ARO Tool Products

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

BANT–A–MATIC® SELF–FEED DRILLS

Models 8245–B( )–( ) and 8345–B( )–( )

SECTION M102
MANUAL 12
Released: 3–11–88
Revised: 11–17–95
Form: 3261–2

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

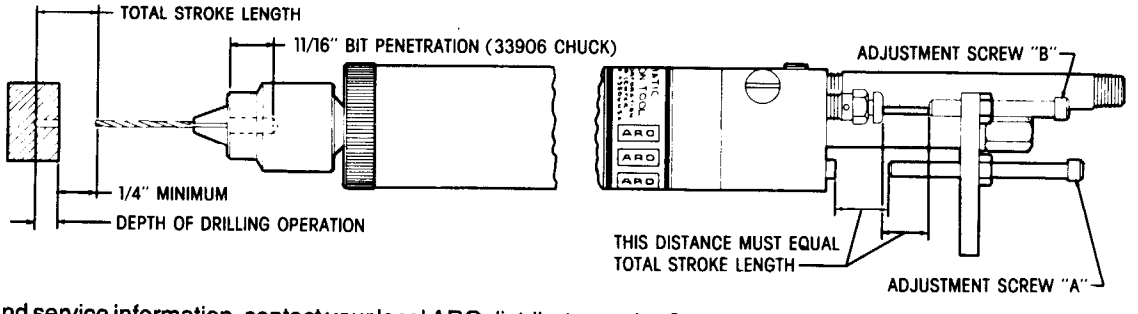
After disassembly is complete, all parts, except sealed or shielded bearings, should be washed with solvent. To relubricate parts, or for routine lubrication, use the following recommended lubricants:

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 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 (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) 672–0801.

ARO Tool Products
Ingersoll–Rand Company
1725 U.S. No. 1 North • P.O. Box 8000 • Southern Pines, NC 28388–8000

ARO®
Part of worldwide Ingersoll-Rand

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.

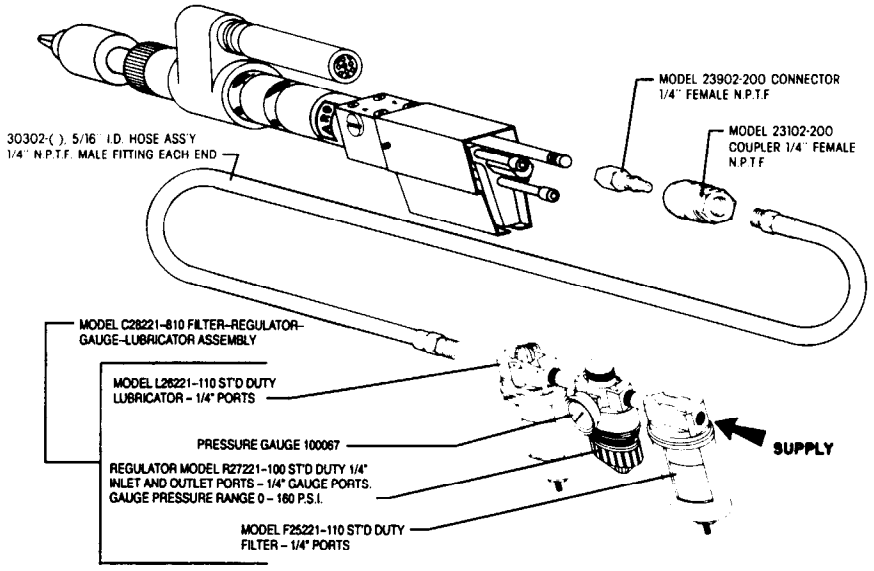
REMOTE OPERATION

- 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 actuacted, 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 9 for plumbing and schematic diagrams.

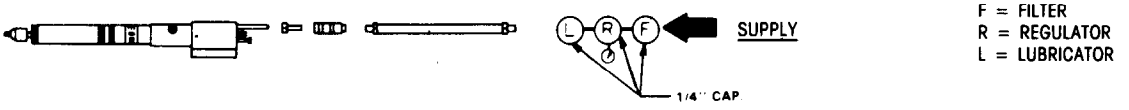
SPECIAL NOTE: The air inlet and remote ports of valve housing have tapered pipe threads and should not require the use of thread sealants, such as sealant tape or pipe joint compounds. Thread sealants, when used improperly, can contaminate air passages and cause valve or unit to malfunction.

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.

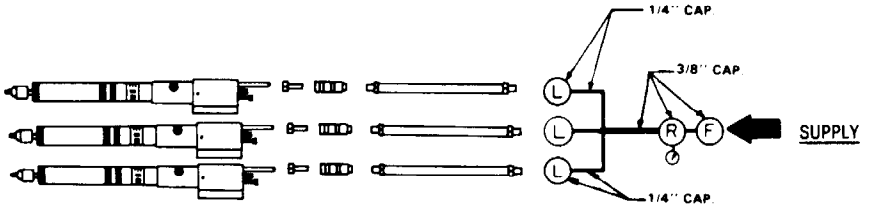
Shown below is the same system in schematic form.



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.



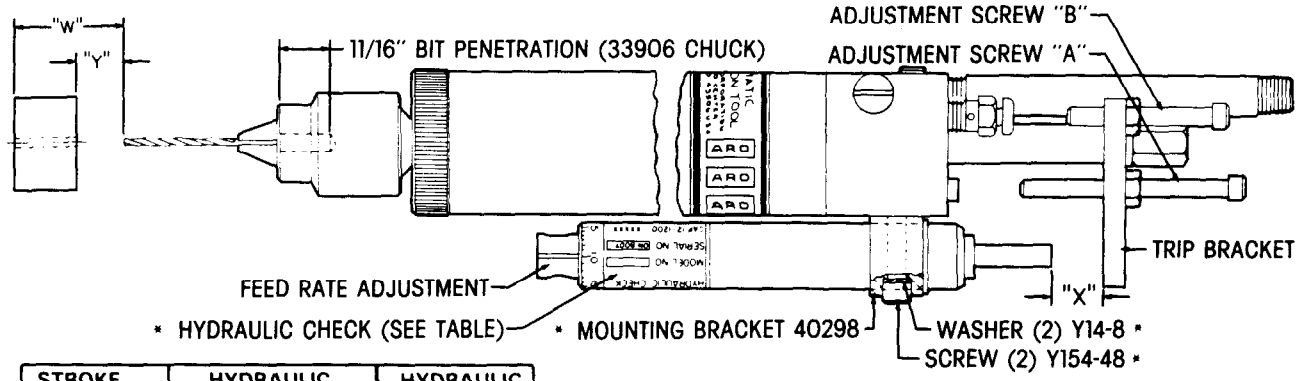
FILTER MODEL F25231-110
REGULATOR MODEL R27231-100
LUBRICATOR MODEL L26221-110

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 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 (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 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 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 ASS'Y	HYDRAULIC CHECK NO.
1 INCH	40301-2	38922
2 INCH	40301-3	38922-1
3 INCH	40301-4	38922-2

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

SEE PAGE 11 FOR HYDRAULIC CHECK DIMENSIONAL DATA.

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.

GEARING DISASSEMBLY

__ Remove chuck 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.
__ If tool has double gearing, unthread ring gear (83) from ring gear (81).
__ DIRECT DRIVE MODELS: Unthread and remove bearing lock nut (103).
__ Grasp ring gear in one hand and tap the threaded end of spindle with a soft face 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).

48117-1 GEARING DISASSEMBLY

__ Remove chuck from gearing.
__ 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 outer sleeve (41).
__ Using wrenches on flats of ring gear and motor housing, unthread gearing from motor housing.
__ Pull spindle (96) and components from ring gear.
__ Remove bearing (70) and shafts (71) to release gears (74).
__ Remove bearing (70) and shafts (91), releasing gears (90 and 89).
__ Unthread lock nut (86), releasing spindle (93) and bearing (94).

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 (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.
__ DIRECT DRIVE MODELS: Assemble bearing lock nut (103) to spindle.
__ Assemble gearing to tool.
__ Assemble chuck (88) to tool.

48117-1 GEARING ASSEMBLY

__ Assemble gears (74) to spindle (96), securing with shafts (71).
__ Assemble gears (89 and 90) to spindle, securing with shafts (91).
NOTE: Assure each shaft (91) contains 15 needle bearings.

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

__ Pack bearings (70) with ARO 33153 grease and assemble to spindle.
__ Lubricate gears liberally with ARO 33153 grease and assemble spindle to ring gear.
__ Pack bearings (94) with ARO 33153 grease and assemble to spindle (93).
__ Assemble spindle and components to ring gear.
__ Assemble seal (87) to lock nut (86) and assemble to ring gear, securing bearings.
__ Assemble spindle nut (95) to spindle.
__ Assemble spacer (69) to bearing (70).
__ Assemble gearing to tool.
__ Assemble chuck (88) to spindle.

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 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 (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.

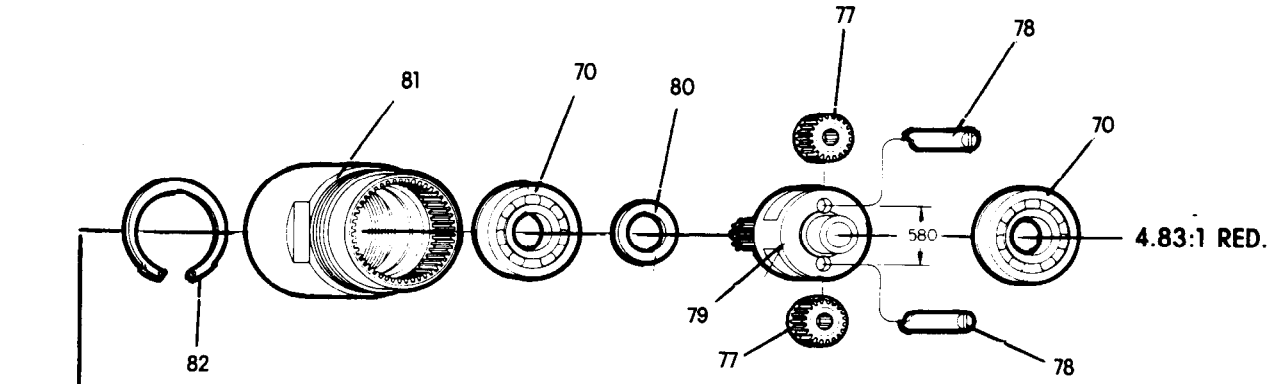
VALVE HOUSING DISASSEMBLY

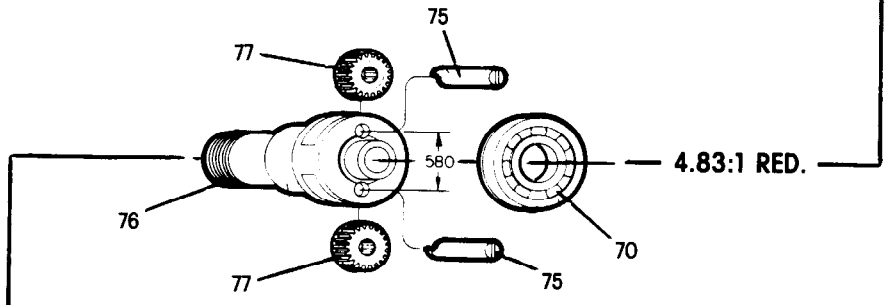
The valve body (14), feed control valves (23) and button bleed valves (25) can be serviced without removing outer sleeve from valve housing. To gain access to check valves (17) and components or "O" rings (11), follow disassembly procedure for removing the air piston.

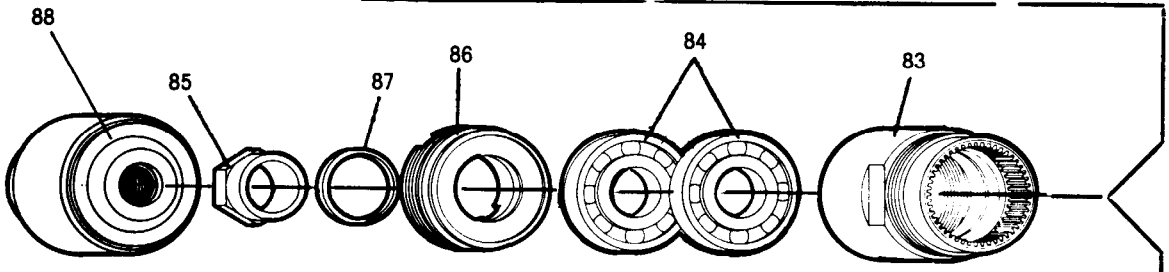
__ Remove both caps (12) and "O" rings (13)—models 8245-B( )-( ) only.
__ Push valve body (14) out thru housing. Handle valve body with reasonable care so the o.d. of valve is not damaged.
__ Button bleed valves (25) need not be removed except for replacement.

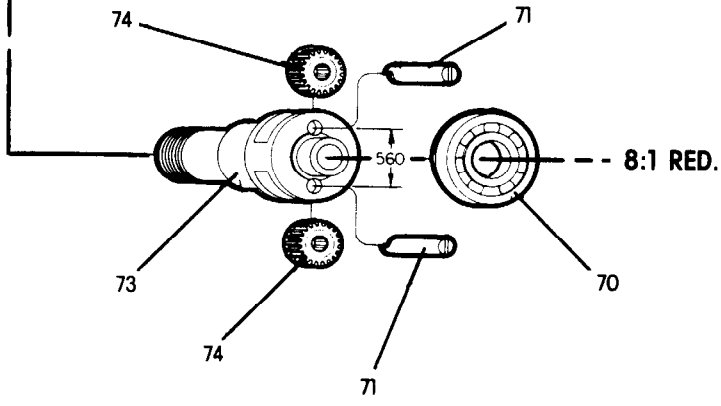
VALVE HOUSING ASSEMBLY

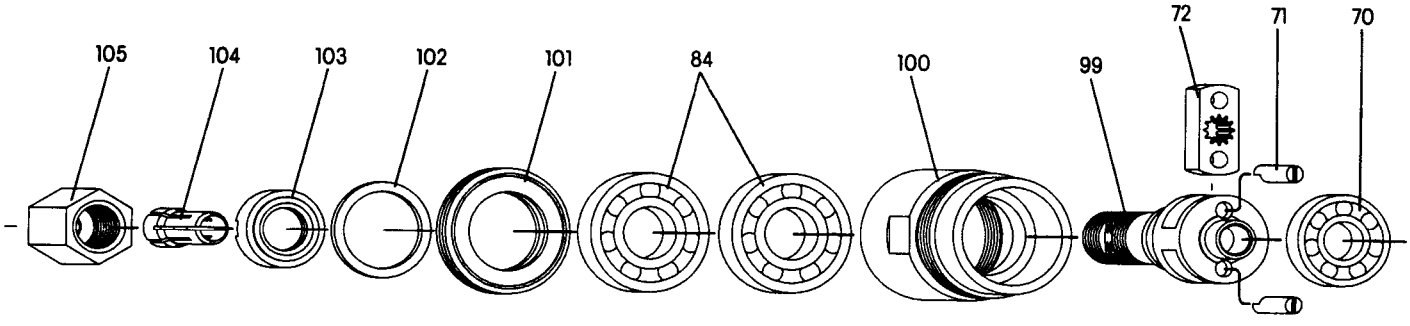
__ Replace all "O" rings with new ones.
__ Assemble "O" rings (22) to needle valves (23) and assemble needle valves to housing.
__ Assemble plate (97) to housing, securing with screws (98).
__ Lubricate "O" ring (15) with 36460 lubricant and assemble to valve body – models 8245-B( )-( ) only.
__ Assemble valve body to housing and assemble caps (12) with "O" rings (13) to housing.
__ If check valve(s) (17) have been removed, assemble "O" ring(s) (16) to valve(s) and assemble valve(s) to housing.
__ Assemble spring(s) (18) to housing.
__ Assemble "O" ring (20) to screw plug (21) and assemble to housing.
__ Assemble screw plug (19) to housing – models 8245-B( )-( ) only.
__ Assemble outer sleeve and components to housing as described in air piston assembly section.

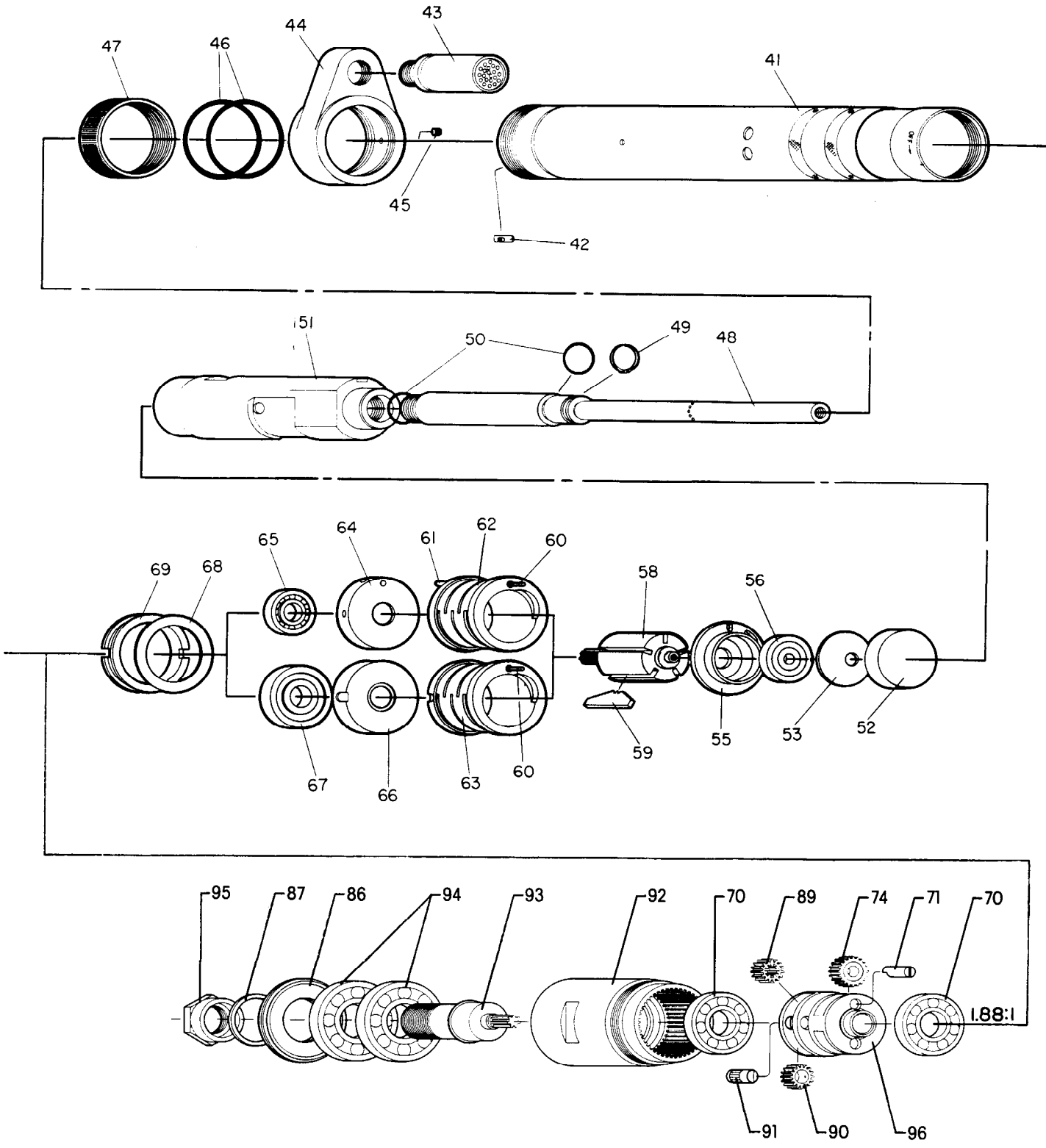




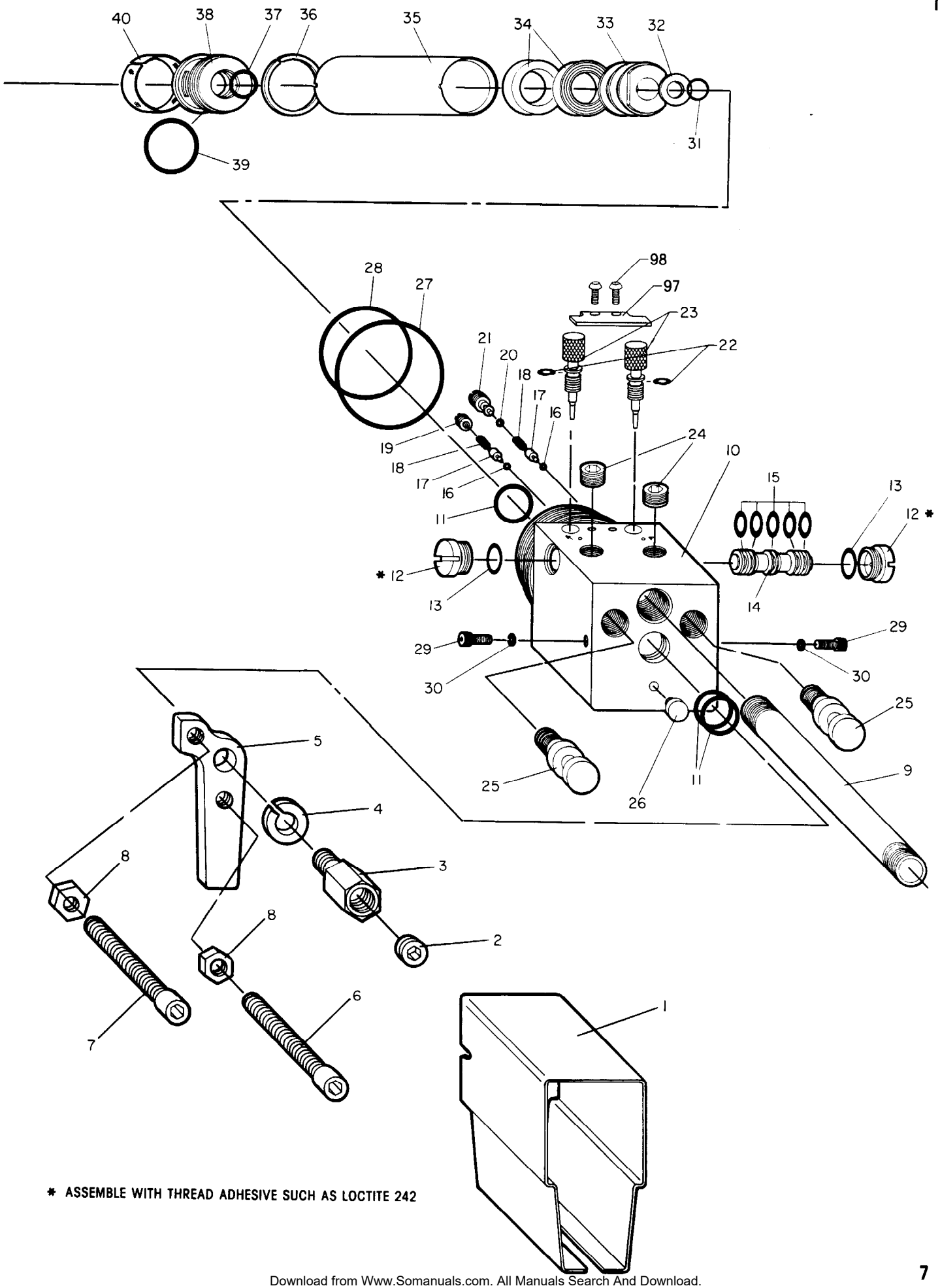








	PART NUMBER FOR ORDERING			PART NUMBER FOR ORDERING
	Drive Gearing Ass'y (8:1) includes items 70, 71 (2 req'd), 73, 74 (2 req'd) and 83 thru 87	39479		Drive Gearing Ass'y (1.88:1) includes items 69, 70 (2 req'd), 71 (2 req'd), 74 (2 req'd), 86, 87, 89, 90 (2 req'd), 91 (2 req'd), 92, 93, 94 (2 req'd), 95 and 96 48117-1
88	Chuck	33906		
89	Sun Gear (7 interior – 15 exterior teeth) .	48112-1		
90	Gear (2 req'd) 16 teeth	48111-1	97	Plate 48440-1
91	Shaft (2 req'd) (includes 15 needle bearings per shaft)	33686	98	Screw (2 req'd) Y211-1
			99	Spindle 38723
92	Ring Gear (includes grease fitting 35967)	48116-1	100	Ring Gear 38248-1
93	Spindle	48114-1	101	Lock Ring 38719
94	Bearing (2 req'd)	48305-1	102	Seal 38720
95	Spindle Nut	38893-1	103	Bearing Lock Nut 38718
96	Spindle	48115-1	104	Collet 31812-8
			105	Collet Nut 38721

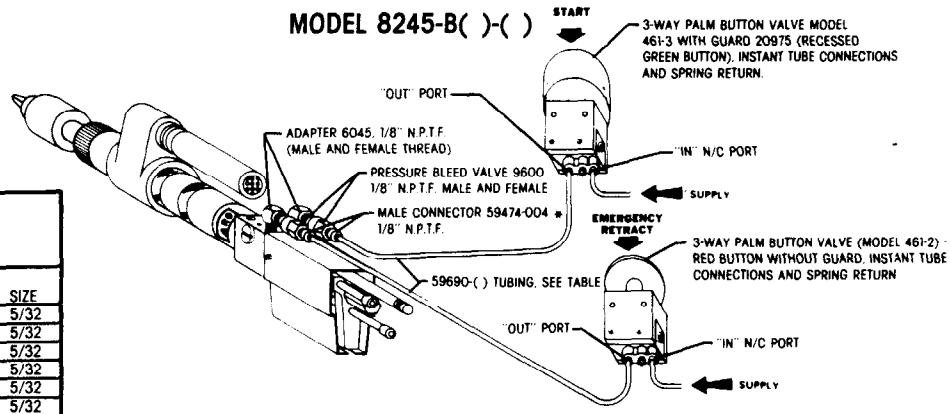


* ASSEMBLE WITH THREAD ADHESIVE SUCH AS LOCTITE 242

		PART NUMBER FOR ORDERING
1	Cover	
	models 8245-B( )-1 and 8345-B( )-1	40294-1
	models 8245-B( )-2 and 8345-B( )-2	40294
	models 8245-B( )-3 and 8345-B( )-3	40294-2
2	Pipe Plug	Y227-2-L
3	Adapter	44883
4	Lock Washer	Y14-616
5	Trip Bracket	
	models 8245-B( )-( )	41713-2
	models 8345-B( )-( )	41713-1
6	Adjustment Screw "A"	
	models 8245-B( )-1,-2 and 8345-B( )-1,-2	40292-2
	models 8245-B( )-3 and 8345-B( )-3	40292-3
7	Adjustment Screw "B"	
	model 8245-B( )-1	40292-1
	models 8245-B( )-2 and 8245-B( )-3	40292-2
8	Nut (2 req'd on models 8245-B( )-( ))	Y11-4-C
9	Pipe Nipple	
	models 8245-B( )-1 and 8345-B( )-1	40857-5-1
	models 8245-B( )-2,-3 and 8345-B( )-2,-3	40857-7-1
10	Valve Housing	
	models 8245-B( )-1 and 8245-B( )-2	40285
	models 8245-B( )-3	40799
	models 8345-B( )-1 and 8345-B( )-2	41298-1
	models 8345-B( )-3	41298-2
11	"O" Ring (3 req'd)	34276
12	Cap (2 req'd)(models 8245-B( )-( ) only)	46696
13	"O" Ring (2 req'd)(models 8245-B( )-( ) only)	Y325-12
14	Valve Body (models 8245-B( )-( ) only)	40287
15	"O" Ring (5 req'd)(models 8245-B( )-( ) only)	41082
16	"O" Ring (2 req'd on models 8245-B( )-( ))	Y325-2
17	Check Valve (2 req'd on models 8245-B( )-( ))	39587
18	Spring (2 req'd on models 8245-B( )-( ))	35733
19	Screw Plug (models 8245-B( )-( ) only)	39652
20	"O" Ring	Y325-3
21	Screw Plug	38863
22	"O" Ring (2 req'd on models 8245-B( )-( ))	Y325-7
23	Needle Valve (2 req'd on models 8245-B( )-( ))	48441-1
24	Pipe Plug (2 req'd)	Y227-2-L
25	Button Bleed Valve (2 req'd on models 8245-B( )-( ) only)	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, 97 and 98	
	models 8245-B( )-1 and 8245-B( )-2	40813-1
	model 8245-B( )-3	40813-2
	includes items 10, 11, 16, 17, 18, 20 thru 24, 26 thru 30, 97 and 98	
	models 8345-B( )-1 and 8345-B( )-2	41301-3
	model 8345-B( )-3	41301-4
31	"O" Ring	41534
32	Bearing Race	42364
33	Piston	39459-1
34	Seal (2 req'd)	35922
35	Air Cylinder	
	models 8245-B( )-1 and 8345-B( )-1	39458-1
	models 8245-B( )-2 and 8345-B( )-2	39458
	models 8245-B( )-3 and 8345-B( )-3	39458-2
36	Retaining Ring	39471
37	"O" Ring	Y325-16
38	Muffler Cap	39456
39	"O" Ring	Y325-24
40	Screen	39461
41	Outer Sleeve	
	models 8245-B( )-1 and 8345-B( )-1	40750
	models 8245-B( )-2 and 8345-B( )-2	40295
	models 8245-B( )-3 and 8345-B( )-3	40800
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	
	models 8245-B( )-1 and 8345-B( )-1	40751-1
	models 8245-B( )-2 and 8345-B( )-2	40293-1
	models 8245-B( )-3 and 8345-B( )-3	40801-1
49	Retaining Ring	Y145-20
50	"O" Ring (2 req'd)	Y325-13
51	Motor Housing	
	models 8245-B( )-1,-2 and 8345-B( )-1,-2	40296
	models 8245-B( )-3 and 8345-B( )-3	40802
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 2700 r.p.m. models	33654-2
	for 900, 4400 and 19000 r.p.m. models	34746-2
68	Spacer	34737
69	Spacer	33018
70	Bearing	32850
71	Shaft (2 req'd)	38251
72	Spline Driver	38108
73	Spindle	39467
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)	
	used with 4.83:1 and 23.3:1 gearing (46 teeth)	39481
	used with 1:1 and 8:1 gearing (49 teeth)	39482
84	Bearing (2 req'd)	
	used with 4.83:1 and 8:1 gearing	48305-1
	used with 1:1 gearing	34682
85	Spindle Nut	38893-1
86	Lock Nut	38250
87	Seal	38895
	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
	Drive Gearing Ass'y (1:1) includes items 70, 71 (2 req'd), 72, 84 (2 req'd) and 99 thru 105	38724-2
	Drive Gearing Ass'y (4.83:1) includes items 70, 75 (2 req'd), 76, 77 (2 req'd) and 83 thru 87	39478

BASIC REMOTE CONTROL FOR START AND EMERGENCY RETRACT FUNCTIONS

MODEL 8245-B( )-( )



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

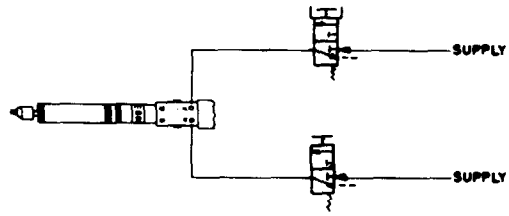
Remote operation of the unit may be achieved by connecting a 3-way valve to the remote start and/or remote retract ports, as shown above.

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.

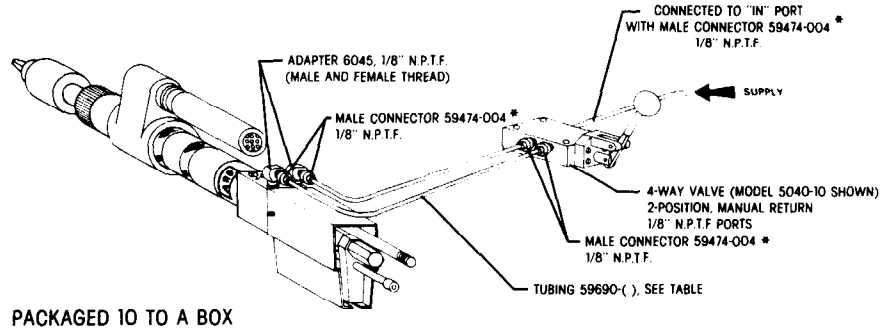
EMERGENCY RETRACT – depress the emergency button momentarily. This signal to the unit will shift the built-in pressure operated valve, commanding the unit to retract immediately to the initial position whereupon the unit will stop.

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.



MODEL 8345-B( )-( )



* PACKAGED 10 TO A BOX

REMOTE OPERATION

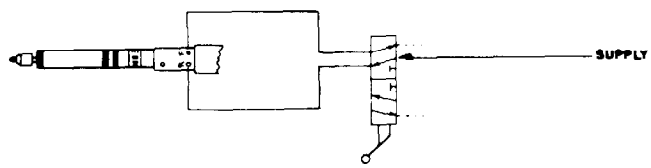
Remote operation is achieved by connecting a 4-way valve to the remote start and retract ports as shown above. This valve supplies power directly to the feed piston in the tool.

TO START – move lever forward. The unit will advance to a pre-set depth (adjustment screw contacts stud on valve housing).

TO RETRACT – move lever rearward (back). The unit will retract to the initial position.

EMERGENCY RETRACT – the unit will retract at any time the lever is moved to the rearward (back) position. The motor runs continuously as long as air pressure is present at the air inlet to the tool. A shut-off valve should be installed in the air inlet line to completely shut the tool off in case of an emergency.

Shown below is the same system in schematic form.



SERVICE KIT NO. 41205-1

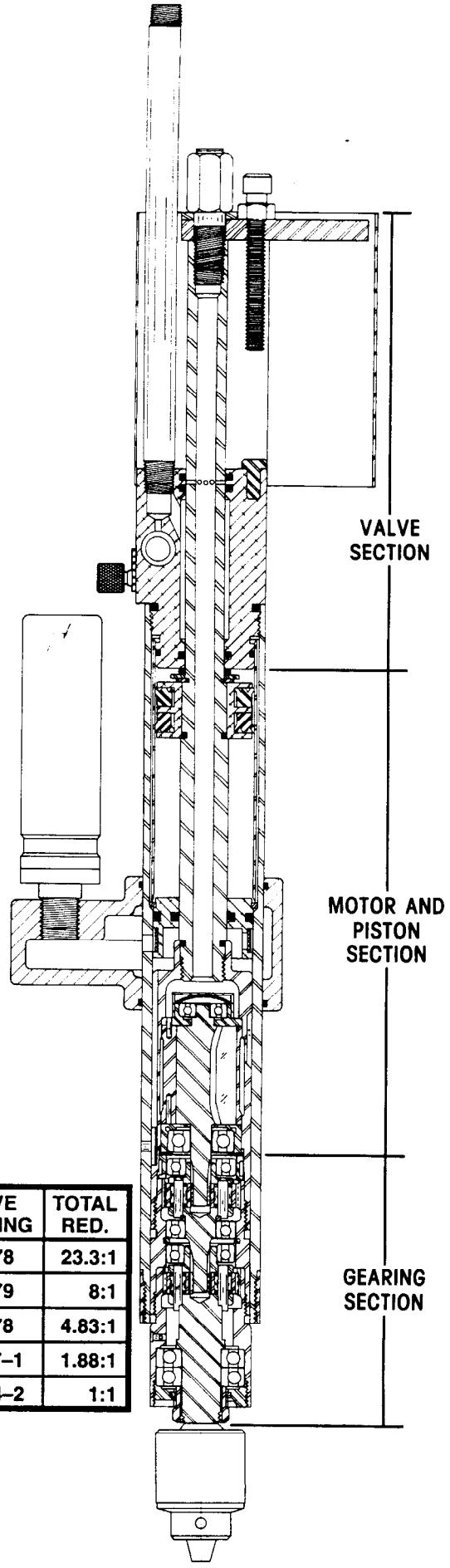
FOR SERVICING ONE MODEL 8245-B( )-( ) or 8345-B( )-( ) EXCEPT 8245-B30-( ), 8345-B30-( ) or 8245-101-( ).

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 8245-B30-( ), 8345-B30-( ) or 8245-101-( ).

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



MODEL NUMBER		R.P.M.	MOTOR ASSEMBLY	AUXILIARY GEARING	DRIVE GEARING	TOTAL RED.
8245-B8-( )	8345-B8-( )	900	34746-2	36017	39478	23.3:1
8245-B30-( )	8345-B30-( )	2700	33654-2		39479	8:1
8245-B45-( )	8345-B45-( )	4400	34746-2		39478	4.83:1
8245-101-( )		10,000	33654-2		48117-1	1.88:1
8245-203-( )	8345-203-( )	19,000	34746-2		38724-2	1:1

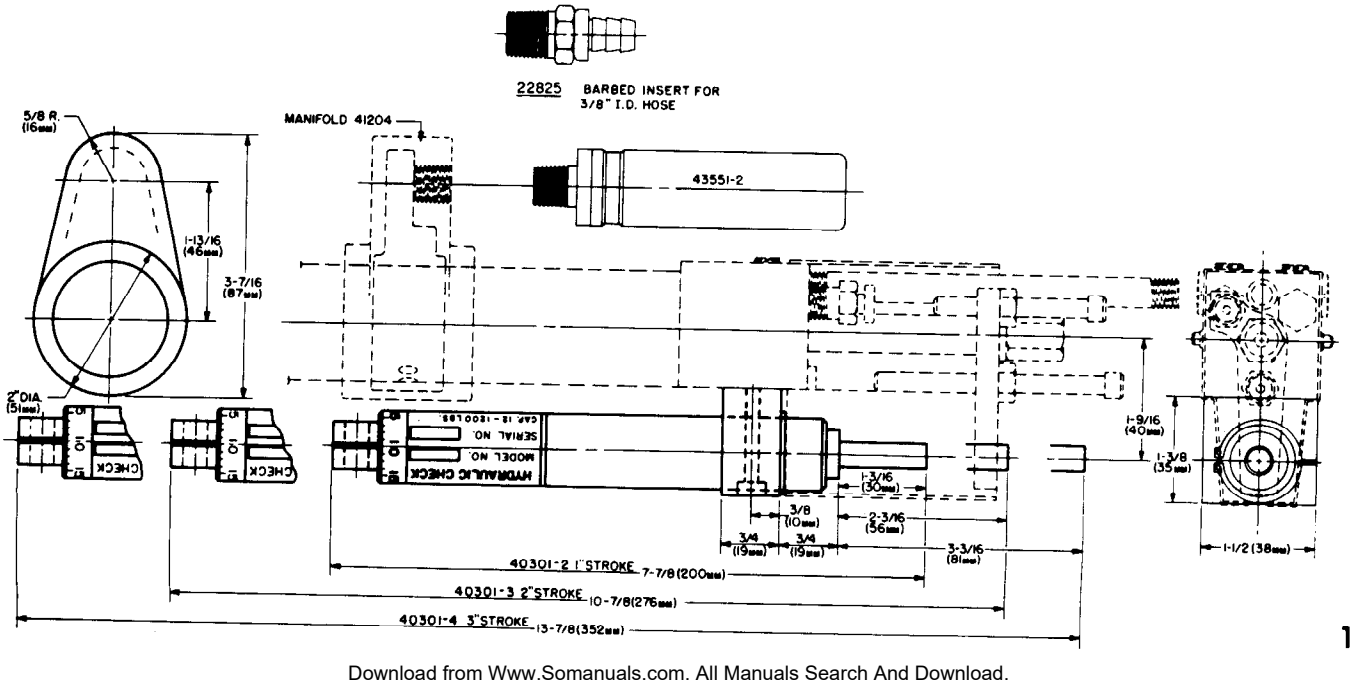
MODELS WITH -EU SUFFIX ARE "EC" COMPLIANT MODELS.

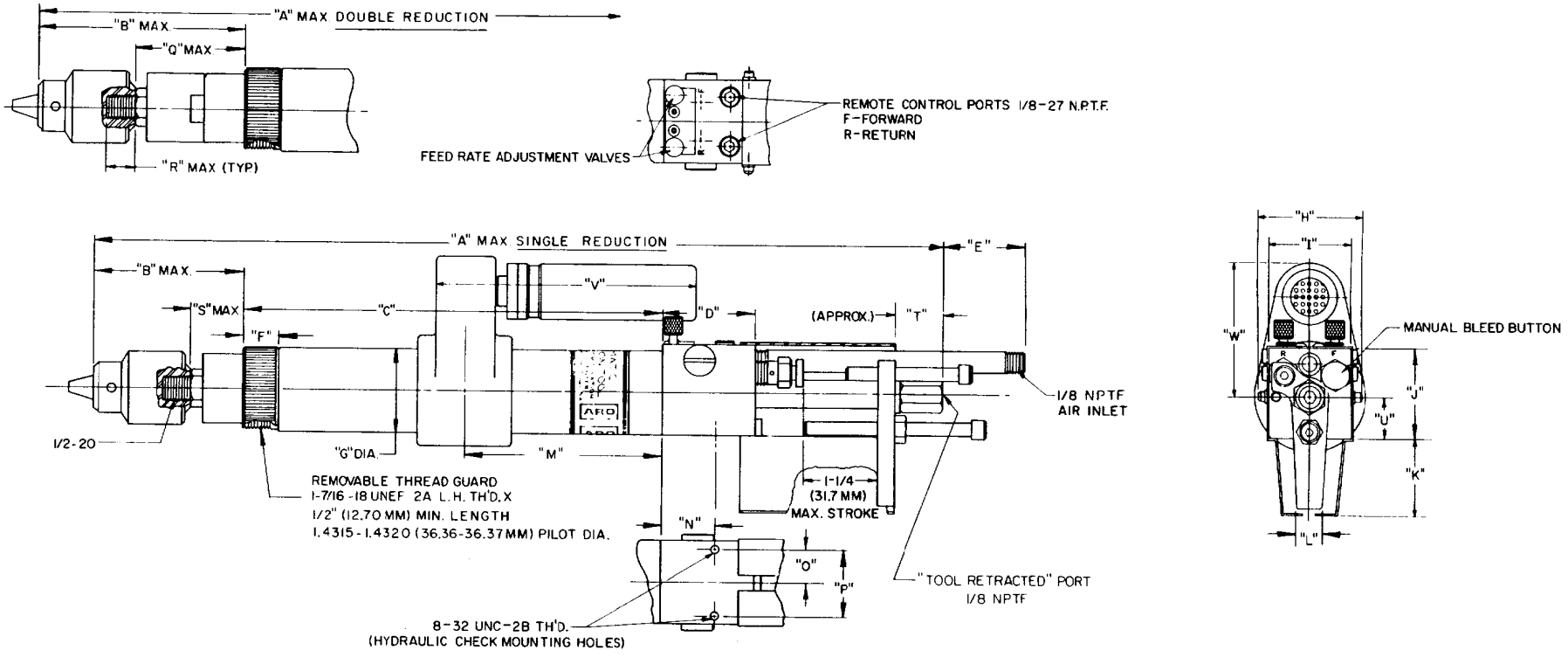
TROUBLE SHOOTING

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 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. 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

	A		B																						
	DOUBLE REDUCTION	SINGLE REDUCTION	DOUBLE REDUCTION	SINGLE REDUCTION	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1-1/4" STROKE (32 MM)																									
INCHES	16-1/4	15-3/16	3-25/32	2-23/32	7-1/2	1-11/16	1-1/2	21/32	1-1/2	1-55/64	1-1/2	1-5/8	1-3/8	1/2	3-1/2	.980 .990	.589 .599	1.183 1.193	2-1/64	33/64	61/64	7/8	3/4	4-3/4	2-7/16
MM	413	386	96	69	197	43	38	17	38	47	38	41	35	13	89	24.89 25.15	14.96 15.21	30.05 30.30	51	13	24	22	19	121	60
2" STROKE (51 MM)																									
INCHES	17-3/4	16-11/16	3-1/32	1-31/32	9	1-11/16	2-3/4	21/32	1-1/2	1-55/64	1-1/2	1-5/8	1-3/8	1/2	4-1/4	.980 .990	.589 .599	1.183 1.193	1-17/64	33/64	13/64	7/8	3/4	4-3/4	2-7/16
MM	451	424	77	50	229	43	70	17	38	47	38	41	35	13	108	24.89 25.15	14.96 15.21	30.05 30.30	32	13	5	22	19	121	60
3" STROKE (76 MM)																									
INCHES	21-3/4	20-11/16	3-1/32	1-31/32	11	2-11/16	1-3/4	21/32	1-1/2	1-55/64	1-1/2	1-5/8	1-3/8	1/2	5-1/4	1.980 1.990	.589 .599	1.183 1.193	1-17/64	33/64	13/64	7/8	3/4	4-3/4	2-7/16
MM	552	525	77	50	279	68	44	17	38	47	38	41	35	13	133	50.29 50.55	14.96 15.21	30.05 30.30	32	13	5	22	19	121	60