

OPERATION MANUAL
WHEELER/ REX 6790

Ref.No. 199110

Important

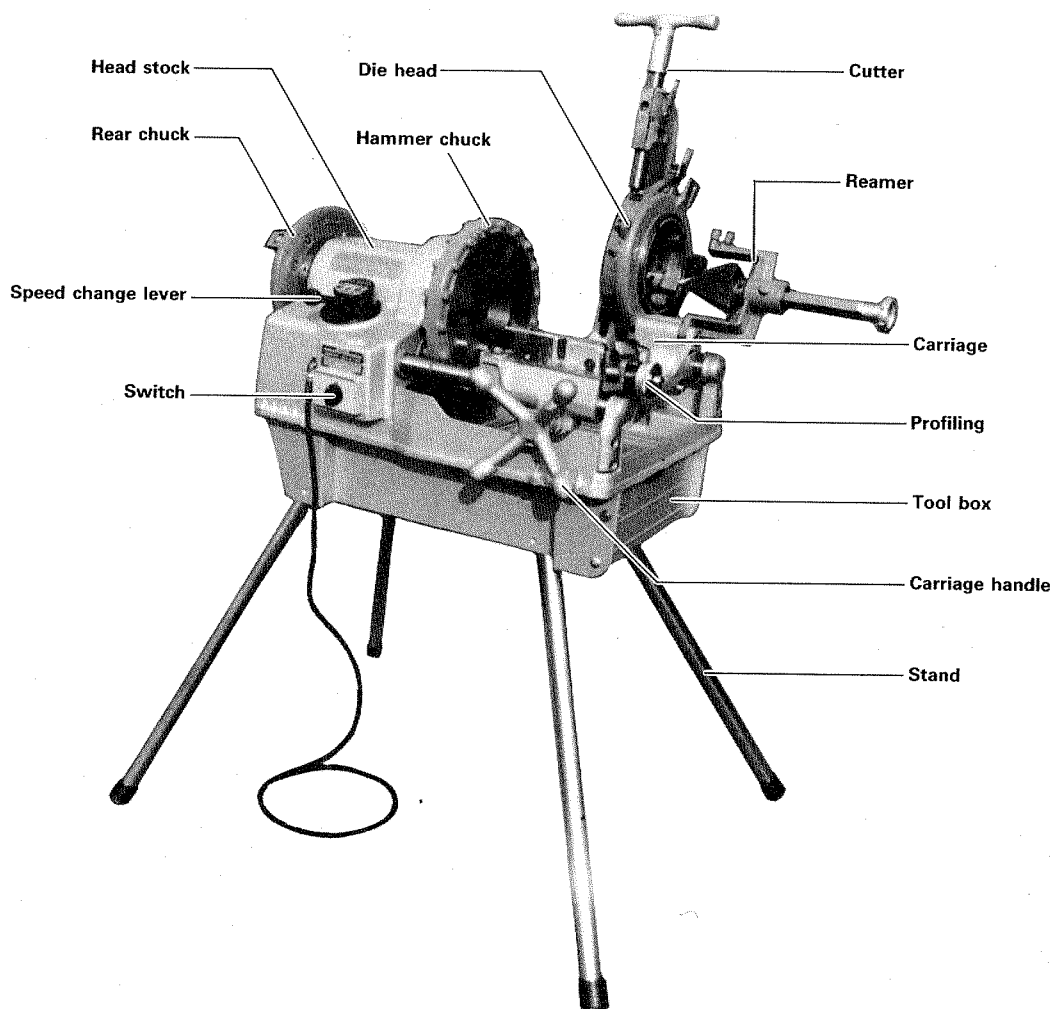
For your own safety, best performance and a long tool life, read this Operation Manual carefully and completely before assembling and operating this unit.

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

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Main Parts



Specifications and Accessories

■ Specifications

Capacity: ½–4" (threading, cutting, reaming)
Voltage: 120V or 240V dual voltage modles available.
Motor: Single phase 1KW condenser motor

Rotation speeds:

		60Hz
½–¾"	threading	48 r.p.m.
¼–4"	cutting, reaming	
1–2"	threading	27 r.p.m.
2½–4"	threading	15 r.p.m.

Net weight: 281 lbs (127.5kg)
Dimension: 32(L) x 16(W) x 22(H) inch

■ Standard Accessories

½–2" Self-opening die head
2½–4" Profiling die head
½–¾", 1–2", 2½–4" Dies
4-Leg stand
3, 4, 5, 6, 8mm Hexagonal keys (one each)
Cutter wheel
Bearing oil (with oiler)

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 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.

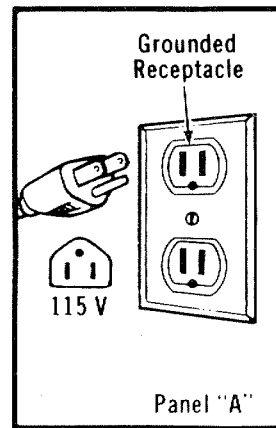
Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

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. 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.



22. Always Use Safety Glasses

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

23. Proposition 65

⚠ WARNING:

This product can expose you to chemicals lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Preparation

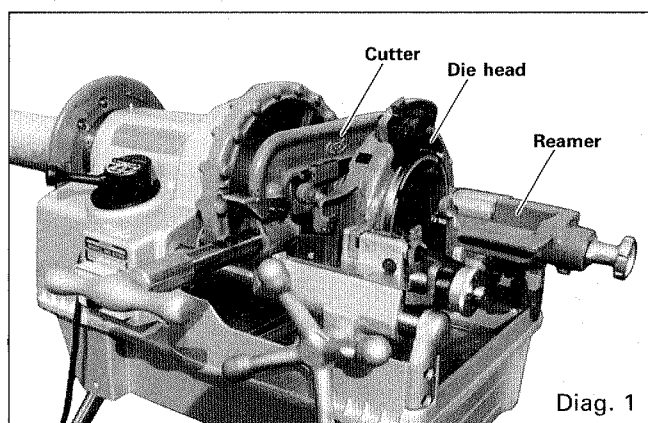
■ Transportation

It is not necessary to drain off the oil during transportation.

1. Insert a short pipe and close the chuck firmly.

Caution:

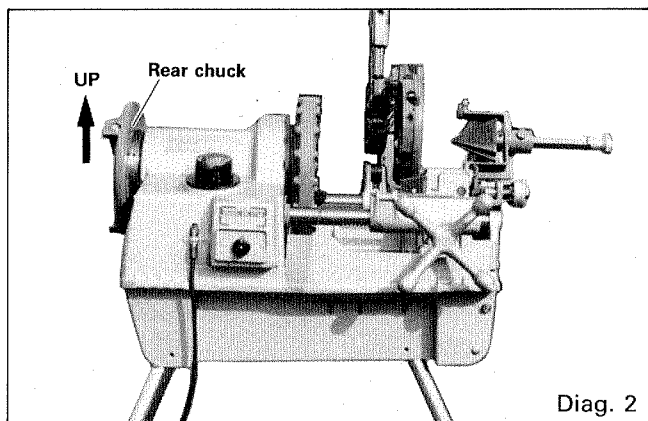
1. Make sure the length of the pipe is short enough to allow the die head to be lowered into position for transportation.
2. Release the size-setting lever, open the dies as far as they will go and then replace the setting lever on the corresponding pin.
3. Lock the reamer arm in the reaming position.
4. Lower the pipe cutter; turn the carriage handle clockwise to advance towards chuck side.
5. Turn the cutter handle, and secure the roller and pipe. The machine should then be secure during transportation.



Diag. 1

■ Setting Up

1. When setting up the machine, the legs should be adjusted with the rear chuck higher than the hammer chuck so that oil does not flow back down the pipe being cut. (see diagram 2)
2. Remove the tank upper cover, and check that the level of the oil adequately covers the strainer.
3. Set the oil cover and scrap receiver in the right position.



Diag. 2

Operating Voltage

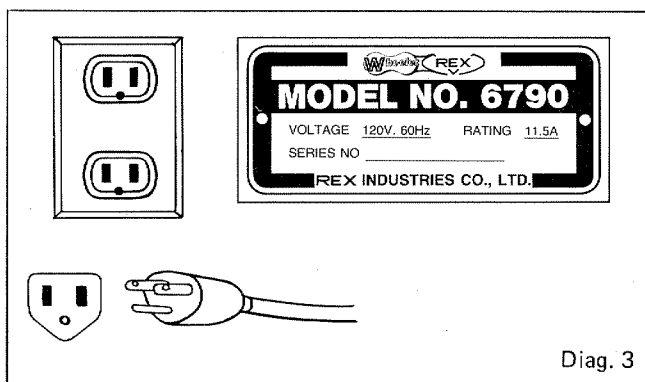
■ Power supply

Before use, check the voltage on the name plate. Ensure the voltage selector switch located on the nameplate above the On-Off switch, is set to the appropriate voltage.

■ Operating Voltage

Use only an AC power supply and always ground the machine before use. If an extension cord is used, it must be as short as possible and of sufficient capacity for the power supplied.

Input voltage should not vary by more than 10% of the specified supply. Always check the voltage before operating the machine. An incorrect voltage could seriously damage the motor.

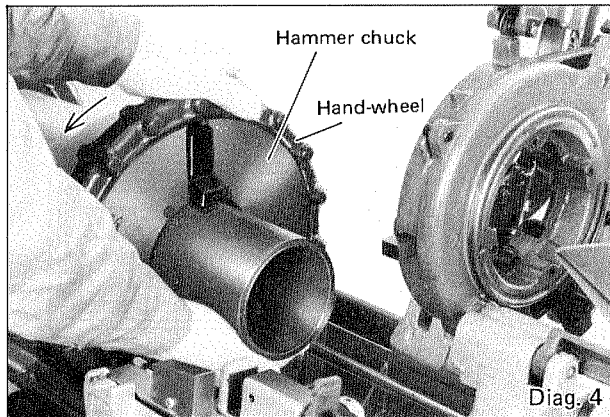


Diag. 3

Operating Guide

■ Setting the Pipe

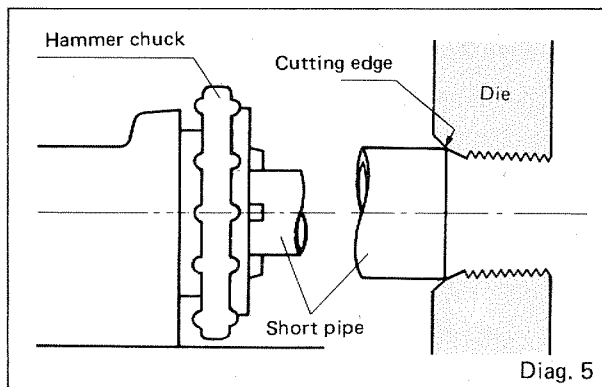
1. Open both chucks wider than the size of the pipe to be cut and insert the pipe from the rear chuck side where possible.
2. Close the rear chuck and, holding the pipe in your right hand, close the hammer chuck to grip the pipe. Jerk the hand-wheel sharply towards you to lock.
3. A sharp jerk in the opposite direction will release the pipe after cutting has been completed.



Diag. 4

■ Hints for Short Pipes

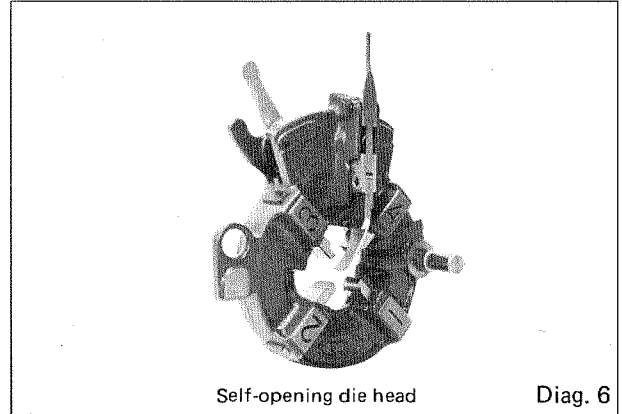
Setting a short pipe (which does not reach the rear chuck). With the hammer chuck slightly loose, move the pipe into contact with the dies as shown in the diagram. This will help hold the pipe on center while the hammer chuck is tightened. In this way a smooth taper cut is ensured every time.



Diag. 5

■ 1/2-2" pipe threading (self-opening die head)

The die head and dies on this 1/2-2" self-opening die head can also be used on the 6090. The die head also allows for adjustment of threading length. Push the cam-plate up and set the auto-open pin in position. As the dies travel along the pipe, the end of the pipe comes into contact with the pin and pushes it out of its groove to release the dies.

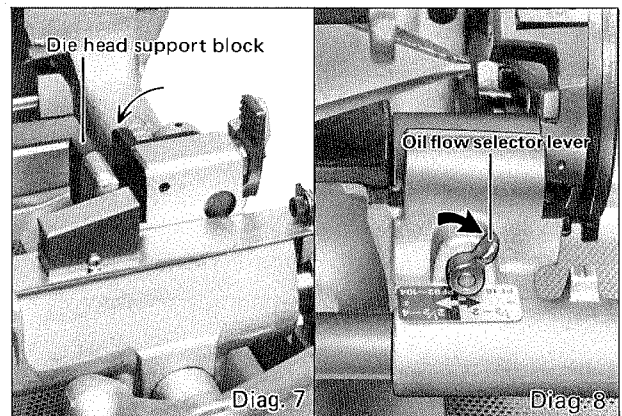


Self-opening die head

Diag. 6

■ Threading Instructions

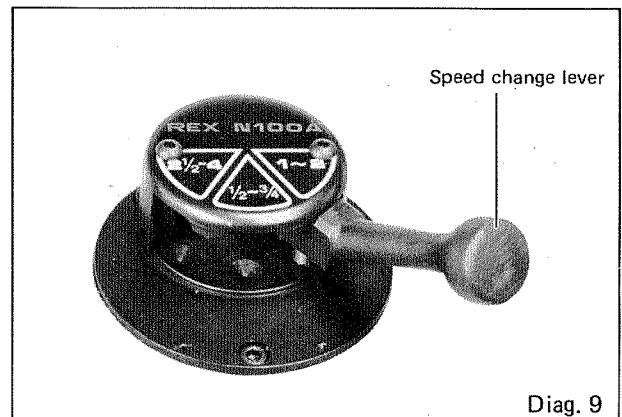
1. Turn the die head support block, located on the carriage, to the left as shown in the diagram.
2. Fit the appropriate die head as shown in the photograph.
3. Push the cam plate handle forward to set the auto-open lever, then set the thread size by fitting the lever nut to the appropriate position.



Diag. 7

Diag. 8

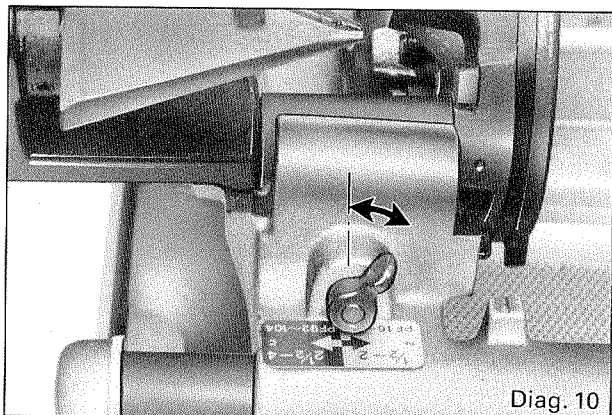
4. Set the speed change lever for the appropriate pipe size. Turn the oil flow selector lever to the right as shown in the diagram.



Speed change lever

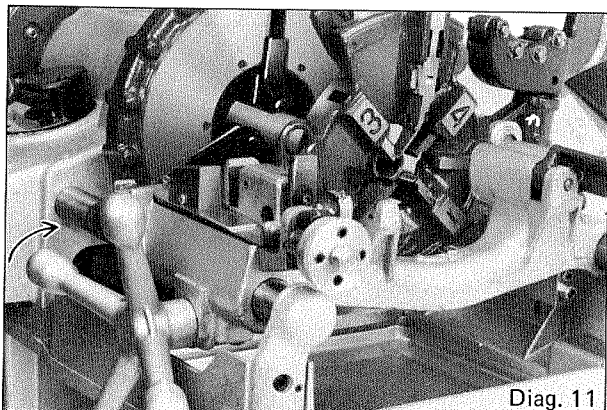
Diag. 9

5. Switch the machine 'ON' and the thread cutting oil will automatically flow out from the die head. Excessive oil flow can be reduced by turning the lever to the left again.



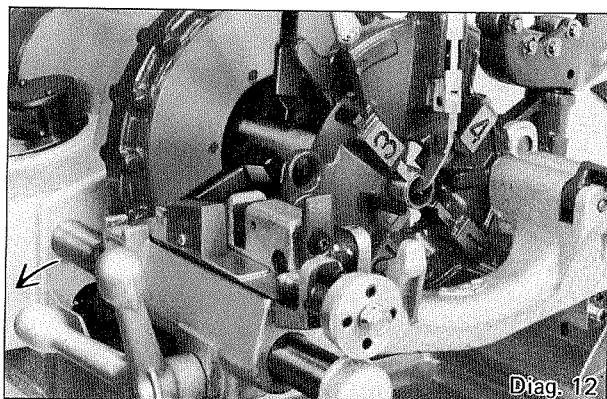
Diag. 10

6. Turn the carriage handle clockwise until the dies have engaged the pipe for 3 or 4 threads. From this point the carriage handle may be released. A standard taper thread will then be cut automatically.



Diag. 11

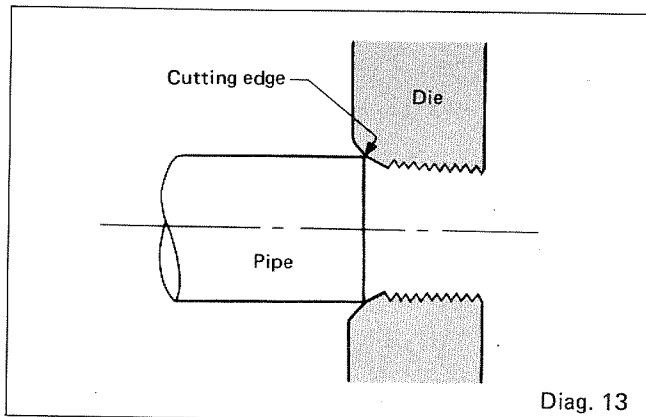
7. Once threading has been completed, switch OFF and turn the carriage handle counter clockwise. Retract the die head from the pipe.



Diag. 12

■ 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.



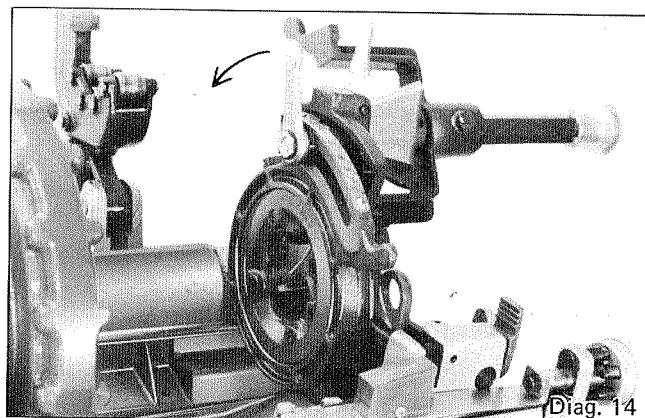
Diag. 13

Caution:

- If the machine suddenly stops during threading, turn off immediately (a delay will result in the motor burning up).
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.
 3. To stop threading, push the auto-open lever to the left.

■ Setting the Threading size

Loosen the lever nut and set the index line to the desired thread size and tighten firmly.



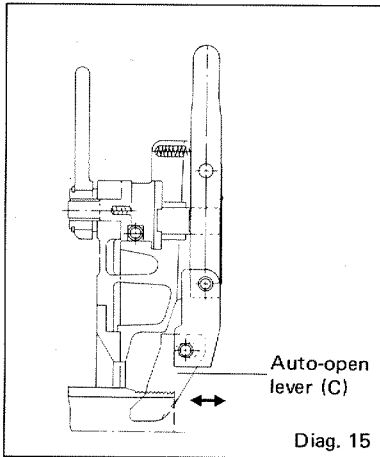
Diag. 14

■ Adjustment of the Threading Length

A device for adjustment of the threading length is attached. Use this for making threads of the desired length as follows.

Adjustable capacity 1-½" (3 threads)
½-¾" (4 threads)

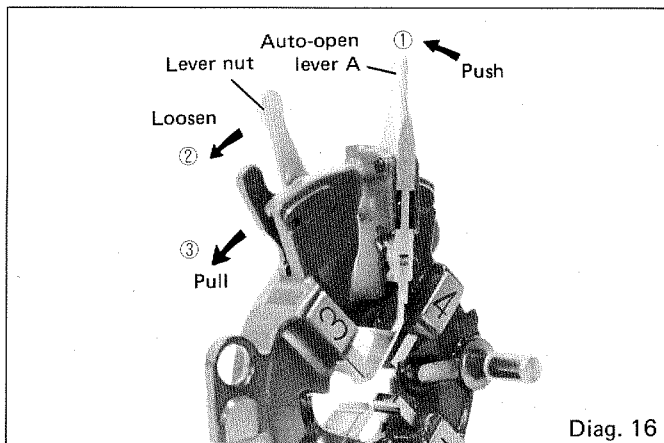
1. Loosen the socket head cap screw on the auto-open lever (C).
2. Move the auto-open lever to the right for longer threads or to the left for shorter threads as indicated by the arrows in the diagram.
Retighten the socket head cap screw.



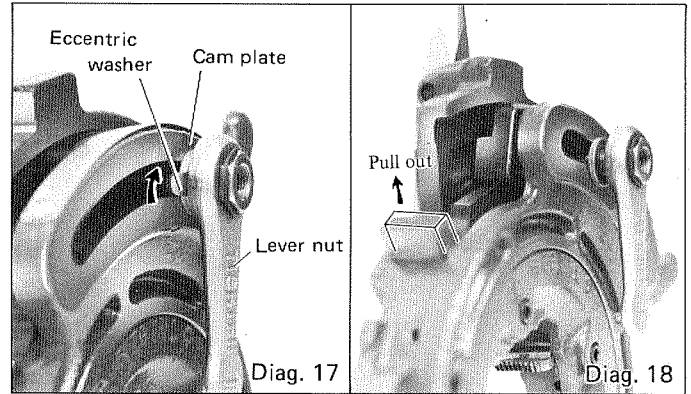
■ Removal and Replacement of the Dies

1. Removing the dies

- (1) Push the auto-open lever (A) in the direction of the arrow (see diagram 16) and put the die head into the open position.

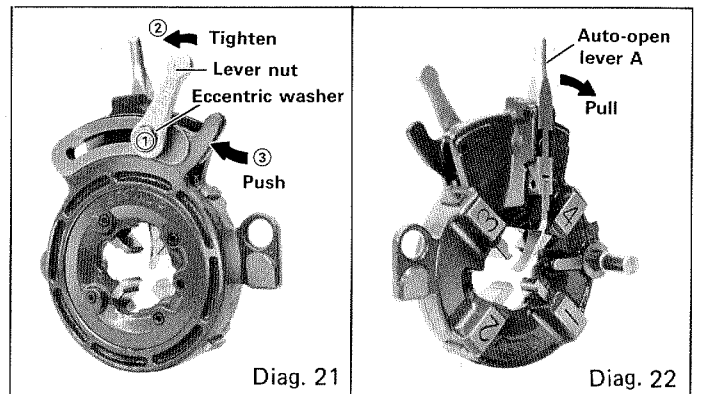
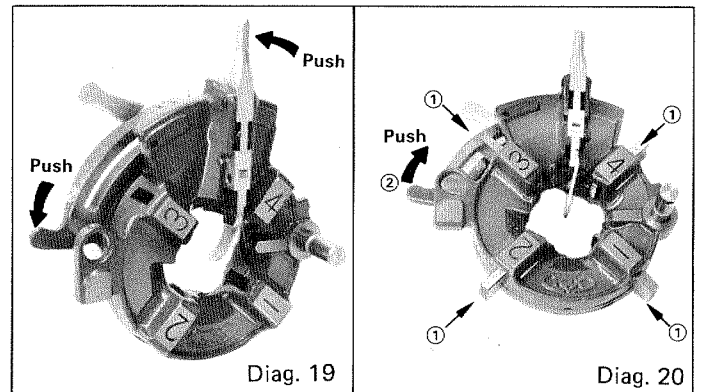


- (2) Turn the lever nut in the direction of the arrow (see diagram 17) and wobble the projection on the eccentric washer until it is completely loose.
- (3) Next, having loosened the eccentric washer from the hollow groove on the cam plate, turn the cam plate fully anti-clockwise in the direction of the dies-open position, and remove the dies from the die head.



2. Replacing the dies

- (1) Insert each die into its corresponding slot number in the die head as far as the line marked on the die.
- (2) Keeping the die head in a stable position, turn the cam plate clockwise in the direction of the die-set and the dies will fall into position in the center of the die head.



Note:

If the cam plate does not turn properly, reset each of the 4 dies individually in the correct position.

■ **Making Threads of Non-standard Length**

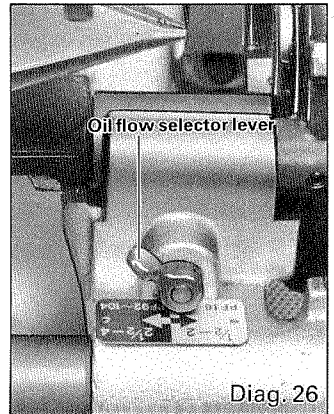
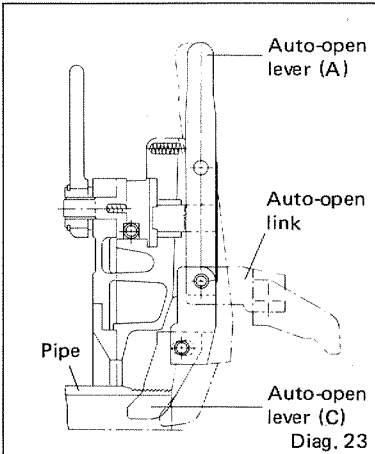
A device for manual threading is attached to enable threads of non-standard length to be made.

For manual operation, loosen the socket head cap screw on the auto-open link

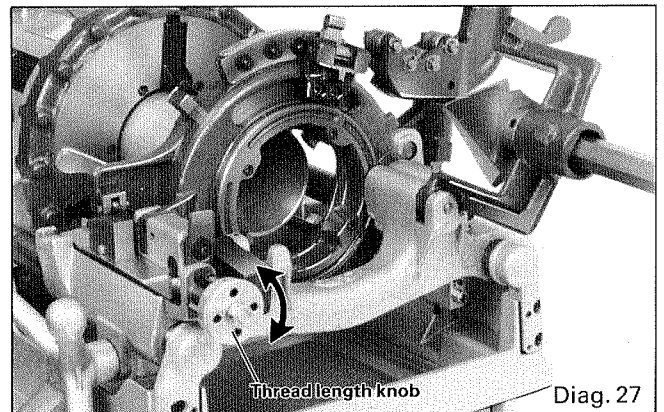
Next, raise the auto-open lever (C) 90° as shown in diag. 23.

Then retighten the socket head cap screw.

Finally, select the desired position for threading, press the auto-open lever (A) in the direction of the arrow and complete the threading.



3. Turn the thread length knob on the carriage and insert the pin for the appropriate size in the pin hole.



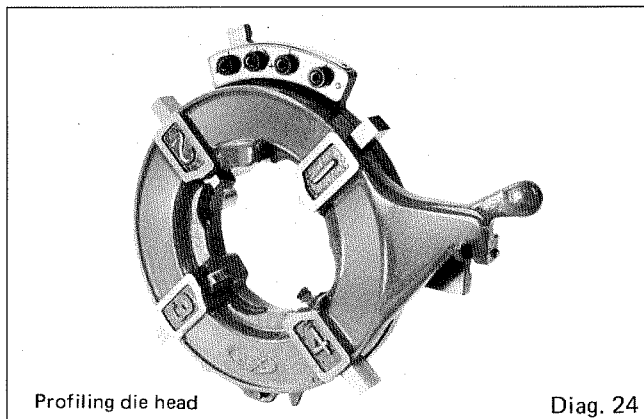
■ **2½–4" Pipe Taper Threading (Profiling die head)**

The size setting lever on this profiling 2½–4" die head allows for a simple and accurate change of threading size.

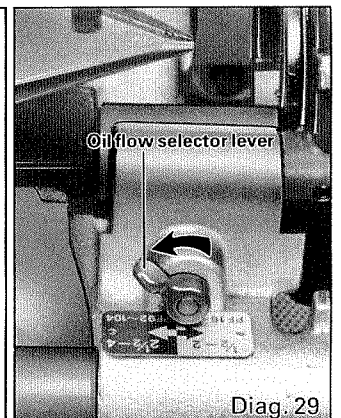
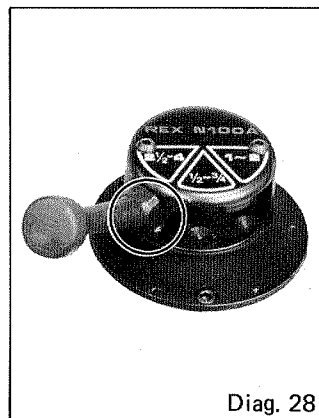
Thread thickness can be adjusted independent of pipe size.

■ **Preparation for Threading**

1. Turn the die head support block to the right as shown in the diagram. Lift the cutter and reamer out of the way and lower the die head into contact with the profiling board.
2. Lower the setting lever to the right and move it into position for the required size.



4. Set the speed adjustment lever for the appropriate pipe size. Turn the oil flow selector lever to the left as shown in the diagram.

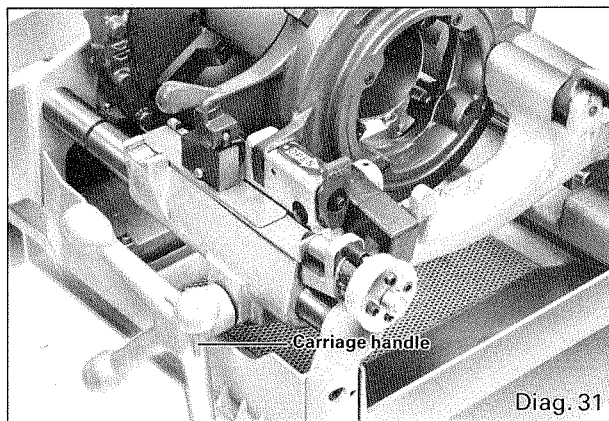


■ Threading Instructions

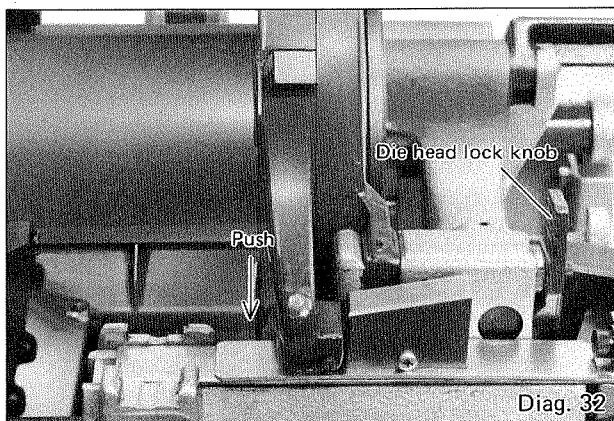
1. Switch ON. The cutting oil will flow automatically from the die-head. Adjustment of the oil flow can be made by turning the oil flow selector lever to the right.



2. Apply clockwise pressure on the carriage handle until the dies engage the pipe to a distance of three or four threads. From this point the carriage handle may be released. A standard taper thread will be cut automatically.



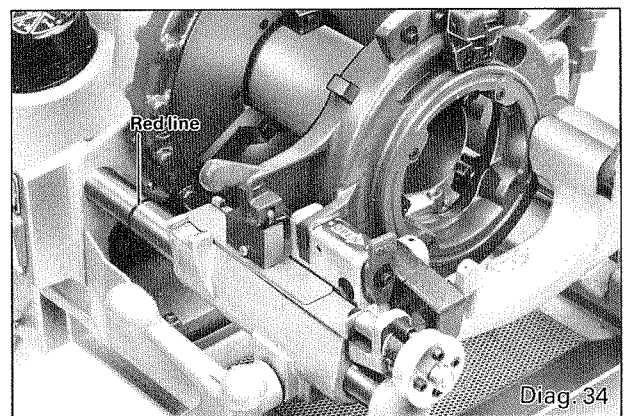
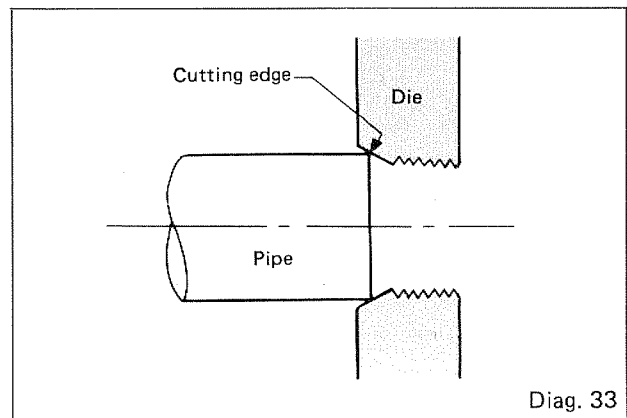
3. When the die head roller drops down over the end of the profiling block the dies will open and the thread will be complete.



4. Switch OFF. Turn the carriage handle to the right to release the die head from the pipe. Then raise the handle on the die head and the profiling board will return to its original position.
5. The chuck and rear chuck can be loosened by hitting the hammer wheel away from you. The pipe can then be removed. However, it may be easier to first pull out the die head lock lever and raise the die head before releasing the chuck and rear chuck.

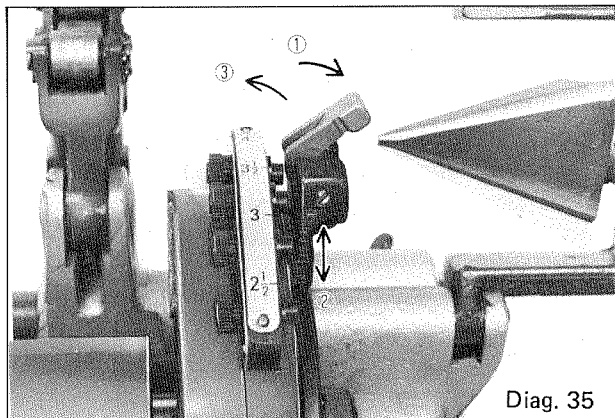
■ Precautions for Threading

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 to the 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.



■ Microfine Adjustment of Thread Depth

Microfine adjustment of thread thickness is possible to allow pipes to be cut to exactly your own requirements. Simply turn the microfine adjustment knob to the left to decrease, and to the right to increase the thread thickness. The knob is locked by a locking bolt which should be loosened with the hexagonal key provided and the knob turned three settings to the right before adjustments are made. One setting on the knob represents one thread on the pipe for the 1"-2" die head, and 1.3 threads for the 1/4"-3/4" die head.



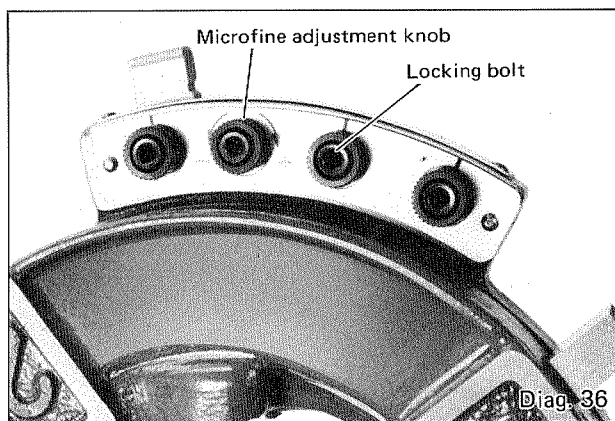
Diag. 35

Note:

Size should always be checked with a thread gauge after adjustment.

■ Change of Size

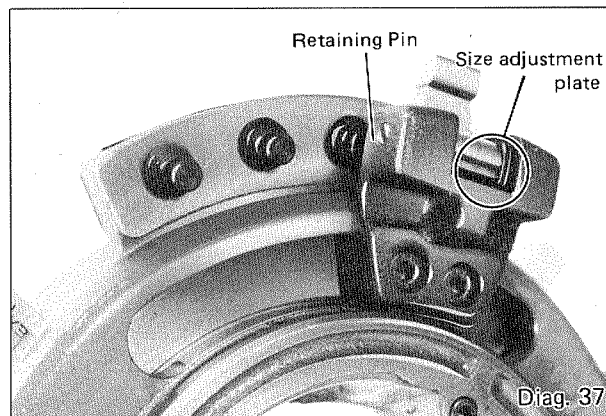
Size change is simple with the size setting lever.



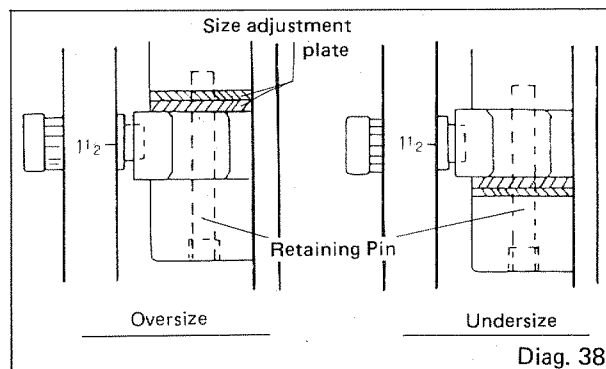
Diag. 36

■ Size Adjustment Plate

If, even with full adjustment, thread size is not satisfactory, remove the retaining pin and reinsert the size adjustment plates as shown in the diagram. Reinsert the retaining pin to hold in place.



Diag. 37

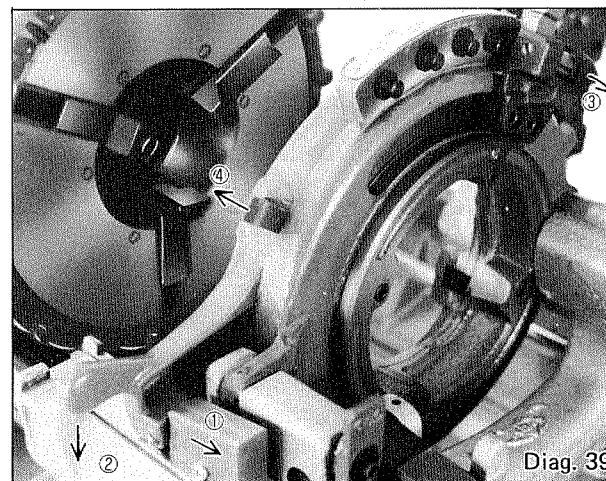


Diag. 38

■ Removal and Replacement of the Dies

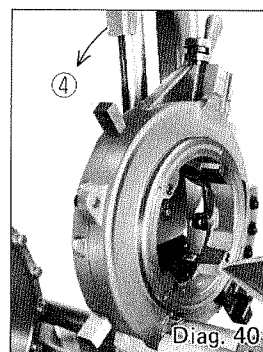
■ Removing the dies

1. Move the profiling block to the right until the die head roller touches the profiling cover.



Diag. 39

2. Turn the size setting lever to the right and then push it as far as it will go beyond the 4" setting. Then remove No. 1 and No. 2 dies.
3. Pull out the die head lock lever and raise the die head to remove die No. 3 and No. 4.



Diag. 40

■ Replacement of dies

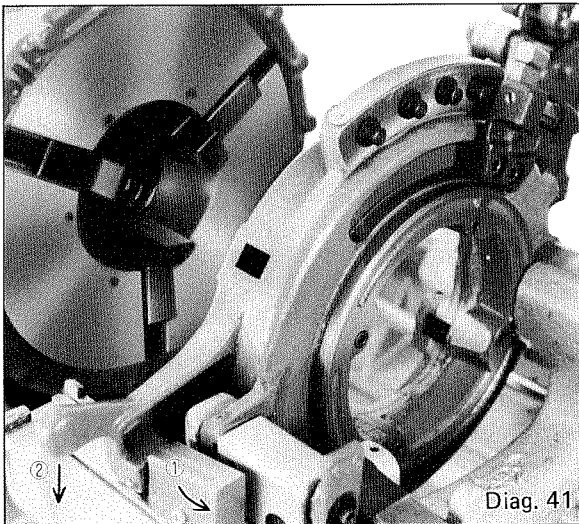
1. With the die head in the raised position, pull the handle on the body of the die head forwards and insert dies Nos. 3 and 4 in their corresponding slots, ensuring they engage the notch in the die head.
2. Move the profiling block to the right until the die head roller touches the profiling cover. Insert dies 1 and 2 into their corresponding slots.

Note:

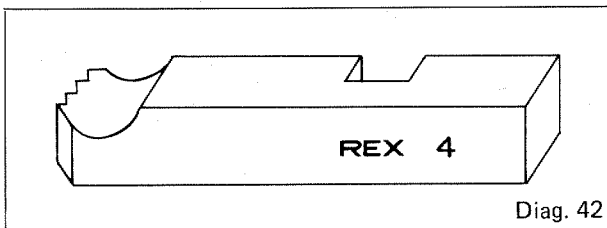
When a die is installed to the correct depth in the die holder slot, a detent will engage the detent notch. The die is then properly positioned.

Steps 1 and 2 above may be reversed.

3. Reset the size setting lever to the threading size required.



Diag. 41

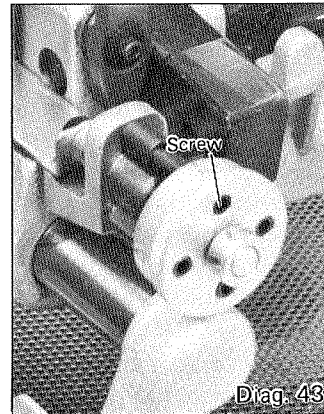


Diag. 42

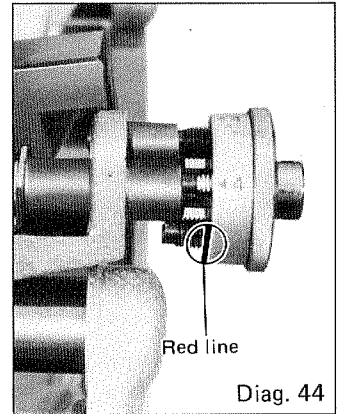
■ Adjustment of Threading Length

The machine is designed to produce threads of standard length but thread length may be individually increased or decreased by turning the appropriate hex-socket set screw in the thread length knob. Whichever size is selected, one revolution clockwise will increase thread length by 1.5mm, and conversely, one revolution counterclockwise will decrease thread length by the same amount.

There is no need to 'lock' the screws in position.



Diag. 43



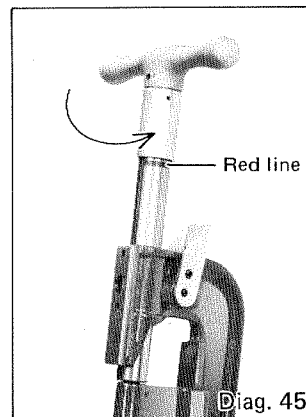
Diag. 44

■ Cutting and Reaming

For cutting or reaming set the speed change lever to the $\frac{1}{2}$ – $\frac{3}{4}$ position. Be sure to ream after cutting.

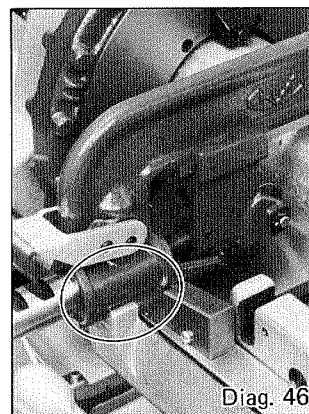
■ Pipe Cutting

1. If not already visible, turn the cutter handle counterclockwise until the red line appears. Push the open lever down and pull out the cutter handle.



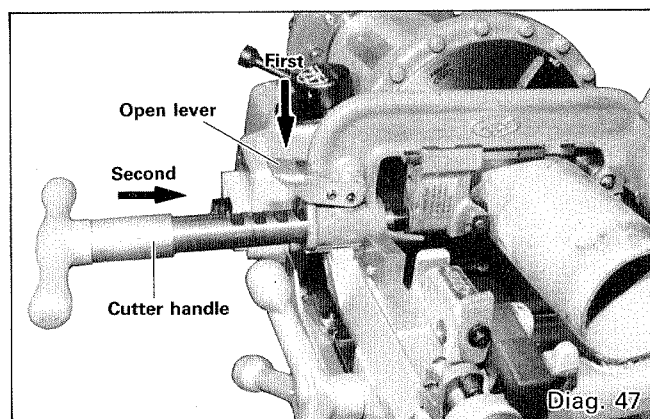
Diag. 45

2. Lower the cutter wheel onto its resting position on the carriage, aligning it with the position where the pipe is to be cut.

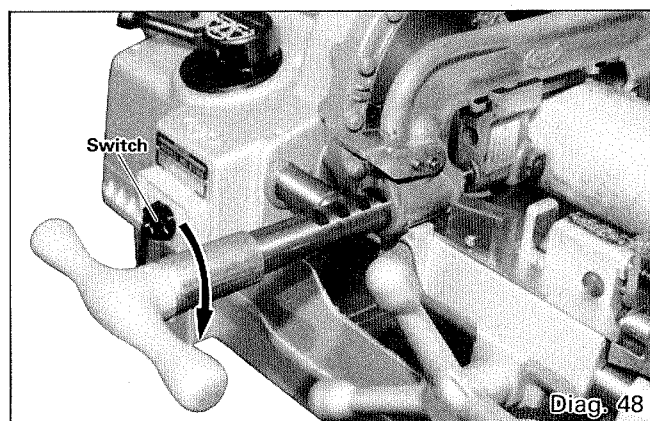


Diag. 46

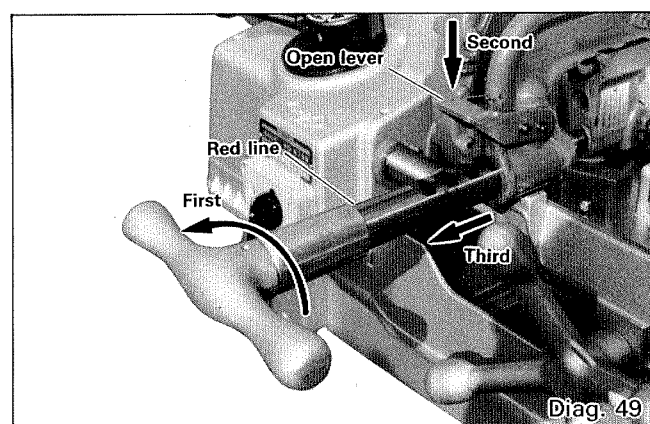
- Pull the cutter frame towards you while pushing back the cutter handle so as to engage both the rollers and the cutter wheel with the outer surface of the pipe.



- Switch ON. For each revolution of the pipe, turn the cutter handle a quarter turn clockwise until cutting is complete.



- When cutting is complete, switch OFF.
- Lower the open lever and pull out the cutter handle.



- In preparation for subsequent use, turn the cutter handle counterclockwise until the red line re-appears.
- Lift up the cutter unit.

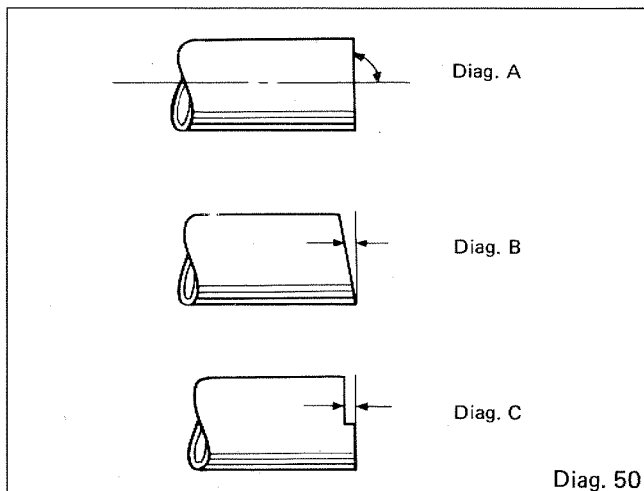
WARNING:

If the cutter handle is turned too violently, when the cutter wheel cuts into the pipe it can distort the shape of the pipe.

■ **Special Cut Grinder Precautions**

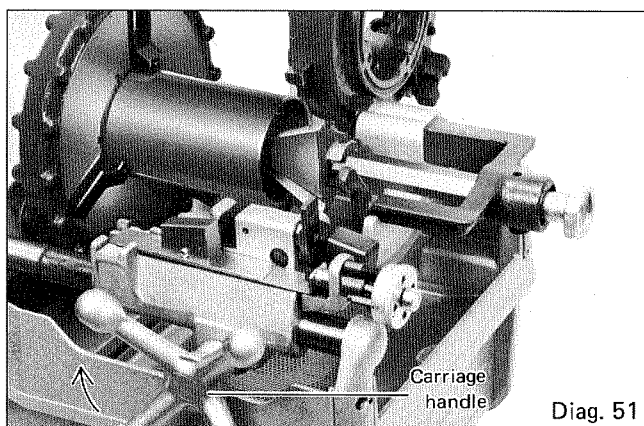
We strongly recommend that only the pipe cutter attached to the machine be used to cut pipes that are to be threaded. If a grinder is used, make sure that the cut face is square and without steps as in diag A.

Diags B and C show faults common to grinder cutters.



■ **Reaming**

- Raise the die head and cutter out of the way and set the speed change lever to the fast position. Lower the reamer arm and push the reamer bar toward the pipe, locking the bar in position with ¼ turn.
- Start the machine and turn the carriage handle clockwise to feed the reamer into the pipe.
- When reaming is complete turn off the machine, retract the reamer bar and raise the reamer arm into the rest position.



CAUTION:

When processing a stainless steel pipe, use the same rotation speed for reaming as used for threading the pipe.

Optional Specifications and Accessories

- **Optional Specifications**
- 120/240V dual voltage models available.
- **Optional Accessories**

Dies heads:	Bolt	W($\frac{5}{16}$ - $\frac{7}{8}$ ") (1- $\frac{1}{4}$ ") UNC($\frac{5}{16}$ -2") M(8-52)
	BSPT	$\frac{1}{4}$, $\frac{3}{8}$ " (W $\frac{5}{16}$ - $\frac{7}{8}$ ")
	NPT	$\frac{1}{4}$, $\frac{3}{8}$ "
Dies:	Bolt	W($\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2") UNC($\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2") M(8, 10, 12, 14, 16, 18, 22, 24, 27, 30, 33, 36, 39, 42, 45, 48, 52)
	BSPT	$\frac{1}{4}$, $\frac{3}{8}$ "
	NPT	$\frac{1}{4}$, $\frac{3}{8}$ "
Grooving heads, (Beveling):		($\frac{3}{4}$ -2") (2 $\frac{1}{2}$ -4"),
Grooving dies:		($\frac{3}{4}$) (1-2") (2 $\frac{1}{2}$ -3 $\frac{1}{2}$ "), (4),
Beveling dies:		($\frac{3}{4}$) (1-2") (2 $\frac{1}{2}$ -4")

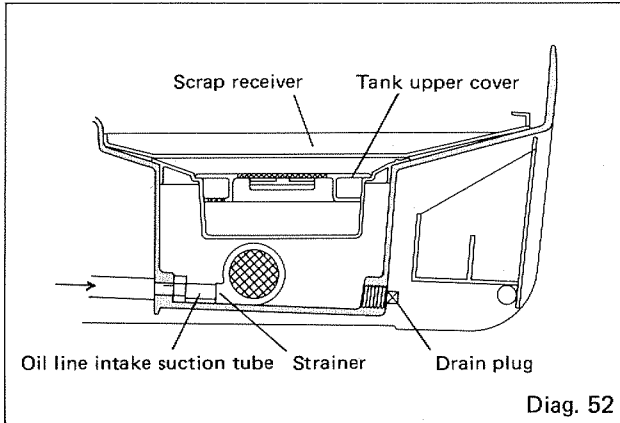
- **Other Accessories**

Transporter

Maintenance

■ Cutting Oil System

1. Be sure the 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 every 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.



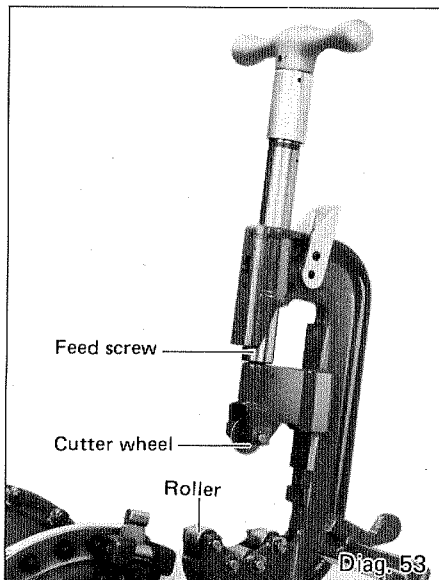
■ Keep Oil System Clean as Follows

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.

■ Pipe Cutter

1. Check cutter wheel and replace if blunt 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 and cutter pin. Lubricate cutter wheel pin with a thick, heat resistant oil additive such as Bardahl, S.T.P. or equiv.



■ Adjustment of the V belt

If the V-belt becomes slack, the tension can be increased by adjusting the tension pulley. Only do this with the power supply disconnected.

1. Remove the rear cover by undoing the 4 screws.
2. Slightly loosen the two head-cap screws and gently force the tension pulley against the belt.
3. Retighten the two head-cap screws.
4. Replace the rear cover.

V-Belt No. : (JIS) A-24

■ Chuck Jaw Inserts

If chuck jaw inserts show significant wear or damage replace them all, not just one or two.

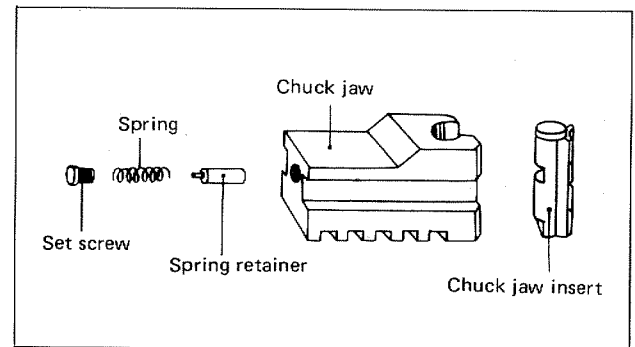
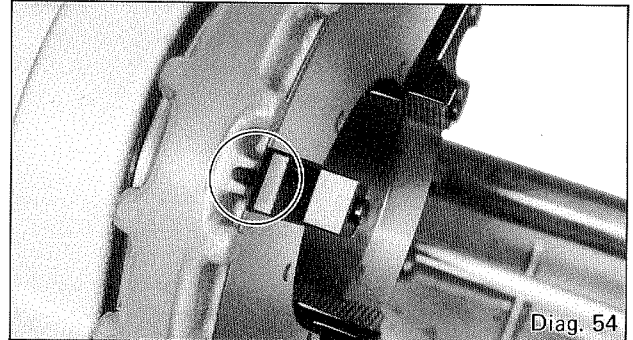
Be sure to line up the chuck jaw in the correct position on the handwheel.

■ 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 screws till they turn no further.

■ **Main Shaft**

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

■ **Hand Wheel Chuck**

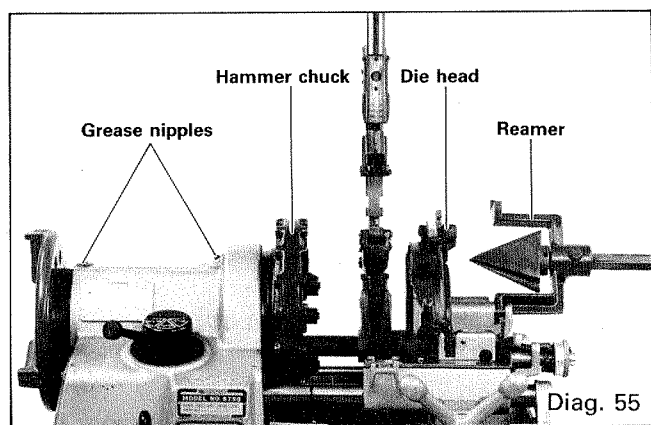
Check that all chuck mounting screws are tight.

■ **Reamer**

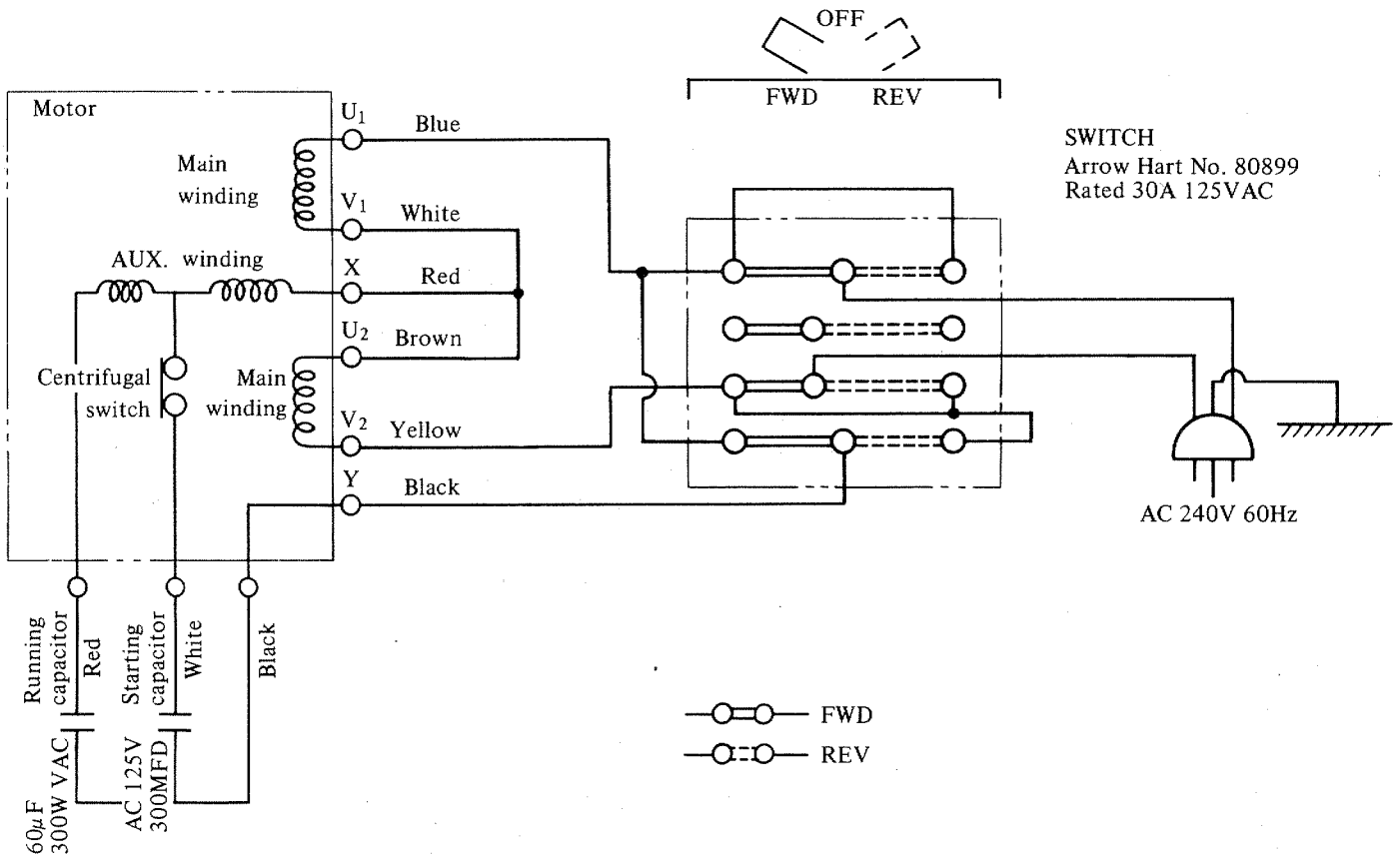
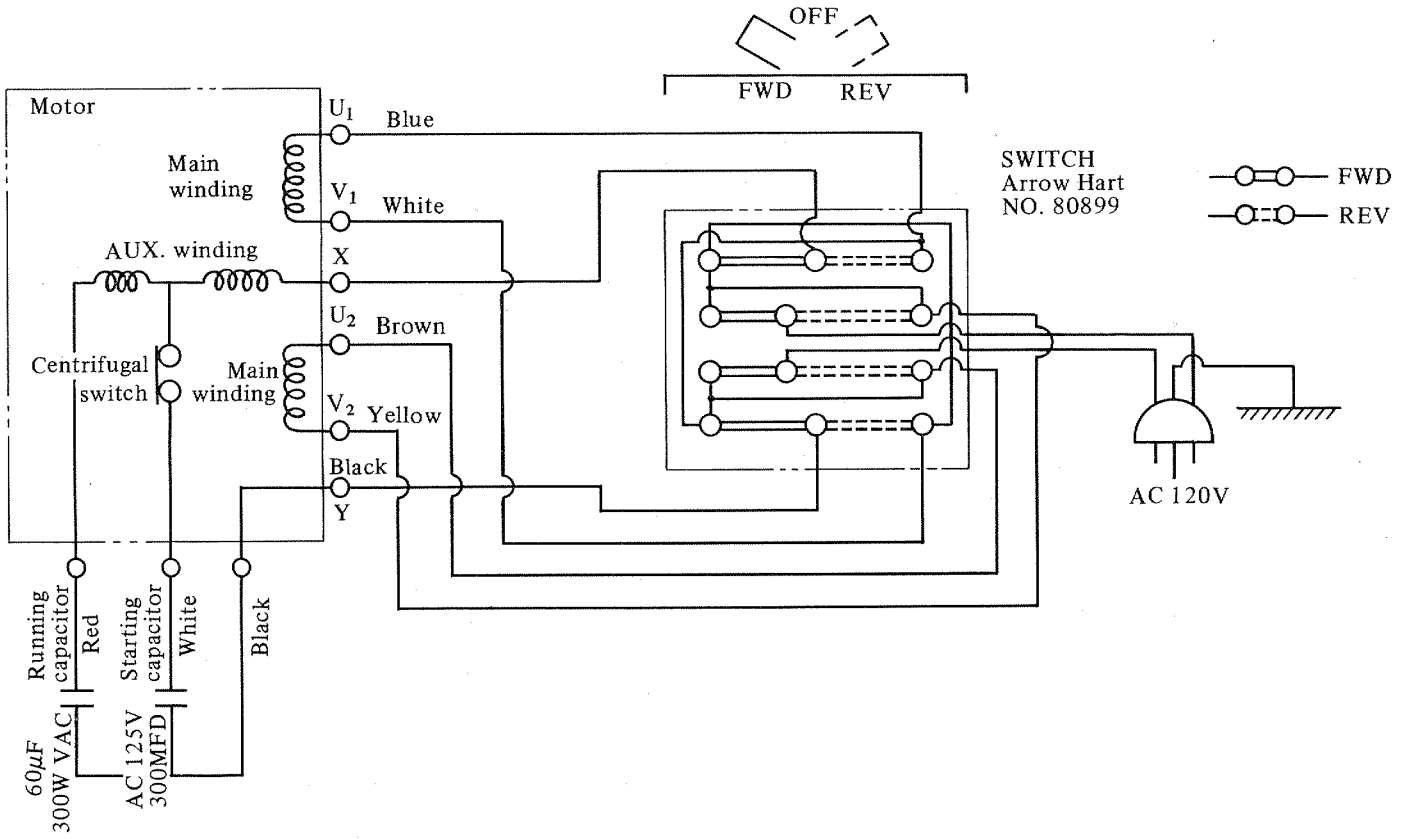
Clean and lightly oil reamer cone and shaft.

■ **Die Head and Dies**

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



Wiring Diagram





WHEELER-REX

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REX

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