



OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

PAR-A-MATIC® SELF-FEED DRILLS WITH
DUAL SPINDLE DRILLING HEAD

Model 8258-C()-()

SECTION M106

MANUAL 40

Released: 10/80

Revised: 8-18-95

Form: 1809-2

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

OPERATING AND SAFETY 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 air line 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 per set of gears.

EVERY 500 HOURS OF TOOL OPERATION – Remove pipe plug (135) from housing (110) and add a good multigrade 10W/30 oil to saturate felt type oil reservoir in housing. There should be no free oil floating around in housing. Drain off excess oil by running the unit with the oil plug removed. Replace oil plug after draining. NEVER USE GREASE TO LUBRICATE DUAL SPINDLE UNIT.

AIR SUPPLY REQUIREMENTS

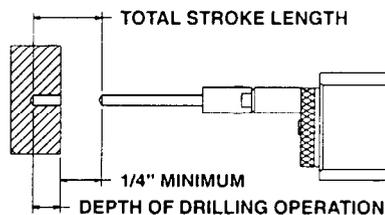
For maximum operating efficiency, the following air supply specifications should be maintained to this air tool:

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

An ARO® model C28221-810 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 (43) is provided with 2" – 16 L.H. threads (remove thread guard [49] for use) and a 2" x 1-1/8" long



pilot diameter for fixture mounting. Foot and flange type mounting brackets are available for tool mounting.

RECOMMENDED LUBRICANTS

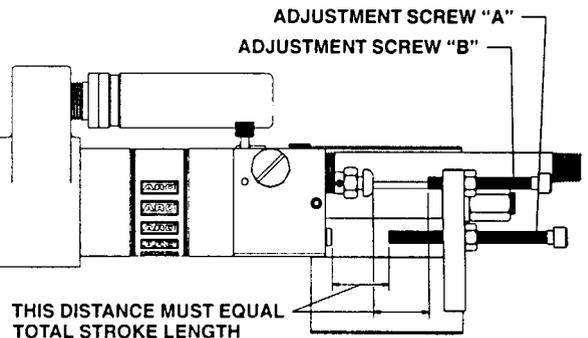
After disassembly is complete, all parts, except sealed or shielded bearings, should be washed with solvent. To relubricate parts, or for routine lubrication, use the following recommended lubricants:

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 (31) and remove cover (1).
- Allow a minimum distance of 1/4" between the drill point of the unit and the workpiece (this is necessary for the air motor to start and reach free speed before the drill point touches the workpiece).
- Determine the TOTAL STROKE LENGTH the drill must travel to perform the drilling 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 (28) equals the Total Stroke Length.
- Tighten jam nut (8).
- Loosen jam nut (8) and turn adjustment screw "B" so the distance between the end of the screw and the button bleed valve (27) is slightly GREATER than the distance set for adjustment screw "A".
- Start and let unit advance until the adjustment screw "A" makes contact with the stud (28).
- Carefully, and be aware that the unit is going to retract, turn the adjustment screw "B" until it depresses the button bleed valve (27) 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) 672-0801.

ARO Tool Products

Ingersoll-Rand Company

1725 U.S. No. 1 North • P.O. Box 8000 • Southern Pines, NC 28388-8000

©1995 THE ARO CORPORATION • PRINTED IN U.S.A.

INGERSOLL-RAND®
PROFESSIONAL TOOLS

FEED RATE CONTROL VALVES

- Turn valve (24), marked "R" on top of housing, approximately 1-1/2 turns counterclockwise (open).
- Turn the other valve (24), marked "F" on top of housing, clockwise until closed (do not tighten too snugly).
- Start the unit and slowly turn valve (24) 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 (24) marked "R" on housing.

MANUAL OPERATION

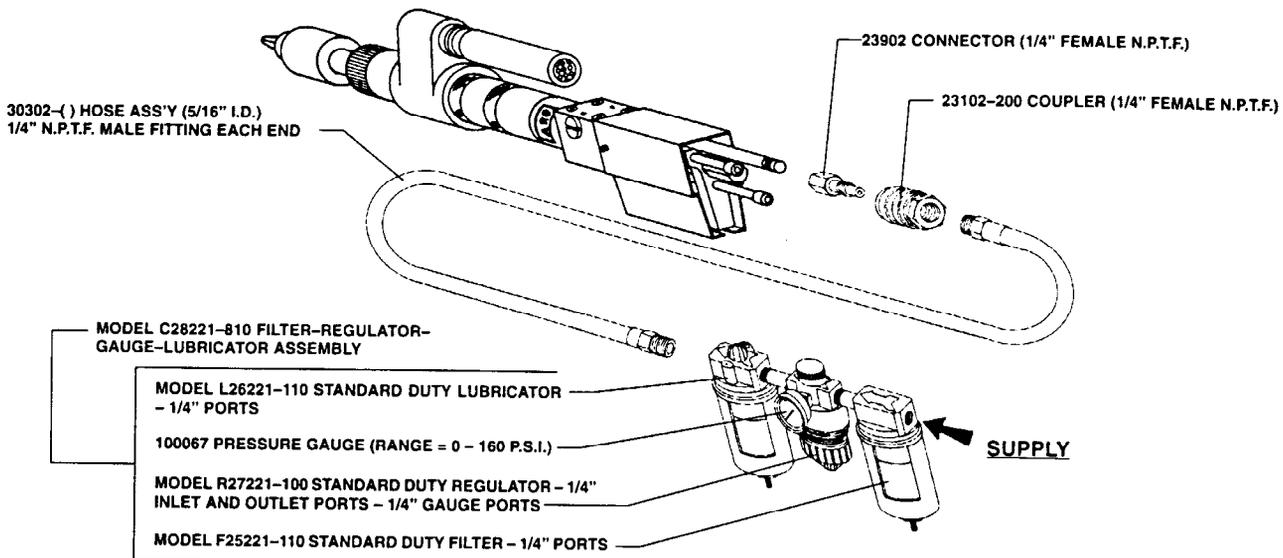
- Install button bleed valve (27) in either the "F" port located at top of valve housing or the "F" port located at the rear of valve housing. NOTE: Unused port must be plugged with pipe plug (22).
- Depress button bleed valve (27) marked "F" on valve housing. The unit will start in the forward (advancing) mode and continue to feed forward until the adjusting screw "B" has depressed bleed valve (27) marked "R" to retract the unit. See set-up procedure.
- A manual emergency retract button bleed valve (27) 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 12 for plumbing and schematic diagrams.

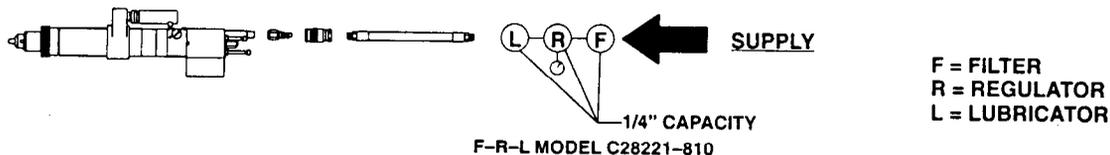
SPECIAL NOTE: The air inlet and remote ports of valve housing have tapered pipe threads and should not require the use of thread sealants, such as sealant tape or pipe joint compounds. Thread sealants, when used improperly, can contaminate air passages and cause valve or unit to malfunction.

RECOMMENDED POWER AIR INLET SYSTEM

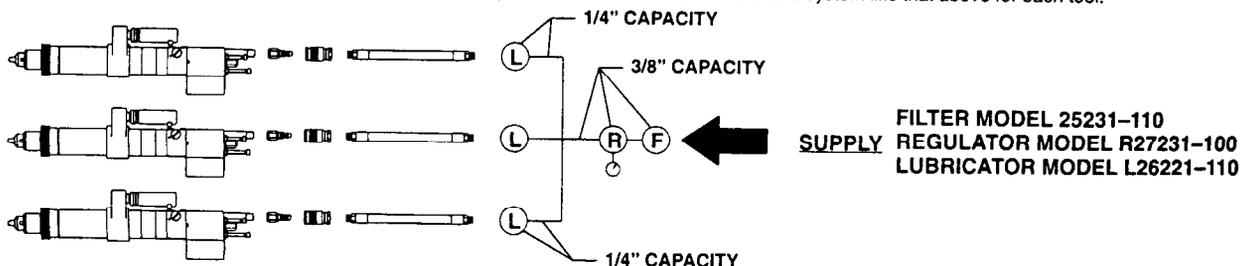


Your ARO self-feed tool is designed to deliver specific horsepower and thrust to achieve high rates of work. To assure the unit will develop this power, care must be taken that the power air inlet system is correctly sized to permit the proper rate of air flow. Shown is a system for a single tool that 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.



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



SET-UP PROCEDURE WITH OPTIONAL HYDRAULIC CHECK

M106

40

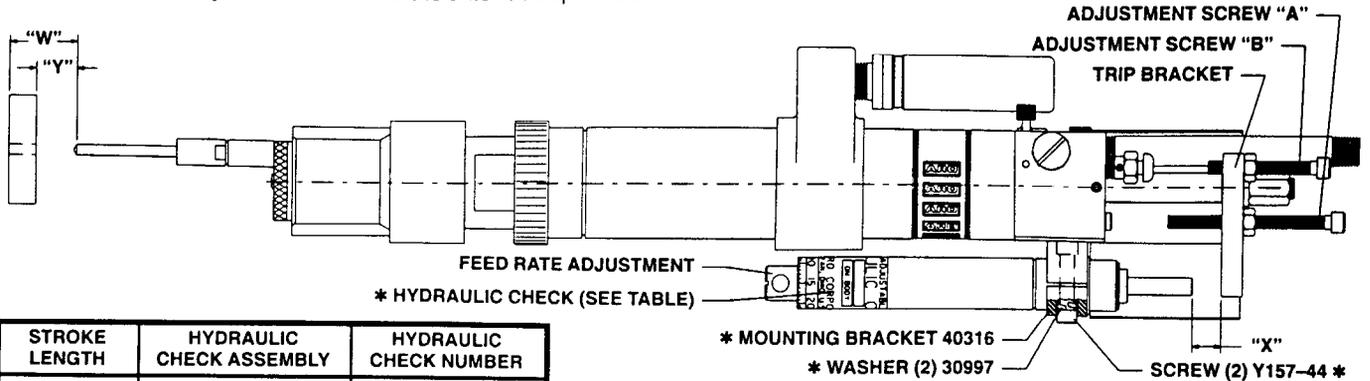
- Assemble hydraulic check to mounting bracket and assemble mounting bracket to tool, using washers (30997) and cap screws (Y157-44).
- Measure distance from drill point to work piece – distance “Y”.
- Distance “X” between hydraulic check plunger and trip bracket must be less than distance “Y” to prevent damage to drill point when it approaches the work piece.
- Loosen the cap screws (Y157-44) and position hydraulic check to obtain correct setting for distance “X”.
- Tighten cap screws (Y157-44) 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 drill 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 the drill unit and the drill 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

TO CONTROL BREAKTHROUGH

- Position hydraulic check so the distance between the plunger and the trip bracket (distance “X”) is less than the distance from the drill point to the opposite side of the work piece (distance “W”).
- Set-up of the self-feed drill unit will be the same as explained in “Set-up Procedure”, page 1.



STROKE LENGTH	HYDRAULIC CHECK ASSEMBLY	HYDRAULIC CHECK NUMBER
1 INCH	40591-3	38922
2 INCH	40591-4	38922-1
3 INCH	40591-5	38922-2

PARTS INDICATED BY ASTERISK (*) ARE INCLUDED IN 40591-() HYDRAULIC CHECK ASSEMBLY.

SEE PAGE 15 FOR HYDRAULIC CHECK DIMENSIONAL DATA.

SPINDLE ADJUSTMENT

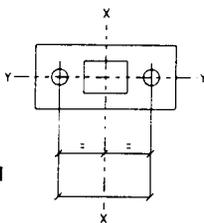


FIGURE 1

For simple spindle adjustment, the “X” “X” and “Y” “Y” axis of the component shown in figure 1 should coincide with the “X” “X” and “Y” “Y” axis of the drill head and drilling unit as shown in figure 2. The spindles should then be adjusted in the manner shown in figures 3 and 4.

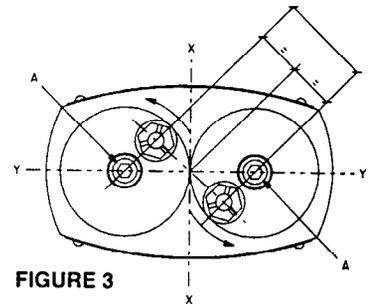


FIGURE 3

IMPORTANT – If the procedure is not followed and both spindles are moved out to one side of the head, any subsequent spindle adjustment will result in the necessity of having to re-adjust the relationship between the drilling unit and the component.

Figure 2 shows the twin spindle head with the spindles set to the minimum centers.

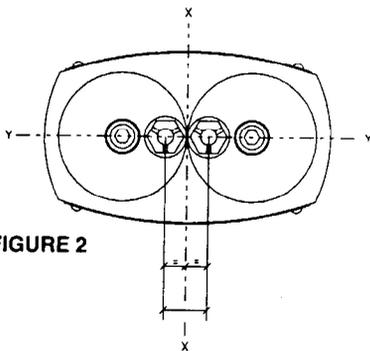


FIGURE 2

To adjust the spindles as shown in figure 3, loosen both screws “A” and rotate both turrets in the direction indicated by the arrows to the approximate centers that are required.

Rotate the complete drill head assembly to bring both spindles to the required “Y” “Y” axis as shown in figure 4. Finally, adjust spindle centers on axis “Y” “Y” to suit gauge or drill bushings and tighten screws “A” securely.

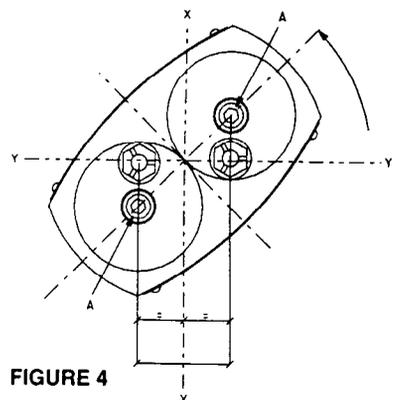


FIGURE 4

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

- 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 this tool.
- Use only genuine ARO replacement parts for this tool. When ordering, specify part number, description, tool model number and serial number.

DUAL SPINDLE DISASSEMBLY

- Using the 4 mm hex wrench supplied with the unit, loosen both adjusting screws (134). NOTE: Alternately unthread adjusting screws approximately 1/2 turn at a time or unthread screws simultaneously to prevent damaging the unit and remove dual spindle unit from tool.
- Remove crescent ring (109).
- Rotate spindle turret, and at the same time, pull back slightly on turret to locate alignment of spindle with notch in body (110) and remove spindle assembly from body.
- To remove gear (112) from body, remove oil reservoir (116) and nylon washer (115), bending washer slightly to remove.
- Needle cage (113), spacer (114) and washer (111) are loose parts and will drop out. DO NOT disassemble spindle (133) unless it is necessary to replace a part.
- To disassemble spindle assembly, using a flat bottom type punch or similar tool and an arbor press, remove gear (121) from spindle (132).
- Remove spindle from sleeve carefully because the six (6) rollers (128) are loose parts and will drop out. NOTE: Thrust race (129) is press fit on spindle.
- Cut off "O" ring (131) and, using a "C" type washer that properly fits spindle, press thrust race and needle cage off spindle.
- If link bearing (123) and sleeve (126) are removed from turret, it will be necessary to remove the foam strip (124) first. Lift one end of foam strip and pull so it slides thru notch under link bearing.
- Using a proper size punch and an arbor press, remove link bearing. Press sleeve thru remaining distance in turret.
- After the dual spindle head assembly has been removed from the adapter, the driving spindle (104) and components can be removed from the adapter (100).
- To remove bearing (106) and/or gear (107), remove driving spindle from adapter, then remove retaining ring (105).
- Press bearing back on spindle to expose needle roller (108) and remove roller and gear from spindle (104). Remove bearing (106).

DUAL SPINDLE ASSEMBLY

- Pack bearings and coat gears with a good grade of bearing grease when assembling. Saturate oil reservoirs with a good multigrade 10W/30 oil.
- Press sleeve (126) into turret. NOTE: The slot in the sleeve must be aligned with the notch in the back face of the turret.
- Push the foam strip (124) into the notch in the turret, with the widest side across the notch. The center of the strip should be under the sleeve and the two ends should meet at the point opposite the sleeve.
- Press the link bearing on sleeve, keeping the 10 mm hole in the link bearing in accurate alignment with the 10 mm hole in the turret.
- Slide "O" ring (131) and needle cage (130) on spindle.
- Slide thrust race (129) on spindle and press to location diameter up to shoulder adjacent to bearing (130).
- Be certain thrust race is pressed on and squarely seated or premature failure of the bearing may occur.
- Assemble thrust race (127) and slide spindle into sleeve, leaving approximately a 1/2" gap between the end of sleeve and

thrust race and assemble the six (6) rollers (128) to spindle. Be certain there are six rollers.

- Lubricate rollers and bearings using a good grade of bearing grease and slide spindle on into sleeve.
- Assemble needle cage (122) to spindle and press gear (121) on spindle, leaving an end play of .001" - .002".
- Insert a dummy adjusting screw (134)(or shaft of the same dia.) thru adapter side of body to maintain alignment of parts to be assembled into body and assemble nylon washer (111) to dummy screw.
- Assemble one needle cage (113), spacer (114) and needle cage (113) into gear (112) and assemble gear to the dummy screw.
- Assemble nylon washer (115) into body, bending slightly to insert into body, and assemble oil reservoir (116) into body.
- Assemble adjusting screw (134) to spindle assembly (133) and assemble nylon washer (111) to adjusting screw.
- Assemble the spindle assembly into body while holding adjusting screw in alignment with dummy screw to maintain parts alignment and using adjusting screw to push the dummy screw out of body.
- Align spindle assembly with notch in body to assemble. After assembling spindle to body, assemble crescent ring (109) to adjusting screw, securing screw to body.
- NOTE: When assembling dual spindle head to adapter assembly, alternately thread adjusting screws (134) approximately 1/2 turn at a time to prevent damaging the unit.
- Assembly of the driving spindle and components to the adapter (100) will be the reverse of the disassembly procedure.

GEARING DISASSEMBLY

- Thread adjustment screws (6 and 7) all the way back and push the piston rod (51) all the way forward to expose wrench flats of motor housing (52) from the outer sleeve (43).
- Using wrenches on flats of ring gear and adapter (100), unthread adapter from gearing and remove dual spindle attachment from tool.
- Using wrenches on flats of ring gear and motor housing, unthread gearing from motor housing.
- If tool has double gearing, unthread ring gear (87) from adapter (78).
- Grasp ring gear in one hand and tap threaded end of the spindle with a soft face hammer; spindle and components will loosen from ring gear.
- Remove bearing(s) and shafts from spindle to remove gears.
- To remove bearings (89) from ring gear, remove lock nut (90).

GEARING ASSEMBLY

- Assemble gears to spindle and secure with shafts.
- Align notch in end of shaft with step on spindle (align notch of shaft with spacer for auxiliary gearing). NOTE: Be sure each shaft (72) contains 15 needle bearings.
- Pack bearings with ARO 33153 grease and assemble spacer (71) and bearing (70) to spindle.
- Lubricate gears of spindle liberally with ARO 33153 grease and assemble spindle to ring gear.
- Pack bearings (89) with ARO 33153 grease and assemble to spindle with the "unmarked" faces of bearings facing each other (identification markings on bearings facing out).
- Assemble seal (91) to lock nut (90) and secure bearings (89) with lock nut.
- Assemble spindle nut (92) to spindle.
- Assemble gearing to tool.

MOTOR DISASSEMBLY

- Remove gearing from tool as previously outlined.
- Remove spacer (68) and motor assembly from housing.

- Remove cap (54) and shield (55).
- Grasp cylinder in one hand and tap splined end of rotor with a soft face hammer; motor will come apart.

MOTOR ASSEMBLY

- Assemble bearing (56) to end plate (57), pressing on outer race of bearing.
- Assemble end plate (57) to rotor, pressing on inner race of bearing.
- Coat i.d. of cylinder (61) with ARO 29665 spindle oil and assemble cylinder to end plate (57), aligning roll pin in cylinder with hole in end plate.
- Coat blades (59 or 66) with ARO 29665 spindle oil and insert into rotor slots – straight side out.
- Assemble bearing (63) to end plate (62), pressing on outer race of bearing.
- Assemble end plate (62) to cylinder, pressing on inner race of bearing.
- Be sure rotor does not bind (if rotor binds, tap splined end of rotor lightly to loosen).
- Assemble shield (55) and cap (54) to end plate (57).
- Assemble motor and spacer (68) 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 in an upright position.
- Using a strap wrench on outer sleeve (43), unthread (L.H. threads) and CAUTIOUSLY remove outer sleeve straight up and off from valve housing to prevent bending of air cylinder (37) and damaging the inside diameter.
- Handle the air cylinder (37) with care so its fine cylindrical shape is not distorted in any manner.
- If the air cylinder remains inside the outer sleeve when the sleeve is removed, push the piston rod (51) forward then pull it backward. The cylinder will then extend from the sleeve and can now be removed.
- Remove "O" ring (33) and retaining ring (34).
- Push piston rod and motor housing out thru gear end of outer sleeve. Piston (36) will drop out when motor housing and piston rod are removed from outer sleeve.
- Insert a suitable rod thru gear end of outer sleeve and push muffler cap (41) out thru valve end of outer sleeve.
- Piston rod (51) and motor housing (52) 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 the tool, it is recommended that the "O" rings be replaced with new ones when reassembling the part to the tool. Lubricate all "O" rings with ARO 36460 "O" ring lubricant.

- Assemble retaining ring (38), "O" ring (39), "O" ring (40) and screen (42) to muffler cap (41).

RECOMMENDED METHOD FOR HOLDING DRILLS IN SPINDLES

- To properly hold drill bit in collet and reduce the chance of slippage, a flat must be ground on the shank end of the bit.
- The flat should be approximately 5/16" (8 mm) long and the depth should be 1/3 of the bit diameter.
- NOTE: If the bit is too large to fit into locking insert (smaller capacity dual spindles do not have insert), a square must be ground on the shank end of the bit.

- Assemble muffler cap (41), screened end first, to outer sleeve (43) from end of sleeve with internal threads. Push muffler cap into sleeve until it bottoms against step in sleeve.
- Coat torque pin (44) 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 (39) contained in muffler cap. Align slot in motor housing with torque pin (44).
- Assemble seals (35) to piston (36), with lips of seals facing away from each other.
- Assemble piston (36) to piston rod (51) and push piston on rod until it seats against "O" ring (50) and step on rod.
- Assemble retaining ring (34) to groove in piston rod, securing piston on rod.
- Assemble "O" ring (33) to piston rod and slide on rod until it seats against retaining ring (34).
- Clamp valve housing (10) in a suitable holding device, with the threaded end of housing upright.
- Coat i.d. of air cylinder (37) with "O" ring lubricant 36460 and place air cylinder on valve housing (10) over "O" ring (30).
- Using care not to damage "O" rings (11) contained in housing, insert piston rod (51) 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

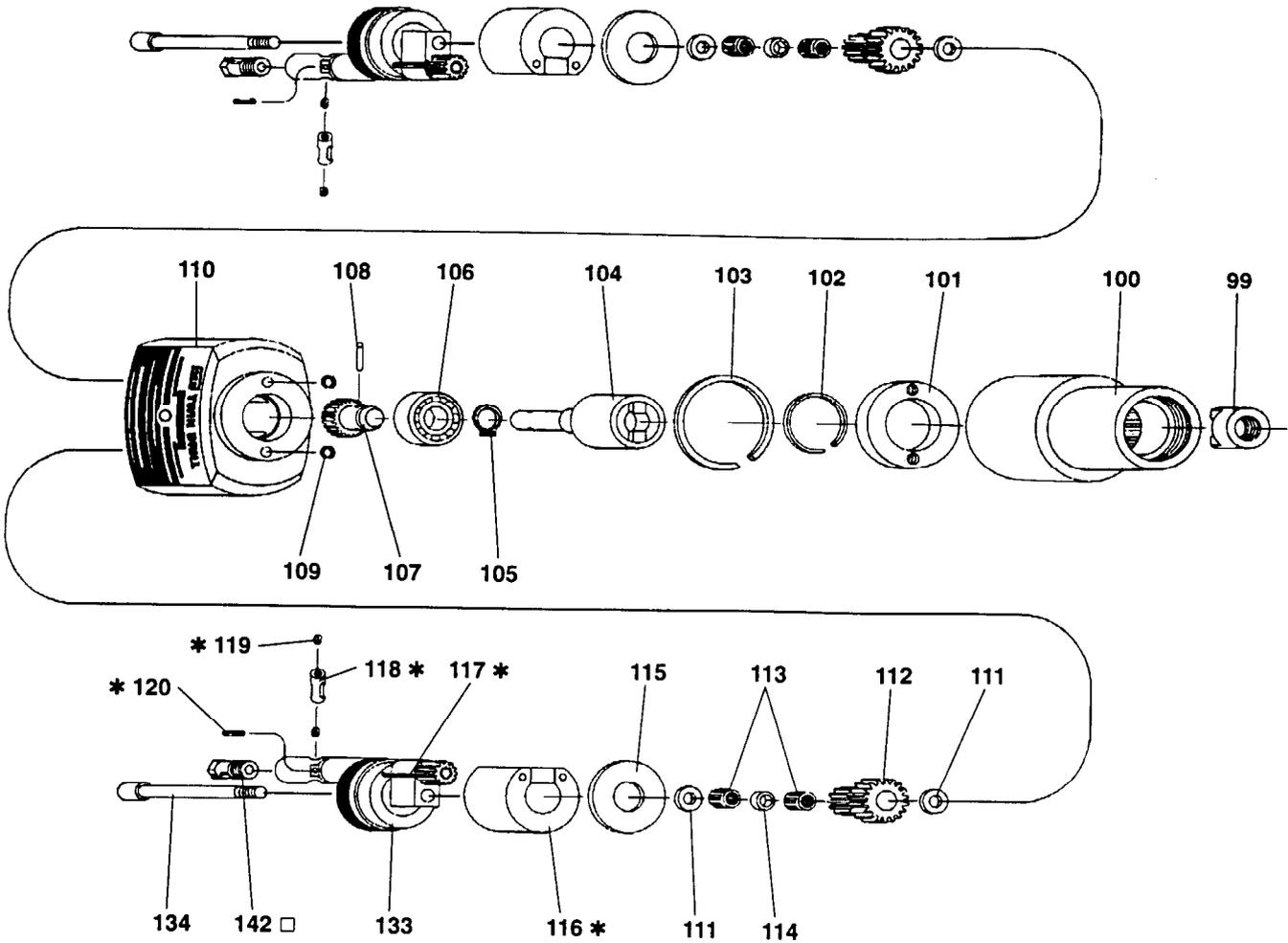
The valve body (14), feed control valves (24) and button bleed valves (27) can be serviced without removing outer sleeve from valve housing. To gain access to check valves (17) and components or "O" rings (11), follow disassembly procedure for removing the air piston.

- 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 (27) need not be removed except for replacement.

VALVE HOUSING ASSEMBLY

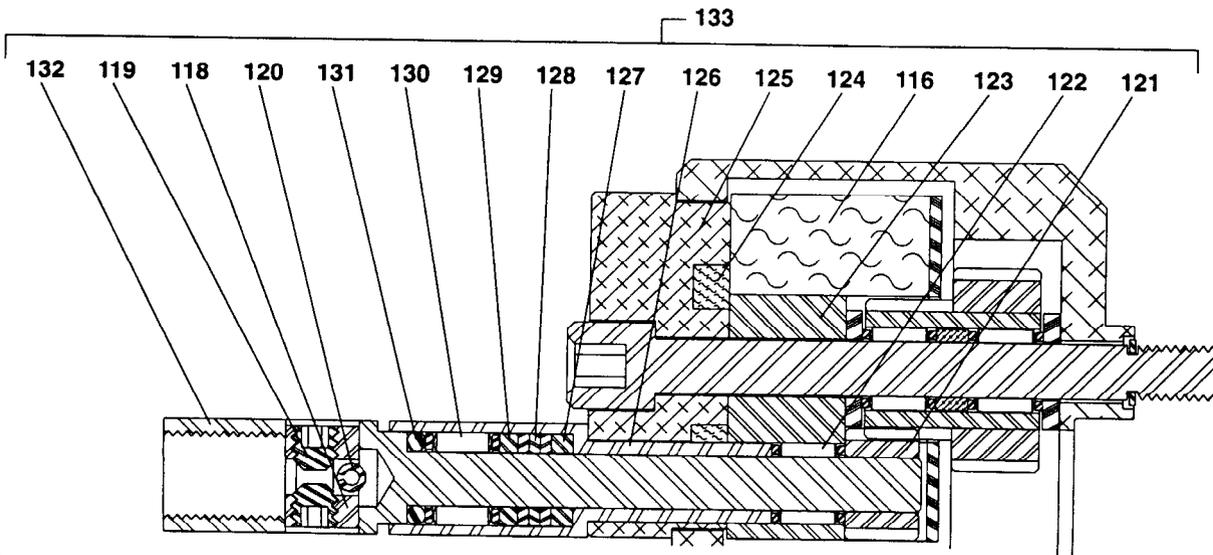
- Replace all "O" rings with new ones.
- Lubricate "O" rings (15) with 36460 lubricant and assemble to valve body.
- Assemble valve body to housing and assemble caps (12), with "O" rings (13), to housing.
- If check valves (17) have been removed, assemble "O" rings (16) to valves and assemble valves 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.
- Assemble "O" rings (23) to needle valves (24) and assemble needle valves to housing.
- Assemble plate (25) to housing, securing with screws (26).

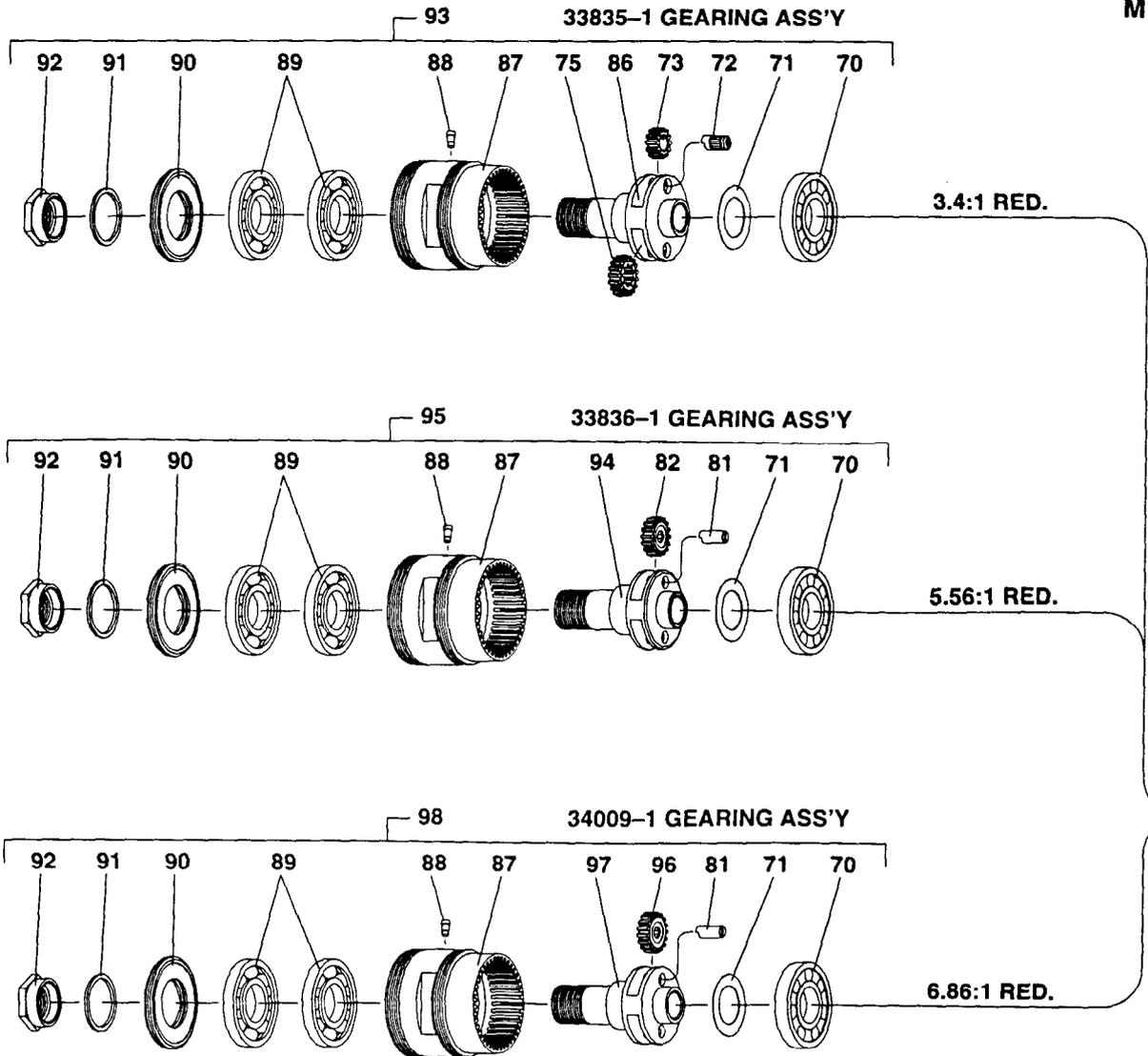
46023 DUAL SPINDLE ATTACHMENT



* INCLUDED IN ITEM 133 ASSEMBLY (SEE BELOW).

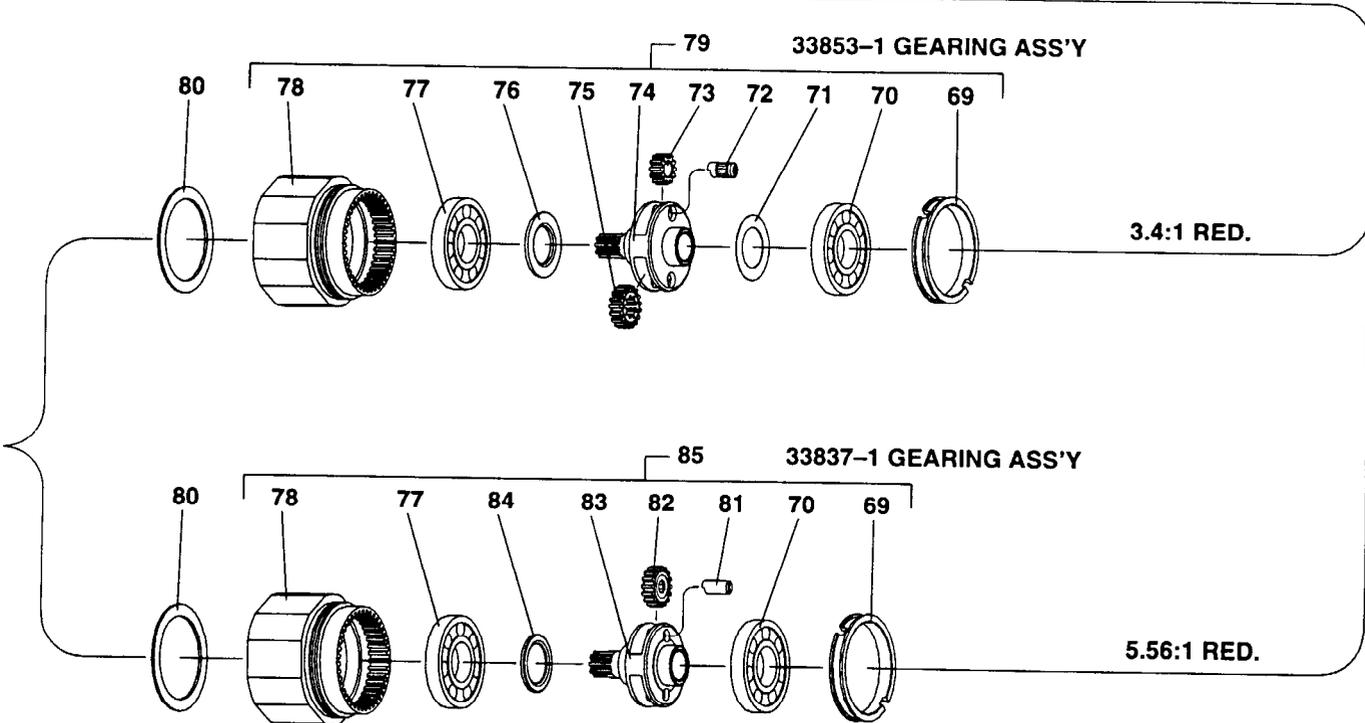
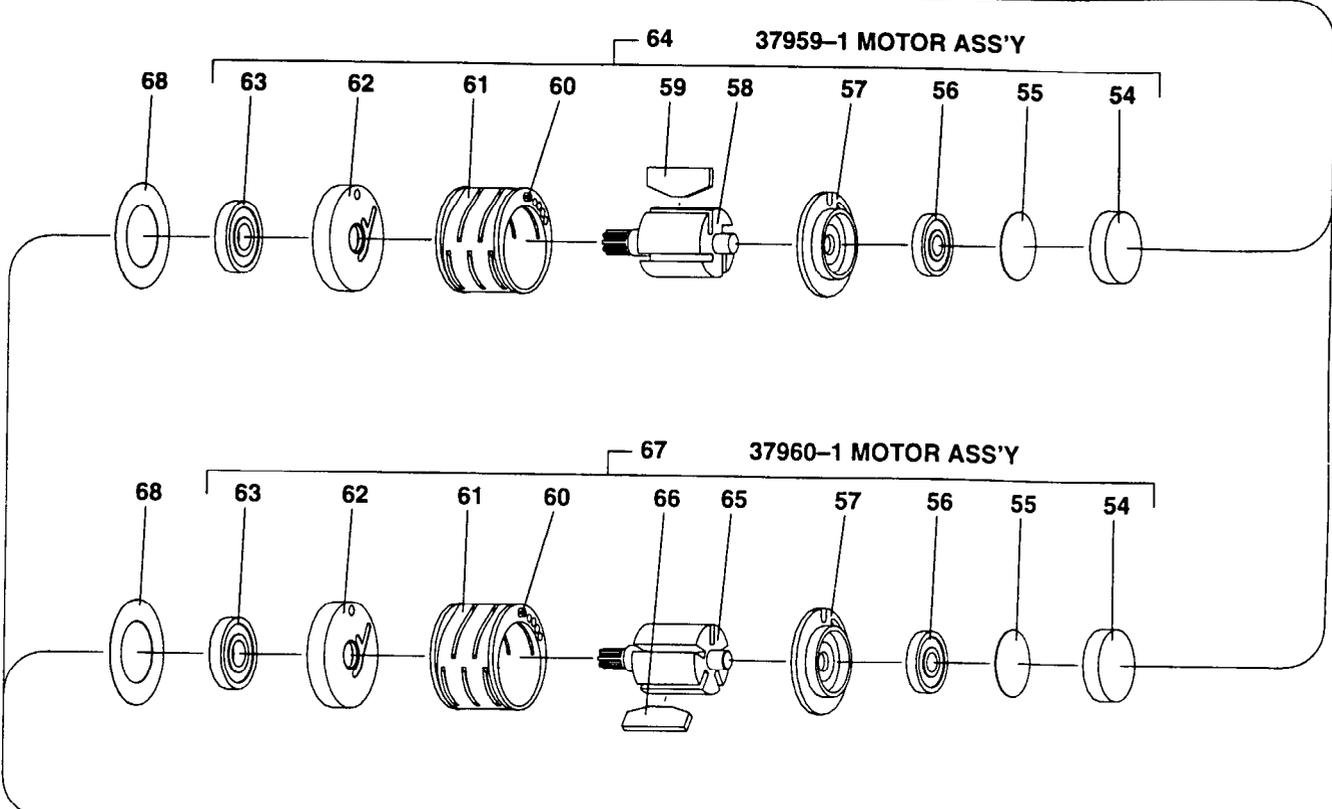
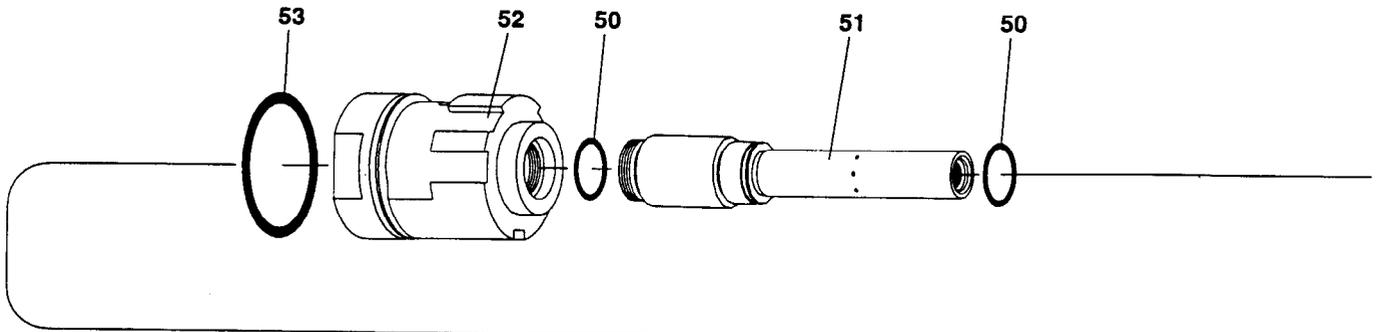
□ NOTE: ITEM 142 COLLETS ARE NOT FURNISHED WITH DUAL SPINDLE ATTACHMENT. COLLETS MUST BE ORDERED SEPARATELY. SEE PAGE 13.

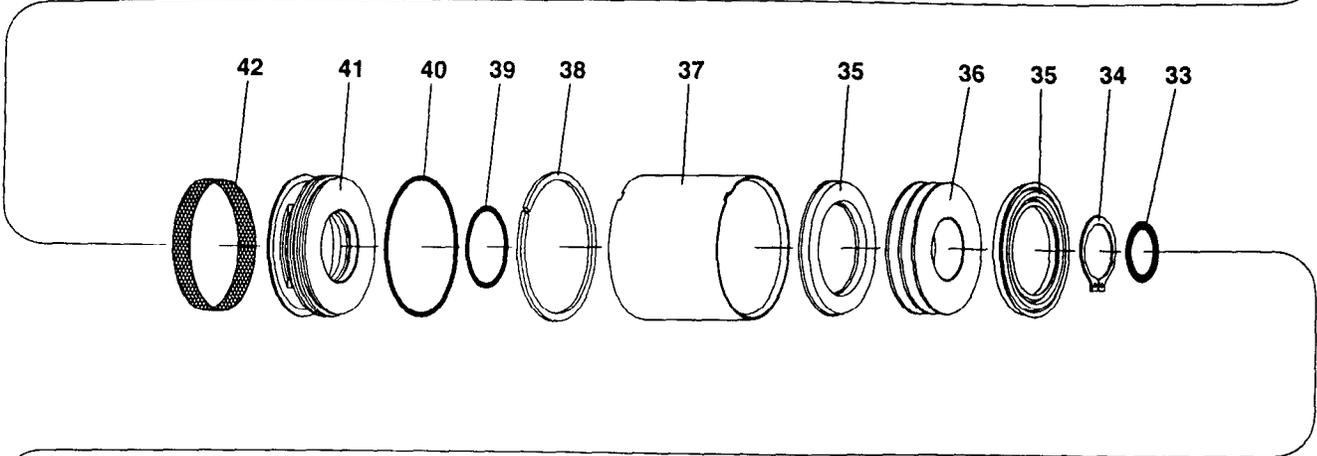
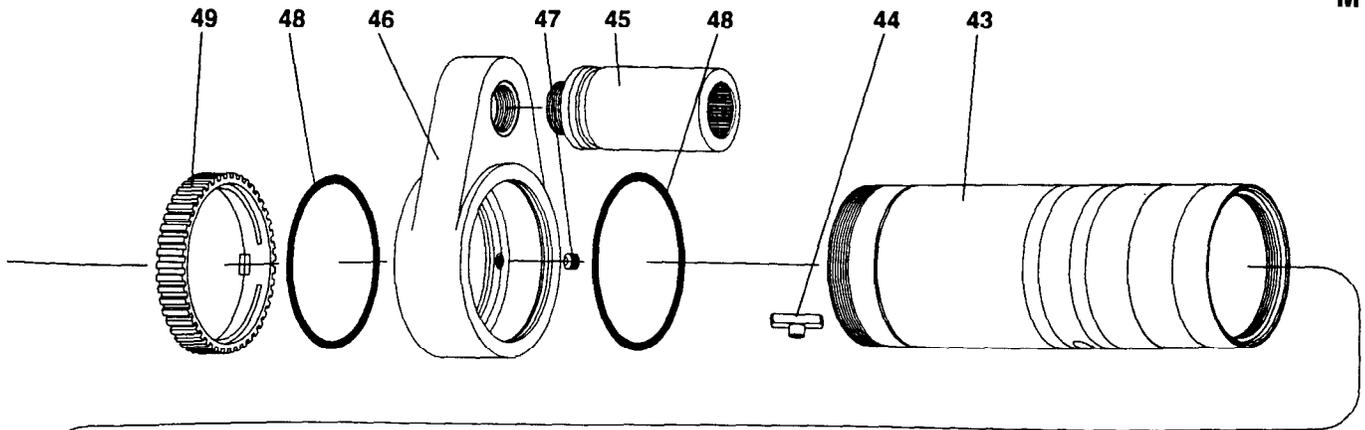




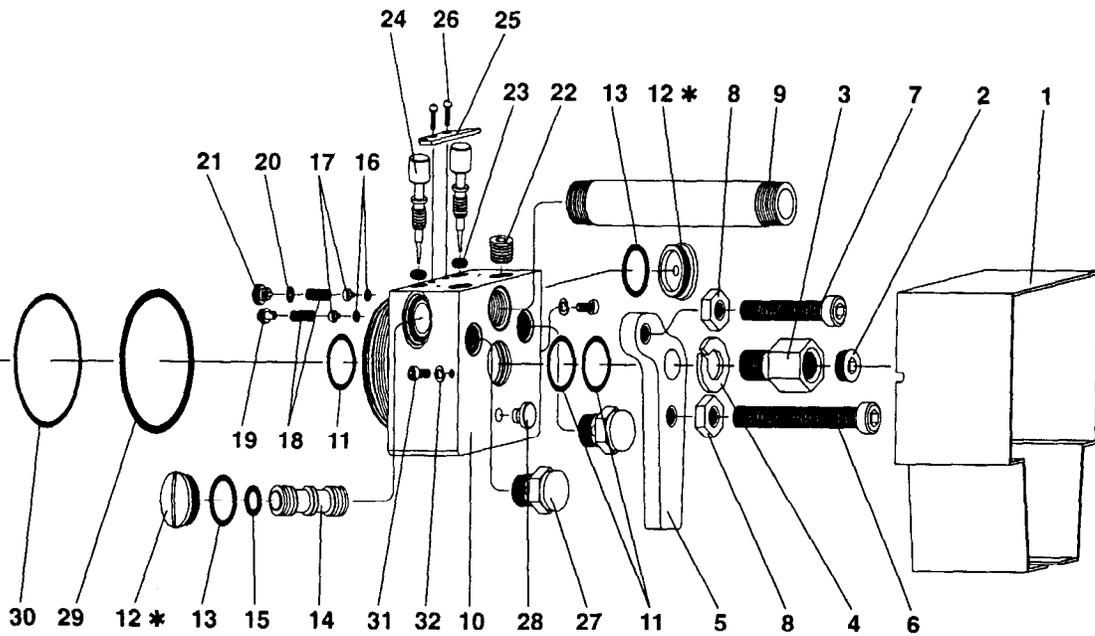
MODEL NUMBER	R.P.M.	MOTOR ASSEMBLY	AUXILIARY GEARING	DRIVE GEARING	TOTAL RED.
8258-C5-()	500	37959-1	33837-1	33836-1	30.9:1
8258-C8-()	850	37959-1	33837-1	33835-1	18.9:1
8258-C14-()	1450	37959-1	33853-1	33835-1	11.6:1
8258-C21-()	2100	37960-1		34009-1	6.86:1
8258-C28-()	2800	37959-1		33836-1	5.56:1
8258-C50-()	5000	37959-1		33835-1	3.4:1

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





NOT SHOWN
40302 NAMEPLATE (NON-EU MODELS)
40302-EU NAMEPLATE (-EU MODELS)



* ASSEMBLE WITH THREAD ADHESIVE SUCH AS LOCTITE 242.

PART NUMBER FOR ORDERING

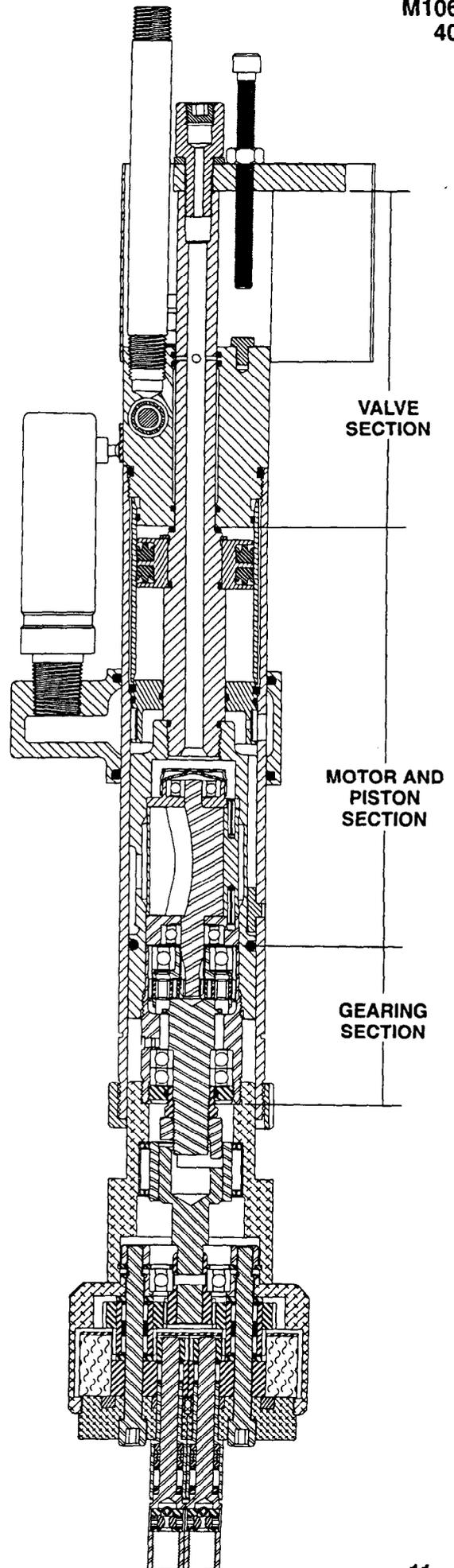
PART NUMBER FOR ORDERING

1	Cover		50	"O" Ring (2 req'd)	Y325-16
	models 8258-C()-1	40313-1	51	Piston Rod	
	models 8258-C()-2	40313		models 8258-C()-1	40754-1
	models 8258-C()-3	40313-2		models 8258-C()-2	40310-1
2	Pipe Plug	Y227-2-L		models 8258-C()-3	40807-1
3	Adapter	44883	52	Motor Housing	
4	Lock Washer	Y14-616		models 8258-C()-1, -2	40319
5	Trip Bracket	41713-3		models 8258-C()-3	40808
6	Adjustment Screw "A"		53	"O" Ring	Y325-222
	models 8258-C()-1, -2	40292-2	54	Cap	38783
	models 8258-C()-3	40292-3	55	Shield	38805
7	Adjustment Screw "B"		56	Bearing	Y65-7
	models 8258-C()-1	40292-1	57	End Plate	37956
	models 8258-C()-2, -3	40292-2	58	Rotor	30745
8	Nut (2 req'd on)	Y11-4-C	59	Blade (4 req'd)	30741
9	Pipe Nipple		60	Roll Pin (2 req'd)	Y178-22
	models 8258-C()-1	40857-5-2	61	Cylinder (includes item 60)	37958
	models 8258-C()-2	40857-6-2	62	End Plate	31158
	models 8258-C()-3	40857-7-2	63	Bearing	Y65-15
10	Valve Housing		64	Motor Assembly	37959-1
	models 8258-C()-1, -2	40305	65	Rotor	31633
	models 8258-C()-3	40805	66	Blade (5 req'd)	31363
11	"O" Ring (3 req'd)	Y325-15	67	Motor Assembly	37960-1
12	Cap (2 req'd)	46697	68	Spacer	32310
13	"O" Ring (2 req'd)	Y325-14	69	Spacer	32305
14	Valve Body	40307	70	Bearing	32325
15	"O" Ring (5 req'd)	41083	71	Spacer	37676
16	"O" Ring (2 req'd)	Y325-2	72	Shaft (2 req'd) (includes 15 needle bearings per shaft)	33686
17	Check Valve (2 req'd)	39587	73	Gear (2 req'd) 12 teeth	30899
18	Spring (2 req'd)	35733	74	Spindle	37667
19	Screw Plug	39652	75	Drive Gear (9 interior - 17 exterior teeth)	30901
20	"O" Ring	Y325-3	76	Spacer	32314
21	Screw Plug	38863	77	Bearing	32325
22	Pipe Plug (2 req'd)	Y227-2-L	78	Adapter	38892
23	"O" Ring (2 req'd)	Y325-7	79	Gearing Assembly (3.4:1 reduction)	33853-1
24	Needle Valve (2 req'd)	48441-1	80	Spacer	38894
25	Plate	48440-1	81	Shaft (2 req'd)	33436
26	Cap Screw (2 req'd)	Y211-1	82	Gear (2 req'd) 16 teeth	33440
27	Button Bleed Valve (2 req'd)	24130	83	Spindle	33425
28	Stud	46558	84	Spacer	32312
29	"O" Ring	Y325-129	85	Gearing Assembly (5.56:1 reduction)	33837-1
30	"O" Ring	Y325-29	86	Spindle	38888
31	Screw (2 req'd)	Y154-19	87	Ring Gear (includes item 88)	38882
32	Washer (2 req'd)	Y14-4	88	Grease Fitting	35967
	Housing and Valve Assembly (includes items 10 thru 32)		89	Bearing (2 req'd)	48305-1
	models 8258-C()-1, -2	40814-1	90	Lock Nut	38250
	models 8258-C()-3	40814-2	91	Seal	38895
33	"O" Ring	41535	92	Spindle Nut	38893-1
34	Retaining Ring	Y145-23	93	Gearing Assembly (3.4:1 reduction)	33835-1
35	Seal (2 req'd)	38860	94	Spindle	38889
36	Piston	38867-1	95	Gearing Assembly (5.56:1 reduction)	33836-1
37	Air Cylinder		96	Gear (2 req'd) 17 teeth	33438
	models 8258-C()-1	38866-1	97	Spindle	38890
	models 8258-C()-2	38866	98	Gearing Assembly (6.86:1 reduction)	34009-1
	models 8258-C()-3	38866-2	99	Dog Nut	45979
38	Retaining Ring	35619	100	Adapter (includes 47757-197 bearing)	46020
39	"O" Ring	Y325-20	101	Lock Ring	45990
40	"O" Ring	Y325-30	102	Retaining Ring	45987
41	Muffler Cap	38865	103	Retaining Ring	45988
42	Screen	38886	104	Drive Spindle	46021
43	Outer Sleeve		105	Retaining Ring	45989
	models 8258-C()-1	40753	106	Bearing	32325
	models 8258-C()-2	40318	107	Driving Gear	45991
	models 8258-C()-3	40806	108	Needle Roller	45986
44	Torque Pin	40312-1		Adapter Assembly (includes items 99 thru 108)	47283
45	Muffler	43551-3	109	Crescent Ring (2 req'd)	45997
46	Manifold (includes items 47 and 48)	43590	110	Body	45999
47	Set Screw	Y23-102	111	Nylon Washer (4 req'd)	45994
48	"O" Ring (2 req'd)	43588	112	Inter Gear (2 req'd)	45996
49	Thread Guard	38869	113	Needle Bearing Cage (4 req'd)	46002
			114	Spacer (2 req'd)	45995

PART NUMBER FOR ORDERING →

M106
40

115	Nylon Washer (2 req'd)	45993
116	Oil Reservoir	46009
117	Roll Pin (2 req'd)	Y178-45
118	Locking Insert	46015
119	Set Screw (2 req'd)	46014
120	Roll Pin	Y178-35
121	Gear	47757-64
122	Needle Cage	46002
123	Link Bearing	47757-63
124	Foam Strip	47757-227
125	Turret	47757-61
126	Sleeve	47757-62
127	Thrust Race	47757-72
128	Roller (6 req'd)	47757-60
129	Thrust Race	47757-66
130	Needle Cage	47757-194
131	"O" Ring	47757-225
132	Spindle	47757-59
133	Spindle Assembly (2 req'd)	46022
134	Adjustment Screw (2 req'd)	45992
135	Set Screw (2 req'd) (not shown)	45984
136	Open End Wrench (11 mm) (not shown)	46017
137	Hex Wrench (2.5 mm) (not shown)	46018
138	Box End Wrench (11 mm) (not shown)	46019
139	Drive Screw (8 req'd) (not shown)	47757-195
140	Nameplate (not shown)	48043-1
141	Hex Wrench (4 mm) (not shown)	Y106-4
	Dual Spindle Head Assembly (includes items 109 thru 141)	47980
	Dual Spindle Attachment (includes items 99 thru 141)	46023
142	Collet (2 req'd) (see page 13)	



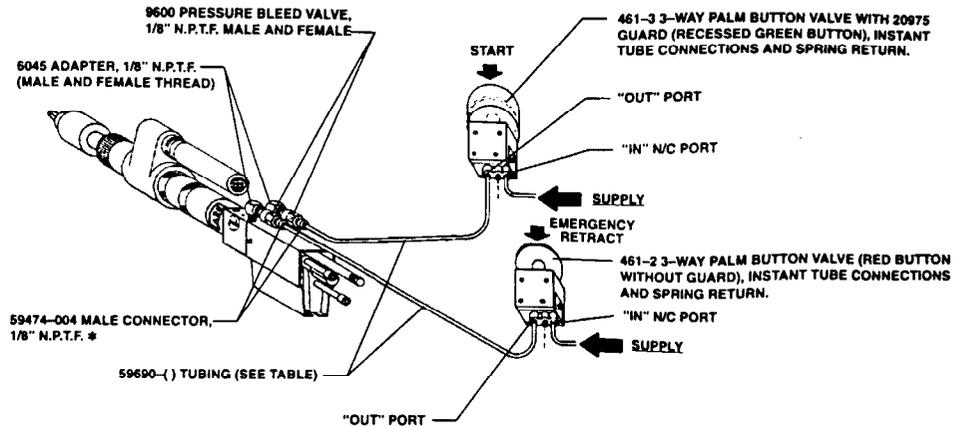
SERVICE KIT NO. 41325

QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
4	30741	Blades	1	Y65-15	Bearing
5	31363	Blades	2	Y325-2	"O" Ring
2	35733	Spring	1	Y325-3	"O" Ring
1	38783	Cap	2	Y325-7	"O" Ring
2	38860	Seal	2	Y325-14	"O" Ring
2	40309	Gasket	3	Y325-15	"O" Ring
5	41083	"O" Ring	2	Y325-16	"O" Ring
1	41535	"O" Ring	1	Y325-20	"O" Ring
1	41795	Motor Oil	1	Y325-29	"O" Ring
1	41799	Gear Lube	1	Y325-30	"O" Ring
1	41954	"O" Ring	1	Y325-129	"O" Ring
1	Y65-7	Bearing	1	Y325-222	"O" Ring

BASIC REMOTE CONTROL FOR START AND EMERGENCY RETRACT FUNCTIONS

ARO INSTANT TUBING 100 FOOT ROLLS		
MODEL NUMBER	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

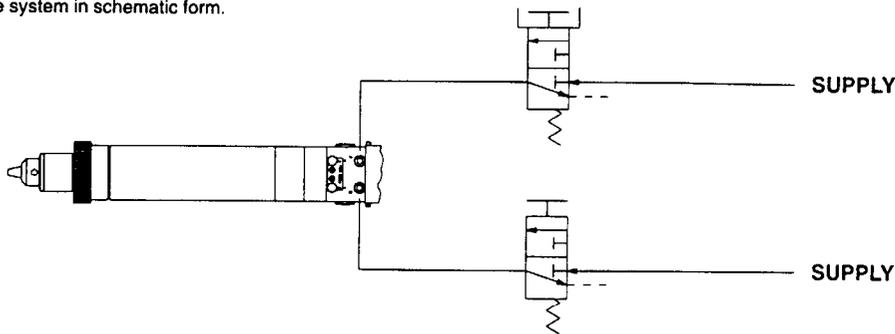
Remote operation of the unit may be achieved by connecting a 3-way valve to the remote start and/or remote retract ports, as shown above.

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.



TROUBLE SHOOTING

M106

40

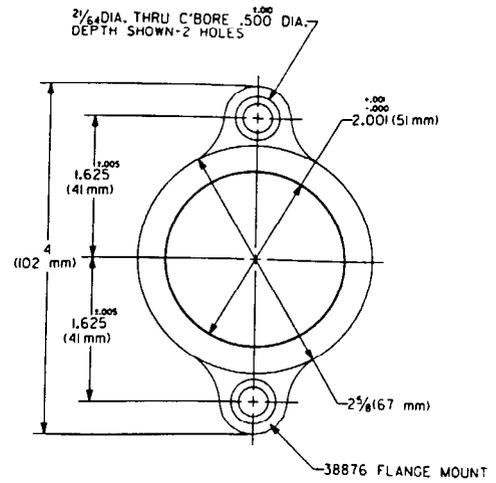
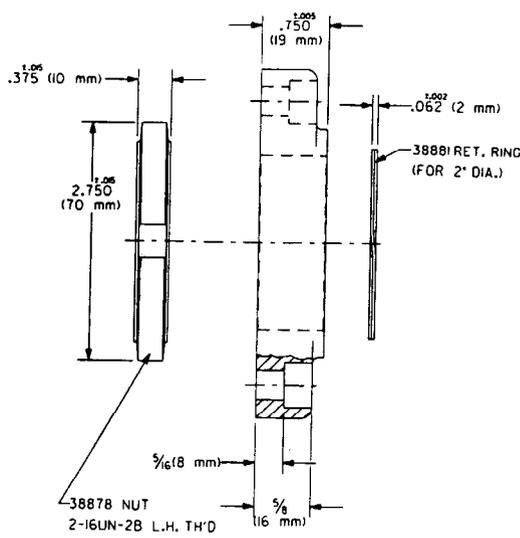
LISTED BELOW ARE SOME OF THE MOST COMMON CAUSES FOR THE SELF-FEED DRILL TO MALFUNCTION. MALFUNCTIONS BEYOND THE SCOPE OF THIS MANUAL SHOULD BE BROUGHT TO THE ATTENTION OF YOUR ARO REPRESENTATIVE OR RETURN THE TOOL TO THE FACTORY FOR REPAIR.

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 BE SURE CAPS ARE PROPERLY TIGHTENED.
	4. DIRT OR DAMAGED "O" RINGS ON SPOOL VALVE (14).	4. REFER TO VALVE SECTION, PAGE 4, 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. BE SURE 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 (24) 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 BE SURE 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 ALL AIR PASSAGES CLEAR OF DEBRIS.

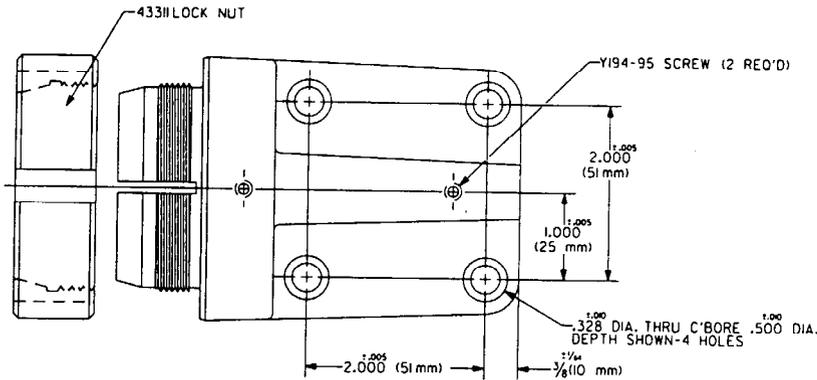
OPTIONAL COLLETS

COLLET NUMBER	BORE DIA.	ACCEPTS DRILL SIZES			COLLET NUMBER	BORE DIA.	ACCEPTS DRILL SIZES		
		INCH	NO.	MM			INCH	NO.	MM
45998-1	.039"		61	1.0	45998-29	.150"		25	3.8
45998-2	.043"		57	1.1	45998-30	.154"		23	3.9
45998-3	.047"	3/64	56	1.2	45998-31	.157"	5/32	22	4.0
45998-4	.052"		55	1.3	45998-32	.161"		20	4.1
45998-5	.055"		54	1.4	45998-33	.165"		19	4.2
45998-6	.059"		53	1.5	45998-34	.169"		18	4.3
45998-7	.063"	1/16	52	1.6	45998-35	.173"	11/64	17	4.4
45998-8	.067"		51	1.7	45998-36	.177"		16	4.5
45998-9	.071"		50	1.8	45998-37	.181"		14	4.6
45998-10	.075"		48	1.9	45998-38	.185"		13	4.7
45998-11	.079"	5/64	47	2.0	45998-39	.189"	3/16	12	4.8
45998-12	.083"		45	2.1	45998-40	.193"		10	4.9
45998-13	.087"		44	2.2	45998-41	.197"		9	5.0
45998-14	.091"		43	2.3	45998-42	.201"		7	5.1
45998-15	.094"	3/32	42	2.4	45998-43	.205"	13/64	5	5.2
45998-16	.098"		40	2.5	45998-44	.209"		4	5.3
45998-17	.102"		38	2.6	45998-45	.213"		3	5.4
45998-18	.106"		36	2.7	45998-46	.216"			5.5
45998-19	.110"	7/64	35	2.8	45998-47	.220"	7/32	2	5.6
45998-20	.114"		33	2.9	45998-48	.224"			5.7
45998-21	.118"		32	3.0	45998-49	.228"		1	5.8
45998-22	.122"		31	3.1	45998-50	.232"			5.9
45998-23	.126"	1/8		3.2	45998-51	.236"	15/64	A	6.0
45998-24	.130"		30	3.3	45998-52	.240"		B	6.1
45998-25	.134"		29	3.4	45998-53	.244"		C	6.2
45998-26	.138"			3.5	45998-54	.248"		D	6.3
45998-27	.142"	9/64	28	3.6	45998-55	.252"	1/4	E	6.4
45998-28	.146"		26	3.7	45998-56	.256"		F	6.5

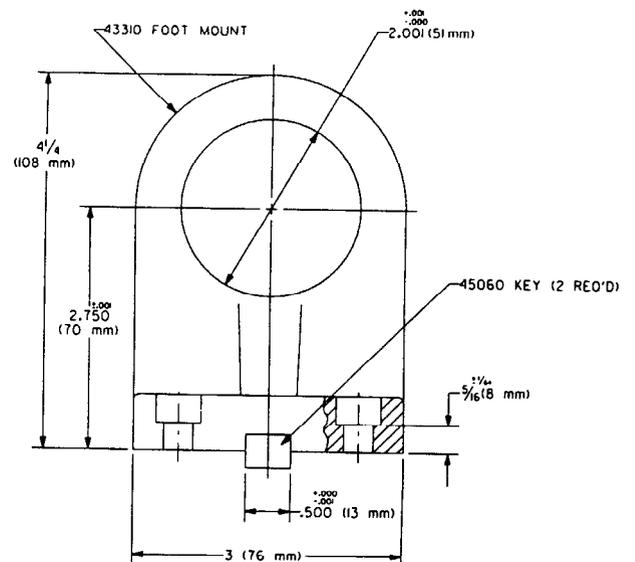
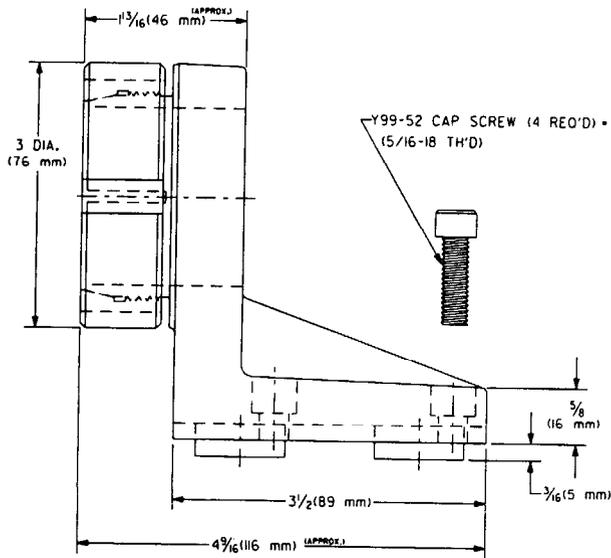
ACCESSORIES



38877 FLANGE MOUNT ASSEMBLY



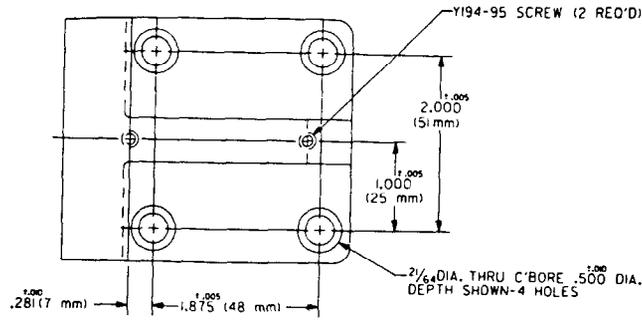
* NOT INCLUDED IN FOOT MOUNT ASSEMBLY



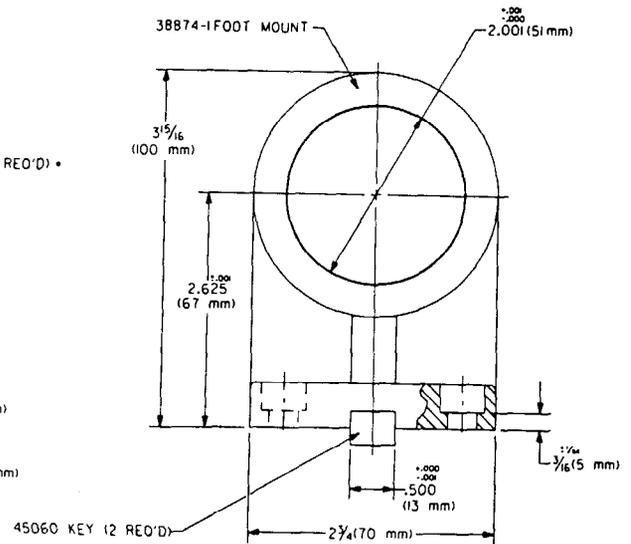
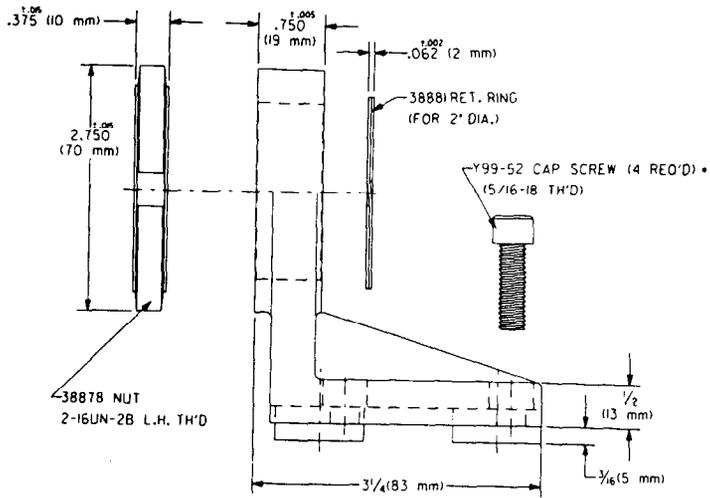
43313 COLLET TYPE FOOT MOUNT ASSEMBLY

ACCESSORIES

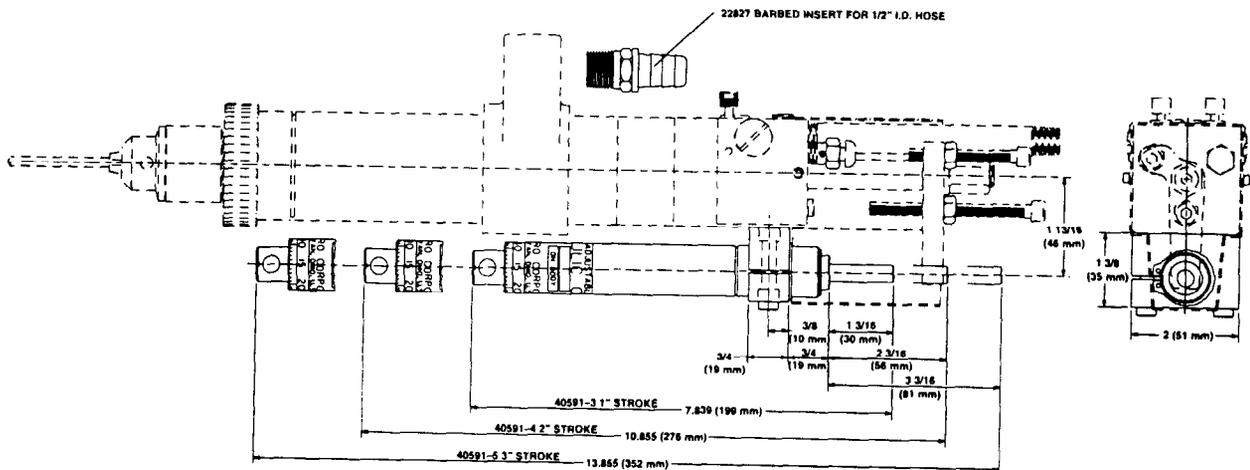
M106
40

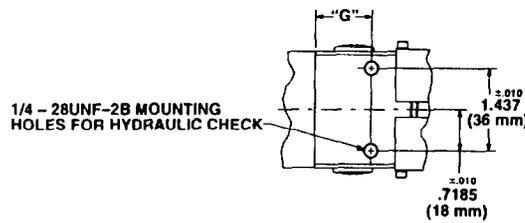
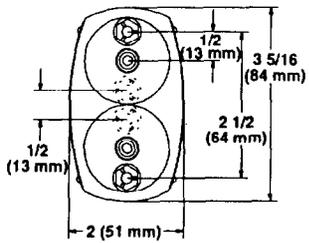
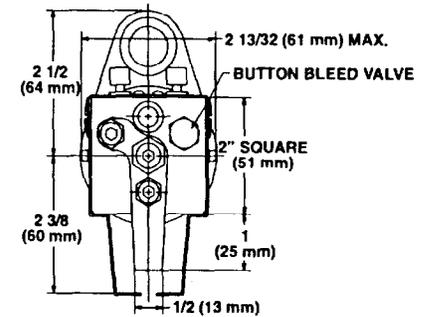
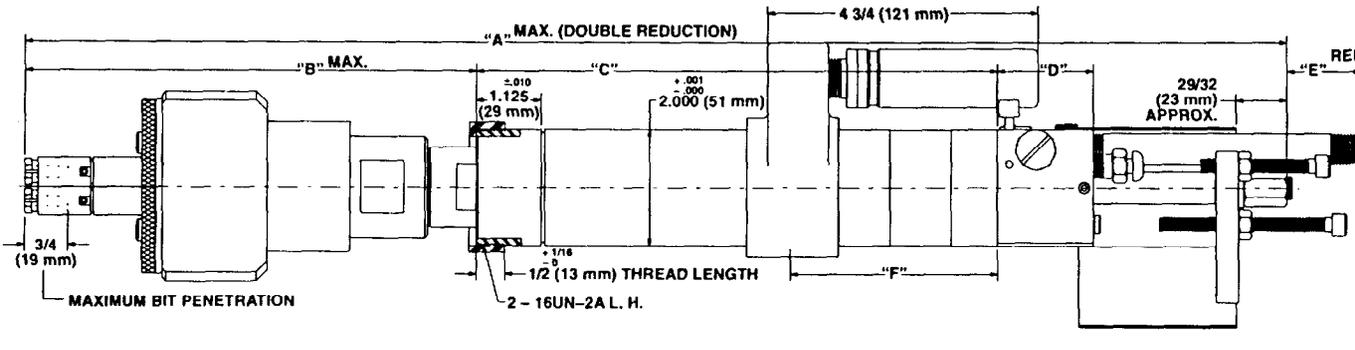
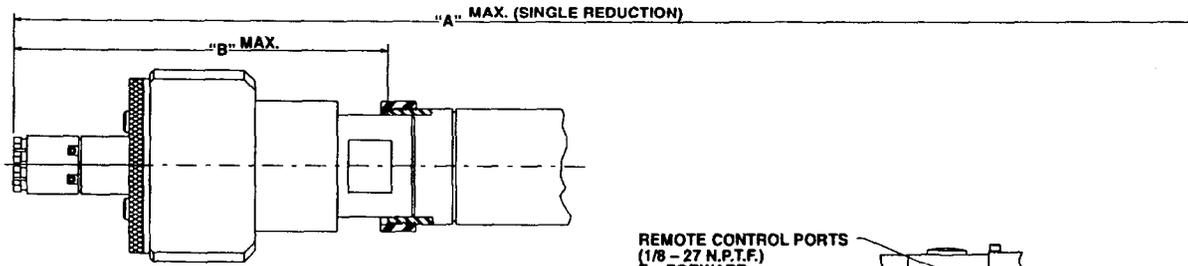


• NOT INCLUDED IN FOOT MOUNT ASSEMBLY



38875-1 FOOT MOUNT ASSEMBLY





DIMENSIONAL DATA

		A		B		C	D	E	F	G
		SINGLE RED.	DOUBLE RED.	SINGLE RED.	DOUBLE RED.					
MODELS 8258-C(-)1	INCHES	20 15/32	21 25/32	6 13/32	7 23/32	9 1/16	1 11/16	1 1/2	3 5/8	63/64
	mm	520	553	163	196	230	43	38	92	25
MODELS 8258-C(-)2	INCHES	21 31/32	23 9/32	5 11/16	7	10 9/16	1 11/16	1 3/4	4 3/8	63/64
	mm	558	591	144	178	268	43	44	111	25
MODELS 8258-C(-)3	INCHES	25 31/32	27 9/32	5 11/16	7	12 9/16	2 11/16	1 3/4	5 3/8	1 31/32
	mm	660	693	144	178	319	68	44	137	50