clear the highest point of the flange on the first revolution.

After the cut is finished, turn the motor off to stop the Flange Facer rotation.

Loosen the mandrel draw nut and remove the BEVELMASTER™ from the pipe.

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

Replace as required.



POSITIONING OF THE TOOL HOLDER

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

Tool holder feed travel is from O.D. to I.D.

ADJUSTMENT OF THE TOOL HOLDER

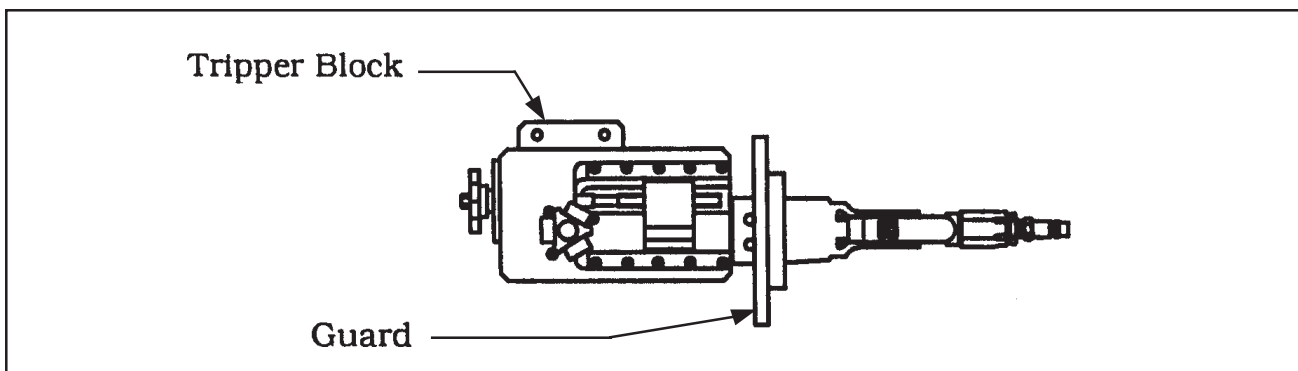
Loosen the hold-down screws on the adjustable slide rail.

Run the tool holder to the most outward position.

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

Adjust only those screws which bear directly in line with the tool holder.

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



Using the 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.

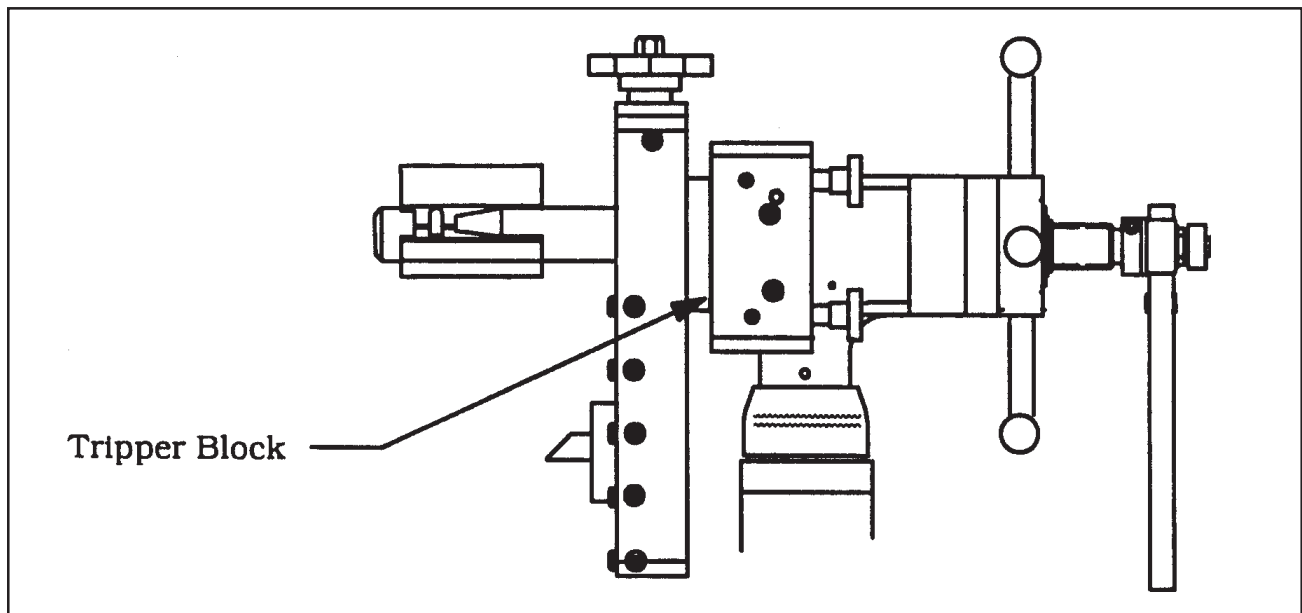
Adjust the remaining adjustment set screws so that the tool holder has a smooth, even feel.

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.

Re-adjust as necessary.



ADJUSTING THE DEPTH OF CUT

Rotate the feed knob on the Model 204B until the desired position is achieved.

Depth of the cut for roughing should not exceed .030".

Finish cut for optimum finishes should be .005" to .015".

Lock the mandrel in place by tightening the torque acceptance keys to the mandrel shaft.

FEED RATE

The feed rate is .013” per revolution per tripper shaft.

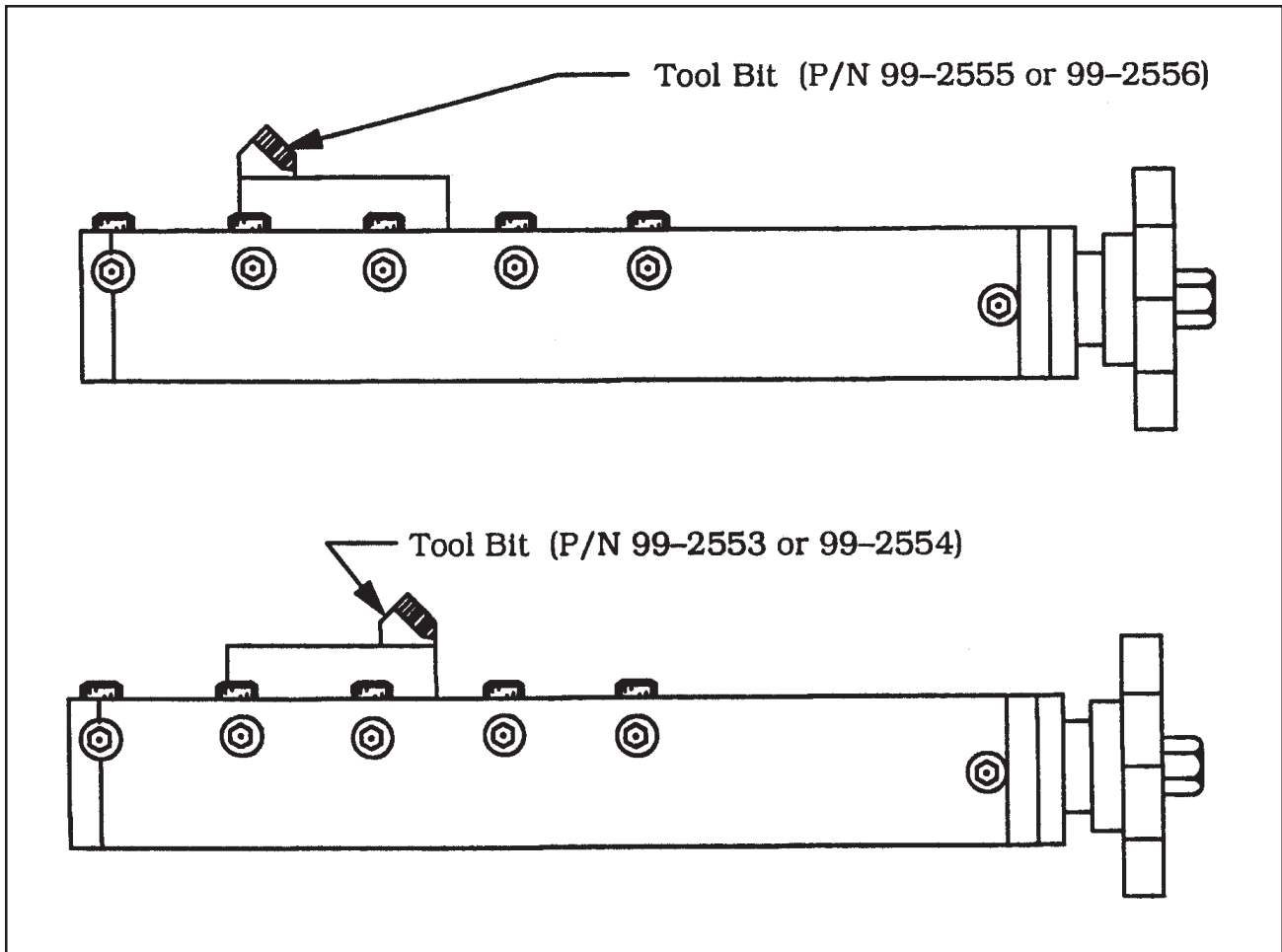
INSTALLATION OF THE TOOL BITS

To select the appropriate tool bits, refer to the tool bit selection chart.

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.

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

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



CUTTING SPEEDS

Use 200 surface inches per minute (5080 surface millimeters 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 (6350 surface millimeters per minute) for:
Mild steels and some thin wall stainless steels when coolants are permitted and
applied.

Use 300 surface inches per minute (7620 surface millimeters per minute) for :
Aluminum and thin-wall mild steel and tube with coolants.

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 Bit feed rate is dependent on the flange material and the type of finish required.

Roughing or record finish: .026" (.7 mm) feed (both trippers engaged).

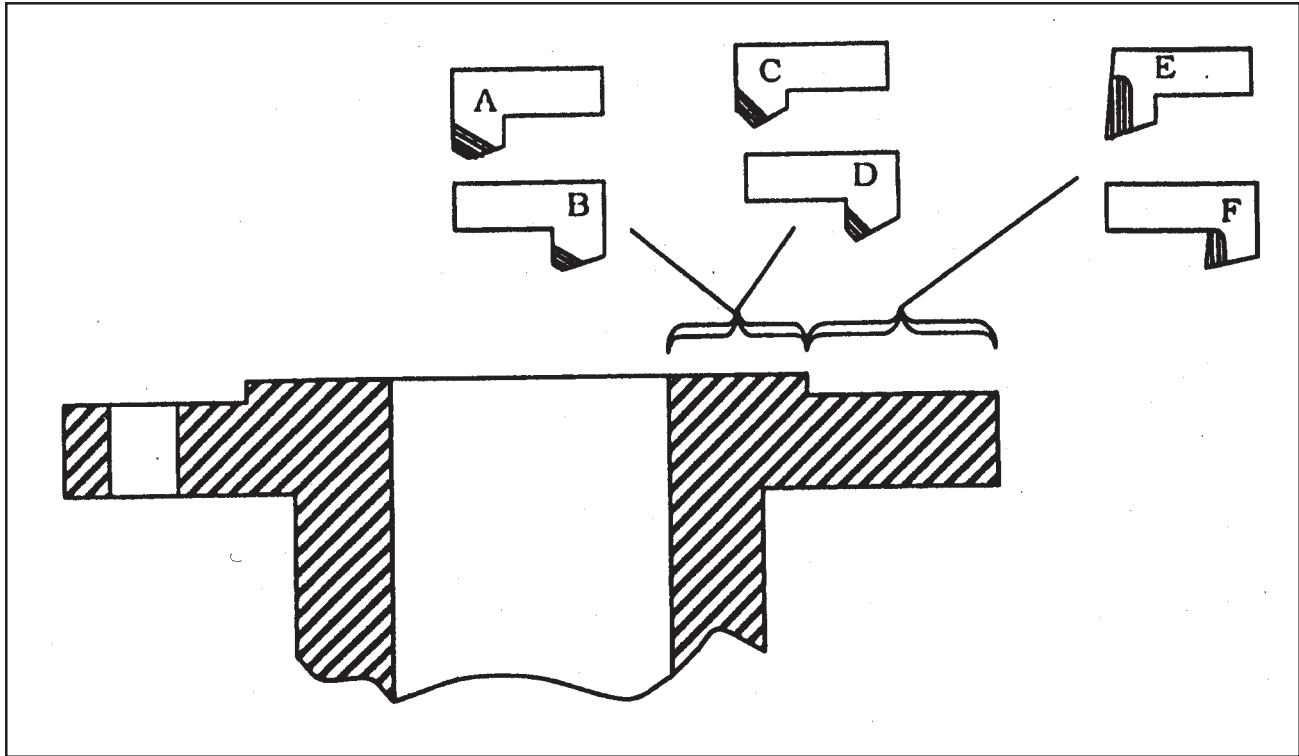
Smooth finish: .013" (.3 mm) feed (one tripper engaged).

DEPTH OF CUT RECOMMENDATIONS

Roughing cut: .030" (.8 mm) maximum depth.

Finish cut: .010" (.3 mm) depth.

TOOL BITS



Tool Bits for use with the Model 204B-FF Flange Facer			
P/N	Figure	Description	Cutting Range
99-2553*	A	Tool Bit, Flange Facing, Inside Record Finish	1.50" to 9.00" dia (38.1 mm to 228.6 mm dia)
99-2554*	C	Tool Bit, Flange Facing, Inside Smooth Finish	1.50" to 9.00" dia (38.1 mm to 228.6 mm dia)
99-2089	E	Tool Bit, Flange Facing, Inside Recessed Face	1.50" to 9.00" dia (38.1 mm to 228.6 mm dia)
99-2555*	B	Tool Bit, Flange Facing, Outside Smooth Finish	4.50" to 14.00" dia (114.3 mm to 355.6 mm dia)
99-2556*	D	Tool Bit, Flange Facing, Outside Smooth Finish	4.50" to 14.00" dia (114.3 mm to 355.6 mm dia)
99-2423	F	Tool Bit, Flange Facing, Outside Recessed Face	4.50" to 14.00" dia (114.3 mm to 355.6 mm dia)
* Supplied with the kit			

TROUBLE SHOOTING

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 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

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.

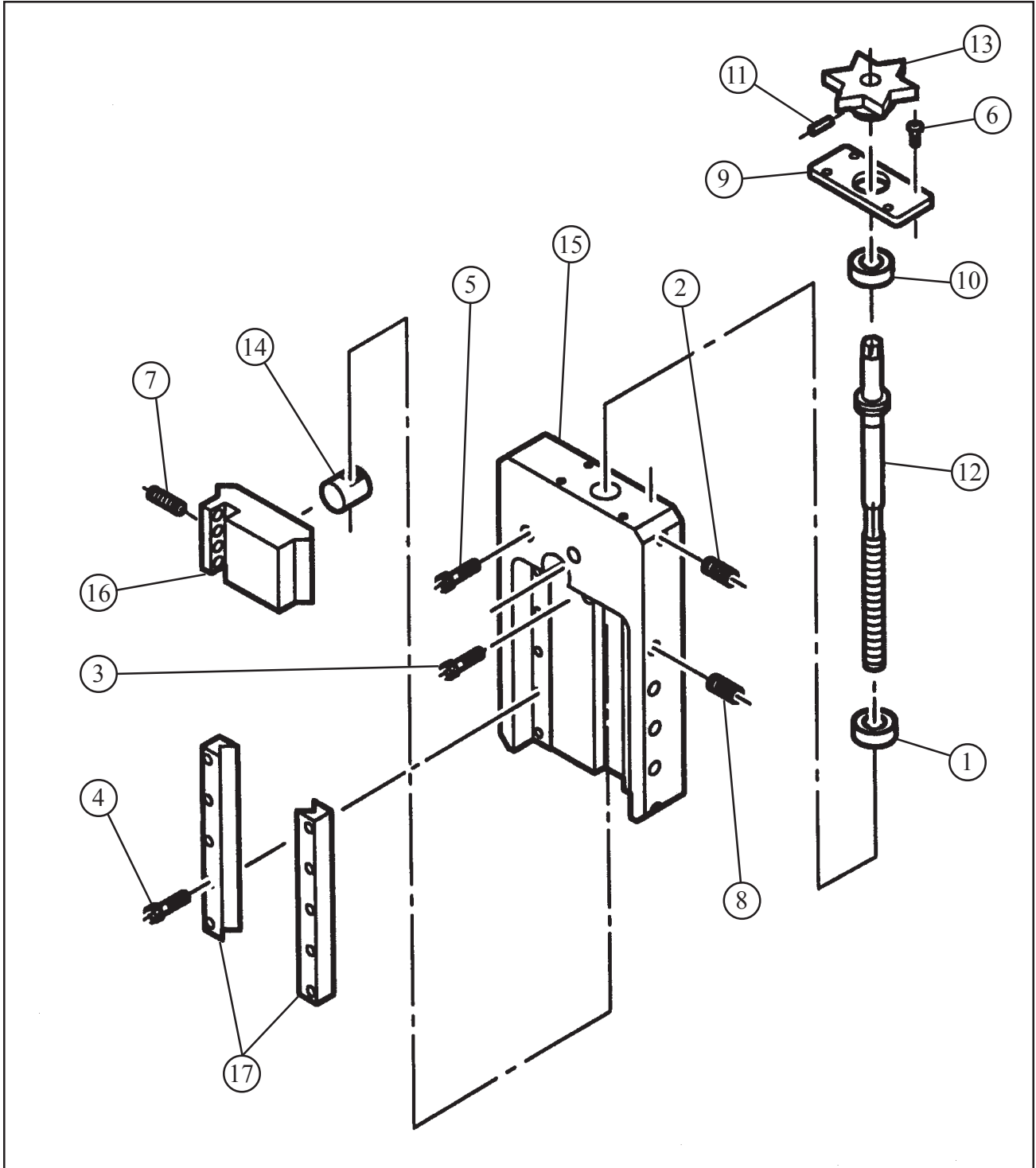
Problem: The hydraulic motor will not start

Probable causes:

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

ILLUSTRATED PARTS BREAKDOWN

MODEL 204B-FF, FLANGE FACER ASSEMBLY

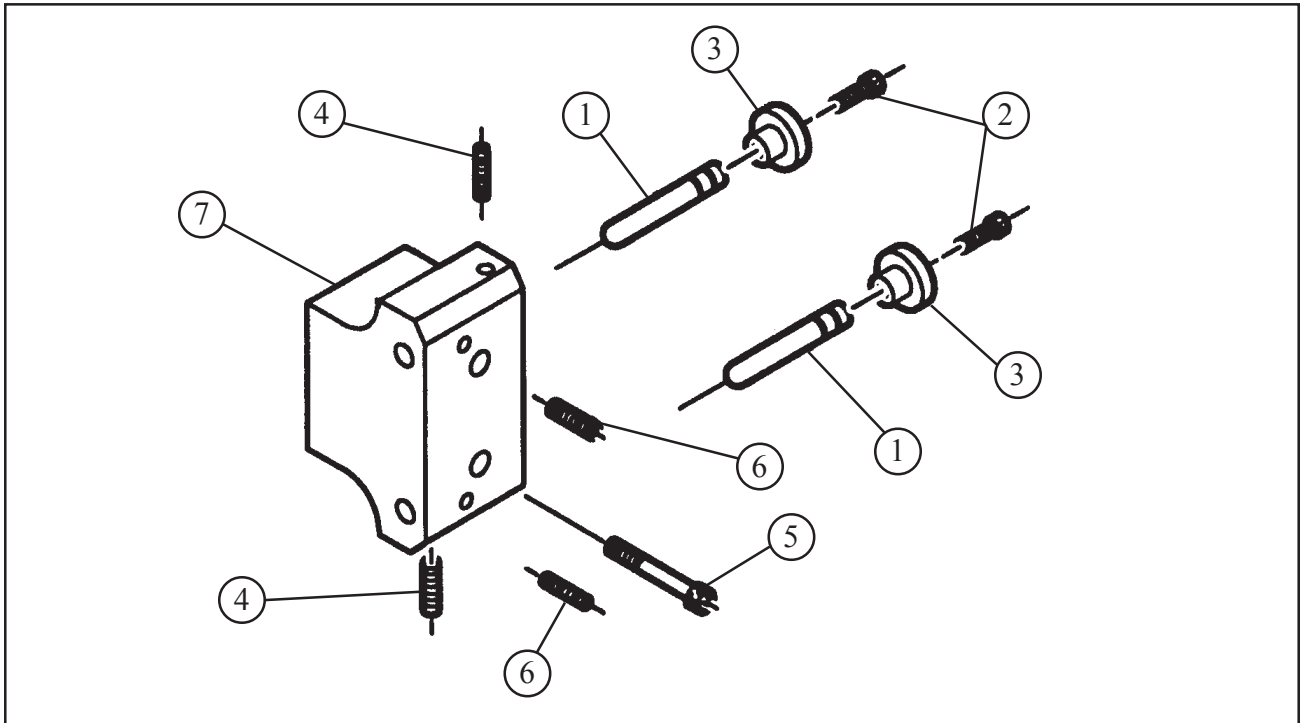


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Parts List, Model 204BB-FF, Flange Facer Assy (P/N 82-0116)

Item No.	Part No.	Description	Qty
1.	29-0182	BEARING, BALL	1
2.	30-0464	PLUNGER, BALL	1
3.	33-0053	SCREW, CAP, 5/16-18 X 5/8"	1
4.	33-0043	SCREW, CAP, 1/4-20 X 1 1/4"	10
5.	33-0058	SCREW, CAP, 5/16-18 X 1 1/2"	2
6.	33-0280	SCREW, BUTTON, #10-24 X 5/8"	4
7.	33-0514	SCREW, SET, 5/16-18 X 3/8", CUP PT	4
8.	33-1369	SCREW, SET, 3/8-24 X 1/2", HDOG	5
	33-1644	SCREW ASSY, FEED, 1/2-13"	1
9.	24-0728	PLATE, RETAINING	1
10.	29-0182	BEARING, BALL	1
11.	32-0043	PIN, ROLL, 3/16 DIA X 1 1/4"	1
12.	33-1643	SCREW, FEED, 1/2-13"	1
13.	38-0080	SPROCKET, FEED	1
14.	35-0266	NUT, FEED	1
15.	47-1107	BRACKET, CARRIER	1
16.	49-0088	HOLDER, TOOL	1
17.	66-0105	RAIL, SLIDE	2
NOT SHOWN:			
	30-0514	BRUSH, CHIP	1
	36-0020	WRENCH, T, 5/32" HEX	1
	36-0021	WRENCH, T, 3/16" HEX	1
	36-0023	WRENCH, T, 1/4" HEX	1
	36-0091	RATCHET, 1/4" DRIVE	1
	36-0144	SOCKET, 1/4" DRIVE, 7/16"	1
	43-0499	GUARD ASSEMBLY	1
	33-0039	SCREW, CAP, 1/4-20 X 5/8"	2
	86-0162	CASE, CARRYING	1

TRIPPER BLOCK ASSEMBLY



Parts List, Bracket Assy, Trippler (P/N 47-1109)

Item No.	Part No.	Description	Qty
	14-0044	SHAFT ASSY, TRIPPER	2
1.	20-0359	SHAFT, TRIPPER	1
2.	33-0030	SCREW, CAP, #10-24 X 3/4"	1
3.	42-0023	KNOB, ROUND	1
4.	30-0125	BALL PLUNGER	2
5.	33-0048	SCREW, CAP, 1/4-20 X 2 1/2"	2
6.	33-0903	SCREW, SET, 1/4-20 X 5/16", HDOG	2
7.	47-1108	BRACKET, TRIPPER	1