ARO Tool Products

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

BANT–A–MATIC® SELF–FEED DRILLS

Models 8246–D( )–( )

SECTION M104
MANUAL 13
Released: 4–1–88
Revised: 12–12–94
Form: 3265–2

IMPORTANT: READ THIS MANUAL CAREFULLY BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

OPERATING PRECAUTIONS

- Keep hands and clothing away from rotating end of tool.
- Wear suitable eye protection while operating tool.
- Disconnect air supply from tool before removing/installing bit or performing other maintenance procedures.

ROUTINE LUBRICATION REQUIREMENTS

Lack of or an excessive amount of lubrication will affect the performance and life of this tool. Use only recommended lubricants at below time intervals:

EVERY 8 HOURS OF TOOL OPERATION – Fill lubricator reservoir of recommended F.R.L. with spindle oil (29665).

EVERY 160 HOURS OF TOOL OPERATION – Inject NLGI #1 "EP" grease (33153), 1 to 2 strokes, thru grease fitting in gear housing. NOTE: Spindle must be extended from outer sleeve sufficiently to expose grease fitting in gear housing. Gearing should contain approximately 1/8 oz. (3.5 g) of grease.

AIR SUPPLY REQUIREMENTS

For maximum operating efficiency, the following air supply specifications should be maintained to this air tool:

- AIR PRESSURE – 90 PSIG (6 bar)
- AIR FILTRATION – 50 micron
- LUBRICATED AIR SUPPLY
- HOSE SIZE – 5/16" (8 mm) I.D.

An ARO® model C28231–810 air line FILTER/REGULATOR/LUBRICATOR (F.R.L.) is recommended to maintain the above air supply specifications.

MOUNTING

The nose end of the outer sleeve (41) is provided with 1–7/16" – 18 L.H. threads [remove thread guard (47) for use] and a 1–7/16" x 1/2" long pilot diameter for fixture mounting. Foot and flange type mounting brackets are available for tool mounting.

RECOMMENDED LUBRICANTS

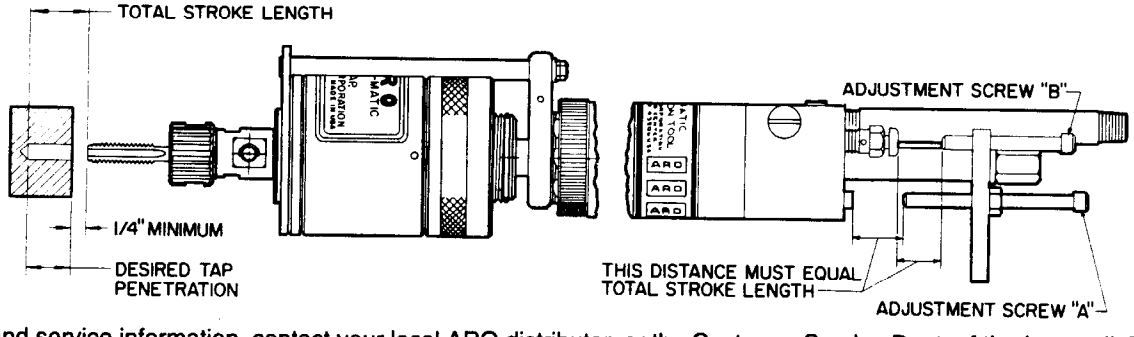
After disassembly is complete, all parts, except sealed or shielded bearings, should be washed with solvent. To relubricate parts, or for routine lubrication, use the following recommended lubricants:

Where Used	ARO Part #	Description
Air Motor	29665	1 qt. Spindle Oil
"O" Rings & Lip Seals	36460	4 oz. Stringy Lubricant
Gears and Bearings	33153	5 lb. "EP" – NLGI #1 Grease

SET–UP PROCEDURE

WARNING: Keep clear of rotating end of unit with hands and/or clothing. Keep fingers/hands from being pinched between housing or valves and adjustment screws and/or trip bracket.

- Loosen two screws (29) and remove cover (1).
- Allow a minimum distance of 1/4" between the tap point of the unit and the workpiece. This is necessary for the air motor to start and reach free speed before the tap point touches the workpiece.
- Determine the TOTAL STROKE LENGTH the tap must travel to perform the tapping operation – see illustration below.
- Loosen jam nut (8) and turn adjustment screw "A" so the distance between the end of the screw and the stud (26) equals the total stroke length.
- Tighten jam nut (8).
- Loosen jam nut (8) and turn adjustment screw "B" (valve–in–head models only) so the distance between the end of the screw and the button bleed valve (25) is slightly GREATER than the distance set for adjustment screw "A".
- Start and let the unit advance until the adjustment screw "A" makes contact with the stud (26).
- Carefully, and be aware that the unit is going to retract, turn the adjustment screw "B" until it depresses the button bleed valve (25) enough to cause the unit to retract.
- Tighten jam nut (8).
- See "FEED RATE CONTROL VALVES", page 2.



For parts and service information, contact your local ARO distributor, or the Customer Service Dept. of the Ingersoll–Rand Distribution Center, White House, TN at PH: (615) 672–0321, FAX: (615) 672–0601.

ARO Tool Products
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INGERSOLL-RAND®
PROFESSIONAL TOOLS

FEED RATE CONTROL VALVES

- Turn valve (23), marked "R" on top of housing, approximately 1-1/2 turns counterclockwise (open).
- Turn the other valve (23), marked "F" on top of housing, clockwise until closed (do not tighten too snugly).
- Start unit and slowly turn valve (23) marked "F" counterclockwise (open) until the desired forward rate of feed is reached.
- A final adjustment of the rate of return (retract) can be made with the valve (23) marked "R" on housing.

MANUAL OPERATION

- Install button bleed valve (25) in either the "F" port located at top of valve housing or the "F" port located at the rear of valve housing. NOTE: Unused port must be plugged with pipe plug (24).
- Depress button bleed valve (25) marked "F" on valve housing. The unit will start in the forward (advancing) mode and continue to feed forward until the adjusting screw "B" has depressed bleed valve (25) marked "R" to retract the unit. See set-up procedure.
- A manual emergency retract button bleed valve (25) can be installed in "R" port at top of valve housing if desired. This valve can be used to immediately retract the unit in case of misaligned part or other emergency. Valve not furnished.

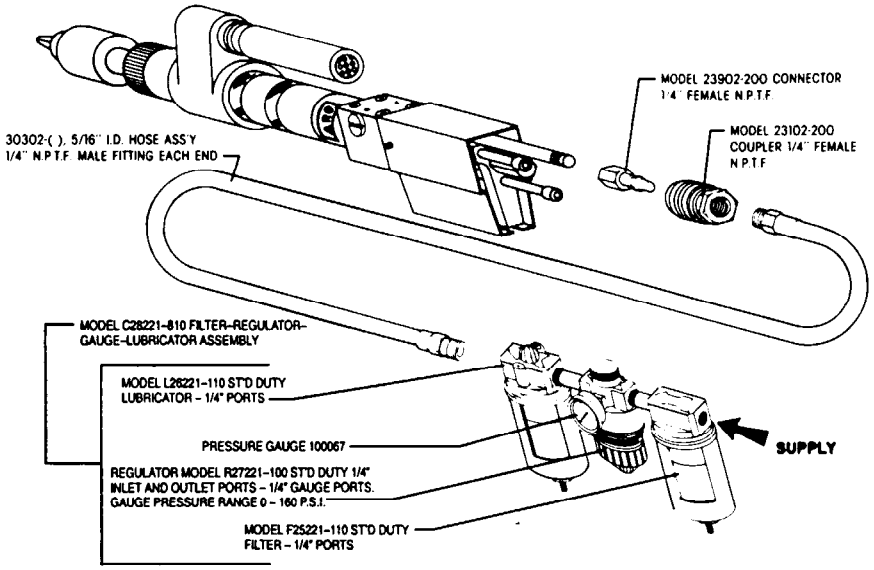
REMOTE OPERATION

- Install a pressure bleed valve – ARO part number 9600 – in valve port marked "F" at either the top or rear of valve housing.
- Connect pressure bleed valve – using 1/8" i.d. tubing – to a remote operated valve which, when actuated, feeds air pressure to the pressure bleed valve. Pressure bleed valve will bleed the air from "F" port of valve housing causing spool valve in housing to shift to the forward feed position thus starting the forward stroke of the unit.
- Install a pressure bleed valve –ARO part number 9600– in valve port marked "R" at the top of the valve housing and connect – using 1/8" i.d. tubing– to a remote MANUALLY operated valve. This valve is used as an emergency retract in case of a part misalignment or such only as the unit, when properly set-up and applied, will automatically retract and return to the start position. See set-up procedure.

Refer to page 3 for plumbing and schematic diagrams.

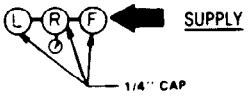
SPECIAL NOTE: The air inlet and remote ports of valve housing have tapered pipe threads and should not require the use of thread sealants, such as sealant tape or pipe joint compounds. Thread sealants, when used improperly, can contaminate air passages and cause valve or unit to malfunction.

RECOMMENDED POWER AIR INLET SYSTEM



Your ARO Self-Feed tool is designed to deliver specific horsepower and thrust to achieve high rates of work. To assure the unit will develop this power, care must be taken that the power air inlet system is correctly sized to permit the proper rate of air flow. Shown is a system for a single tool that will supply correct delivery. IMPORTANT – the tool is power rated when 90 P.S.I. is present AT THE TOOL DURING OPERATION.

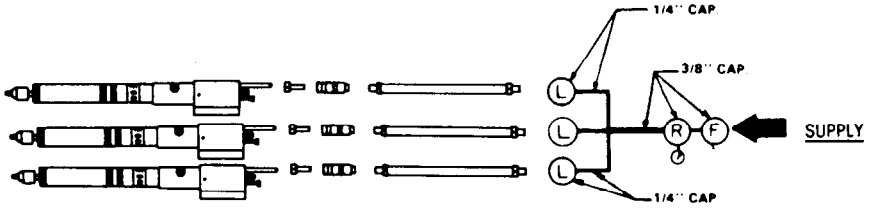
Shown below is the same system in schematic form.



F = FILTER
R = REGULATOR
L = LUBRICATOR

F-R-L- MODEL C28221-810

If two or three units are to be installed, each unit should be supplied with a system like that shown below or use system like that above for each tool.



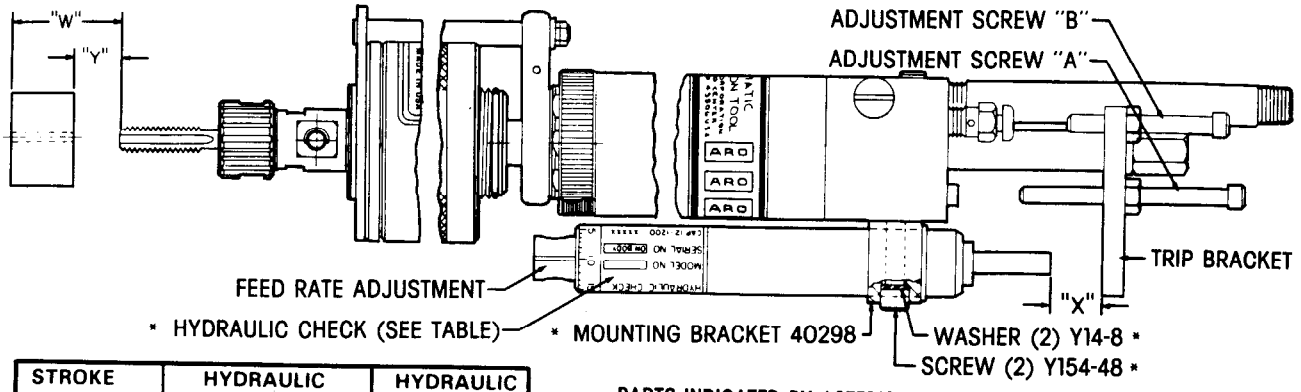
FILTER MODEL F25231-110

REGULATOR MODEL R27231-100

LUBRICATOR MODEL L26221-110

SET-UP PROCEDURE WITH OPTIONAL HYDRAULIC CHECK

- Assemble hydraulic check to mounting bracket and assemble mounting bracket to tool using washers (Y14-8) and cap screws (Y154-48).
- Measure distance from tap point to work piece – distance "Y".
- Distance "X" between hydraulic check plunger and trip bracket must be less than distance "Y" to prevent damage to tap point when it approaches the work piece.
- Loosen the cap screws (Y154-48) and position hydraulic check to obtain correct setting for distance "X".
- Tighten cap screws (Y154-48) securely before operating unit.
- Increase the air flow thru the Feed Control Valve marked "F" by opening two (2) full turns from closed position. This will allow tap to advance rapidly until the trip bracket contacts plunger of hydraulic check.
- The Hydraulic Feed Rate Adjustment is located at the nameplate end of the Hydraulic Check. Rotate extended spindle until the slot on the spindle is located midway between the highest and the lowest settings.
- Start tap unit and the tap will advance at a rapid rate until the trip bracket contacts plunger of hydraulic check.
- Slowly rotate the Hydraulic Feed Rate counterclockwise for faster feed rate or clockwise for slower feed rate.

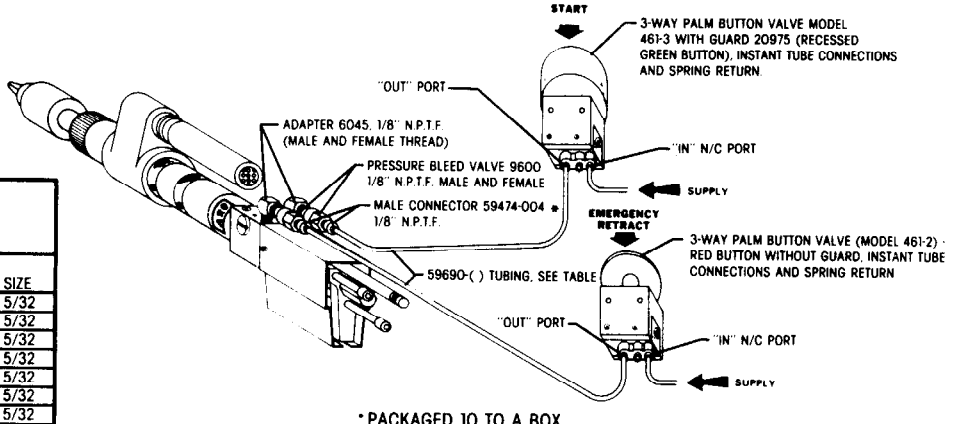


STROKE LENGTH	HYDRAULIC CHECK ASS'Y	HYDRAULIC CHECK NO.
2 INCH	40301-3	38922-1

PARTS INDICATED BY ASTERISK (*) ARE INCLUDED IN 40301-( ) HYDRAULIC CHECK ASSEMBLY.

SEE PAGE 11 FOR HYDRAULIC CHECK DIMENSIONAL DATA.

BASIC REMOTE CONTROL FOR START AND EMERGENCY RETRACT FUNCTIONS



ARO INSTANT TUBING – 100 FT. ROLLS		
MODEL NO.	COLOR	SIZE
59690-004	WHITE	5/32
59690-104	BLACK	5/32
59690-204	GREEN	5/32
59690-304	RED	5/32
59690-404	BLUE	5/32
59690-504	YELLOW	5/32
59690-604	GRAY	5/32
59690-704	ORANGE	5/32

*PACKAGED 10 TO A BOX

REMOTE OPERATION

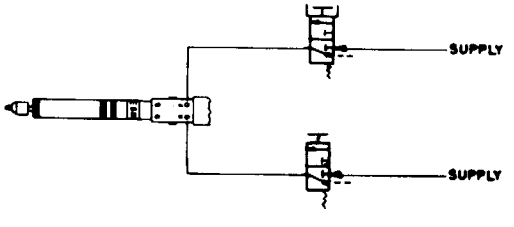
Remote operation of the unit may be achieved by connecting a 3-way valve to the remote start and/or remote retract ports, as shown above.

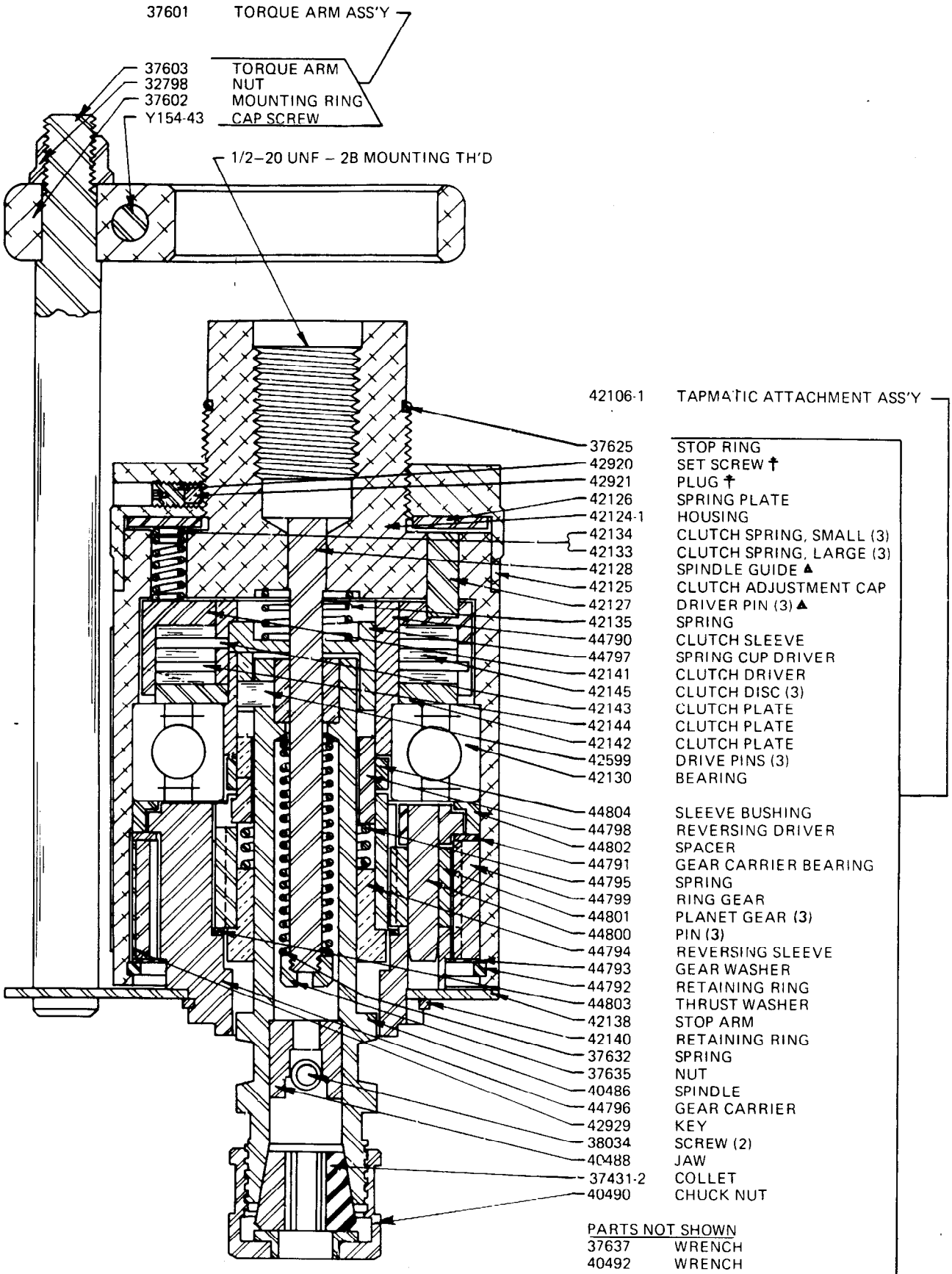
TO START – depress the remote button momentarily. The unit will advance the drill to a pre-set depth and automatically retract to the initial position whereupon the unit will stop.

EMERGENCY RETRACT – depress the emergency button momentarily. This signal to the unit will shift the built-in pressure operated valve, commanding the unit to retract immediately to the initial position whereupon the unit will stop.

NOTE: MANUAL START and EMERGENCY RETRACT buttons on the tool are fully operational even when remote control is used. The manually operated buttons can be used when set-up is required.

Shown below is the same system in schematic form.





† INCLUDED WITH 42125 CLUTCH ADJUSTMENT CAP.

▲INCLUDED WITH 42124-1 HOUSING

42123-1 TAPMATIC ATTACHMENT AND TORQUE ARM ASS'Y

- Never apply excessive pressure by a holding device which may cause distortion of a part.
- Apply pressure evenly to parts which have a press fit.
- Apply even pressure to the bearing race that will be press fitted to the mating part.
- Use correct tools and fixtures when servicing this tool.
- Don't damage "O" rings when servicing tool.
- Use only genuine ARO replacement parts for this tool. When ordering,specify part number, description, tool model number and serial number.

TAPPER DISASSEMBLY

__Remove stop ring (37625).
__Loosen set screw (42920) and remove clutch adjustment cap (42125), releasing spring plate (42126). Clutch springs (42133 and 42134) can now be removed.
__Remove chuck nut (40490), collet (37431-2), screw (38034) and jaw (40488).
__Remove nut (37635), spring (37632), retaining ring (42140) and stop arm (42138).
__Remove retaining ring (44792) and gear washer (44793).
__Remove spindle (40486) with reversing sleeve (44794).
__Remove spacer (44802).
__Remove clutch sleeve (44790), clutch driver (42141), clutch plates (42143, 42144 and 42142) and clutch disc (42145).
__Remove spring cup driver (44797) and spring (42135).
__To disassemble spindle components, remove drive pins (42599) and press spindle (40486) out of reversing sleeve (44794).

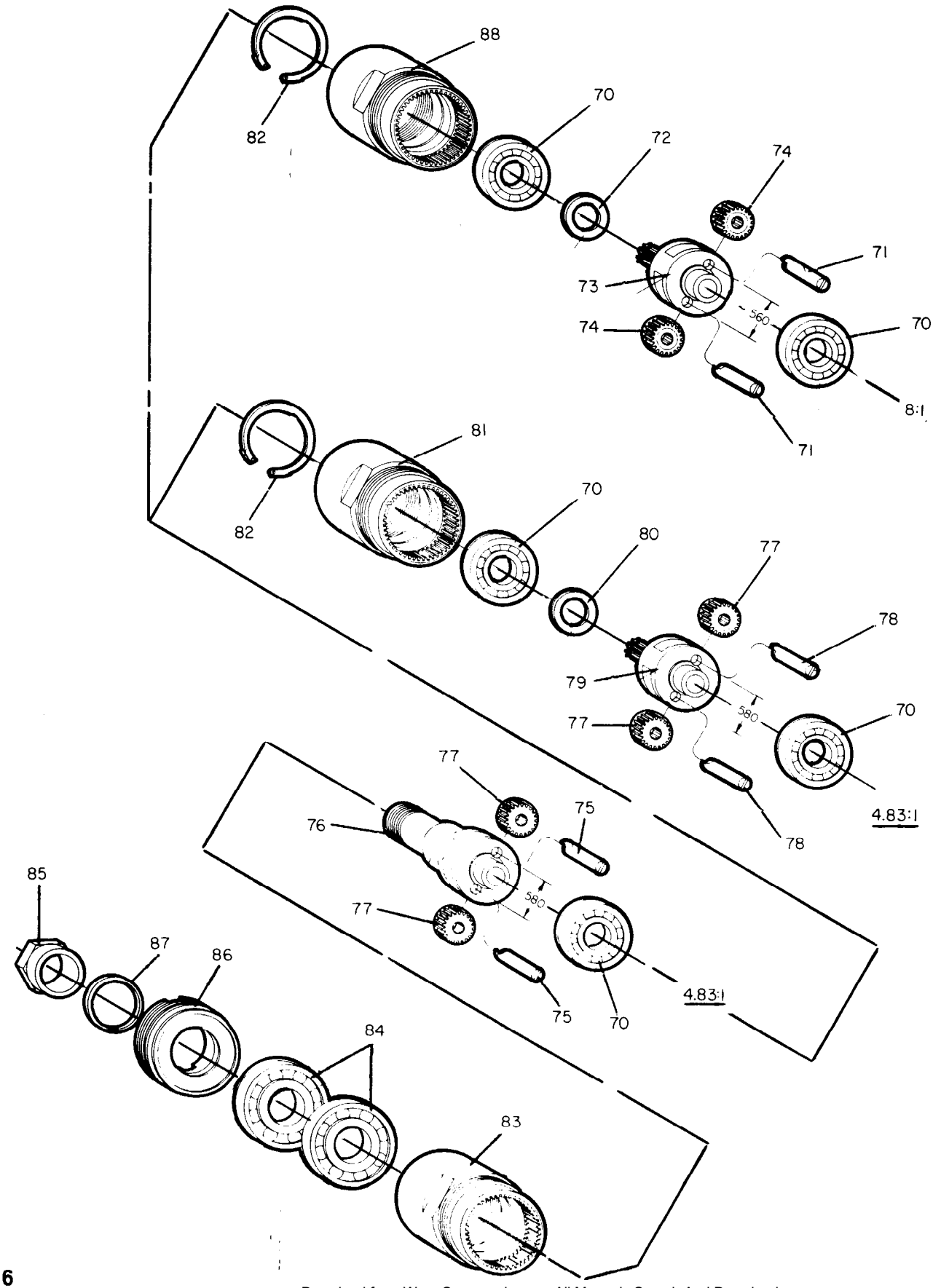
TAPPER ASSEMBLY

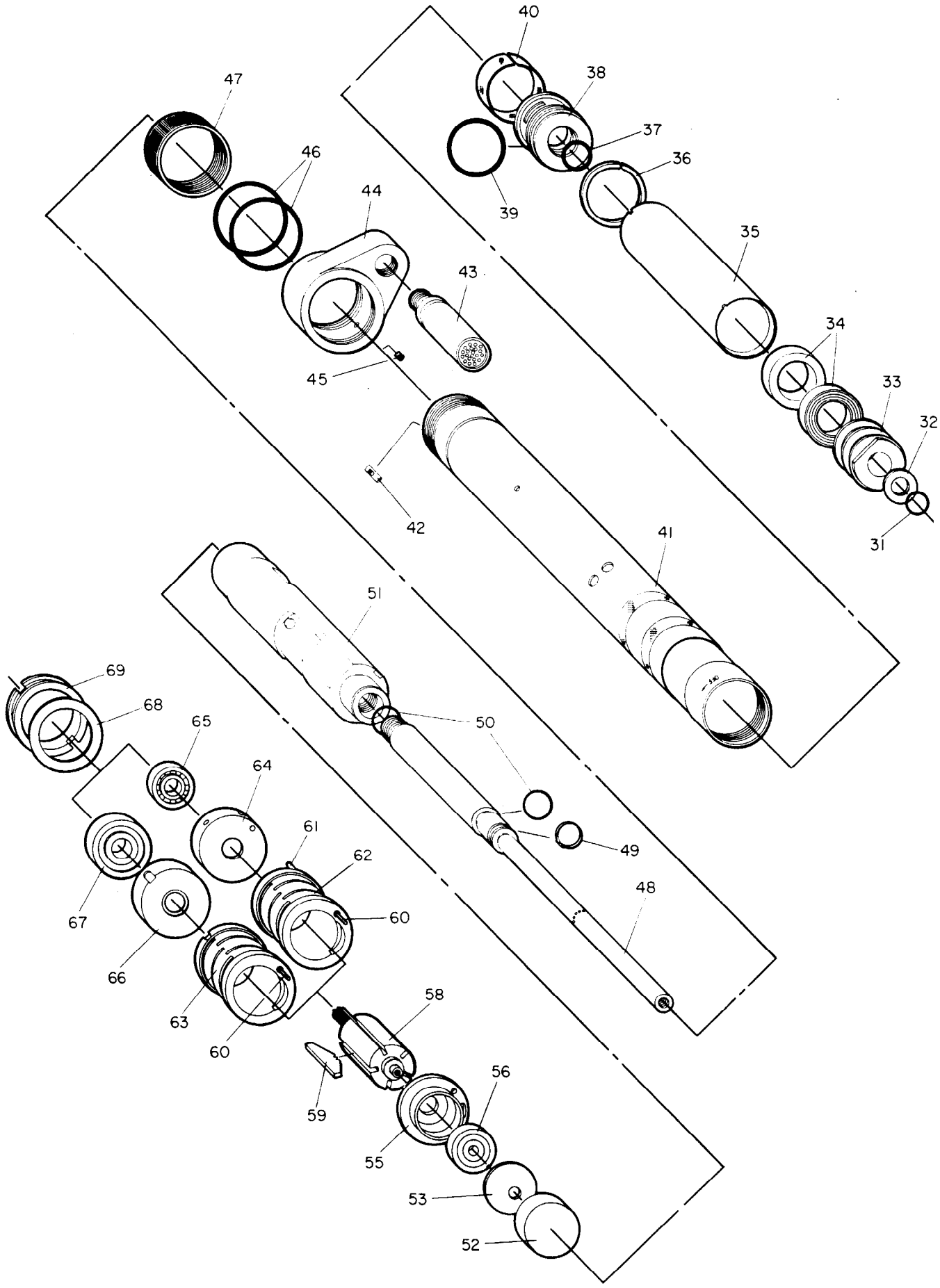
__Tapping units are packed with grease and only need periodic additions to maintain proper lubrication. It is suggested that after approximately 600 hours of operation, a small amount (1/4 to 3/4 oz. – 7 to 21 g.) of grease 33153 be added. This unit must be disassembled to apply grease. An excessive amount of lubricant will create internal friction and overheating.
__Thoroughly clean and lubricate all parts requiring lubrication. Do not get clutch parts wet or oily.
__Assemble clutch plate (42142) on clutch sleeve (44790) with bearing (42130).
__Assemble clutch disc (42145), clutch plate (42144), clutch disc (42145), clutch plate (42143) and clutch disc (42145) to clutch sleeve (44790).
__Line up clutch dogs and assemble to clutch driver (42141).
__Assemble spring (42135) and spring cup driver (44797) into housing, and assemble clutch driver (42141) with clutch plates and clutch sleeve (44790) into housing, insuring that notches in clutch driver align with driver pins (42127) in housing.
__Assemble spacer (44802) to housing.
__Press spindle (40486) into reversing sleeve (44794).
__Assemble three drive pins (42599) to spindle and assemble into housing.
__Assemble gear washer (44793) to housing, securing with retaining ring (44792).
__Assemble spring (37632) into spindle (40486) and secure with nut (37635).
__Assemble jaw (40488) to spindle, securing with screw (38034).
__Assemble collet (37431-2) to spindle, securing with chuck nut (40490).
__Assemble clutch springs (42134 and 42133), spring plate (42126), clutch adjusting cap (42125) and stop ring (37625) to housing.
__Assemble stop arm (42138) to tapper, securing with retaining ring (42140).

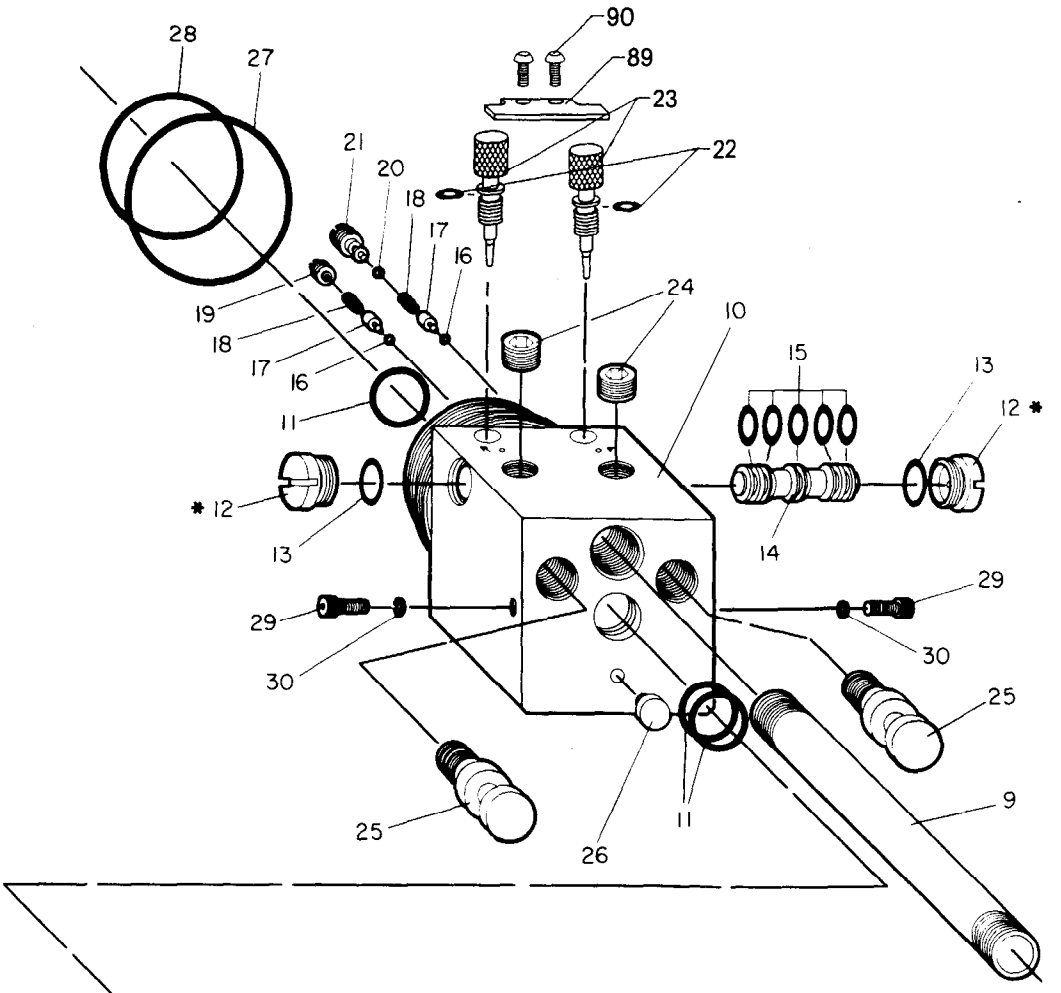
42123-1 TAPMATIC ATTACHMENT & TORQUE ARM ASS'Y

OPERATOR INSTRUCTIONS

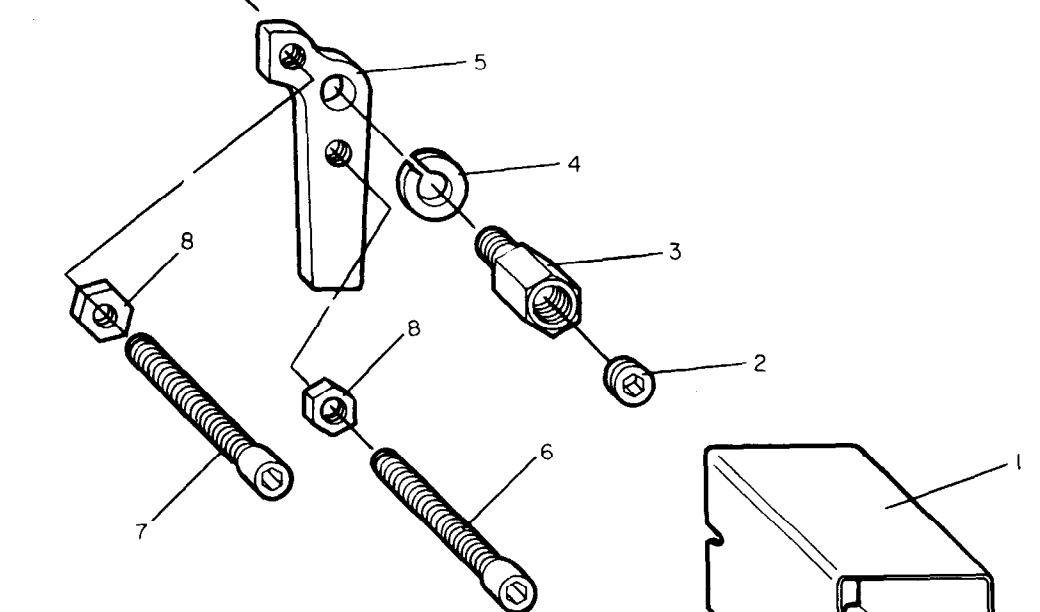
It is extremely IMPORTANT that a short arm (such as furnished) be employed with the tapping attachment to assure the best performance of the planetary gear reversing mechanism.
Before installing the tapping attachment, thoroughly clean the machine spindle. Insert the desired tap into the tap chuck of the attachment so the back jaws will engage the square of the tap. Tighten chuck nut first, then tighten back jaws. This will assure true running of the tap. The tapping attachment incorporates a spring loaded clutch. Driving torque adjustment is made by tightening or loosening the knurled clutch adjusting cap (42125). When the desired torque has been determined, the cap may be locked in place by tightening set screw (42920). The proper clutch adjusting procedure, when beginning tapping operation, is to loosen adjusting cap until all graduations on housing are visible, then tighten cap progressively until the unit will drive a sharp tap. If a clattering noise is heard during the tapping cycle, it means that the rollers in the units drive spindle have reached a neutral position and are seeking engagement with either the driving or reversing splines. NEVER permit this clattering to occur, as it will adversely effect the life of the attachment. The correct method of operation is to advance the machine spindle firmly to where the tap enters the hole, the tap then begins to feed itself into the work piece, follow behind with the machine spindle until the desired depth is reached. Lead pressure is not required with this attachment.
The free axial float in the attachment will automatically allow the tap to follow its own lead. A SHORT, QUICK, reaction movement of the machine spindle will instantly reverse the tap at any time. The tap will return to a right-handed rotation as soon as it is withdrawn from the hole. During reversal, retract the machine spindle ahead of the lead of the tap but not to the point where you are pulling against the tap itself. The spring loaded clutch will slip when the tap reaches bottom in blind hole tapping. If the clutch slips before the tap reaches the desired depth, it is evident that the tap is dull and should be replaced immediately with a sharp tap. THE CLUTCH SHOULD NOT BE TIGHTENED FURTHER. When the clutch releases, a buzzing sound is produced – this is not detrimental to the unit.

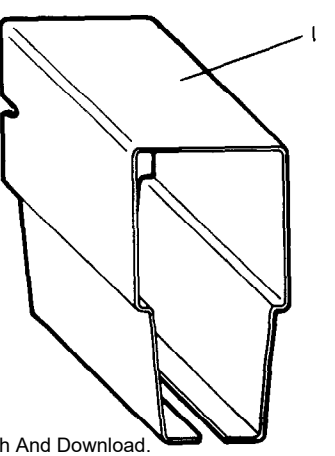






* ASSEMBLE WITH THREAD ADHESIVE SUCH AS LOCTITE 242





MODEL NUMBER	R.P.M.	MOTOR ASSEMBLY	AUXILIARY GEARING	DRIVE GEARING	TOTAL RED.
8246–D5–2( )	550	33654–2	36287	39478	38.6:1
8246–D8–2( )	900	34746–2	36017	39478	23.3:1

MODELS WITH –EU SUFFIX ARE "EC" COMPLIANT MODELS.

GEARING DISASSEMBLY

__Remove tapper attachment from tool.
__Thread adjustment screws (6) and (7) all the way back and push the piston rod (48) all the way forward to expose wrench flats of motor housing (51) from the outer sleeve (41).
__Using wrenches on flats of ring gear and motor housing, unthread gearing from motor housing.
__Unthread ring gear (83) from ring gear (81 or 88).
__Grasp ring gear in one hand and tap the threaded end of the spindle with a soft faced hammer; spindle and components will loosen from ring gear.
__Remove bearing(s) and shafts from spindle to remove planet gears.
__To remove bearings (84) from ring gear, remove lock nut (86).

GEARING ASSEMBLY

__Assemble gears to spindle and secure with shafts.
__Align notch at end of shaft with step on spindle (align notch of shaft with spacer (72 or 80) for auxiliary gearing).
__Pack bearing (70) with ARO 33153 grease and assemble to spindle.
__Lubricate gears of spindle liberally with ARO 33153 grease and assemble spindle to ring gear.
__Pack bearings (84) with ARO 33153 grease and assemble to spindle with the unmarked faces of bearing facing each other (identification markings on bearing facing out).
__Assemble seal (87) to lock nut (86) and secure bearings (84) with lock nut.
__Assemble spindle nut (85) to spindle (drive gearing only).
__Assemble gearing to tool.
__Assemble tapper attachment to tool.

MOTOR DISASSEMBLY

__Remove gearing from tool as previously outlined.
__Remove spacers (69 and 68) and motor assembly from housing.
__Remove cap (52) and shield (53).
__Grasp cylinder in one hand and tap splined end of rotor (58) with a soft faced hammer; motor will come apart.

MOTOR ASSEMBLY

__Pack open bearings with ARO 33153 grease.
__Assemble bearing (56) to end plate (55).
__Assemble end plate (55) to rotor.
__Coat i.d. of cylinder (62 or 63) with spindle oil 29665 and assemble cylinder to end plate (55) aligning air inlet slot of cylinder and end plate.
__Coat rotor blades (59) with spindle oil 29665 and insert into rotor slots (straight side out).
__Assemble bearing to front end plate and assemble end plate to rotor and cylinder.
__Be sure rotor does not bind (if rotor binds, tap splined end of rotor lightly to loosen).
__Assemble shield (53) and cap (52) to end plate (55).
__Assemble motor and spacers (68 and 69) to motor housing.
__Assemble gearing to tool.

AIR PISTON DISASSEMBLY

__Remove gearing and motor assembly as outlined.
__Remove cover (1), adapter (3), washer (4) and trip bracket (5).
__Place valve housing in a suitable holding device with the outer sleeve (41) in an upright position.
__Using a strap wrench on outer sleeve (41), unthread (L.H. threads) and CAUTIOUSLY remove outer sleeve straight up and off from valve housing to prevent bending of air cylinder (35) and damaging the inside diameter.
__Handle the air cylinder (35) with care so its fine cylindrical shape is not distorted in any manner.
__If the air cylinder remains inside the outer sleeve when sleeve is removed, push the piston rod (48) forward then pull it backward. The cylinder will then extend from the sleeve and can now be removed.
__Remove "O" ring (31), bearing race (32) and retaining ring (49).
__Push piston rod and motor housing out thru gear end of outer sleeve. Piston (33) will drop out of housing.
__Insert a suitable rod thru gear end of outer sleeve and push muffler cap (38) out thru valve end of outer sleeve.
__Piston rod (48) and motor housing (51) are secured with a hard drying thread adhesive. If it should become necessary to separate these two parts, heat the threaded area lightly to soften the adhesive and unthread the rod from the housing (R.H. threads).

AIR PISTON ASSEMBLY

NOTICE: When a part containing "O" rings has been removed from tool, it is recommended that the "O" rings be replaced with new ones when reassembling part to the tool. Lubricate all "O" rings with ARO 36460 "O" ring lubricant.

__Assemble retaining ring (36), "O" ring (37), "O" ring (39) and screen (40) to muffler cap (38).
__Assemble muffler cap (38), screened end first, to outer sleeve (41) from end of sleeve with internal threads. Push muffler cap into sleeve until it bottoms against step in sleeve.
__Coat torque pin (42) with grease to retain pin in place and assemble inside outer sleeve in hole provided.
__Assemble "O" ring (50) to piston rod.
__Assemble motor housing and piston rod to outer sleeve thru end of sleeve with external threads and push piston rod thru muffler cap, using care not to damage "O" ring (37) contained in muffler cap. Align slot in motor housing with torque pin (42).
__Assemble seals (34) to piston (33), with lips of seals facing away from each other.
__Assemble piston (33) to piston rod (48) and push piston on rod until it seats against "O" ring (50) and step on rod.
__Assemble retaining ring (49) to groove in piston rod, securing piston on rod.
__Assemble bearing race (32) and "O" ring (31) to piston rod and slide them on rod until they seat against retaining ring (49).
__Clamp valve housing (10) in a suitable holding device with the threaded end of housing upright.
__Coat i.d. of air cylinder (35) with "O" ring lubricant 36460 and place air cylinder on valve housing (10) over "O" ring (28).
__Using care not to damage "O" rings (11) contained in housing, insert piston rod (48) thru housing and carefully locate outer sleeve over air cylinder and thread sleeve to housing. Tighten securely using a strap wrench.
__Assemble motor, gearing, trip bracket and components and assemble cover (1) to housing.

VALVE HOUSING DISASSEMBLY

The valve body (14), feed control valves (23) and button bleed valves (25) can be serviced without removing outer sleeve from valve housing. To gain access to check valves (17) and components or "O" rings (11), follow disassembly procedure for removing the air piston.

__Remove both caps (12) and "O" rings (13).
__Push valve body (14) out thru housing. Handle valve body with reasonable care so the o.d. of valve is not damaged.
__Button bleed valves (25) need not be removed except for replacement.

VALVE HOUSING ASSEMBLY

__Replace all "O" rings with new ones.
__Lubricate "O" ring (15) with 36460 lubricant and assemble to valve body.
__ Assemble "O" rings (22) to needle valves (23) and assemble needle valves to housing.
__ Assemble plate (89) to housing, securing with screws (90).
__Assemble valve body to housing and assemble caps (12) with "O" rings (13) to housing.
__If check valves (17) have been removed, assemble "O" rings (16) to valves and assemble valves to housing.
__Assemble springs (18) to housing.
__Assemble "O" ring (20) to screw plug (21) and assemble to housing.
__Assemble screw plug (19) to housing.
__Assemble outer sleeve and components to housing as described in air piston assembly section.

		PART NUMBER FOR ORDERING
1	Cover	40294
2	Pipe Plug	Y227-2-L
3	Adapter	44883
4	Lock Washer	Y14-616
5	Trip Bracket	41713-2
6	Adjustment Screw "A"	40292-2
7	Adjustment Screw "B"	40292-2
8	Nut (2 req'd)	Y11-4-C
9	Pipe Nipple	40857-7-1
10	Valve Housing	40285
11	"O" Ring (3 req'd)	34276
12	Cap (2 req'd)	46696
13	"O" Ring (2 req'd)	Y325-12
14	Valve Body	40287
15	"O" Ring (5 req'd)	41082
16	"O" Ring (2 req'd)	Y325-2
17	Check Valve (2 req'd)	39587
18	Spring (2 req'd)	35733
19	Screw Plug	39652
20	"O" Ring	Y325-3
21	Screw Plug	38863
22	"O" Ring (2 req'd)	Y325-7
23	Needle Valve (2 req'd)	48441-1
24	Pipe Plug (2 req'd)	Y227-2-L
25	Button Bleed Valve (2 req'd)	24130
26	Stud	46558
27	"O" Ring	Y325-26
28	"O" Ring	Y325-24
29	Screw (2 req'd)	Y154-19
30	Washer (2 req'd)	Y14-4
	Housing and Valve Assembly (includes items 10 thru 30)	40813-1
31	"O" Ring	41534
32	Bearing Race	42364
33	Piston	39459-1
34	Seal (2 req'd)	35922
35	Air Cylinder	39458
36	Retaining Ring	39471
37	"O" Ring	Y325-16
38	Muffler Cap	39456
39	"O" Ring	Y325-24
40	Screen	39461
41	Outer Sleeve	40295
42	Torque Pin	40297-1
43	Muffler	43551-2
44	Manifold (includes items 45 and 46)	41204
45	Set Screw	Y29-82
46	"O" Ring (2 req'd)	Y325-29
47	Thread Guard	35912
48	Piston Rod	40293-1
49	Retaining Ring	Y145-20

		PART NUMBER FOR ORDERING
50	"O" Ring (2 req'd)	Y325-13
51	Motor Housing	40296
52	Cap	39466
53	Shield	39465
55	Rear End Plate	33096
56	Bearing	38232
58	Rotor	
	7 teeth, used with motor ass'y 33654-2	33026-1
	12 teeth, used with motor ass'y 34746-2	34734-1
59	Blade (5 req'd)	32860
60	Roll Pin	33416
61	Roll Pin	Y178-1
62	Cylinder (includes items 60 and 61)	33397
63	Cylinder (includes item 60)	34747
64	Front End Plate (used with motor 33654-2)	33024
65	Bearing	32851
66	Front End Plate (used with motor 34746-2)	34742
67	Bearing	Y65-8
	Motor Assembly	
	for 550 r.p.m. models	33654-2
	for 900 r.p.m. models	34746-2
68	Spacer	34737
69	Spacer	33018
70	Bearing	32850
71	Shaft (2 req'd)	33021
72	Spacer	33019
73	Spindle	36289
74	Gear (2 req'd) 20 teeth	33048
75	Shaft (2 req'd)	38722
76	Spindle	39468
77	Gear (2 req'd) 17 teeth	34745
78	Shaft (2 req'd)	34735
79	Spindle	35915
80	Spacer	34736
81	Ring Gear	35914
82	Retaining Ring	35900
83	Ring Gear (includes grease fitting 35967)	39481
84	Bearing (2 req'd)	48305-1
85	Spindle Nut	38893-1
86	Lock Nut	38250
87	Seal	38895
88	Ring Gear	36288
	Auxiliary Gearing Ass'y (4.83:1) includes items 70 (2 req'd), 77 (2 req'd.), 78 (2 req'd), 79, 80, 81 and 82	36017
	Auxiliary Gearing Ass'y (8:1) includes items 70 (2 req'd), 71 (2 req'd), 72, 73, 74 (2 req'd), 82 and 88	36287
	Drive Gearing Ass'y (4.83:1) includes items 70, 75 (2 req'd), 76, 77 (2 req'd) and 83 thru 87	39478
89	Plate	48440-1
90	Screw (2 req'd)	Y211-1

SERVICE KIT NO. 41205-1

FOR SERVICING ONE MODEL 8246-D8-2.

QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
1	38232	Bearing	1	41799	Gear Lube
5	32860	Blade	1	41954	"O" Ring Lube
3	34276	"O" Ring	1	Y65-8	Bearing
2	35733	Spring	2	Y325-2	"O" Ring
2	35922	Seal	1	Y325-3	"O" Ring
1	39461	Screen	2	Y325-7	"O" Ring
1	39466	Cap	2	Y325-12	"O" Ring
			2	Y325-13	"O" Ring
5	41082	"O" Ring	1	Y325-16	"O" Ring
1	41534	"O" Ring	2	Y325-24	"O" Ring
1	41795	Motor Oil	1	Y325-26	"O" Ring

SERVICE KIT NO. 41310-1

FOR SERVICING ONE MODEL 8246-D5-2.

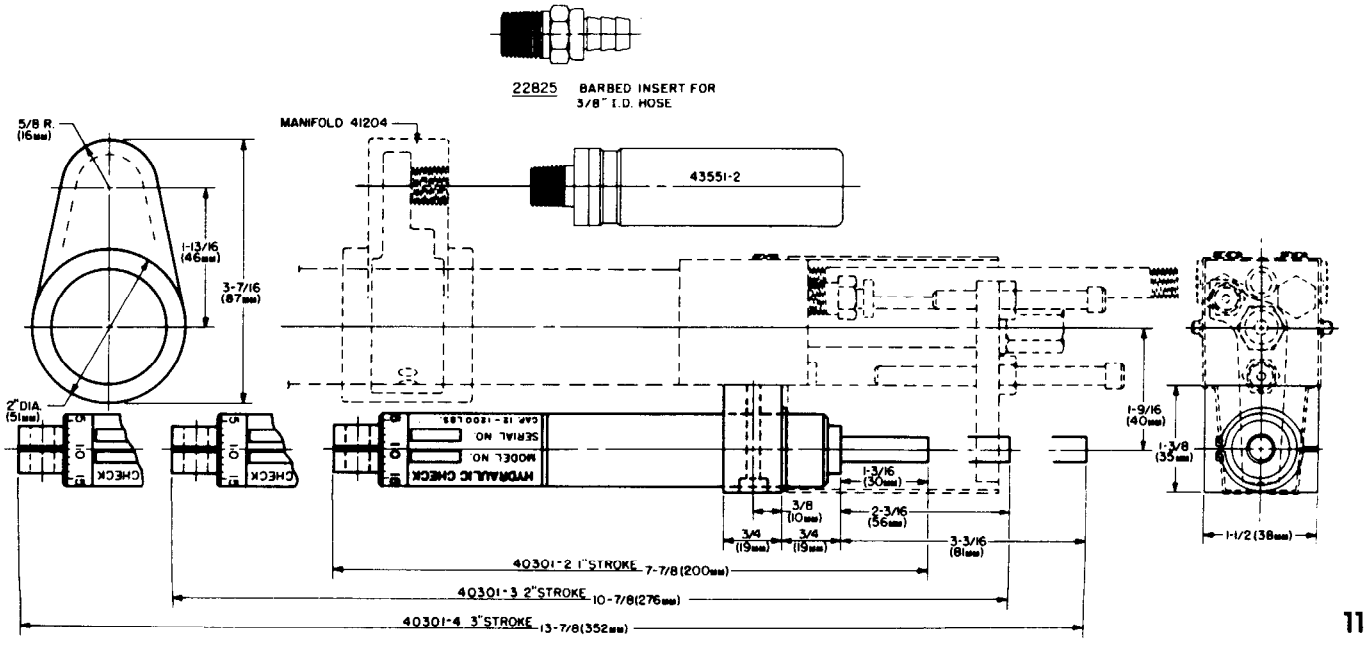
QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
1	38232	Bearing	1	41795	Motor Oil
1	32851	Bearing	1	41799	Gear Lube
5	32860	Blade	1	41954	"O" Ring Lube
3	34276	"O" Ring	2	Y325-2	"O" Ring
2	35733	Spring	1	Y325-3	"O" Ring
2	35922	Seal	2	Y325-7	"O" Ring
1	39461	Screen	2	Y325-12	"O" Ring
1	39466	Cap	2	Y325-13	"O" Ring
			1	Y325-16	"O" Ring
5	41082	"O" Ring	2	Y325-24	"O" Ring
1	41534	"O" Ring	1	Y325-26	"O" Ring

TROUBLE SHOOTING

LISTED BELOW ARE SOME OF THE MOST COMMON CAUSES FOR THE SELF-FEED DRILL TO MALFUNCTION. MALFUNCTIONS BEYOND THE SCOPE OF THIS MANUAL SHOULD BE BROUGHT TO THE ATTENTION OF YOUR ARO REPRESENTATIVE OR RETURN THE TOOL TO FACTORY FOR REPAIR.

CONDITION	POSSIBLE CAUSE	CORRECTIVE ACTION
Failure to feed or irregular or erratic feed.	1. Inadequate air supply	1. Check air supply for correct regulator adjustment (90 p.s.i.g. max. when tool is operating).
	2. Feed control valves improperly adjusted.	2. Refer to set-up procedure, page 1.
	3. Air leak around cap (12).	3. Check for damage to "O" ring. Check and insure caps are properly tightened.
	4. Dirt or damaged "O" rings on spool valve (14).	4. Refer to valve section, page 9, and remove spool valve. Inspect, clean and replace "O" rings.
	5. Clogged air passage in valve housing.	5. Remove valve housing from tool. Disassemble and blow all air passages clear of debris.
Low speed or motor fails to operate.	1. Inadequate air supply.	1. Check air supply for correct regulator adjustment.
	2. Clogged air passage in valve housing.	2. Remove valve housing from tool. Disassemble and blow all air passages clear of debris.
Motor continues to run after retraction.	1. Piston not fully retracted.	1. Insure piston is not obstructed and is returned all the way back.
	2. Damaged "O" ring (11) inside valve housing.	2. Remove valve housing from tool. Replace "O" rings.
Failure to retract.	1. Improper adjustment or alignment between adjustment screw and button bleed valve.	1. Refer to set-up procedure, page 1.
	2. Feed control valves (23) improperly adjusted or dirty.	2. Check adjustment, refer to page 2. Remove, inspect and clean.
	3. Air leak around cap (12).	3. Check for damage to "O" ring. Check and insure caps are properly tightened.
	4. Damaged "O" rings in muffler cap, valve housing or spool valve or seals on piston.	4. Disassemble, inspect and replace "O" rings and/or seals.
	5. Clogged air passage in valve housing.	5. Remove valve housing from tool. Disassemble and blow air passages clear of debris.

ACCESSORIES



DIMENSIONAL DATA