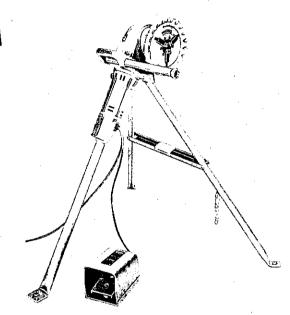
Important

For Your Own Safety
Before Assembling and Operating
This Unit, Read This Operator's
Manual Carefully and Completely.
Learn The Operation, Applications
and Potential Hazards Peculiar To
This Unit.

RIDGID.

270 Power Drive

Operator's Manual



RIDGID®

Pre-Tested Work Saver® **Tools**

The Ridge Tool Company

400 Clark St., Elyria, Ohio 44036, U.S.A.

Form No. 270-M-388 940-633-010 FOR YOUR FILE

PUBLICATIONS NOTICE

The attached literature has just been printed and sent					
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Date 3/18/88

270 Operator's Manual

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Harvey Kishman

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Signed

Additional copies of attached literature can be ordered by writing to:
The Ridge Tool Co. c/o Print Shop, 400 Clark St., Elyria, Ohio 44035.

All requests must include literature form number, product name, quantity desired and return address.

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RIDGID 270

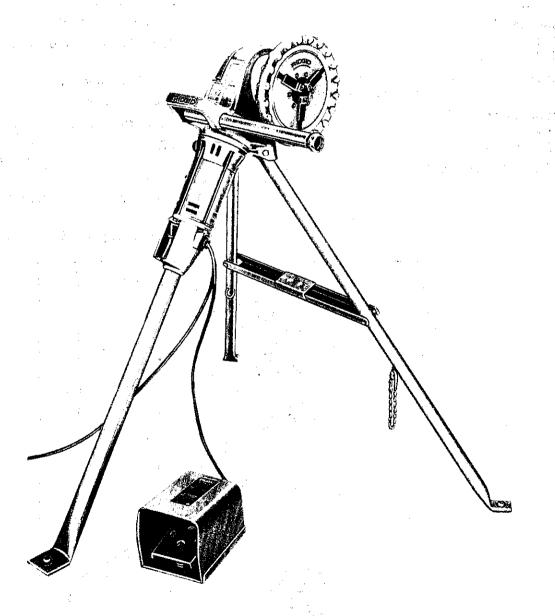
Power Drive

Power Drive

Record below and retain product model and serial numbers which are located on nameplate.

Model

Seriai



Description, Specifications and Accessories

Description

The RIDGID No. 270 Power Drive is an electric-motor-driven power drive which centers and chucks pipe, conduit and rod (bolt stock) and rotates it while cutting, threading and reaming operations are performed. Forward (counterclockwise) or reverse (clockwise) rotation can be selected with REV/OFF/FOR Switch.

Specifications

Specification	19
Threading Cap	acity:
Chuck	. Three Jaw Hammer Wheel Chuck with replaceable jaw inserts
Chuck Speed:	
	26-30 rpm
Threading 2"	pipe 16-18 rpm
Switch (REV/O	FF/FOR)2 pole, double throw, toggle switch

Motor:			
Type Universal			
Rating 120V, single phase,			
AC, 13 amps (50-60 Hz)			
(240V available on request)			
Foot Switch (ON/OFF) guarded, oil and water tight			
Power Source 15 amp rated circuit			
Weight 94 lbs.			
Accessories			
00-RB Drop Head Threader 1/4 "-1 " bolts			
12R Drop Head Threader			
504 Quick-Opening Threader 1"-2" pipe and 11/8"-2" bolts			
No. 4PJ Pipe Threader 21/2"-4" pipe			
141 Pipe Threader 21/2 "-4" pipe			
No. 202 Cutter wheel type, wide roll			
No. 2 Reamer tapered, straight flutes, 5 cutting edges, right hand 1/6" through 2" pipe			
No. 318 Oiler reduces oil waste, keeps dies flooded			
No. 46 Pipe Support Stand adjustable 23" to 33"			

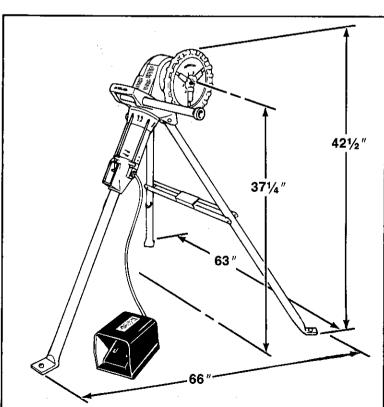


Figure 1. No. 270 Power Drive Dimensions.

Safety Information

The operator's manual contains safety information and instructions for your protection against serious injuries including:

Loss of fingers, hands, arms or other body parts if clothing or gloves get caught in moving parts;

Shock, electrocution or burns from contact with wires, motor or other power drive parts;

Impact injuries, including broken bones if machine tips over or workpiece falls.

Eye injuries, including being blinded by thrown workpiece or workpiece chips.

General Safety

Read and follow the safety information and instructions in the operator's manual.

Read and follow the safety labels on the machine.

Know the location and functions of all controls before using machine.

Footswitch Safety

The footswitch is for your safety. It lets you shut-off the motor by removing your foot. The machine has a high torque. If clothing gets caught the machine will continue to chew up clothing, pulling you into the machine. The clothing itself can bind around your arm or other body parts with enough force to crush or break bones.

AWARNING

Warning: Clothing/gloves can be caught in moving parts. Fingers, hands, arms or other body parts can be crushed or broken.

- Use footswitch.
- · Do not wear gloves.
- Keep sleeves and jacket buttoned.
- Do not reach across machine because clothing can be drawn into moving parts.
- · Operate machine from switch side only.
- Do not disconnect or block footswitch.
- · Keep footswitch in working order.
- Lock footswitch when machine is not in use and to avoid accidental starting. (Fig. 4)
- Make sure switch is in the "off" position before plugging in power cord.
- Make sure you can quickly remove your foot from the footswitch.

Figure 2. Footswitch Safety

Personal Safety

- Wear snug fitting clothes, safety shoes, hard hat and safety glasses. Cover up or tie up long hair. Do not wear loose clothing, gloves, unbuttoned jackets, loose sleeve cuffs, neckties, rings, watches or other jewelry.
- 2. Wear hearing protectors, ear plugs or muffs if you use the machine daily or in a very noisy area.
- 3. Operate machine from the side with the REV/OFF/ FOR switch.
- 4. Keep good footing and balance. Do not overreach.
- 5. Do not operate machine when you are tired.

Electrical Safety

1. Ground machine. Use approved three-conductor cord and three-prong grounding type plug in a grounded receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Do not connect the green (or green and yellow) wire to a live terminal. If your unit is for use on less than 150 volts, it has a 120V plug. If it is for use on 150 to 250 volts, it has a 230V plug.

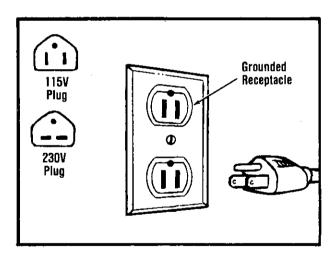


Figure 3. Machine Grounding Instructions

Connect machine to an AC power supply that matches the nameplate specifications. Do not use D.C. power.

- Use only three-wire extension cords which have three-prong grounding plugs and three-pole receptacles which accept the machine's plug. Replace or repair damaged, frayed, broken or worn cords.
- 4. Refer to the following chart of recommended extension cord sizes. When using an extension cord, be certain that the conductor size is large enough to prevent excessive voltage drop which will cause loss of power.

	Wire Size Required		
Length of Cord	120V	230V	
24 feet	14	16	
50 feet	12	14	
100 feet	10	12	
150 feet	8	10	
200 feet	6	8	
300 feet		8	
400 feet	<u> </u>	6	

Figure 4. Extension Cord Chart

- 5. When using an extension cord outdoors, use cords marked with the suffix "W-A" following the cord type designation. For example, SJTW-A indicates that the cord is acceptable for outdoor use.
- 6. Do not use machine in damp or wet locations. Do not let machine get rained on.



Figure 5. Electrical Hazard Sign

7. Unplug power cord when adjusting, servicing or changing accessories.

Work Area Safety

- 1. Keep children and visitors out of work area. If visitors must be in area keep them far away from the machine and extension cords.
- 2. Keep work area clean, uncluttered and well lighted.
- 3. Keep floors dry and free of slippery materials.
- 4. Clear machine and bench of all objects as wrenches or tools before turning machine on.

Machine Safety

- The machine is made to thread and cut pipe or bolt. Follow instructions in operator's manual or machine uses. Other uses may increase risk of injury.
- Secure machine to bench or stand to keep it from tipping over. Bolt machine to the floor when using No. 840 Universal Power Shaft.
- 3. Tighten chuck handwheel and engage rear centering deivce on the work before turning on machine.
- Support long, heavy work from the floor with a pipe support to prevent tipping of machine. (See pipe supports in Descriptions and Specifications section).
- 5. Use machine for jobs it is designed to do. Do not force the machine to do jobs it is not designed to do.
- Use recommended accessories. Use of other accessories may increase the risk of injury. Refer to operator's manual for recommended accessories.
- 7. Check for broken or damaged parts before using machine. A damaged guard or other machine part should be checked for alignment, binding, breakage and correct mounting to make sure they are operating properly. Repair or replace damaged guards or other machine parts by an authorized service center.
- 8. Do not use machine if switches are broken.
- Keep covers in place. Do not operate machine with covers removed.

Machine Maintenance

- 1. Use sharp cutting tools.
- 2. Keep machine clean for best performance.
- 3. Follow instructions for lubricating and changing accessories.
- 4. Inspect machine cord weekly. Replace damaged, frayed, broken or worn machine cord.
- 5. Inspect extension cords weekly. Repair or replace damaged, frayed, broken or worn cords.

- Keep handles dry and clean. Keep free from oil and grease.
- When not being used, store machine in a secured, locked area, out of reach of children and people unfamiliar with the threading machine.
- 8. Keep footswitch in working order.
- Lock footswitch when not in use to avoid accidental starting.

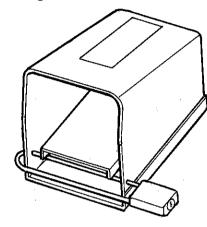


Figure 6. Locked Footswitch

Operation Using Hand Tools

Warning: Operator should be thoroughly familiar with preceding Safety Precautions before attempting to operate this equipment.

Installing Pipe in Power Drive (Fig. 7)

Warning: DO NOT operate this Power Drive with a universal drive shaft.

- 1. Measure and mark length of pipe being worked.
- Tighten Chuck Jaws with a repetitive counterclockwise snap spin of Handwheel. This hammering action tightens Jaws on pipe. A clockwise rotation snap spin releases Jaws.

Warning: Pipe longer than 7 feet must be supported with a Pipe Support Stand.

Cutting Pipe with Hand Cutter

- 1. Install pipe.
- 2. Engage Pipe Cutter with pipe and align Cutter Wheel with mark on pipe.
- 3. Rest Pipe Cutter Frame on Support Bar (Fig. 8) located on switch side of machine. Tighten Feed Screw Handle.

- 4. With Power Cord plugged in, turn REV/OFF/FOR Switch to FOR (forward) position (Fig. 7).
- 5. Place foot on Foot Switch (Fig. 7) to operate machine.
- 6. Continuously tighten Feed Screw Handle (Fig. 8) with both hands until pipe cutoff is completed.
- 7. Release Foot Switch and turn REV/OFF/FOR Switch to OFF position.

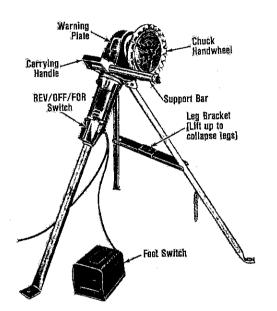


Figure 7. No. 270 Power Drive.

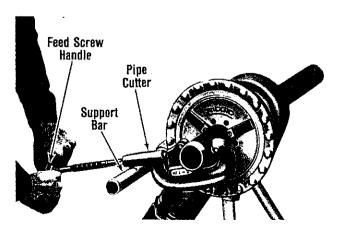


Figure 8. Cutting Pipe with Cutter.

Threading Pipe with Hand Threader

- 1. Place Threader on end of pipe with Handle resting on Support Bar (Fig. 9).
- 2. Place No. 318 Oiler (Fig. 10) under Threader and apply RIDGID Thread Cutting Oil on pipe end.
- 3. Turn REV/OFF/FOR Switch to FOR (forward) position (Fig. 7).
- 4. Step on Foot Switch and push Threader (Fig. 9) with right hand to engage Dies.

Note: Threader is self-feeding once Dies are engaged. Apply plenty of oil (Fig. 10) until threads are completed. (Fig. 21)

- 5. Release Foot Switch once threads are completed.
- 6. Push back Support Bar (Fig. 11) on switch side.
- 7. Reverse Threader Ratchet Knob (Fig. 11).

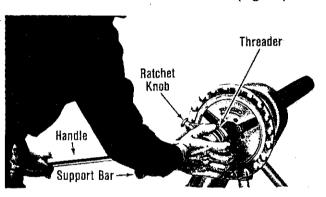


Figure 9. Pushing Threader onto Pipe to Engage Dies.

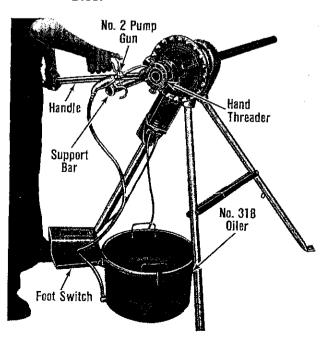


Figure 10. Oiling Threader Dies.

- 8. Lower Threader Handle and pull Support Bar out. Threader Handle is now against lower side of Support Bar.
- Turn REV/OFF/FOR Switch to REV (reverse) position (Fig. 7) and back off Threader by stepping on Foot Switch.
- 10. Release Foot Switch (Fig. 7) and turn REV/OFF/FOR Switch to OFF position.

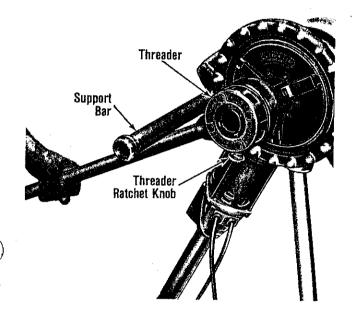


Figure 11. Disengaging Threader from Pipe.

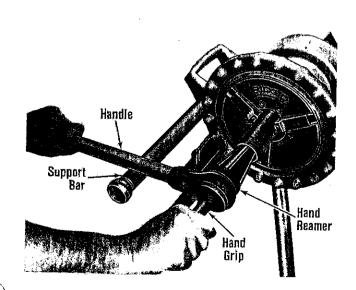


Figure 12. Reaming Pipe with Reamer.

Reaming Pipe with Hand Reamer

Warning: DO NOT use spiral reamers which could get caught in rotating pipe causing serious injury.

- 1. Turn REV/OFF/FOR Switch to FOR (forward) position (Fig. 7).
- 2. Insert Reamer into end of pipe and hold firmly onto Handle and Handgrip (Fig. 12).
- 3. Step on Foot Switch and push on Reamer Handgrip (Fig. 12) with right hand to ream pipe.
- 4. Release Foot Switch, remove Reamer and turn REV/OFF/FOR Switch to OFF position.

Operation Using Geared Threader

Warning: Operator should be thoroughly familiar with preceding Safety Precautions before attempting to operate this equipment.

Installing Nos. 4PJ and 141 Geared Threaders (Close-Coupled Method)

Warning: 1. DO NOT plug power cord in until Geared Threader is installed and ready to thread.

- 2. DO NOT operate this Power Drive with a universal drive shaft.
- 1. Adjust Threader being used.
- 2. Place Threader on floor or workbench with Drive Shaft up. Install No. 244 Drive Bar on Threader Drive shaft and tighten 2 Set Screws (Fig. 13).
- Two men pick up Threader and Insert Drive Bar into chuck of Power Drive (Fig. 14). Tighten Power Drive Chuck Jaws into three "V" shaped grooves in head of Drive Bar.

Note: Allow approximately 3/4" of grooves exposed in from of Chuck Jaws (Fig. 15) to allow space for oiling.

- 4. Pull out Support Bar (Fig. 14).
- 5. Slip No. 758 Loop over Support Bar and secure to Gear Case loop with Set Screw (Fig. 14).

Note: Use No. E-3675 Adapter Bracket (Fig. 14), in place of No. 758 Loop, on all 141 and 4PJ Threaders without loop hole on Gear Case.

 Insert pipe in Threader and center end of pipe in throat of Dies. Tighten workholder with Socket Wrench (Fig. 15).

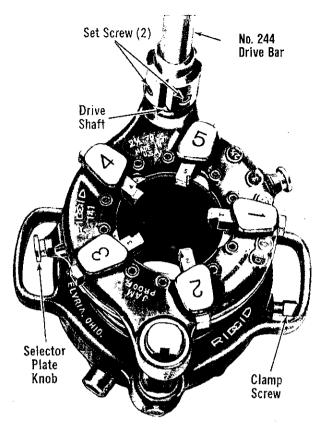


Figure 13. No. 141 Threader with No. 244 Drive Bar Installed (No. 4PJ Threader Similar).

- 7. Tighten Clamp Screw (Fig. 15) securely.
- 8. Position No. 318 Oiler directly under Threader (Fig. 16).
- 9. Support pieces (over 3 ft.) of pipe with No. 46 Pipe Support (Fig. 16). Position approximately 2½ feet from Threader.

Threading Using Nos. 4PJ and 141 Geared Threaders (Close-Coupled Method)

- 1. Install Geared Threader and pipe.
- 2. Plug in Power Cord.
- 3. Turn Power Drive REV/OFF/FOR Switch to FOR (forward) position (Fig. 7).
- 4. Step on Foot Switch.
- 5. Flood Dies (Fig. 16) with RIDGID Thread Cutting Oil during threading operation to assure long Die life.
- 6. **4PJ only** Release Foot Switch just before Die Head begins to press on Pressure Ring (Fig. 20) at base of Pinion Sleeve.
 - 141 only Release Foot Switch when red "STOP" line appears on Pinion Sleeve (Fig. 18).

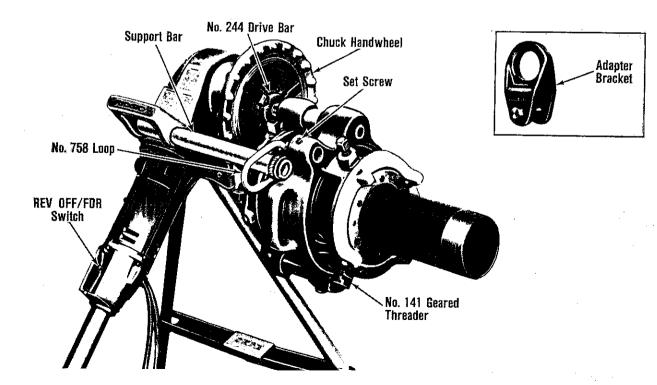
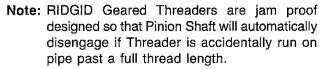


Figure 14. No. 141 Geared Threader Close-Coupled to Power Drive (No. 4PJ Similar).



- 7. Turn REV/OFF/FOR Switch (Fig. 7) to REV (reverse) position.
- 8. **4PJ only** Step on Foot Switch and reverse Threader until Die Head is at starting position and Dies are free from end of pipe.

Note: Do not loosen Workholder until Dies have been disengaged from pipe.

- 141 Step on Foot Switch and reverse Threader one or two revolutions. Pull knobs (Fig. 16) and rotate Cam Plate as far as it will go towards CD mark on Head to disengage Dies.
- 9. **4PJ only** Loosen Workholder Jaws Clamp Screw (Fig. 19) and remove pipe.
 - **141 only** Loosen Jaw Clamp Screws (Fig. 15), turn Workholder to OPEN position and remove pipe.

Note: Before threading next piece of pipe, run Threader Head beyond STANDARD line on Pinion Sleeve and then back to STANDARD line. This movement takes up slack in gearing for immediate response when cutting next thread.

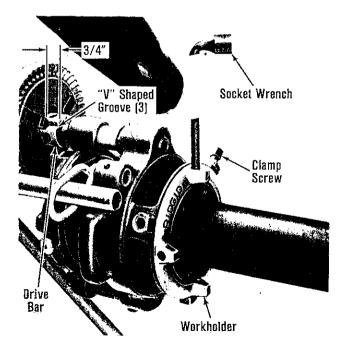


Figure 15. Tightening Workholder on No. 141 Geared Threader.

10. Turn REV/OFF/FOR Switch to OFF position.

Note: If, by accident, a RIDGID Geared Threader is backed off too far and Threaded Barrel becomes disengaged from Workholder, the Threader must be put on a bench and the threads re-engaged carefully by hand. Do not attempt this by power.

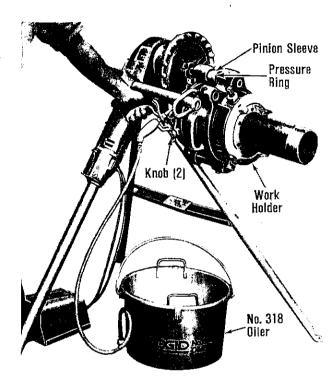


Figure 16. Threading Pipe with No. 141 Geared Threader (Close-Coupled Method) (No. 4PJ Threader Similar).

Adjusting No. 141 Geared Threader

Cam Plate (Pipe Size) Adjustment Procedure

- 1. Place Threader on floor or workbench with Drive Shaft up.
- Pull knobs (Fig. 17) of Cam Plate and rotate Cam Plate to desired pipe size marking on top of Die Head. Release Knobs when Locating Pins drop into holes in Selector Plate.

Thread Size Adjustment Procedure

Grasp Workholder and turn square end of Drive Shaft or turn Gear Case by hand to respective reference lines on Guide Post (Fig. 18).

RIDGID. No. 270 Power Drive

Standard Size Thread - Either one of the following 2 reference lines may be used.

Reference Line 1: Set bottom surface of Die Head to red "Standard" line on Pinion Sleeve.

Reference Line 2: Set upper surface of Die Head which houses Guide Post even with center line at top end of Guide Post.

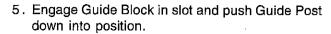
Overside Thread - For oversize (shallow thread) set Head at bottom line on Guide Post. This line is marked (2T OVER).

Undersize Thread - For undersize (deep thread) set head at top line on Guide Post. This line is marked (2T UNDER).

Changing Guide Post for Straight or Tapered Threads (Fig. 18)

Note: Die Head comes set up to cut tapered threads.

- 1. Adjust Threader to cut standard size threads:
- 2. Remove Screw from Gear Case at base of Guide Post.
- 3. Pull Guide Post up until Guide Block attached to Selector Plate is disengaged from angle slot in Guide Post.
- 4. Turn Guide Post until straight slot faces inward for straight thread, or tapered slot inward for tapered thread.



6. Replace Guide Post Screw.

Note: Unit is now set to cut straight threads (NPSM or BSPP) or tapered threads (NPT or BSPT).

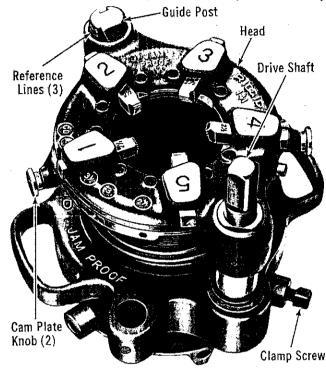


Figure 17. No. 141 Geared Threader with Drive Shaft Up.

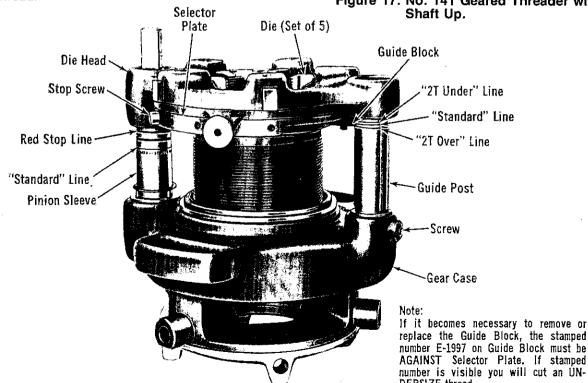


Figure 18. No. 141 Geared Threader Showing Pinion Sleeve and Guide Post Reference.

Changing Die Set

- 1. Remove Stop Screw (Fig. 18) from Selector Plate.
- 2. Pull Knobs (Fig. 17) and rotate Cam Plate to CD mark on top of Die Head.
- 3. Remove worn Die Set (Fig. 18) and insert new Die

Note: Be sure to replace complete Die Set and that Die numbers correspond with slot numbers.

4. Replace Stop Screw.

Note: If it becomes necessary to remove or replace the Guide Block, the stamped number E-1997 on Guide Block must be AGAINST Selector Plate. If stamped number is visible, you will cut an UNDERSIZE thread.

Adjusting No. 4PJ Geared **Threader**

Workholder (Pipe Size) Adjustment Procedure (Fig. 19)

- 1. Place Threader on floor or workbench with Workholder up.
- 2. Loosen 2 Gauge Screws.
- 3. Adjust Gauge Plate to desired size pipe.
- 4. Tighten Gauge Screws against Gauge Plate.
- 5. Back out Clamp Screw so that Workholder will slip over pipe when installed.

Thread Size Adjustment Procedure (Fig. 20)

- 1. Turn Threader over so that Drive Shaft is up.
- 2. Grasp Workholder and turn square end of Drive Shaft or turn Gear Case by hand to reference lines on posts.

Standard Size Thread - Set Head so surface of numbered pads is even with line around ends of Posts.

Oversize Thread - For oversize (shallow thread) set numbered pads on Head below line on Posts. Each 1/2 inch of offset will change thread size one

Undersize Thread - For undersize (deep thread) set surface of numbered pads on Head above line on Posts. Each 1/8 inch of offset will change thread size one turn.

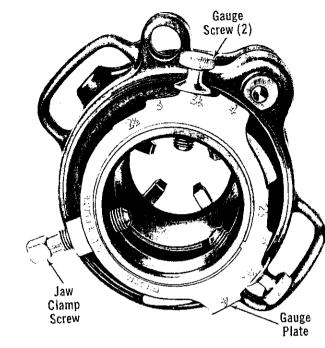


Figure 19. No. 4PJ Threader with Workholder Up.

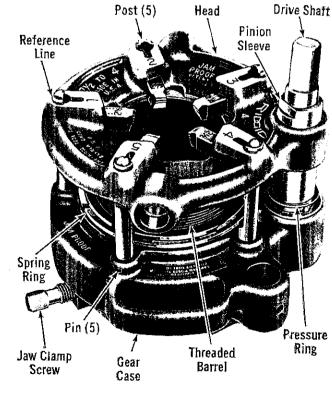


Figure 20. No. 4PJ Geared Threader with Drive Shaft Up.

Changing Die Set (Fig. 20)

1. Insert small screwdriver in slot in Head between Post and Die. Push Die out.

Note: Die is retained by spring loaded ball.

2. Install replacement Die, seating firmly against Post.

Note: 1. Be sure that Die number corresponds with slot number and that slot and Post are free of chips and dirt. Replace complete Die Set.

2. 4PJ Threaders with E-2445 Straight Posts (NPSM - American Thread or BSPP - British Thread) must use special Dies for straight threads only. Threaders equipped with E-1946 Taper Posts must use standard Taper Pipe Dies (NPT - American Thread or BSPT - British Thread) only.

Checking Thread Length (Fig. 21)

- 1. Thread is cut to proper length when end of pipe is flush with edge of Dies (A. Fig. 21).
- 2. Die Head is adjustable to obtain proper thread diameter. If possible, threads should be checked with a thread Ring Gage (B, Fig. 21). A proper thread is cut when end of pipe is plus or minus one turn of being flush with face of Ring Gage.

Note: If a Ring Gage is not available, a fitting can be used. This fitting should be representative of those being used on the job. The pipe thread should be cut to obtain 2 to 3 turns hand tight engagement with fitting. If pipe thread is not proper diameter the Index Line should be moved in the OVER or UNDER size mark on Size Bar. (Refer to Installing Dies in Die Heads)

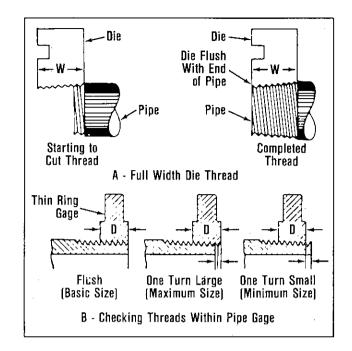


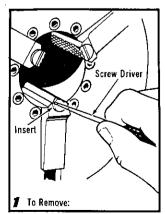
Figure 21. Checking Thread Length.

Maintenance Instructions

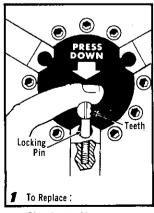
Warning: Always unplug Power Cord before servicing Power Drive.

Jaw Insert Replacement (Fig. 22)

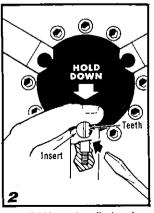
Note: When teeth on Jaw Inserts become worn and fail to hold pipe or rod during operation, replace entire set of Jaw Inserts. Clean teeth of Jaw Inserts daily with wire brush.



Place screw driver in Insert Slot and turn 90 degrees in either direction.



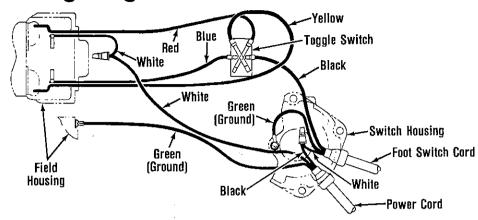
Place Insert sideways on Locking Pin and press down as far as possible.

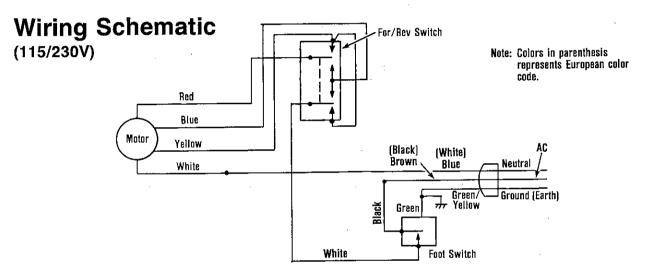


Hold Insert down firmly and with screw driver, turn so teeth face up.

Figure 22. Replacing Jaw Inserts.

No. 270 Wiring Diagram





Wiring Schematic (230V) w/Line Filter (European Color Code)



Pre-Tested Work Saver_® Tools

RIDGID Lifetime Warranty

The RIDGID REPUTATION is the result of consistent product quality and years of pride in workmanship. Rigorous checks and controls from raw materials to packaged products insure product confidence widely accepted as the mark of the professional trades. Therefore, RIDGID covers its products with a LIFETIME WAR-RANTY against defects in material or workmanship; excluding electric motors which are warranted for a period of one year from date of sale. Pipe or drain cleaning tools, rods and cables, are not covered by this warranty and are considered expendable material. To take advantage of this warranty, the complete product must be delivered prepaid to THE RIDGE TOOL COMPANY or any RIDGID AUTHORIZ-ED SERVICE CENTER. Pipe wrenches and other hand tools should be returned to place of purchase. Obviously, failures due to misuse, abuse, or normal wear and tear are not covered by this warranty. NO OTHER WARRANTY, WRITTEN. OR ORAL, APPLIES. No employee, agent, dealer, or other person is authorized to give any warranty on behalf of The Ridge Tool Company. Warranted products will be repaired or replaced, at our option, at no charge to you and returned to you via prepaid transportation. Such replacement or repair is the exclusive remedy available from Ridge. Ridge is not liable for damage of any sort, including incidental and consequential damages. Some U.S.A. states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



