

OPERATION MANUAL

WHEELER/REX 6590

Important

For your own safety, best performance and a long tool life.

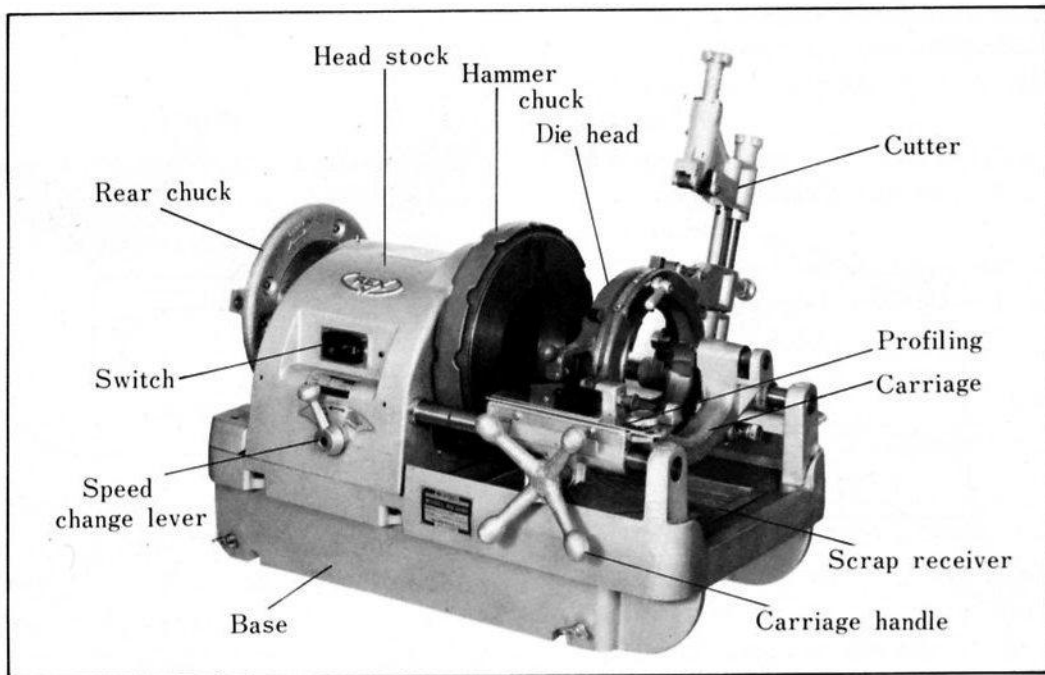
Before assembling and operating this unit, read this Operation Manual carefully and completely.

Learn the operation, application and potential hazards peculiar to this unit.

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Main Parts



Specifications and Accessories

Specifications

Capacity	2½ ~ 6" Carbon steel pipe (threading, cutting, reaming)		
Motor	Single phase 750W condenser motor 120V		
Cutter	Blade type cut off Capacity	Minimum diameter of pipe	2 ²⁷ / ₃₂ " (72 mm)
		Maximum diameter of pipe	6" (170 mm)
		Maximum pipe thickness	½" (13 mm)
Reamer	5 Flute cone		
Chuck	Hammer type chuck (replaceable jaw inserts)		
Oil pump	Gear-type		
Speeds	22 r.p.m. (cutting, reaming) & 7 r.p.m. (threading)		
Weight	Net weight 421 lbs. (191 kg). Shipping weight 498 lbs. (226 kg)		

Standard Accessories

Die heads	2½ ~ 4", 5 ~ 6" one each
Dies	2½ ~ 4", 5 ~ 6" one set each
Screwdriver	1 pc. phillips head
Hexagonal keys	3, 4, 5, 6, 8 mm one each

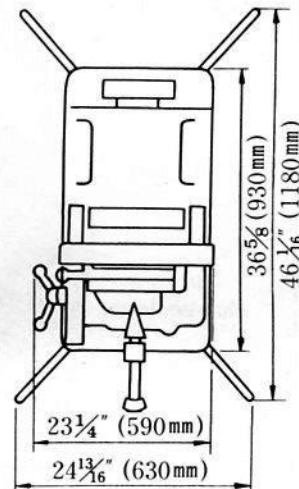
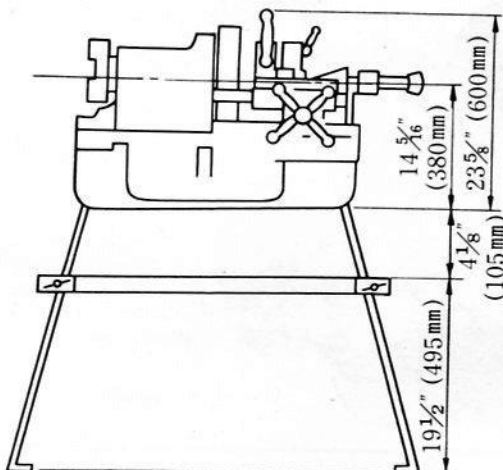
Tool box	1 pc.
Adjustable wrench	200 mm 1 pc.
Stand	4 legs
Machine cover	1 pc.
Thread cutting oil	4 liters (1 can)
Foot switch	1 pc.

Optional Accessories

Die heads	Bevel/Groove (2½ ~ 4"), Bevel/Groove (5 ~ 6")
Dies	Grooving (2½ ~ 3½") (4") (5 ~ 6") Beveling (2½ ~ 4"), (5 ~ 6")

Cap for profiling board (Required for grooving & beveling)

Pipe support



Safety Precautions

For Your Own Safety Read Instruction
Manual Before Operating Tool
Wear Eye Protection

1. Know Your Machine

Read the Operation Manual carefully. Learn the operation, application, and limitations as well as the specific potential hazards peculiar to this machine.

2. Avoid Accidental Starting

Make sure that FWD/OFF/REV Switch is in OFF and Foot Switch operates freely before plugging in.

3. Never Leave Tool Running Unattended

Turn power OFF. Don't leave tool until it comes to a complete stop.

4. Remove Tools & Rags from Machine

Form habit of checking to see that machine is clear of wrenches, other tools and rags before starting.

5. Support Work

Support long, heavy work from the floor with a pipe support.

6. Secure Machine

Securely tighten Chuck Handwheel and Rear Chuck on work. Make sure that machine and stand are stable.

7. Wear Proper Apparel

Wear safety shoes, hard hat, and safety goggles. No loose clothing (unbuttoned jackets or loose sleeve cuffs) or jewelry to get caught in moving parts.

8. Never Stand on Tool

Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.

9. Do not Overreach

Operate machine from Hand Switch side only. Keep proper footing and balance. Be sure foot can be removed safely from Foot Switch at all times. Do not reach across machine and keep hands, body and tools away from moving parts.

10. Maintain Machine in Top Condition

Use sharp cutting tools and keep machine clean for best and safest performance. Follow lubricating instructions.

11. Check Damaged Parts

Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function -- check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

12. Keep Work Area Clean

Cluttered areas, benches, and slippery floors invite accidents.

13. Avoid dangerous environment

Don't use the machine in damp or wet locations. Keep work area well illuminated. Allow sufficient space to operate machine and accessories properly and for others to pass safely.

14. Direction of Feed

Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.

15. Keep Visitors Away

All visitors and children should be kept a safe distance from work area.

16. Use Recommended Accessories

- Use only those accessories and attachments that are recommended in this instruction manual.
- The use of any other accessory or attachment might increase the risk of injury to persons.
- Be sure that any accessory or attachment is used only in the proper and intended manner as described herein.

17. Use Right Tool

Don't force tool or attachment to do a job for which it was not designed.

18. Disconnect Power Cord

When adjusting, servicing or changing accessories. Cord should be in top condition and examined at regular intervals.

19. Don't Force Machine

It will do the job better and be safer at the rate for which it was designed.

20. Grounding Instructions

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

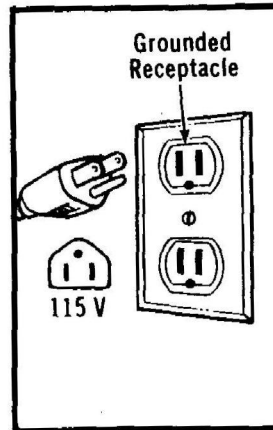
Repair or replace damaged or worn cord immediately.

21. Grounded,

This tool is intended for use on a circuit that has an outlet that looks like the one illustrated. The tool has a grounding plug that looks like the plug illustrated.

22. Ground Machine

This machine should be grounded while in use to protect the operator from electric shock. The machine is equipped with an approved three-conductor cord and three-prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire. Never connect the green wire to a live terminal.



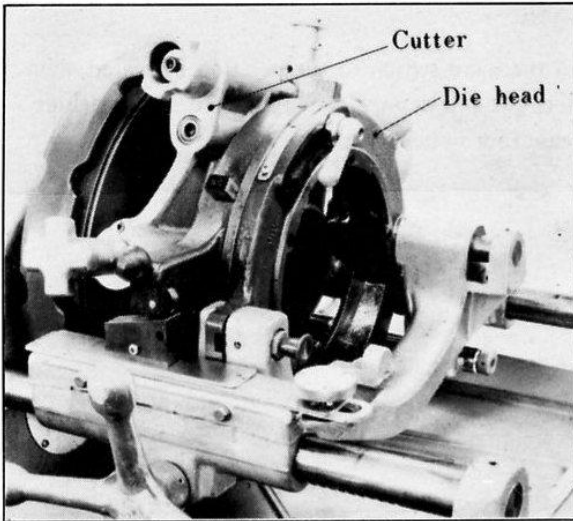
23. Always Use Safety Glasses

Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

Operating Voltage

Be sure that supplied voltage is the same as the voltage the motor is wired for and rated at ($\pm 10\%$).

1. A DC power supply would cause irreparable damage to the condensers so it is recommended that only an AC supply be used.
2. If the machine is being used with a generator, ensure that sufficient power is being supplied and at the exact voltage specified on the name plate.
3. An extension cord which is too long will result in a serious voltage drop. Input voltage should be at rated voltage $\pm 10\%$ at the machine (not at a remote power outlet). If an extension cord is used it should be as short as possible and of heavy wire gage.



Preparation

WARNING:

OPERATOR SHOULD BE THOROUGHLY FAMILIAR WITH PRECEDING SAFETY PRECAUTIONS BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT.

Precautions When Moving The Machine

When moving the machine to another location, please be sure to carry out the following instructions to prevent the carriage from moving and damaging the dies or causing injury.

1. Grip short pipe in the hammer chuck.
2. Set the die head in the threading position.
3. Open the dies fully.
4. Bring the reamer arm down and lock in reaming position. Advance the reamer into the pipe.
5. Move the cutter down onto the pipe and grip the pipe by closing the cutter handle.

WARNING

Do not handle the support bar when moving the machine.

Castors are available to facilitate transport and it is recommended that these be used at all times.

There is no need to drain the oil tank when moving the machine as its design ensures splash-free use at all times.

Setup Instruction

1. Mount machine on legs.

NOTE:

1. The unit should be installed so that the rear chuck side is a bit higher than the other, this will keep oil from flowing into the pipe during operation.
2. Insert legs into base and tighten wing screws securely on all four legs.

Operating Guide

Checking Oil System

1. Raise pipe cutter, reamer and die head.
2. Fill tank about 2/3 full with REX 246 thread cutting oil or a good grade cutting oil. (Approximately 1-1/3 U.S. quarts.)

NOTE:

Check that there is no oil leakage from drain plug.

3. Connect power cord to power supply.
4. Place switch in fwd. position.
5. Press down foot switch to start machine.
6. When die head is lowered into threading position, cutting oil flows from hole in die head. (Oil comes out of carriage drain and when no die head has been installed oil comes out of die head installation hole on carriage.)

Priming Oil Pump

1. Remove scrap receiver and tank upper cover from base.
2. Remove oil intank line suction tube from strainer and hold upright.
3. Using an oiling device, pressure fill with cutting oil through oil intank line suction tube (held upright) and start up motor.
4. Repeat No. 3 several times.

WARNING:

When starting up motor, be especially careful not to get hands or parts of clothing caught in chuck jaw or other moving parts of machine.

5. When cutting oil finally flows out, place tank upper cover and scrap receiver in position on base.

NOTE:

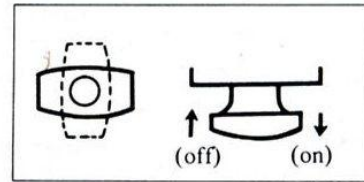
In the case of a forward and reverse motion machine, before carrying out the instructions above, switch over several times between FWD. and REV. position.

WARNING:

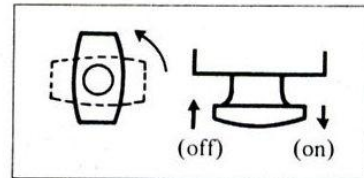
When power is plugged in, do not attempt to install upper tank cover and scrap receiver.

Switch positions

1. Forward rotation

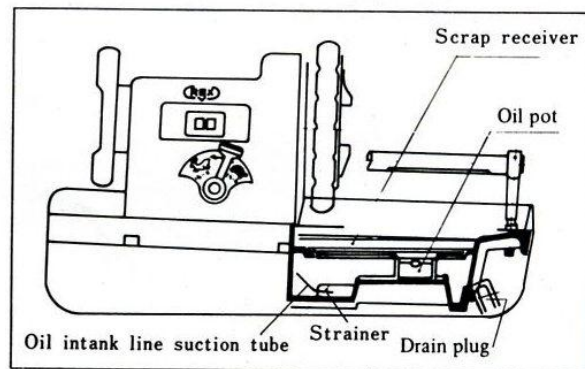


2. Reverse rotation



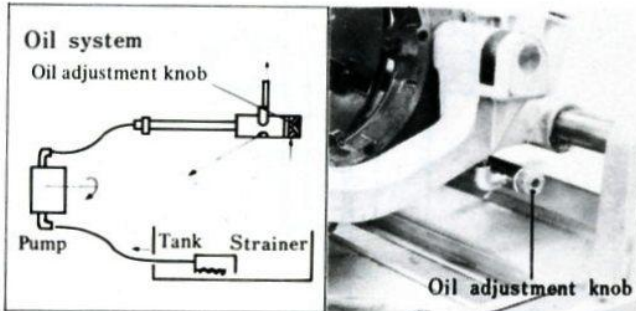
Forward and reverse are operated by hand switch. Cutting oil is supplied for both directions

Turn the hand switch to the position indicated, then pull it out and depress foot switch to start machine. Release foot switch to stop.



3. Threading

1. Raise cutter out of the way and lower the die head into contact with the profiling board. When the die head is securely engaged, press foot switch to start.
2. Be sure the pipe is rotating forward. Turn the carriage handle clockwise to advance the die head toward the pipe. Check that oil is flowing from the die head before starting to thread. (See oil adjustment knob.)

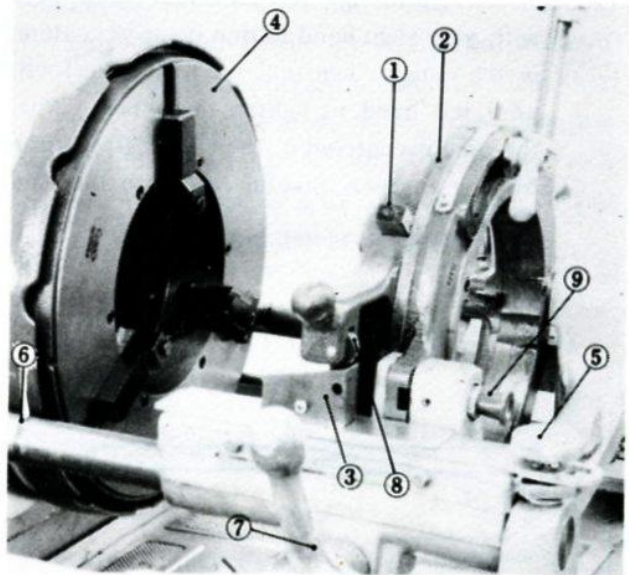


3. Apply clockwise pressure on the carriage handle until the dies engage the pipe to a distance of three or four threads.
4. From this point the carriage handle may be released. A standard taper thread will be cut automatically. When the die head roller drops down over the end of the profiling board the dies will open and the thread is complete.
5. After threading, stop the machine. Retract carriage until die head clears pipe, pull die head lock knob and raise die head to rest position.

4. Precautions for Threading

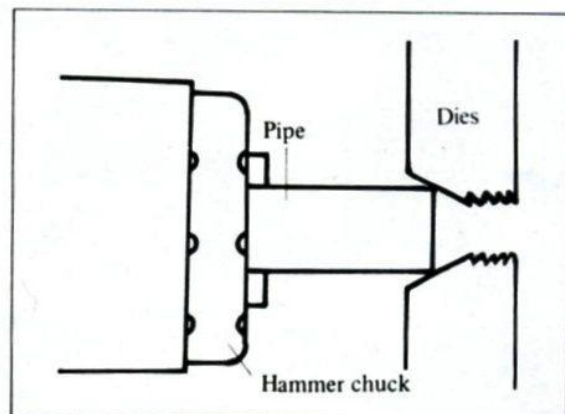
1. As the dies come into contact with the pipe, the carriage handle should be turned with gradually increasing strength until the dies are biting firmly. After the dies fully engage the pipe they will travel smoothly by themselves, but optimum cutting will be assured if the carriage handle is turned with slight pressure to keep pace with die movement.

2. Be sure to start threading with the carriage right of the red line on the front support bar. If threading starts left of the red line the die head can strike the chuck and damage the machine.



- | | |
|-----------------------|-----------------------|
| 1. Die | 6. Red line |
| 2. Die head | 7. Carriage handle |
| 3. Profiling board | 8. Die head roller |
| 4. Hammer chuck | 9. Die head lock knob |
| 5. Thread length dial | |

3. Setting short pipe (which does not reach the rear chuck). With the hammer chuck slightly loose, move the pipe into contact with the dies as shown. This will help hold the pipe on center while the hammer chuck is tightened.

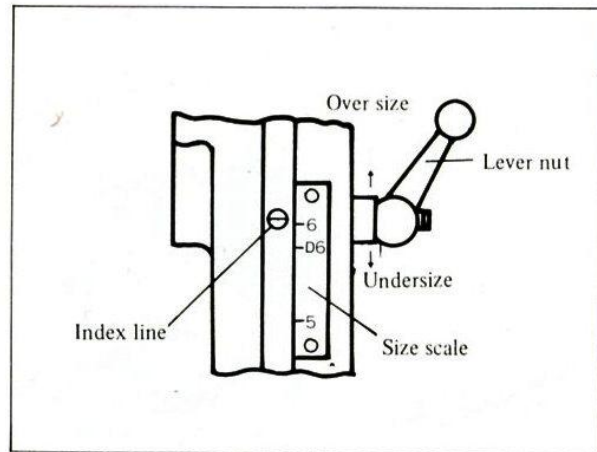


1. Setting Pipe

1. Open the rear chuck and hammer chuck wider than the pipe diameter and insert the pipe from the rear chuck side.
2. After tightening the rear chuck, hold pipe with your right hand so that it can be centered in the chuck, then pull the hand wheel with your left hand to tighten the chuck. When the pipe is centered in the chuck, fit it firmly by one or two forceful pulls on the hand wheel.

2. Preparation for Threading

1. Install the correct set of dies in the die head and fit the die head on the carriage.
2. Loosen the lever nut and set the index line to the desired thread size. Refasten the lever nut to lock in position.

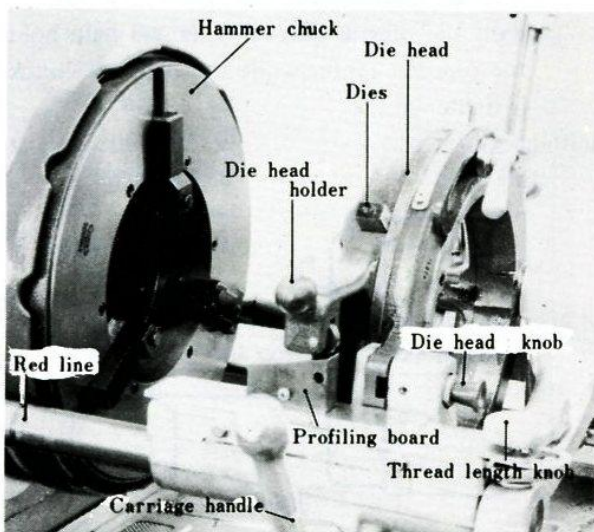
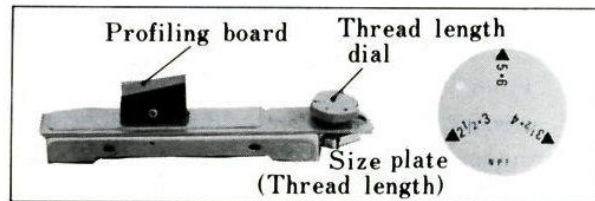


3. For long lengths, support the end of the pipe with an adjustable pipe support.

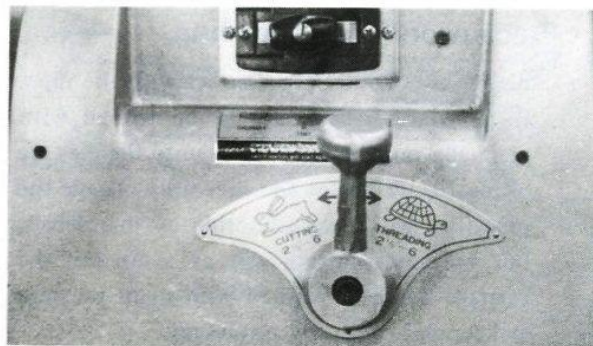
Installation suggestion

The unit should be installed so that the rear chuck side is a bit higher than the other. This will keep oil from flowing into the pipe during operation.

Set the thread length dial for the pipe to be cut.



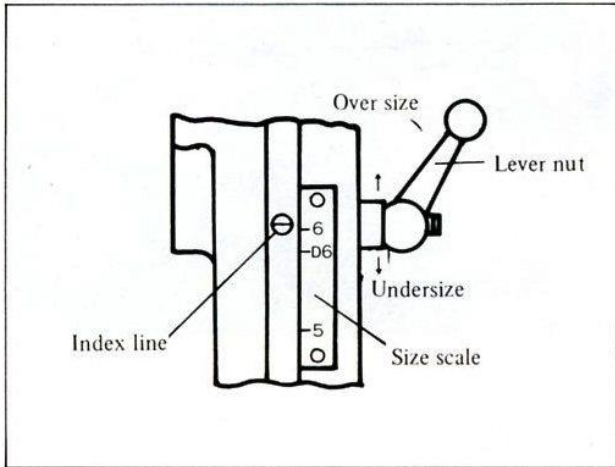
4. Set the speed change lever for the pipe size indicated.



5. Adjustment of Threading Size

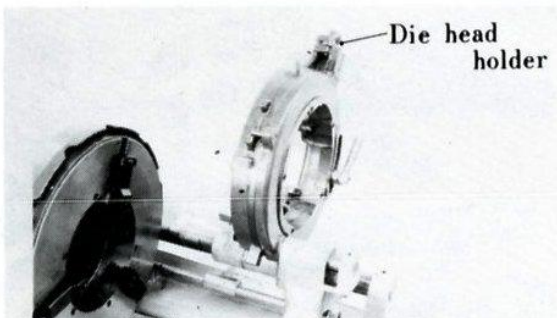
The size scale position has been calibrated at the factory. Recalibration may be done, if necessary, as follows:

1. Make 2 or 3 trial threads to determine correct size. Lock lever nut at this position.
2. Loosen screws at each end of size scale and shift scale so that the size mark lines up with the index line. Retighten screws.



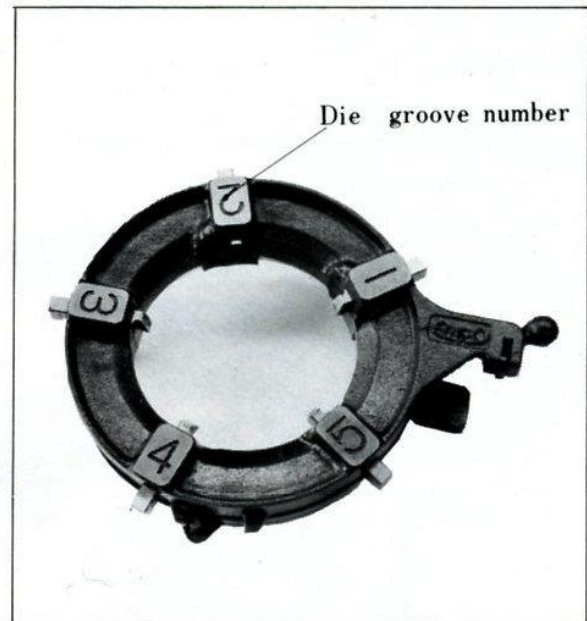
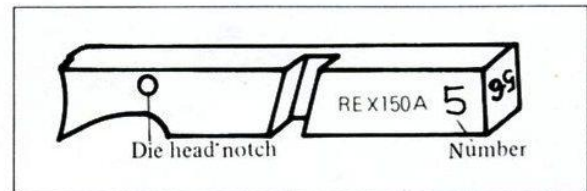
6. Die Removal

1. Loosen the die head lever nut; move it to the far edge. Tighten it lightly.
2. Move the profiling board to the right until the die head roller touches the base. Now dies 1 and 2 can be removed.
3. Next pull out the die head lock knob and raise the die head.
4. Rotate the die head body part of the die head forward and dies 3, 4, and 5 can be removed.



7. Die Installation

1. Follow steps from previous section in reverse.
2. Insert dies into the corresponding slots in the die head. Be careful about die insertion: if it is incorrect, optimum threading will be impossible. When a die is installed to the correct depth in the die holder slot a detent will engage the detent notch. The die is then properly positioned. Since the dies are matched as a set, be sure to use them as a set. When one die is to be exchanged, change the rest to avoid damaged threads.

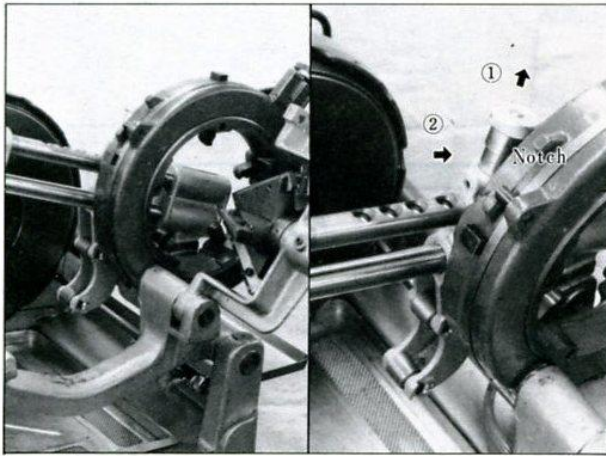


8. Pipe Cutting

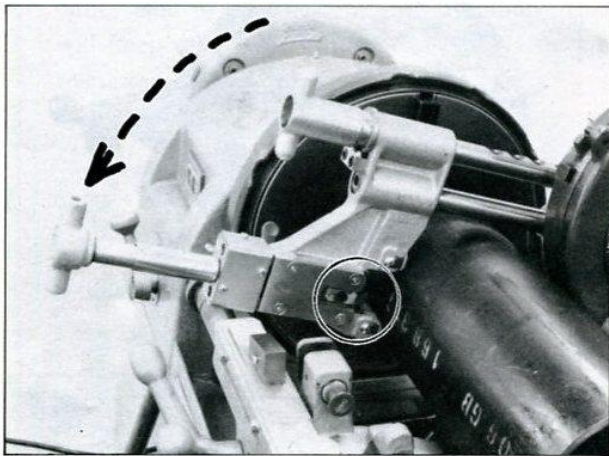
For cutting or reaming set the speed change lever to the fast (Rabbit) position. Be sure to ream after cutting.

Cutting Pipe

1. Raise the die head and reamer out of the way.
Release the guide setting knob and engage in the last notch as shown in figure 1.

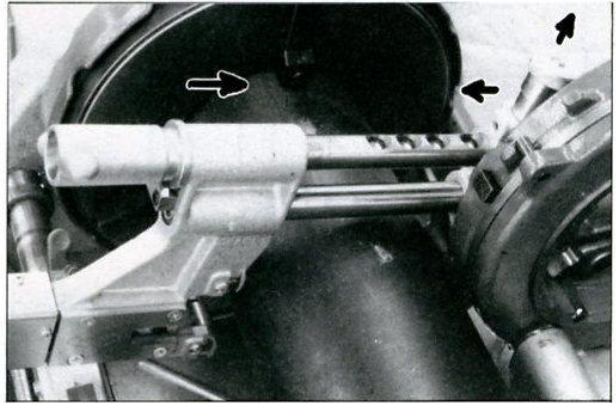


2. Check that the blade is fully opened and lower the cutter onto the pipe.

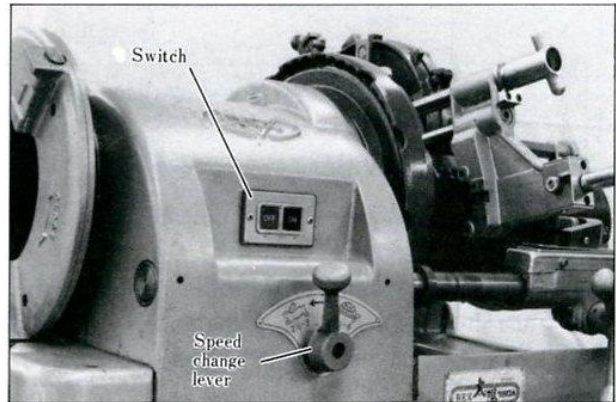


3. Push the frame to bring the rollers into contact with the pipe.
Set the guide in the cutter support bar to match the pipe size.

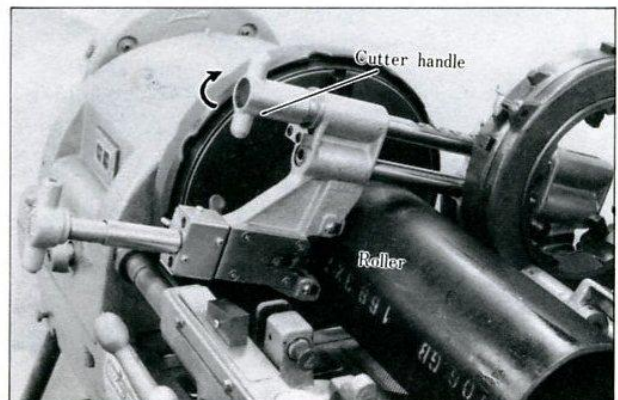
Check that the knob is firmly engaged. If the guide doesn't engage, turn the cutter handle to the left to open the cutter wider than the diameter of the pipe and reset correctly.



4. Switch the unit on and set the speed change lever to the "Rabbit" position.

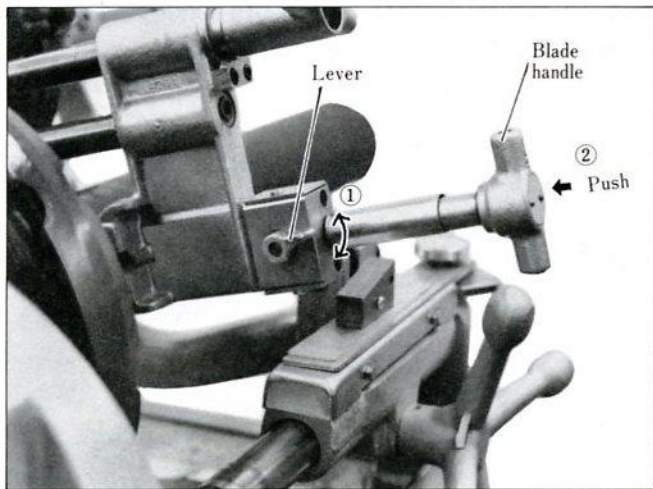


5. Tighten the cutter handle so that the rollers grip the pipe firmly.

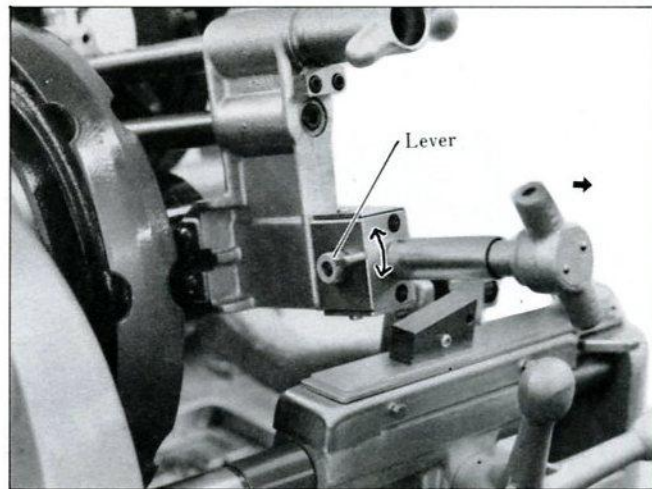


6. Depress lever until it is parallel with the blade handle.

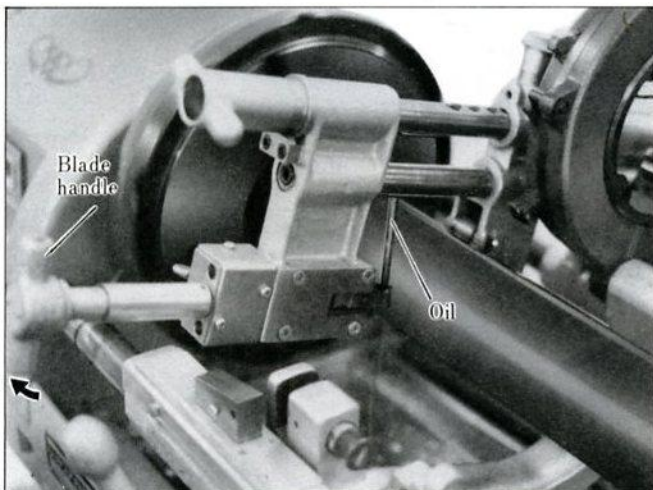
Keep one hand on the lever while you push the blade handle gently, until the cutter is almost touching the pipe.



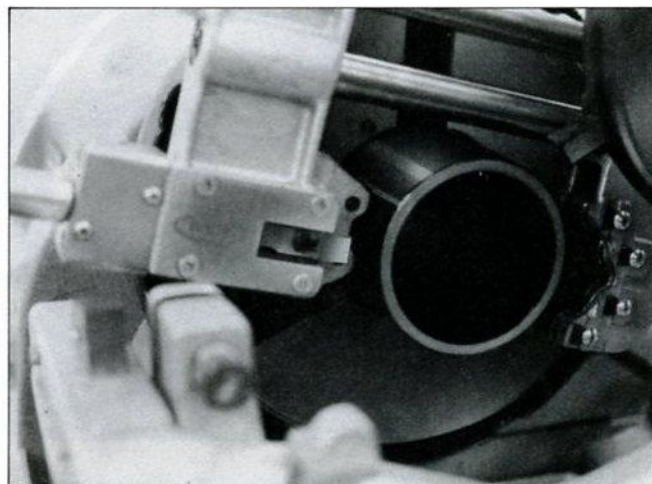
8. Don't be tempted to speed up advancement of the blade when the pipe is almost cut through, irregularities in the inner diameter of the pipe may damage the blade.



7. While the pipe is turning, turn the handle 1/4 of a revolution for every single revolution of the pipe being cut. Continue to turn the handle 1/4 of a revolution for each subsequent revolution of the pipe being cut until the pipe is completely cut.



9. After pipe has been cut, depress lever, and the cutter will return to its starting position.



Replacing the Blade

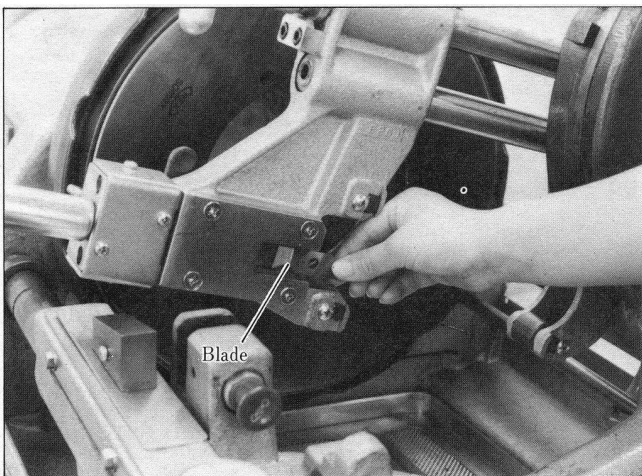
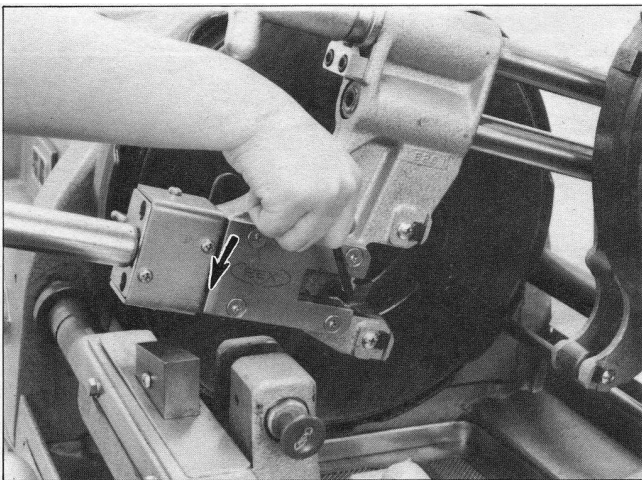
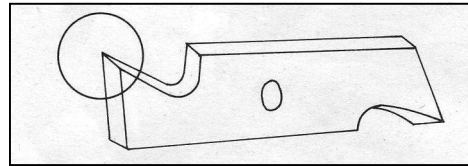
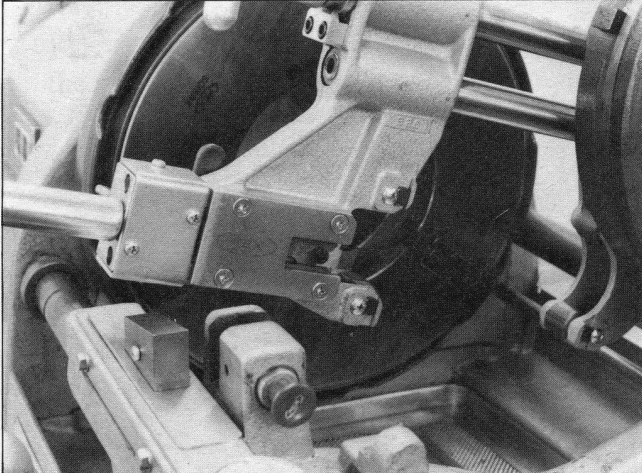
WARNING:

Sharp blades can be dangerous.

Slacken the blade set bolt and remove the blade. Insert new blade, tighten blade set bolt, and new blade is ready for use.

(NOTE)

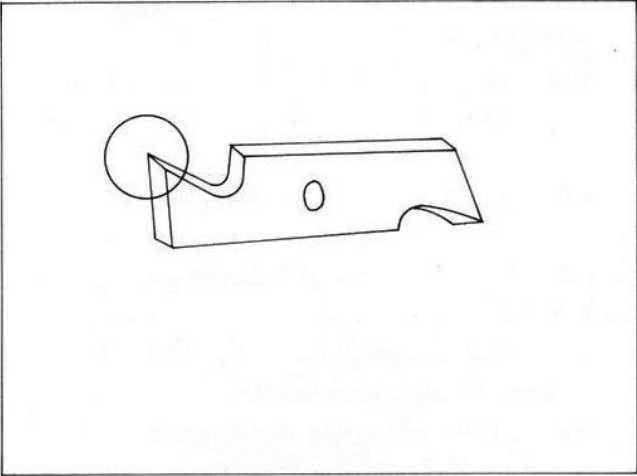
Each blade has two cutting edges, so check the other edge before replacing a used blade with a new one. When replacing a blade, be sure to insert it with the tooth facing in towards the cutter support bars.



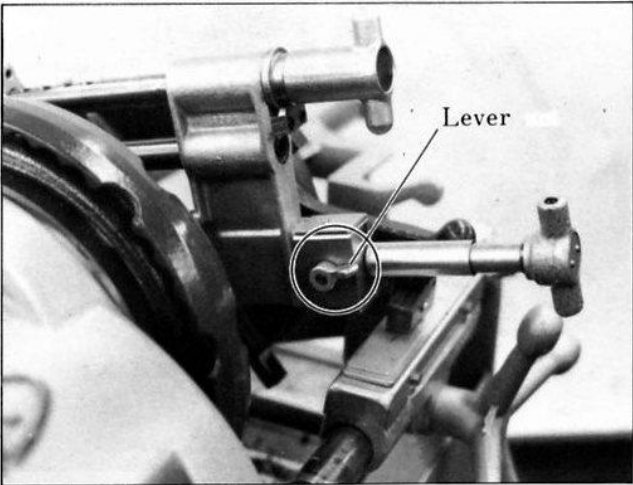
Reasons for Imperfect Cutting of Pipe

Turning of the handle does not produce a cutting of the pipe because:

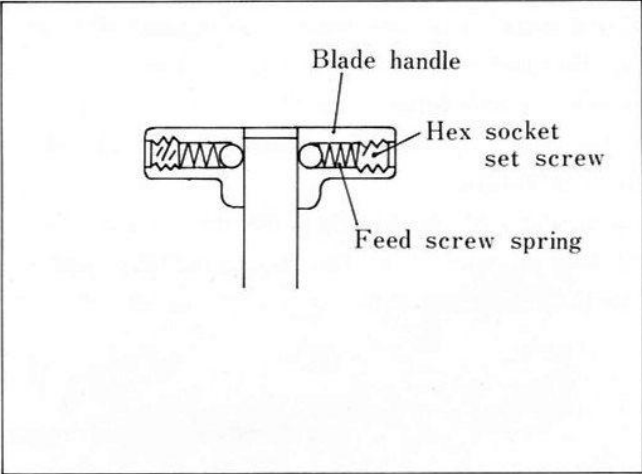
A. The blade is blunt.



B. Lever is not in correct position.



C. The steel ball inside the handle is out of position, causing the 'T-shaped head' to revolve whilst the 'long' part of the handle remains stationary.



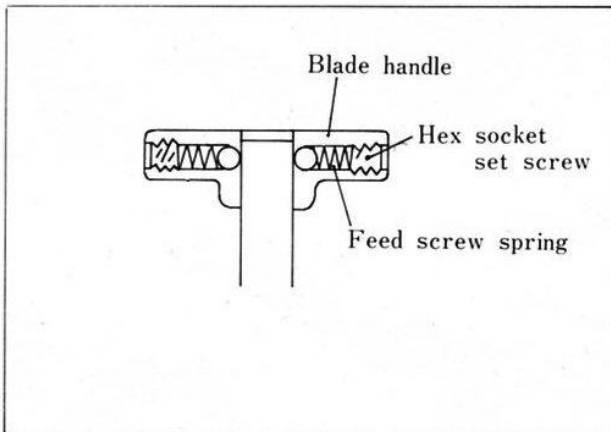
Adjustment of Handle

The handle is automatically set to move only a 1/4 of a revolution for every complete revolution of the pipe.

Should the handle move less than a 1/4 of a revolution, turn the hexagonal key clockwise in the handle once or twice, and check if the handle again moves a 1/4 of a revolution.

It may be necessary to repeat this process a few times before the handle moves the correct 1/4 of a revolution.

(Note: Should the handle move more than a 1/4 of a revolution, turn the hexagonal key anti-clockwise in the handle once or twice, etc, etc.)

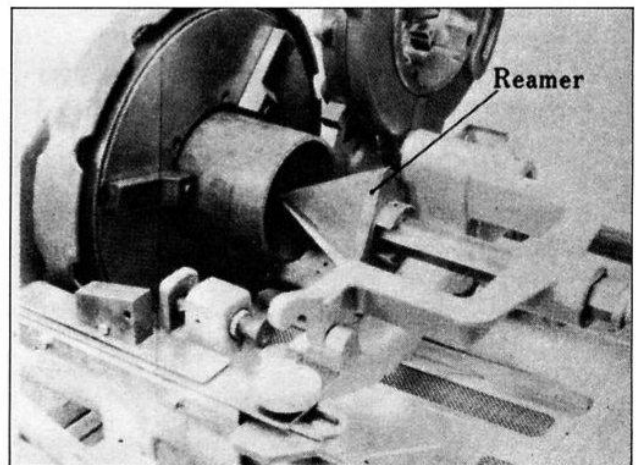


9. Reaming

1. Raise die head and cutter out of the way and set the speed change lever to the fast position. Lower reamer arm and push the reamer bar toward the pipe, locking the bar in position with 1/4 turn.
2. Start the machine and turn the carriage handle clockwise to feed the reamer into the pipe.
3. When reaming is complete turn off the machine, retract the reamer bar and raise the reamer arm into the rest position.

WARNING:

If reaming is carried out with the die head, lowered (in the thread cutting position) the reamer cone will touch the dies and some damage will occur.



Maintenance

WARNING: ALWAYS UNPLUG POWER CORD BEFORE SERVICING MACHINE.

1. Cutting Oil System

1. Be sure oil flows freely. See that there is enough oil in the tank and all oil lines are free from obstructions.
2. If oil becomes discolored or contaminated, drain the tank and refill with fresh cutting oil.
3. Clean oil pot after each 8 to 12 hours of actual use.
4. During thread cutting operations, small chips from the threads will accumulate in the tank so efficient cleaning is essential to ensure proper operation of threading machine.

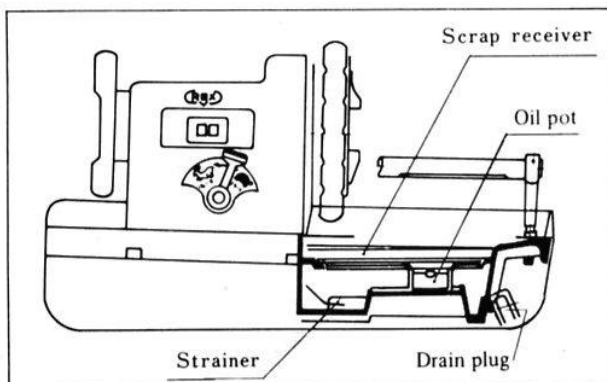
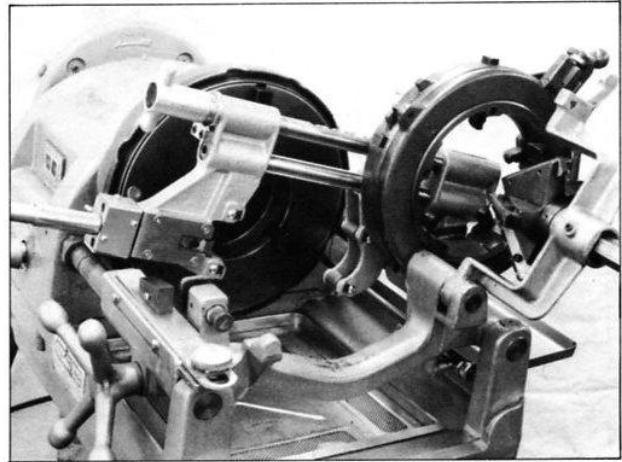
Keep oil system clean as follows

- 1) Drain oil and check for contamination.
- 2) Remove and clean scrap receiver, tank upper cover, oil pot and strainer, and clean the oil tank.

If the oil system is kept clean, this will prolong the working life of the gear-pump.

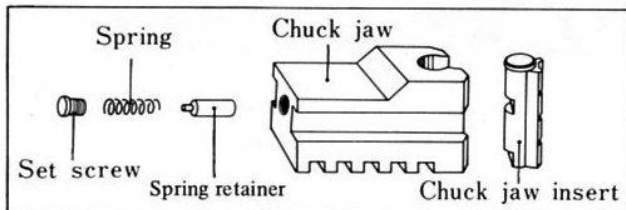
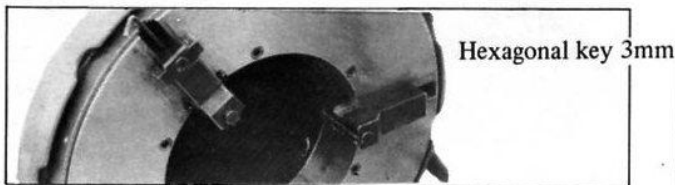
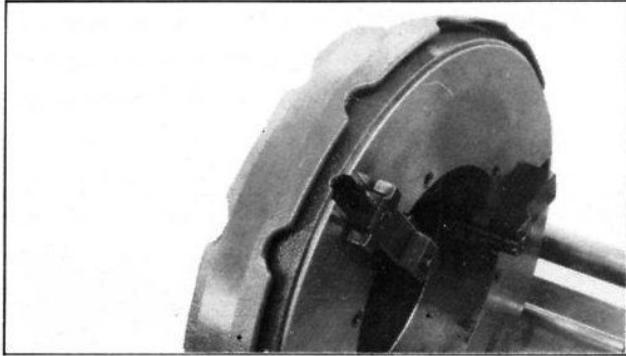
2. Pipe Cutter

1. Check cutter wheel and replace if dull or damaged.
2. Clean and oil the feed screw and cutter roller.
3. Check alignment of cutter frame feed screw, roller pins and cutter pin.
4. Clean and lubricate cutter wheel & cutter pin. Lubricate cutter wheel pin with a thick, heat resistant oil additive such as Bardahl, S.T.P. or equiv.



3. Chuck Jaw Inserts

If chuck jaw inserts show significant wear or damage replace them all not just one or two. Be sure to line up the chuck jaw in the correct position on the handwheel.



Removal of Chuck Jaw Inserts

1. Remove hex socket set screws with hexagonal key.
2. Remove springs and spring retainers.
3. Take out chuck jaw inserts.

Installation of Chuck Jaw Inserts

1. Put new chuck jaw inserts in position.
2. Install spring retainers, then springs.
3. Install hex socket set screws.

CAUTION:

Screw in hex socket set screws till they turn no further.

4. Hand wheel Chuck

Check that all chuck mounting screws are tight.

5. Reamer

Clean and lightly oil reamer cone and shaft.

6. Die Head and Dies

1. Clean die head and dies.
2. Check dies for broken teeth or pipe material between teeth.

7. Main Shaft

Lubricate bearings for hollow spindle through the two grease nipples in the head stock.

