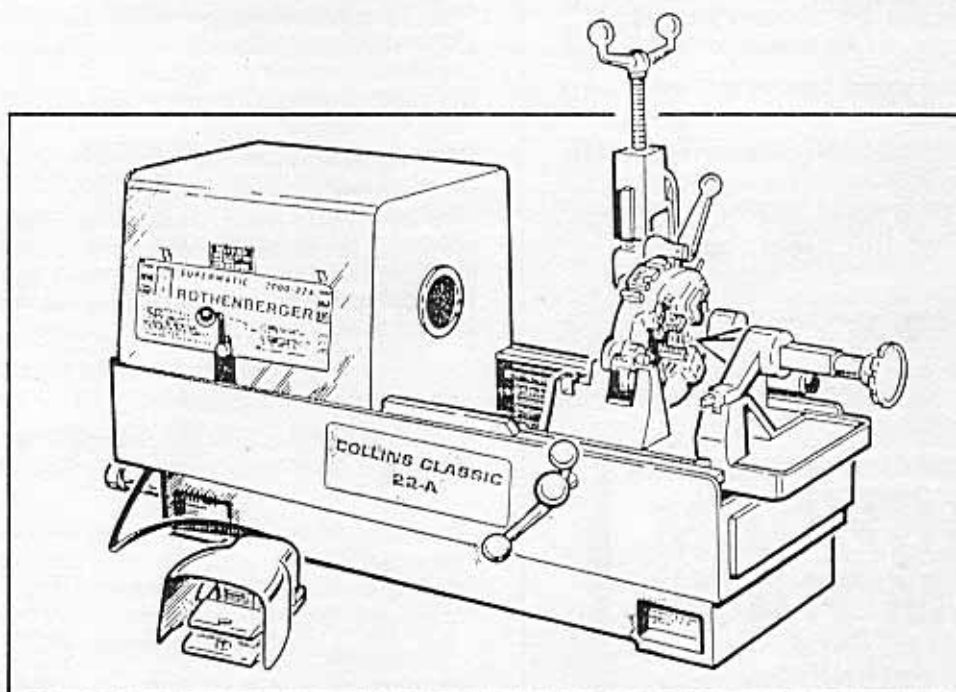


Operator's Manual and Parts Catalog

COLLINS CLASSIC 22A & SUPERMATIC 2000-22A



WARNING
Before operating this unit, read and
understand the Operator's Manual.
Become familiar with the potential
hazards of this unit.

ROTHENBERGER

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ORDERING SPARE PARTS

Manufacturing Part Numbers shown throughout this Manual. To order Spare Parts, please use Order Codes from the enclosed separate Parts Price List.

OPERATOR SAFETY INSTRUCTIONS

WARNING: This metalworking machine is designed for threading, cutting, reaming, beveling and grooving pipe with accessories made or authorized by Rothenberger. Modifying machine in any way and/or using devices not made or authorized by Rothenberger can result in serious injury and void Rothenberger's warranty and liability.

REMEMBER:

- * Operate machine from switch side only.
- * Do not disconnect or block footswitch.
- * Do not wear gloves, loose clothing or neckties.

1. **Read and understand the Instruction Manual.** Before operating or performing maintenance on this machine, read carefully the operator's manual. Become familiar with the machine's operations, applications and limitations. Be particularly aware of its specific hazards. Store the operator's manual in a clean area and always at a readily available location. Additional copies at no charge are available upon request from the factory.
2. **Inspect the equipment.** Prior to starting the machine, check the movable parts for obstructions such as rags, packing remnants, etc. Be certain that guards and machine parts are properly installed and secured.
3. **Prevent accidental startings.** Place switch in "OFF" position prior to plugging in machine.
4. **Ground the machine.** Be certain the machine is connected to an internally grounded electrical system.
5. **Keep work area clean.** Keep the work area adjacent to the machine clear of clutter for unobstructed movement of the operator. Remove all oil or coolant spills. Remove shavings from chip tray as required to maintain proper operating clearance.
6. **Use pipe supports.** It is mandatory to use floor mounted pipe stands for long, heavy work.
7. **Wear proper clothing.** Loose clothing can get easily tangled in moving parts. When operating machine, do not wear unbuttoned jackets, loose sleeve cuffs, gloves, neckties, long hair, etc. Safety glasses and shoes should be worn.
8. **Secure machine and work.** Make certain that the machine is bolted to a heavy work bench or proper stand.
9. **Always maintain machine.** Keep machine clean and cutting tools sharp for safe, dependable operation. Follow lubricating instructions. Report any unsafe condition for immediate correction.
10. **Keep alert.** Do not operate machine if ill or drowsy from medication or fatigue. Avoid horseplay around equipment and keep bystanders a safe distance from equipment.
11. **Operate on switch side only.** Machine should be operated on switch side only. Never reach across

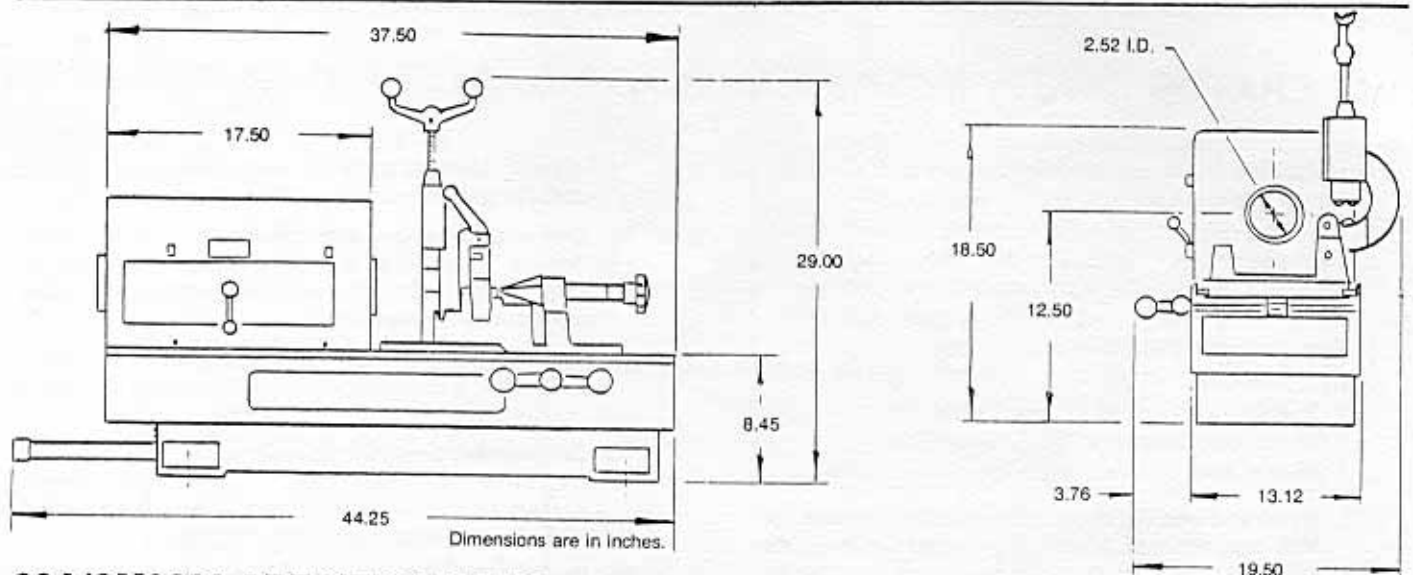
moving parts or material being worked on. Switch should always be accessible to operator.

12. **Operate in proper environment.** Machine should not be operated in damp locations. Wear hearing protection in noisy shop environments. Insure proper illumination in work area.
13. **Do not misuse machine.** Perform only the functions for which the machine is designed. Do not force machine.
14. **Disconnect power cord prior to servicing.** Repair should be attempted only by authorized personnel. Always disconnect power cord before making any adjustments or servicing the machine.
15. **Do not operate the machine with the spindle cover removed.**
16. **Keep fingers and hands away from the chucking jaws.**
17. **Keep visitors away.** All visitors should be kept a safe distance from work area.
18. **Use only recommended accessories.** Refer to Operator's Manual. Use of improper accessories may be hazardous.
19. **Caution: Do not allow familiarity gained from frequent use of your machine to become commonplace.** Always remember that a careless fraction of a second is sufficient to inflict severe injury.

MACHINERY CAN MAIM

Keep Covers In Place!





22A/SM2000 SPECIFICATIONS

Threading Capacity

Pipe 1/8" thru 2"
 Bolt 1/4" thru 2 1/4"

Cutter

Wheel type with sliding roller block.

Cutting capacity: Pipe 1/8" thru 2"
 Bolt 1/4" thru 1"

Reamer

Adjustable 5-flute cone type, right hand.

Reaming Capacity: Pipe 1/8" thru 2"

Chuck

High speed automatic chuck with 8 replacable and reversible jaws, 4 in front and 4 in rear.

Oil Pump

Gerotor type, reversible on R&L machines.

Switch, Operating

Single Phase Machines: Heavy-duty drum type, release-off-thread.

Three Phase Machines: Heavy-duty rotary type. Release-off-thread 1, thread 2.

Switch, Foot

Heavy-duty oil and watertight with safety guard, on-off

Switch, Directional (right & left mach. only)

Rocker type, right-off-left

Motor

Single Phase

- a 115 V. AC/DC, 50-60 Hz, 20 amps, 1/2 HP, 6-brush universal type
- b 230 V. AC/DC, 50-60 Hz, 10 amps, 1/2 HP, 6-brush universal type

Three Phase (optional, available at extra cost)

- a 230 V. AC, 50 or 60 Hz, 5.8/4.7 Amps, 2 1/2 HP, 3400/1700 RPM, two speed induction type
- b 380/440 V. AC, 50 or 60 Hz, 6.1/3.9 Amps, 2.7/2 HP, 2800/1400 RPM, two-speed induction type

Spindle RPM (free running)

Standard or right & left single phase machine:

- 72 RPM with standard gearbox
- 54 RPM with optional low speed gearbox
- 100 RPM with optional high speed gearbox

Right & left three phase machine:

- 60 RPM (thread 1), 120 RPM (thread 2)

Noise Level

Single phase machines: 84 dB max. ("A" scale, slow response)

Three phase machines: 81 dB max. ("A" scale, slow response)

Gearbox

Standard or right & left single phase machine:

Helical gear construction with 13.1:1 reduction (optional low speed gearbox has 16.7:1 and high speed gearbox has 9.6:1 reduction.)

Right & left three phase machine:

Helical gear construction with 3.84:1 reduction

Shipping Weight (less dieheads)

Single phase machines: 235 lbs.

Three phase machines: 265 lbs.

Standard Equipment

Thread Cutting Oil 1 gal Thred-O-Matic Oil
 Allen Wrenches 1/8", 5/32", 3/16"
 7/32", 1/4", 5/16", 3/8", 1/2"

Accessories

Grooving/Chamfering Head (No. 12200) 3/4"-2"
 Reaming/Chamfering Head (No. 13384) 3/4"-2"
 Nipple Chuck (NPT 13600) (BSPT 13610) 1/8"-2"
 Pipe Adapters 1/8"-1 1/2"
 (2" not required)
 Stud Adapters 1/4"-2" N.C. & N.F.
 Pipe Support (No. 13894) for long work
 Ball Bearing Pipe Support (No. 13206); and
 Pipe Support Fitting Using 1" and 1 1/4"
 pipe, a stationary pipe stand can be assembled for extra long work.
 Baffle Plate (No. 1984) Mounts in oil sump to prevent oil spillage
 141 Geared Threader Carriage Kit (No. 13312)
 Mounts on carriage rails for close-coupled threading using 2 1/2"-4" 141 geared threader
 Machine Cover (No. 1985) durable fitted vinyl/canvas cover
 Special Purpose Carriage (No. 13945) Carriage for threading short lengths

- Oil Spout Assembly (No. 12267) Carriage mounted flex hose for additional oiling
- Thread Length Indicator Mounts on carriage and base
- MPF Groover (No. 13910) Groover mounts in cutter position for grooving 1"-2" pipe to accept Michigan pipe fittings

Stands

- No. 12029 wheel stand with tray and 14" rubber tire wheels
- No. 12030 wheel stand with enclosed cabinet, and 14" rubber tire wheels

Dieheads

Automatic Opening

- Range:
- pipe: 1/2"-2"
- bolt: 1/4"-2 1/4", 6-52mm

See Die Tables 1, 7, and 9.

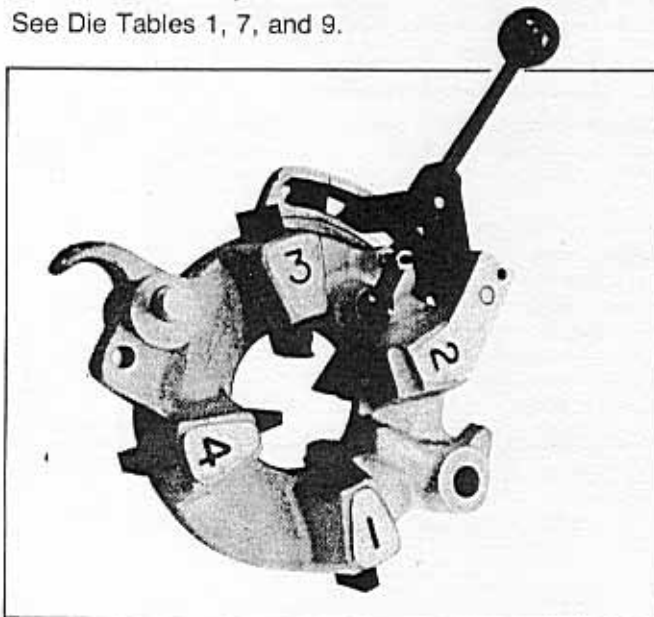


Figure 1

Uniquad

- Range:
- pipe: 1/8"-2"
- bolt: 1/4"-2 1/4", 6-52mm

See Die Tables 1, 3, 4, 6, 7 9.

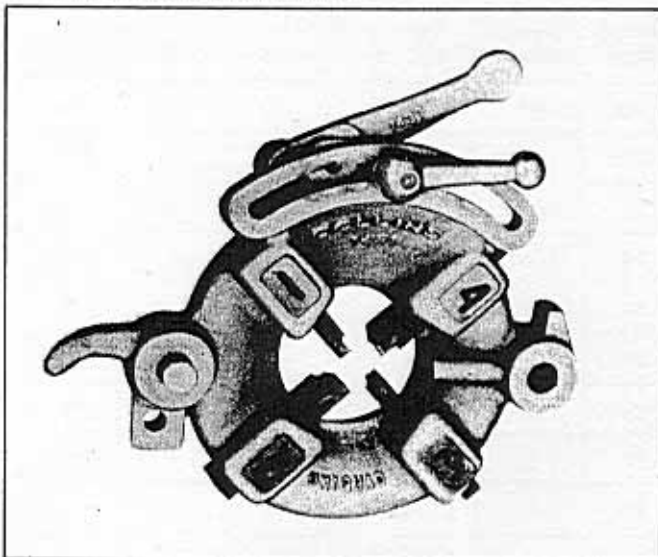


Figure 3

Snap-O-Matic

- Range:
- pipe: 1/8"-2"
- bolt: 1/4"-2 1/4", 6-52mm

Models Available:

- Mono 1/8"
- Dual 1/4"-3/8", 1/2"-3/4", 1"-1 1/4", 1 1/2"-2"
- Quad 1"-2"

See Die Tables 2, 3, 4, 6, 7, 9.

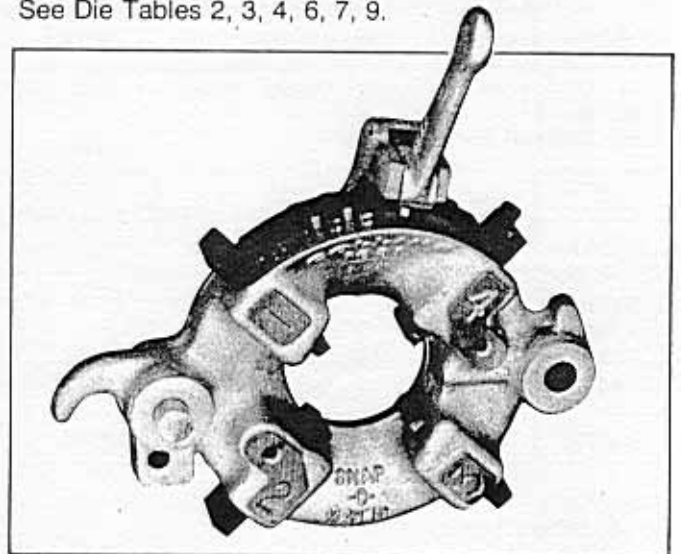


Figure 2

Diehead #12200

Beveling, grooving, or saran cutting head. Range: 3/4"-2" pipe.

See Die Tables 8 and 10.

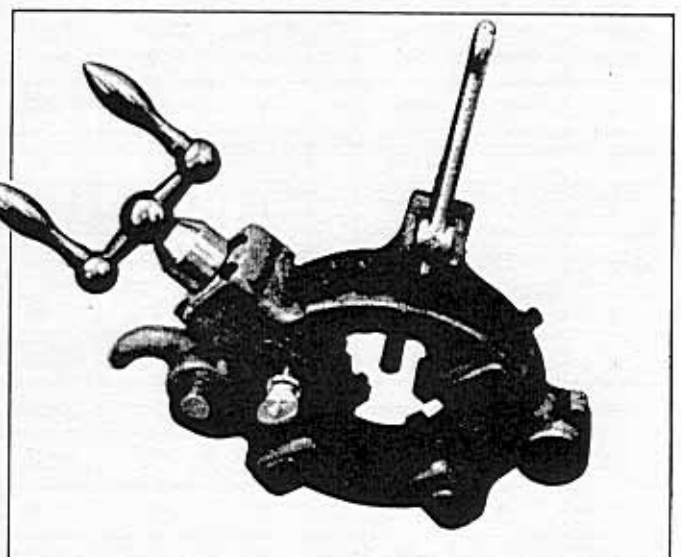


Figure 4

6

Die Tables

Right hand die numbers shown. For left hand dies use right hand die numbers and add "LH". (Example: 2581-LH) *Indicates thread forms available in Left Hand.

Table No. 1
1/8"-2" Universal Pipe Dies

	1/8"	1/4"-3/8"	1/2"-3/4"	1"-2"
NPT*	2581	2582	2583	2584
NPSM	2581-1	2582-1	2585	2586
NPT(SS)	12776	12777	12778	12779 (1"-1 1/4") 12780 (1 1/2"-2")
BSPT*	2611	2612	2613	2614
BSPP*	2611-1	2612-1	2613-1	2614-1

Table No. 2
1/8"-2" Snap-O-Matic Pipe Dies

	1/8"	1/4"-3/8"	1/2"-3/4"	1"-2"
NPT*	2591	2592	2593	2584
NPSM	2591-1	2592-1	2588	2589 (1"-1 1/4") 2590 (1 1/2"-2")
NPT(SS)	2591-S	2592-S	2593-S	12779 (1"-1 1/4") 12780 (1 1/2"-2")
BSPT*	2601	2602	2603	2614
BSPP*	2601-1	2602-1	2603-1	2614-1

Table No. 3
Acme General Purpose Dies

1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"
13551	13552	13553	13554	13555	13556	13557	13558	13559

Table No. 4
Trapezoidal Metric Dies

14mm	16mm	18mm	20mm	22mm	24mm	26mm	28mm	30mm	32mm	36mm
13570	13571	13572	13573	13574	13575	13576	13577	13578	13579	13580

Table No. 6
1/2"-2" British Electric Conduit

1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
2670	2671	2672	2673	2674	2675

Table No. 7
Metric Bolt Dies*

Metric Size	Metric Pitch	Part No.
6	1	2701
7	1	2702
8	1	2731
8	1.25	2703
8	1.50	2750
9	1	2732
9	1.25	2704
10	1	2733
10	1.5	2705
11	1	2734

Metric Size	Metric Pitch	Part No.
11	1.5	2706
12	1.5	2735
12	1.75	2707
14	1.5	2736
14	2	2708
16	1.5	2737
16	2	2709
18	1.5	2738
18	2.5	2710
20	1.5	2739

Metric Size	Metric Pitch	Part No.
20	2.5	2711
22	1.5	2740
22	2.5	2712
24	2	2741
24	3	2713
25	2	2745
25	1.5	2746
27	2	2742
27	3	2714
30	2	2743

Metric Size	Metric Pitch	Part No.
30	3.5	2715
32	1.5	2744
33	3.5	2716
36	4	2717
39	4	2718
40	1.5	2747
42	4.5	2719
45	4.5	2720
48	5	2721
50	1.5	2748
52	5	2722

Table No. 8
Beveling, Grooving, and Saran Bits

	Centering Dies	Grooving & Cutting Bits	Cutting Bit	Double Bevel Bit 45°	Double Bevel Bit 37.5°	Saran Tools
¾"	12416	12205	12206	12269	12212	12219
1"-2"	2760	12205	12206	12269	12212	12219

Explanation of thread forms:

NPT	National Pipe Taper
NPSM	National Pipe Straight Mechanical
NPTSS	National Pipe Taper for Stainless Steel
BSPT	British Standard Pipe Taper
BSPP	British Standard Pipe Parallel
UNC (NC)	United National Coarse
UNF (NF)	United National Fine
BSW	British Standard Whitworth
BSF	British Standard Fine
BEC	British Electrical Conduit

Table No. 9
Universal Bolt Dies

	¼"	5/16"	¾"	7/16"	½"	9/16"	⅝"	¾"	7/8"	1"	1⅛"	1¼"	1⅝"
UNC*	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513
UNF*	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533
BSW*	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633
BSF	2650	—	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661

	1½"	1⅞"	1¾"	1⅝"	2"	2¼"
UNC*	2514	2515	2516	2517	2518	2519
UNF*	2534	2535	2536	2537	2538	—
BSW*	2634	2635	2636	2637	2638	2639
BSF	2662	—	2663	—	2664	—

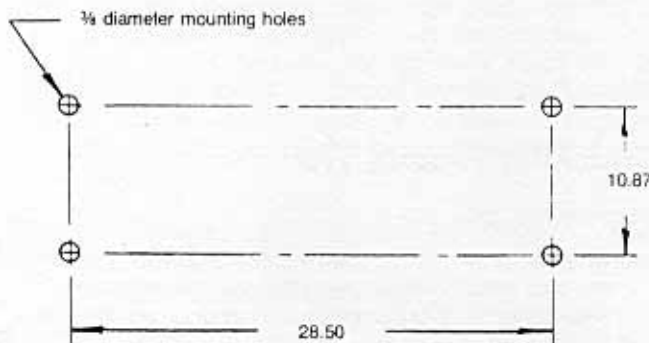
Table No. 10
Reaming and Chamfering Tools, ¾"-2"

Centering Dies	30° Reaming, 25° Chamfering Tool	10° Reaming, 37.5° Chamfering Tool	10° Reaming, 30° Chamfering Tool
13390	13310	13779	13944

Preparing for Operation

Mounting

Be sure the Thred-O-Matic 22-A is solidly mounted on the Collins Stand or substantial bench. ¾" holes in the base are provided for this purpose.



Dimensions are in inches.

When bench mounting, to assure oil draining into the sump, mount motor end of machine ¾" higher than the other end.

When mounting on the Collins Stand, place motor end of machine over the wheel end of stand, which is built higher for proper oil drainage.

Power

Use proper electric current as shown on name plate.

To prevent power loss, grounded extension cord of sufficient capacity must be used.

To avoid electric shocks when operating in the field, connect the ground wire of the extension cord.

Power	Cord Length	Wire Size
115 V	Below 50'	12-3
	50'-100'	10-3
220V 1 Phase	Below 50'	14-3
	50'-100'	12-3

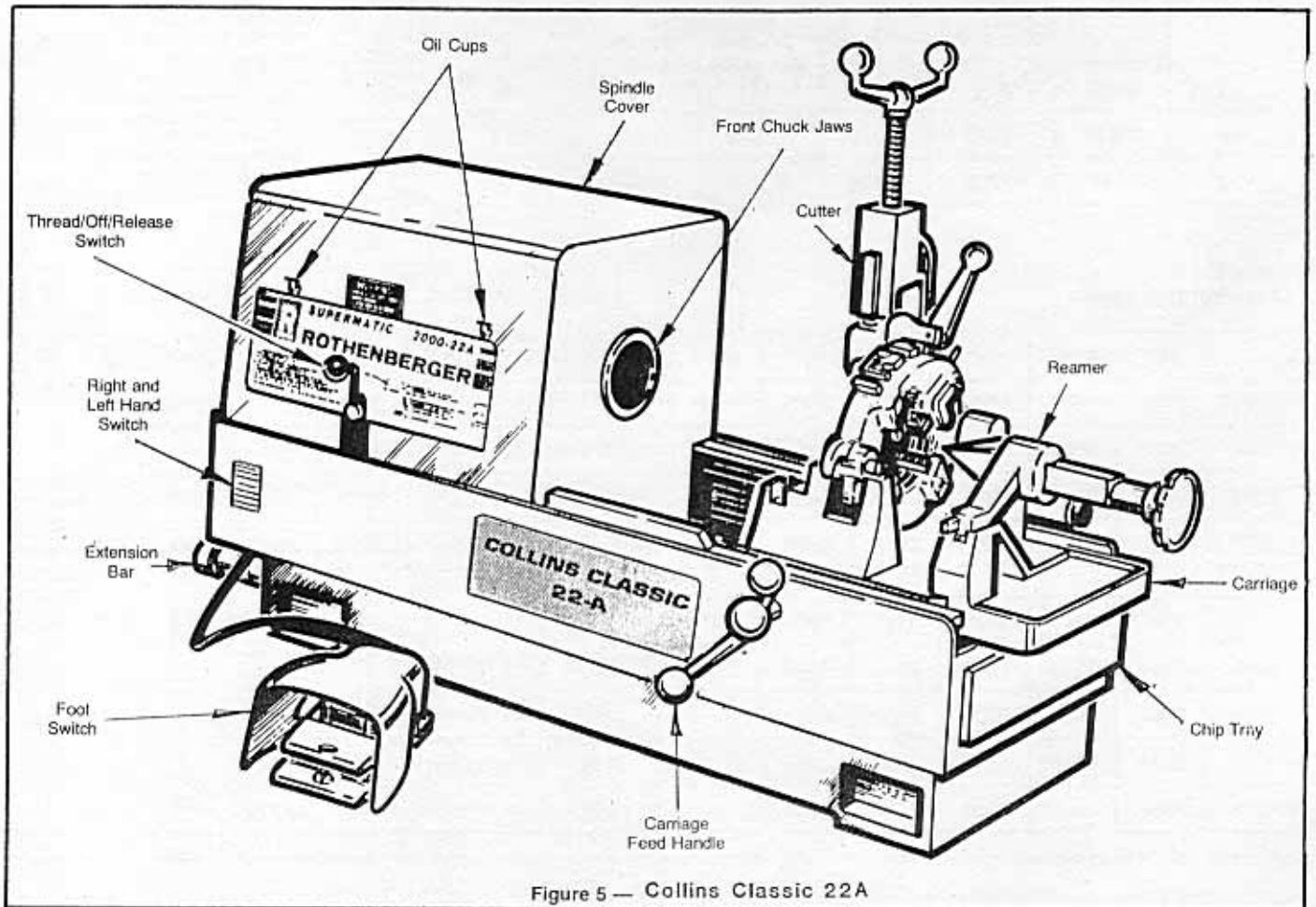


Figure 5 — Collins Classic 22A

Operating Procedure

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

1. Mount machine on a stand or bench as instructed.
2. Pour one gallon of Thred-O-Matic oil into the Thred-O-Matic 22-A sump. If Thred-O-Matic oil is not available, use an equivalent dark, sulphur base thread cutting oil. Thred-O-Matic oil is a special oil designed to stand up under the high speed operation of this machine. Other oils will have a tendency to break down, thereby causing excessive die wear and poor thread quality. Oil pump is self-priming; therefore no priming is needed.
3. For first 10 days of operation, lubricate the spindle bearings every 4 hours with SAE 30 lubricating oil.
4. Your Collins 22-A is equipped with two electrical switches; a safety foot switch, and a thread / off / release (T.O.R.) switch. Collins right & left hand 22-A's have a third switch; a right & left hand directional switch. The function of these switches are as follows: The safety foot switch is designed to provide the operator with a rapid method of stopping electrical power to the machine if an emergency should

occur. Also it insures that the machine cannot be operated unless the operator is in proper position. The thread / off / release switch is the main operating switch. The thread position closes the jaws and rotates the spindle. The off position stops the machine. The reverse position opens the jaws. The reverse position is spring loaded to return to the off position. The right and left hand switch changes the direction of the motor and therefore the direction of the spindle.

5. After making proper electrical connection, step on foot switch and move thread / off / release switch to thread position in order to check oil flow. When die head is in the down position, oil will follow through the die head. If up, oil will flow from bypass pressure relief valve.

Chucking Pipe or Rod

STANDARD 22-A

1. Step on foot switch. (While operating the machine the foot switch will be depressed providing power to the machine. If an emergency occurs, remove foot from switch.)
2. Turn T.O.R. switch to "release" to open jaws.

3. Release T.O.R. switch, and it will return to "off" position.
4. Swing die head, cutter, and reamer up and back to out-of-way position.
5. Insert rod into chuck from either front or rear position for desired length to be cut.

NOTE: For long pieces of pipe or rod, use No. 13894 Adjustable Pipe Support.

6. Move T.O.R. switch to thread position. (Pipe will be chucked automatically and will rotate.)

RIGHT AND LEFT 22-A

1. Turn T.O.R. switch to "release" to open jaws.
2. Push directional switch to desired type of thread (right hand or left hand.)

NOTE: Make sure there is no pipe in the machine before proceeding to step #3.

3. Again, turn T.O.R. switch to "release" position and jaws will cycle to open position.
4. Insert pipe or rod into chuck from either front or rear and position for desired length to be cut.
5. Move T.O.R. switch to thread position.
6. To reposition for opposite threading direction follow steps 1-5.

NOTE: Machine must be at a full stop before using left and right Directional Switch.

Threading Pipe or Rod

1. Slip the proper size die head on to the carriage pin, and lower the head into the carriage groove.
2. On Uniquad heads, close operating handle; on Snap-O-Matic heads, select the correct size and engage the operating handle pin. On automatic dieheads, pull operating lever forward to cock spring-loaded plunger.
3. Turn carriage handle counterclockwise to bring dies against stock.
4. With T.O.R. switch in thread position apply slight pressure on carriage handle until a few threads have been cut, after which the head will feed itself automatically.
5. Correct thread length is normally obtained when stock reaches the outside edge of chasers. When pipe is still rotating, open head.

CAUTION: While threading, open Die Head before Carriage reaches full length of travel. If Carriage strikes Base, excessive strain is put on the machine and damage may result.

6. Move T.O.R. switch to "off" position and turn carriage handle clockwise to clear the die head from the pipe.

Threading Pipe or Rod (Left Hand)

NOTE: Left hand threading operation possible only on 22-A's with right and left hand option.

1. Reverse chuck jaws for left hand threading. (Follow steps 1-5 under "Right and Left 22-A.")
2. Install left hand dies into die head. (See "Installing Dies.")

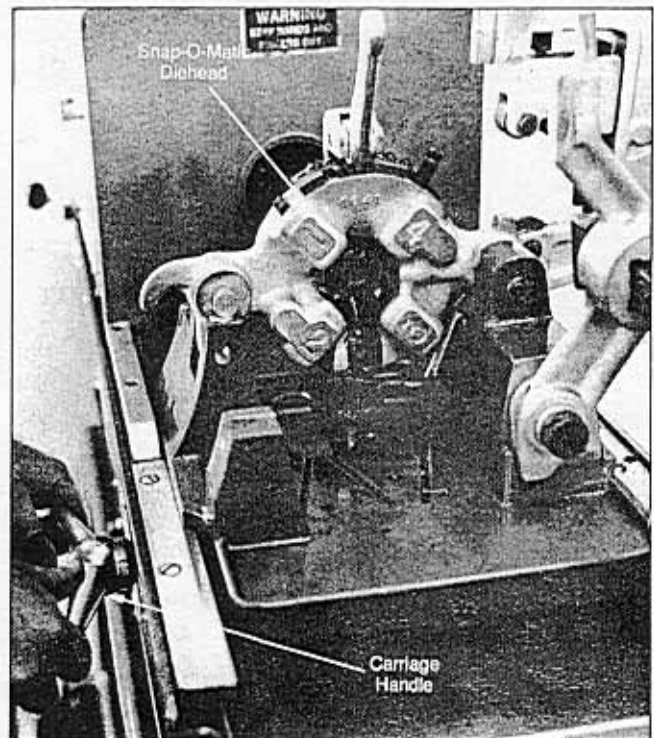


Figure 6 — Threading Pipe or Rod

3. Slip the proper size die head on to the carriage pin, and lower the head into the carriage groove.
4. Slide die head retainer pin through opening in carriage to hold die head.
5. Follow right hand threading instructions, Steps 1-6.

Cutting Pipe or Rod

1. With pipe properly chucked and with cutter, reamer and die head in out of the way position, operate carriage handle until cutter is over area of pipe to be cut.
2. Move T.O.R. switch to "Thread."
3. With roller block retracted to fit over pipe or rod, bring cutter down and turn cutter handle (Fig. 7) clockwise to force cutter wheel against stock to make cut.

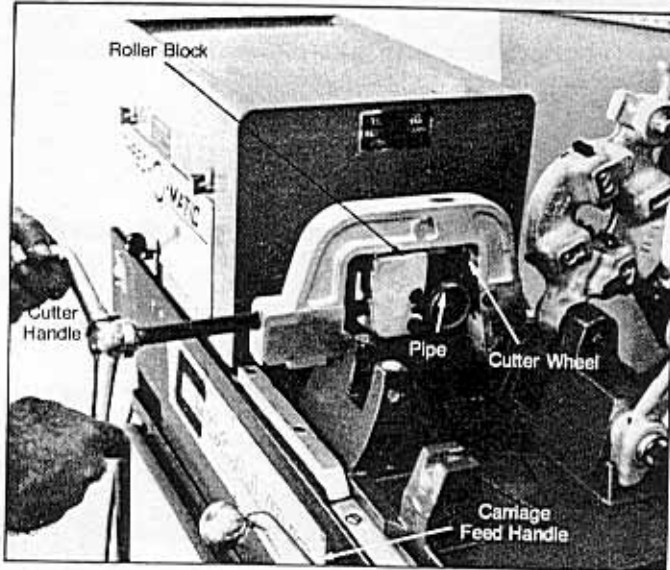


Figure 7 — Cutting Pipe

NOTE: This machine will cut $\frac{1}{8}$ " through 2" pipe or $\frac{1}{4}$ " through 2 $\frac{1}{4}$ " rod. NEVER cut into threads, as this may cause damage to cutter wheel.

4. When pipe is cut, move T.O.R. switch to off and raise cutter to out-of-way position.

Removing Pipe from Chuck

1. Put T.O.R. switch in release position to open jaws.
2. Release T.O.R. switch; it will return to off position.
3. Pull pipe from either front or rear of machine.

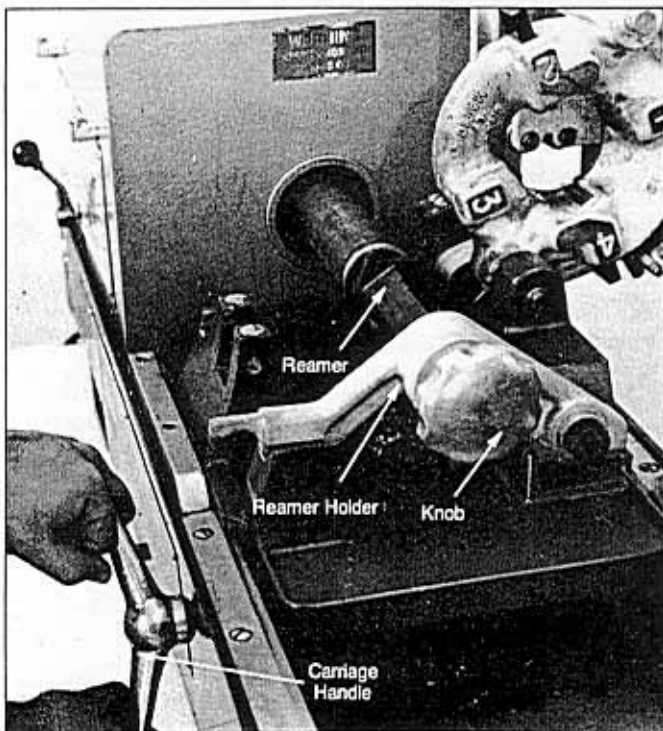


Figure 8 — Reaming Pipe

Reaming Pipe

1. A reamer (Fig. 8) is provided to remove burrs from inside diameter of cut pipe. To use reamer, raise cutter and die head. Swing reamer down into alignment with pipe.
2. Reamer can be extended toward pipe, if necessary, by sliding reamer knob toward reamer arm until contact with reamer holder. Twist reamer knob to left $\frac{1}{4}$ turn to lock in position.
3. With pipe chucked and rotating, turn carriage handle counterclockwise so that flutes of reamer enter pipe. Momentarily apply pressure to handle to force reamer against pipe to remove burrs.
4. After reaming, retract reamer and turn T.O.R. switch to off. Place reamer in out-of-way position.

Installing Dies in Uniquad Die Head (R.H. & L.H.)

The Uniquad Die Head (Fig. 9) requires a set of four Dies to thread pipe ranging from $\frac{1}{8}$ " through 2". One set of dies is required for each of the following pipe size ranges: ($\frac{1}{8}$ "), ($\frac{1}{4}$ " and $\frac{3}{8}$ "), ($\frac{1}{2}$ " and $\frac{3}{4}$ "), and (1" through 2"). Bolt threading requires a separate set of dies for each bolt size.

1. Lay die head on bench with numbers face up.
2. Flip operating lever to OPEN position.

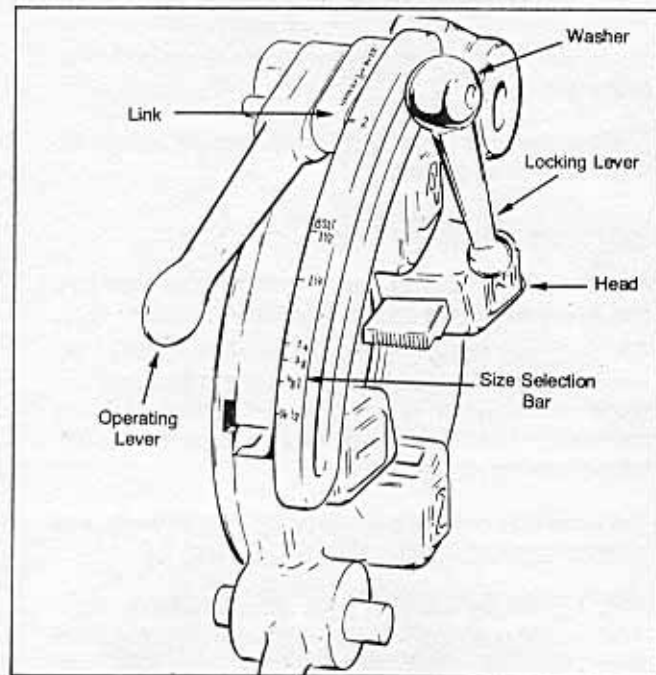


Figure 9 — Uniquad Diehead

3. Loosen locking lever approximately three turns.
4. Slide operating lever all the way to end of slot in the OVER direction indicated on size selection bar.
5. Remove dies from die head.
6. Die numbers 1 through 4 must agree with those on die head.

7. Insert dies until die pins are seated in scroll slots.
8. Slide operating lever until index line on link is aligned with proper size mark on size selection bar.
9. Tighten locking lever. For bolt threads, align index line with BOLT line, 1½" on size selection bar.
10. If oversize or undersize threads are required, set the index line in direction of OVER or UNDER size mark on size selection bar.
11. To install die head, slip die head onto carriage die head pin.

Installing Dies in Snap-O-Matic Die Heads (R.H. & L.H.)

The Snap-O-Matic Die Heads (Fig. 10) are available in the following models and sizes:

Mono	1/8"
Dual	(1/4"-3/8"), (1/2"-3/4") (1"-1 1/4"), (1 1/2"-2")
Quad	(1"-2")

One set of dies are required for each of the pipe size ranges shown above. Bolt threading requires separate set of dies for each bolt size.

1. Lay die head on bench with numbers face up.
2. Remove stop screw with 3/16" Allen wrench.
3. Flip operating lever to open position.
4. Rotate scroll plate with operating lever clockwise until slots in scroll plate and head line up.
5. Remove dies from die head.

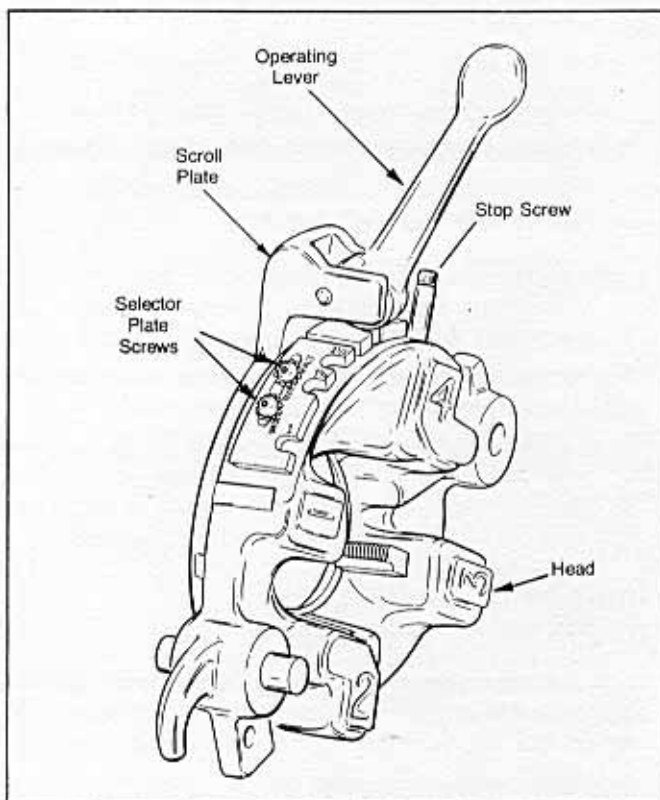


Figure 10 — Snap-O-Matic Die Head

6. Die numbers 1 through 4 must agree with those on die head.
7. Insert dies until die pins are seated in scroll slots.
8. Rotate scroll plate with operating lever towards selector plates, and replace stop screw.
9. For bolt threads, engage operating lever pin in selector plate slot marked "1½/BOLT."
10. If oversize or undersize threads are required, use 5/32" Allen wrench to loosen selector plate screws. Slide selector plate in direction of over or under size mark on plate. Tighten selector plate screws.
11. To install die head, slip die head onto carriage die head pin.

Installing Dies in Automatic Opening Die Head (R.H. & L.H.)

The Automatic Die Head (Fig. 11) requires two sets of dies to thread pipe ranging from ½" through 2". One set of dies is required for each of the following pipe size ranges: (½" and ¾"), and (1" through 2"). Bolt threading requires a separate set of dies for each bolt size.

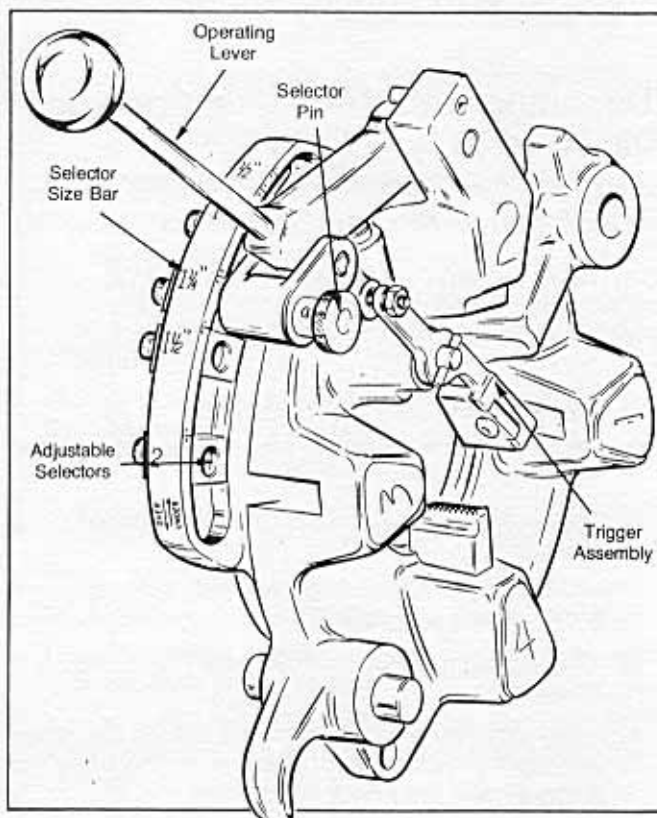


Figure 11 — Automatic Opening Die Head

1. Make sure trigger assembly is released.
2. Disengage selector pin and swing it up, out of the way.
3. Lay head down with numbers up.
4. Rotate selector size bar to open position.

5. Remove die segments No. 1, 3, and 4. Move die segment No. 2 until die pin can freely travel in outer scroll slot.
6. Rotate selector size bar counter clockwise until No. 2 die segment pin is free and can be removed from Die Head.
7. Die numbers 1 through 4 must agree with those on die head.
8. Slide No. 2 die segment in die head slot as far as possible. Rotate selector size bar clockwise until it stops. Push segment 2 into the die head as far as possible.
9. Insert segments 1, 3 and 4.
10. Rotate selector size bar counter clockwise and engage selector pin.
11. For bolt threads, engage selector pin in 1½" setting.
12. If oversize or undersize threads are required, use 3/16" Allen wrench and loosen adjustable selector screws approximately two turns. Move adjustable selector in direction of over or under size mark on selector size bar. Tighten screw.

NOTE: Factory setting marked on the right hand edge of the adjustable Selector.

Threading with Automatic Opening Die Head (R.H. & L.H.)

NOTE: Two different thread length gauges are used on the trigger for NPT (#12693) and BSPT (#12554).

CAUTION: DO NOT LEAN OVER AUTOMATIC OPENING DIE HEAD AS OPENING LEVER COULD STRIKE FACE WHEN AUTOMATICALLY OPENED.

1. Install the die head on carriage pin.
2. Find the correct adjustable size selector and engage the selector pin.
3. Pull operating lever forward to cock the spring loaded plunger.
4. Insert stock through the spindle from either the front or rear of the machine.
5. After stepping on foot switch, turn T.O.R. switch to "Thread."
6. Apply slight pressure on carriage handle until a few threads have been cut, after which the head will automatically feed itself.
7. When the correct thread length is obtained, the die head will open automatically, at which time, move carriage away from stock.
8. Move T.O.R. switch to off.

Continuous Threading

1. Remove thread length gauge from the trigger.
2. Lift the trigger set screw out of its socket and rotate the trigger 45° to get it out of the way.

3. Follow steps 2, 3, 4, 5, 6 of THREAD CUTTING.
4. When the correct thread length is obtained, open die head by moving operating lever toward the rear and move carriage away from the stock.
5. Move T.O.R. switch to off.

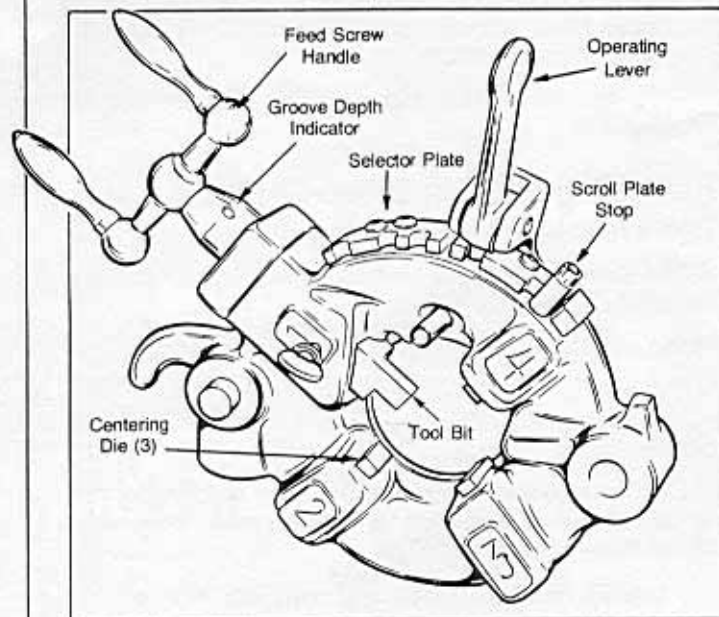


Figure 12 — Die Head #12200

Installing Centering Dies in Die Head #12200

The 12200 die head uses three centering die segments. Refer to Die Tables No. 8 and 10 for correct centering dies.

1. Lay die head on bench with numbers face up.
2. Remove stop screw with 3/16" Allen wrench.
3. Rotate scroll plate with operating lever to open position.
4. Remove dies from die head.
5. Die numbers 2 through 4 must agree with those on die head.
6. Insert dies until die pins are seated in scroll slots.
7. Rotate scroll plate with operating lever towards selector plates and replace stop screw.
8. If oversize or undersize adjustment is required, use 5/32" Allen wrench to loosen selector plate screws. Slide selector plate in direction of over or under size mark on plate. Tighten selector plate screws.

Installing Tool Bits in Die Head #12200

All tool bits are used in the No. 1 die slot opening on the 12200 die head. Refer to Die Tables No. 8 and 10 for correct tool bit.

1. Mount head on carriage pin.
2. Insert tool bit into the No. 1 die slot opening on No. 12200 die head.

3. Rotate feed screw handle counter clockwise slowly until tool bit engages. Continue to rotate until handle stops.
4. To replace tool bit, rotate feed screw handle clockwise until tool bit disengages. Pull tool bit out of die head slot.

Operating Die Head #12200 for Grooving, Beveling, or Saran Cutting

NOTE:

- A. Always retract Tool Bit before operating machine.
- B. Insure adequate Collins Thred-O-Matic oil is present during machining.

1. Install head on carriage pin.
2. Turn feed screw handle all the way counter clockwise until it stops.
3. Disengage operating lever from selector plate and push it back against the scroll plate stop to retract centering dies.
4. Make certain the pipe end to be machined is positioned close to the front jaws.
5. Chuck pipe in the machine as previously instructed and position die head over pipe by using carriage feed handle.
6. Pull operating lever towards the operator in order to engage in proper size slot of selector plate.
7. Feed the tool bit in the same manner that you would operate a lathe. Use a slow, even feed rate.

NOTE: Do not plunge tool into pipe

A continuous chip will curl off and away from the tool at the proper feed. Excessive feed causes breakdown of the cutting edge which will decrease tool life or damage the tool. Excessive feed is indicated by:

- a) Poor surface finish.
- b) Bluish colored chip due to excessive heat generation.
- c) Chips crowd and build up on the tip of the tool, instead of spiraling off away from the tool.

Advance the tool slowly as the tool breaks through the pipe. Let the pipe turn 2-3 revolutions when it breaks through in order to obtain a clean cut-off and to avoid tool breakage. After cut-off, advance the tool until the groove depth indicator size mark matches the guide line. Turn the feed screw one turn clockwise to finish the groove to the correct diameter. Let the pipe rotate 2-3 revolutions to clean-up the groove.

8. Retract tool bit by turning the feed screw handle counter-clockwise until it stops. Retract the centering dies by disengaging and moving the operating lever away from the operator until it stops. Move carriage away from pipe and stop machine.
9. For grooving, check groove diameter. (Go/no-go gauges are available from Collins.)

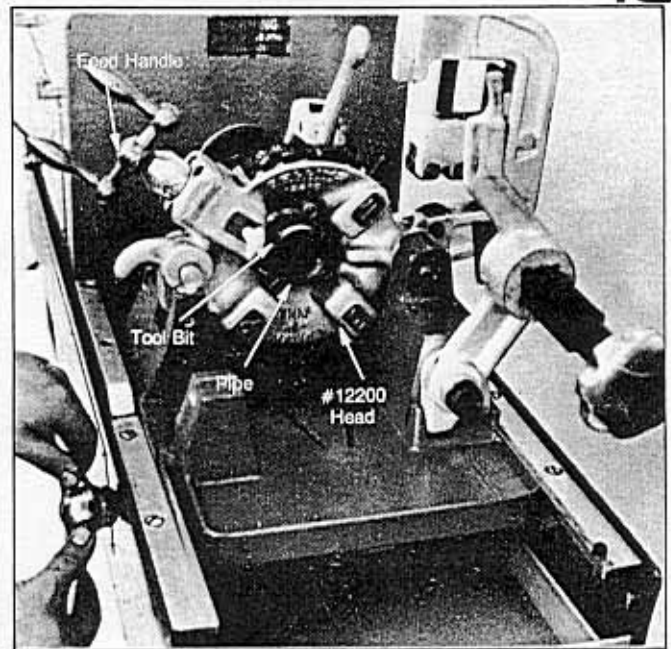


Figure 13 — Reaming and Chamfering

Operating Die Head #13384 for Reaming and Chamfering

NOTE:

- A. Always retract tool bit before operating machine.
- B. Insure adequate Collins Thred-O-Matic oil is present during machining.

1. Install head on carriage pin. See Fig. 13.
2. Turn feed screw handle all the way counter clockwise until it stops.
3. Disengage operating lever from selector plate and push it back against the scroll plate stop to retract centering dies.
4. Make certain the pipe end to be machined is positioned close to the front jaws.
5. Chuck pipe in the machine as previously instructed.
6. Pull operating lever towards the operator in order to engage in proper size slot of selector plate.
7. Rotate feed screw handle clockwise to extend tool bit. Align ream and chamfer cutting edge to pipe wall.
8. Rotate carriage handle counter clockwise to advance tool bit to end of pipe.
9. Adjust cutting tool for desired ream and chamfer. Apply pressure on carriage handle until machine operation is completed.
10. Open head and retract carriage.

NIPPLEMAX, 1/8" - 2" THREADING NIPPLES

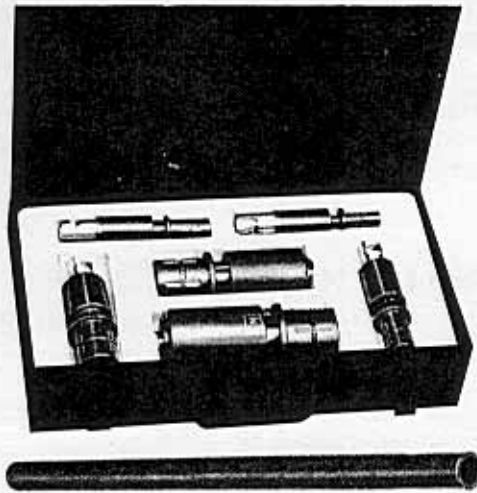
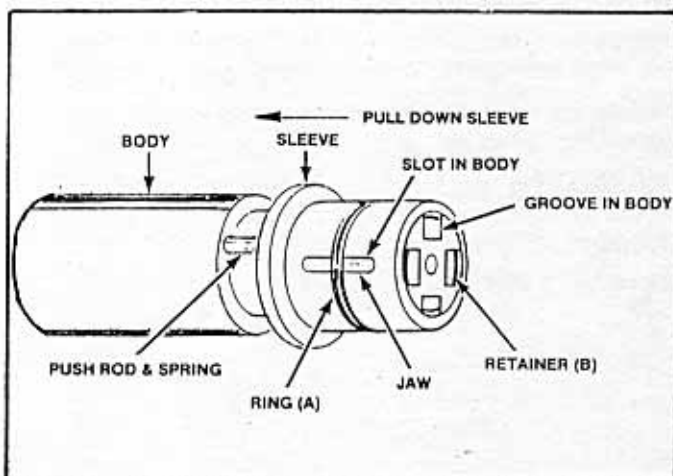
1. Ream the inside of the pipe and thread one end with threading machine.
2. Cut the pipe to required length.
3. Chuck the Nipplemax in the front chuck, being careful to mount it centered.
4. Put the already threaded end of the pipe on the Nipplemax.
5. **IMPORTANT:** Press the Die-Head with Dies against the pipe firmly, **BEFORE** switching on the machine.
6. After the thread is completed, the nipple can be easily removed by hand.

NOTES:

- A. The pipe end which will be put on the Nipplemax should be reamed to remove all I.D. burrs.
- B. The nipple should be put completely on the Nipplemax.
- C. Jaws Slots and Grooves should be kept clean.
- D. Do not start machine until dies contact the nipple to avoid slipping.

HOW TO REPLACE JAWS IN NIPPLEMAX: See close up view.

1. Pull down sleeve.
2. Remove Retainer (b) from Body with a screwdriver. Don't distort wire.
3. Pull up Sleeve to remove it from Body.
4. Remove Jaws from inside of Sleeve and remove Ring to clean Slots.
5. Clean Jaws, grooves and Slots.
6. Put in new jaws.
7. Put sleeve with Jaws on Body. If it was necessary to remove Ring (a) to clean Slots, put Ring (a) on Body.



PART NO.	DESCRIPTION
0.0089	Nipple Max Kit, 1/2"-2", with Extension Bar and Carry Case
0.0190	1/2" Chuck
0.0191	3/4" Chuck
0.0192	1" Chuck
0.0193	1-1/4" Chuck
0.0194	1-1/2" Chuck
0.0195	2" Chuck
0.0199	Shank, for Nipple Max Chucks

"Making-On" Pipe Fitting and Valves

The 22-A may be used to assemble pipe fittings and valves on to the threaded end of a pipe using a heavy-duty 18" pipe wrench.

WARNING: For making on fittings, use only an 18" pipe wrench. Larger wrenches may damage machine base.

1. Retract carriage to farthest position away from front chuck.
2. Insert pipe into chuck and position the end of the pipe to be assembled close to the front jaws.

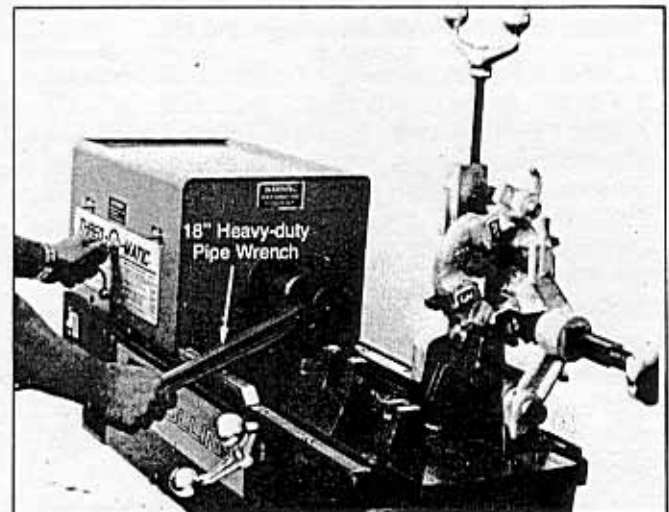


Figure 17 — "Making On"

3. Move T.O.R. switch to thread, and chuck pipe.
4. Return T.O.R. switch to off.
5. Hand tighten fitting on the end of pipe.
6. Place 18" pipe wrench under fitting and tighten pipe wrench jaws.
7. Rest handle portion of pipe wrench on the make-on bar. See Fig. 17.

WARNING: Make-on in right threading direction only.

8. Put T.O.R. switch in thread position.
9. When pipe has made up to desired length, turn T.O.R. switch to release.
10. Remove pipe wrench and pipe with fitting.

"Breakdown" Pipe Fittings and Valves

The 22-A may be used to break loose pipe fittings and valves on the end of pipe.

NOTE: Breakdown feature not included on 22-A's with three-phase motors.

CAUTION: Operate in right-hand threading direction only.

1. Insert pipe through rear chuck and position fitting near jaws.
2. Put T.O.R. switch in thread position, and chuck pipe.
3. Return T.O.R. switch to off position.
4. Slide extension bar out.

5. Place 18" pipe wrench under fitting and tighten pipe wrench jaws.
6. Rest handle portion of pipe wrench on extension bar. (Figure 18)
7. Put T.O.R. switch in thread position.
8. When fitting is removed, put T.O.R. in off position.



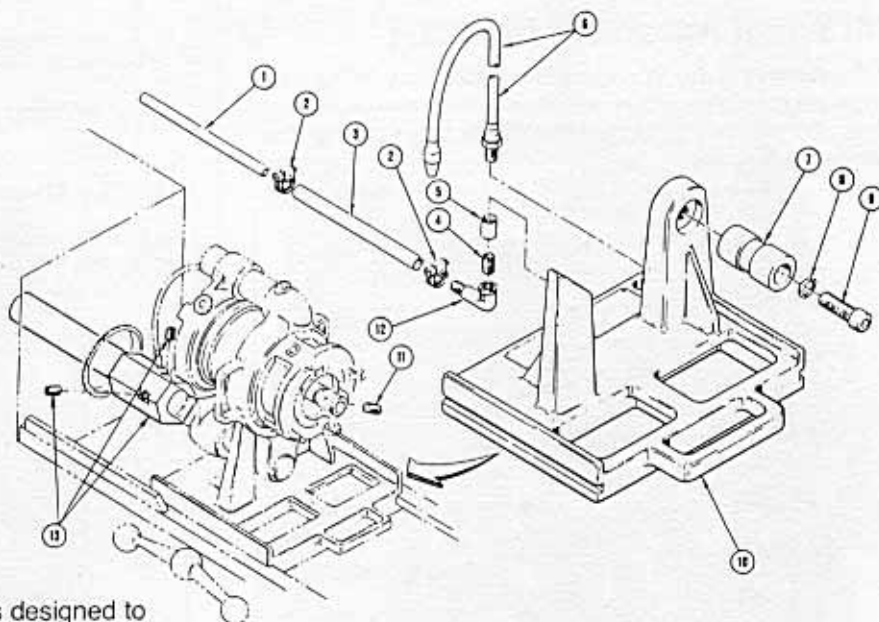
Figure 18 — Breakdown

Using a Universal Shaft

WARNING: Using a universal drive shaft on the 22-A is not recommended. See 141 Geared Threader Kit.

No. 141 Geared Threader Kit Parts and Instructions

Item	Part No.	Description
1.	13351	Tube, telescopic, coolant
2.	13352	Clamp, hose, 1/2" (2)
3.	13315	Tubing, poly-flo, 1/2"
4.	13316	Nipple, pipe, close, 1/8"
5.	4085	Coupling, pipe, 1/8"
6.	4657	Spout, flexible, coolant
7.	13314	Pin, carriage, geared threader
8.	C-113	Lockwasher, pin, retaining, 1/2"
9.	F-507	Screw, soc. hd. cap, 1/2"-13 x 3/4" lg.
10.	13313	Carriage, geared threader
11.	H-505	Setscrew, geared threader, 1/2"-13 x 3/4" lg.
12.	4556	Elbow, pipe, st., 1/4"
13.	13353	Drive Bar Assembly (includes item No. 14 setscrew)
14.	H-504	Setscrew, 1/2"-13 x 3/8" long (2)



The 141 Geared Threader Carriage Kit is designed to be used only on a Collins right and left hand 22-A Thred-O-Matic with a Ridge Tool No. 141 2 1/2"-4" Geared Threader.

1. Remove the 1/4" carriage stop screw on the rear base rail before sliding off the 22-A carriage assembly.

2. Slide on the 141 geared threader carriage. Insert the 3/8" copper oil line into the No. 1564 rubber oil line sleeve.

3. Mount the 141 geared threader onto the carriage pin and tighten the No. H-505 setscrew firmly. Make sure that the geared threader housing is resting on the carriage support.
4. Read and understand the instructions in the Geared Threader Manual for proper operation.
5. Use a Collins No. 10170 pipe support stand every six feet of pipe length.
6. Make sure the 22-A is in the right hand threading position. Open the machine chuck jaws. Put the pipe section of the drive bar into the machine spindle first, then slip the hexagonal part onto the geared threader drive shaft.
7. Adjust the oil hose so that oil will flow onto the dies and pipe.
8. Chuck up the drive bar. Keep machine running until geared threader disengages. Make sure that there is a copious flow of oil on the dies and the pipe.
9. When the geared threader disengages, stop machine. Open the jaws and remove drive bar. Change the machine into left hand threading. Slide the drive bar back onto the geared threader drive shaft as described in No. 6.
10. Chuck up the drive bar and back off the geared threader. When the dies are no longer touching the pipe thread, stop the machine and remove the pipe.
11. It may be necessary to use a wire brush occasionally on the front jaws to remove accumulation of metal which can gather in the jaw teeth. This accumulation if not removed can result in the drive bar slipping.

Oil Spout Assembly (#12287)

By removing the $\frac{1}{8}$ " pipe plug in the back of the carriage die head pin, the oil spout assembly may be easily mounted to provide additional oiling during reaming and cutting operations.

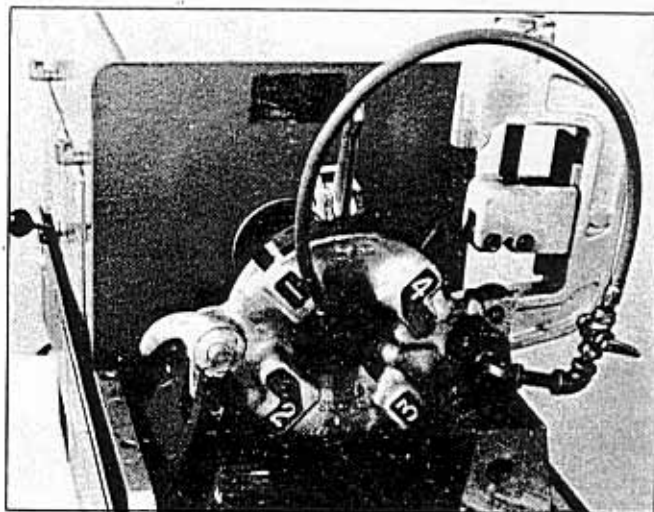


Figure 19 — Oil Spout Assembly

Special Purpose Carriage Assembly (#13945)

For threading of short nipples

Using the special purpose carriage the 22-A has the capacity of threading either $3\frac{1}{2}$ " nipples or studs without the use of a Nipple Chuck.

NOTE: Either the cutter assembly or reamer assembly may mount on the special purpose carriage, but not both at the same time.

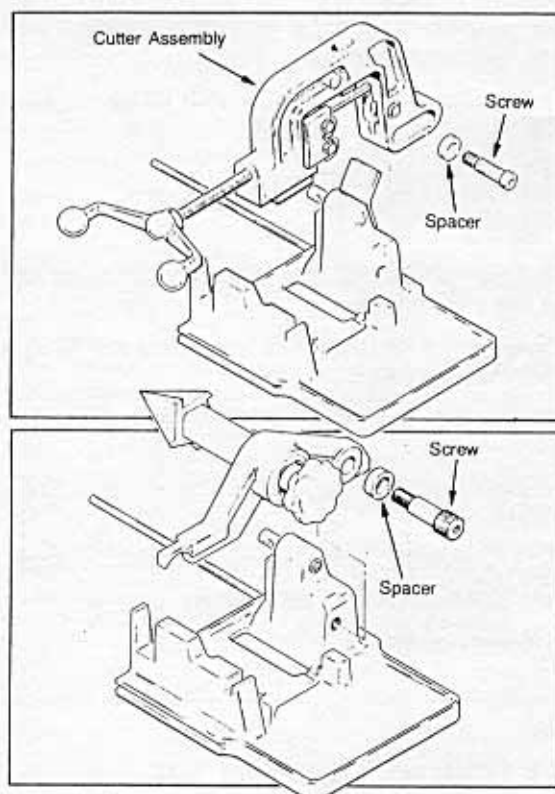


Figure 20 — Special Purpose Carriage (shown with Reamer and Cutter Assemblies)

Baffle Plate (#1984)

For elimination of oil spillage while transporting the 22-A, the baffle plate fits in oil sump under chip tray to contain threading oil.

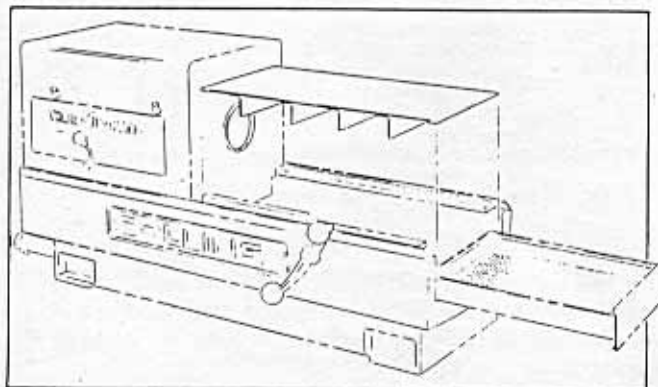


Figure 21 — Oil Sump Baffle Plate

Michigan Pipe Fitting Groover Assembly (#13910)

The MPF Groover Assembly will roll groove 1"-2" schedule 10-40 pipe to accept fittings manufactured by Michigan Pipe Fitting Co.

1. Remove existing cutter assembly and mount the MPF groover assembly.
2. Mount reaming and chamfering head (PN 13384) on carriage die head, pin and lower head.
3. Put T.O.R. switch in release position.
4. Insert pipe in jaws and position for ream and chamfer operation.
5. Put T.O.R. switch in forward position to chuck pipe.
6. Follow instructions for operating diehead PN 13384 for reaming and chamfering.

NOTE: MPF specifications require 1/16" long chamfer for schedule 10 pipe and 1/8" long chamfer for schedule 40 pipe. Chamfer must be free of sharp and ragged edges and external burrs.

7. Lower the MPF groover into the operating position with roller block retracted to fit over the pipe. Turn the carriage handle counter clockwise to bring stop (Fig. 22) against the reamed pipe end.
8. Turn groover feed handle clockwise to bring roller block against the pipe.
9. Bring pipe firmly against the stop. Continue to advance the roll groover feed handle until the male form roll contacts the surface of pipe.
10. Feed roller into pipe until the roller shoulder makes contact with outside pipe diameter.
11. Turn the roller groover operating handle counter clockwise to release roller from pipe.
12. Turn the control switch to release and unchuck pipe.

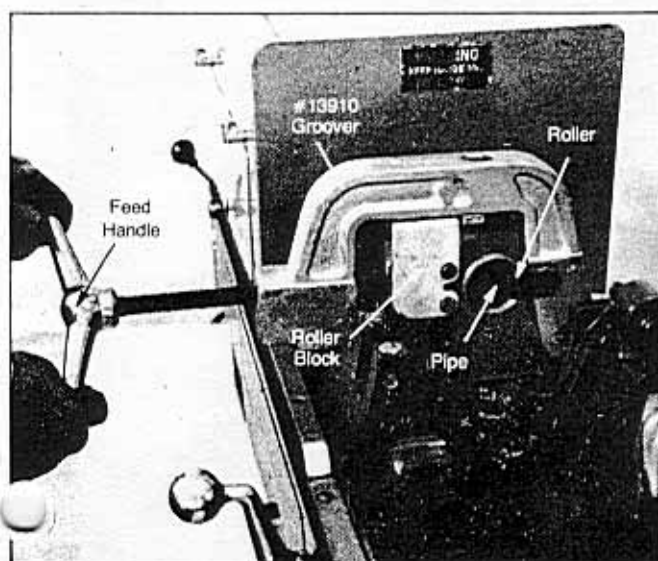


Figure 22 — MPF Groover Assembly

Double Headed Carriage (#13639)

The double-headed carriage is intended for simultaneous use of both threading head and reaming and chamfering head.

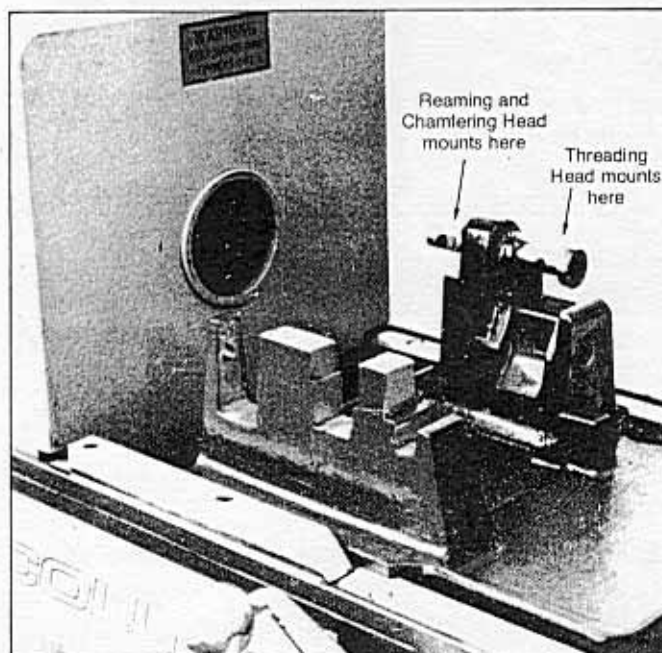


Figure 23 — Double Headed Carriage

Machine Cover (#1985)

The form-fitting cover slips easily on the 22-A and snaps together to protect machine from dust, rain and snow.



Figure 24 — Machine Cover

Maintenance Instructions

WARNING: Always unplug power cord before servicing machine.

NOTE: If any maintenance is required other than that listed below take machine to an authorized Collins Warranty Repair Center or return to factory.

Oil Cups

NOTE: For first 10 days of operation lubricate the spindle bearing every 4 hours with SAE 30 lubricating oil.

After the first 10 days, refill oil cups with SAE 30 every 8 hours of operation.

Threading Oil Maintenance

NOTE: For clean threads and long die life, always use Collins Thred-O-Matic threading oil.

Change threading oil every 40 hours of use or when threading oil has become contaminated or dirty.

1. To drain oil, position a container under drain plug and remove plug.
2. When oil has drained out use a rag to clean oil sump of chips and sediment.
3. Remove all debris around oil filter.
4. Replace drain plug and pour 1 gallon of Collins Thred-O-Matic oil into oil sump.

Oil Pressure Adjustment

To increase or decrease oil flow through die head:

1. Loosen locking nut.
2. To increase pressure, turn set screw clockwise.
3. To decrease pressure, turn set screw counter clockwise.
4. After adjustment, tighten locking nut.

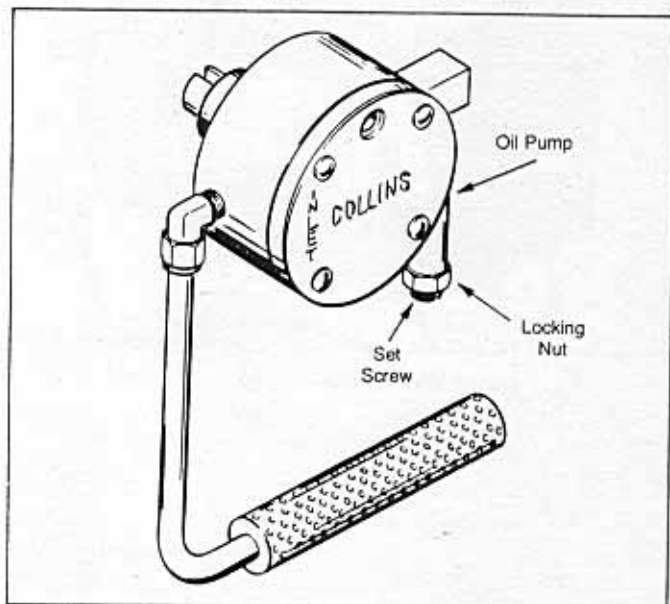


Figure 25 — Oil Pressure Adjustment

Carriage Rails and Gear

Keep clean and oil frequently with machine oil.

Ring Gear

Remove spindle cover and check ring gear every six months to see if additional "Fil-Mo-Plate" spray lubricant needs to be applied.

Motor

Check motor for brush wear every six months. If motor lacks power due to a dirty commutator, use a commutator cleaner stick or fine emery cloth.

Lubrication is not required as all motors have sealed ball bearings.

Gear Case

It is permanently lubricated and requires no maintenance.

Brake Band

If slippage of stock should occur after wire brushing jaws, then:

1. Stop machine.
2. Remove spindle cover.
3. Tighten brake adjustment bolt.
4. Start machine.
5. Turn switch "off" and spindle should coast one revolution. If not, repeat steps 3, 4, and 5.
6. Replace spindle cover.

When threading cast iron pipe, the brake band must be adjusted properly to prevent the pipe from slipping in the jaws. Keep the jaws clean.

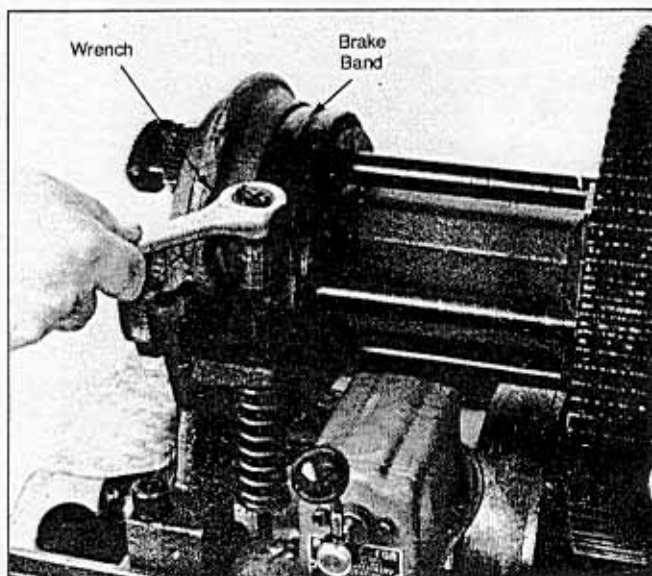


Figure 26 — Brake Band Adjustment

