



OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE
PAR-A-MATIC® SELF-FEED DRILLS

Models 8255-A() and 8355-A()

SECTION M103
MANUAL 11
Released: 8/90
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Form: 1612-2

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.

AIR SUPPLY REQUIREMENTS

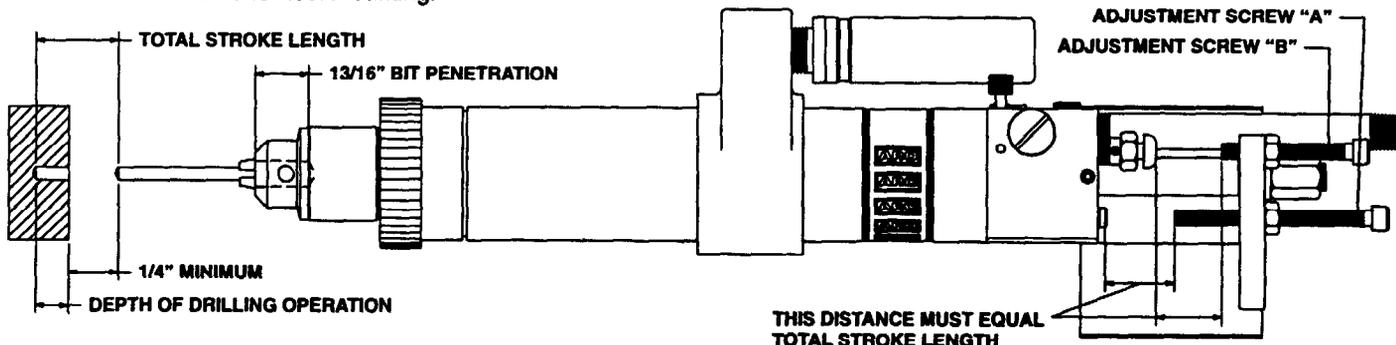
For maximum operating efficiency, the following air supply specifications should be maintained to this air tool:

- 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" (valve-in-head models only) 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

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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

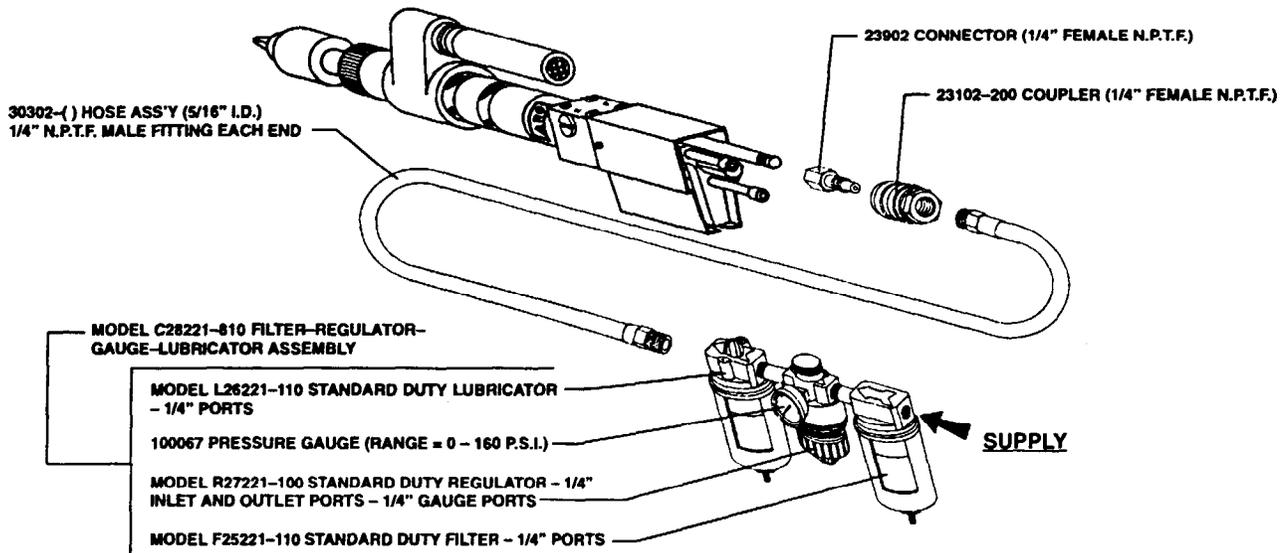
- Install button bleed valve (27) in either the "F" port located at top of valve housing or the "F" port located at the rear of valve housing. NOTE: Unused port must be plugged with pipe plug (22).
- Depress button bleed valve (27) marked "F" on valve housing. The unit will start in the forward (advancing) 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 10 for plumbing and schematic diagrams.

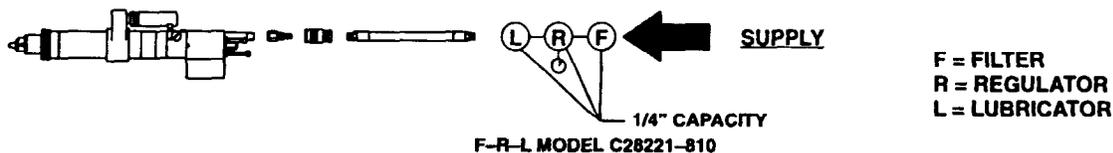
SPECIAL NOTE: The air inlet and remote ports of valve housing have tapered pipe threads and should not require the use of thread sealants, such as sealant tape or pipe joint compounds. Thread sealants, when used improperly, can contaminate air passages and cause valve or unit to malfunction.

RECOMMENDED POWER AIR INLET SYSTEM

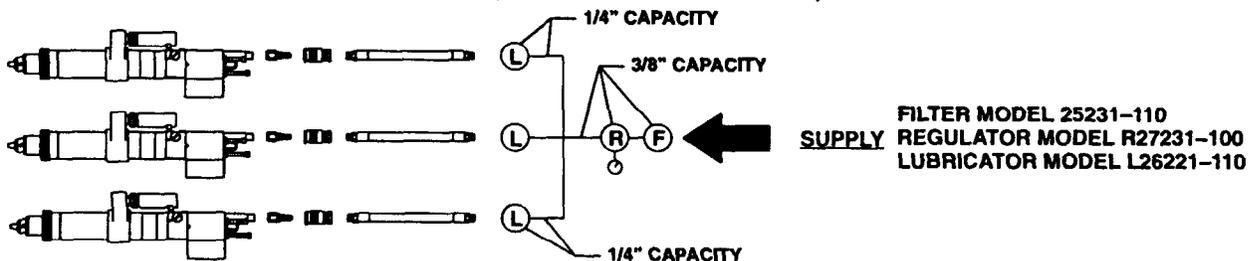


Your ARO self-feed tool is designed to deliver specific horsepower and thrust to achieve high rates of work. To assure the unit will develop this power, care must be taken that the power air inlet system is correctly sized to permit the proper rate of air flow. Shown is a system for a single tool that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



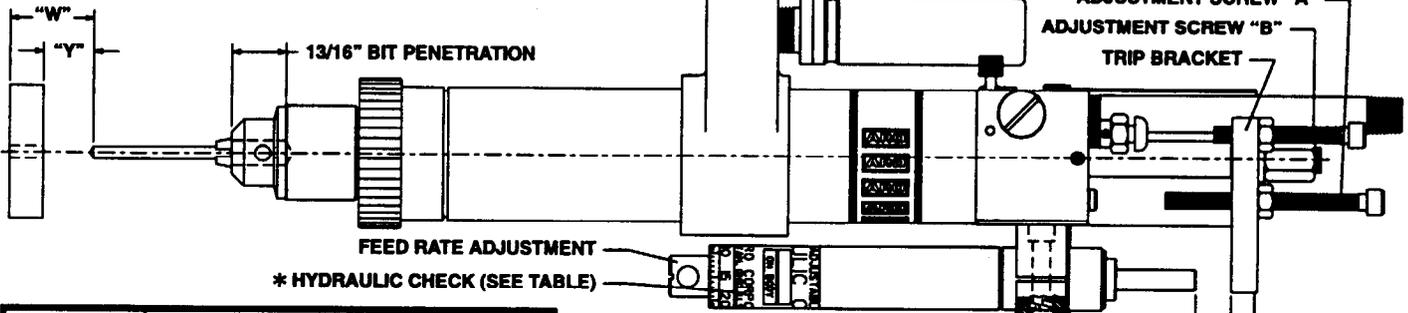
- Assemble hydraulic check to mounting bracket and assemble mounting bracket to tool, using washers (30997) and cap screws (Y157-44).
- Measure distance from drill point to work piece – distance “Y”.
- Distance “X” between hydraulic check plunger and trip bracket must be less than distance “Y” to prevent 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

* MOUNTING BRACKET 40316
* WASHER (2) 30997
SCREW (2) Y157-44 *

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

- Using wrenches on flats of ring gear and motor housing, unthread gearing from motor housing.
- Pull spindle (100) and components from ring gear (102).
- Remove bearing (70) and spacer (99).
- Remove shafts (81), releasing gears (82).
- Remove retaining ring (101), releasing shafts (72) and gears (73 and 75).
- Remove lock nut (90) from ring gear, releasing bearings (89) and spindle (104).

GEARING DISASSEMBLY

- Remove chuck from gearing.
- 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 motor housing, unthread gearing from motor housing.
- If tool has double gearing, unthread ring gear (87) from adapter (78).
- DIRECT DRIVE models: Unthread and remove bearing lock nut (113).
- 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 or 110) 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.
- DIRECT DRIVE models: Assemble bearing lock nut (113) to spindle.
- Assemble spindle nut (92) to spindle.
- Assemble gearing to tool.
- Assemble chuck (117) to spindle.

48044-1 GEARING DISASSEMBLY

- Remove chuck from gearing.
- 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).

48044-1 GEARING ASSEMBLY

- Pack bearings (89) with ARO 33153 grease and assemble to spindle (104).

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

- Lubricate needle bearing (103) with ARO 33153 grease and assemble to spindle (104), and assemble spindle to ring gear (102).
- Assemble seal (91) to lock nut (90) and assemble lock nut to ring gear, securing bearings and spindle.
- Assemble spindle nut (92) to spindle.
- Assemble gears (82) to spindle, securing with shafts (81).
- Assemble spacer (99) and bearing (70) to spindle, securing shafts.
- Assemble gears (73 and 75) to spindle, securing with shafts (72) and retaining ring (101). NOTE: Be sure each shaft contains 15 needle bearings.
- Lubricate gears liberally with ARO 33153 grease and assemble spindle to ring gear.
- Assemble gearing to tool.
- Assemble chuck (117) to spindle.

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).
- 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.

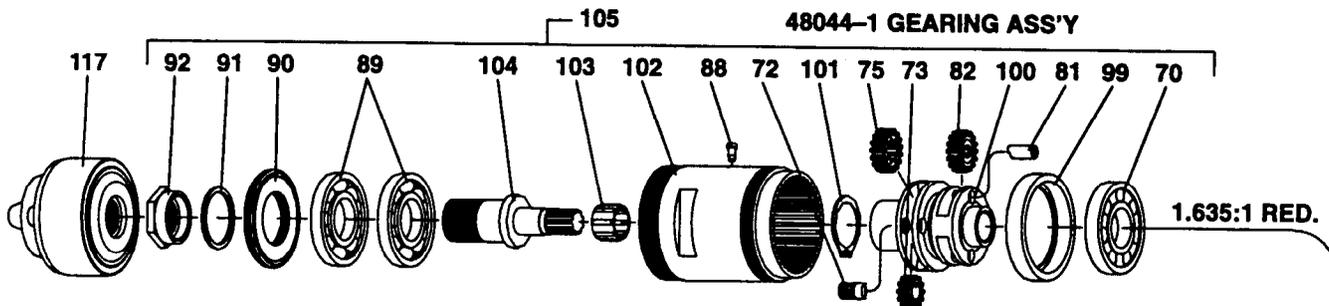
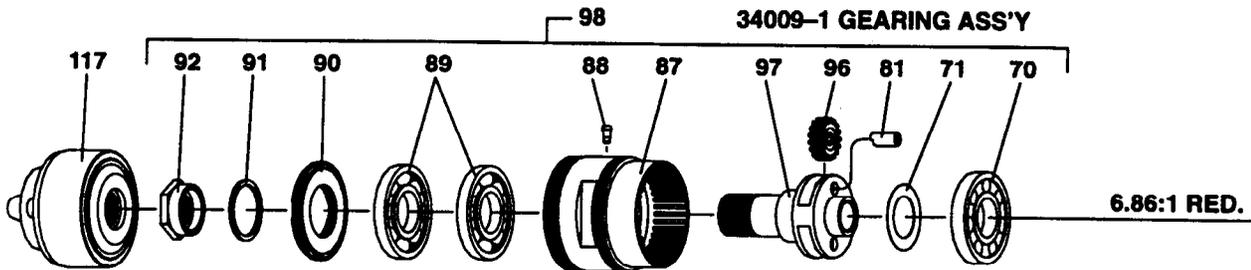
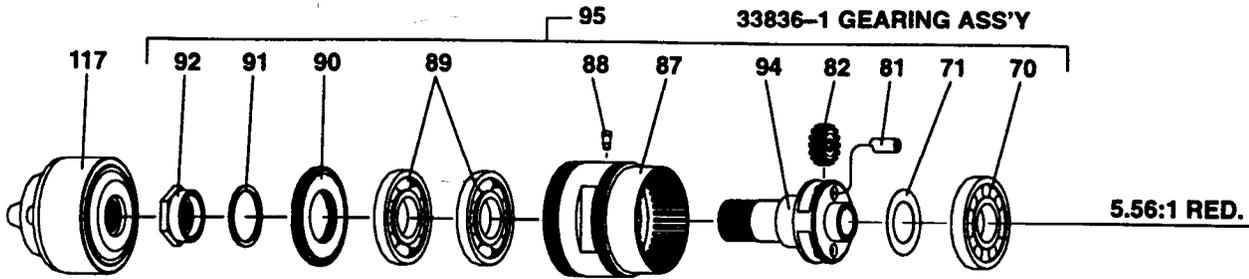
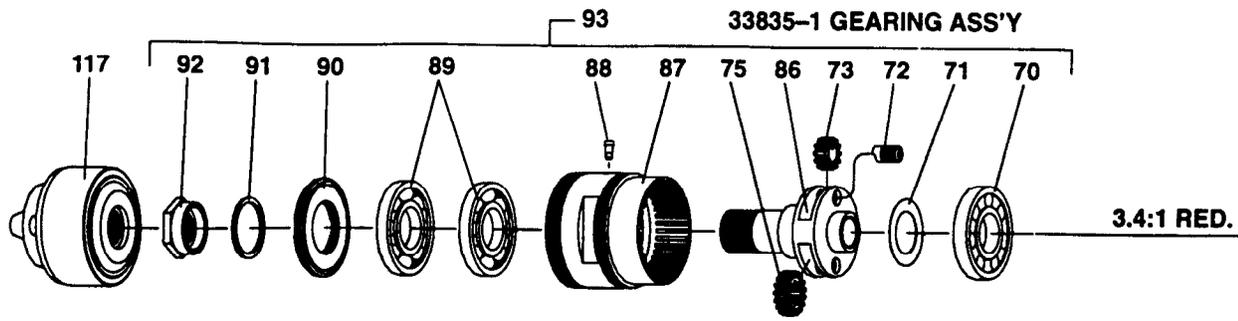
VALVE HOUSING DISASSEMBLY

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.

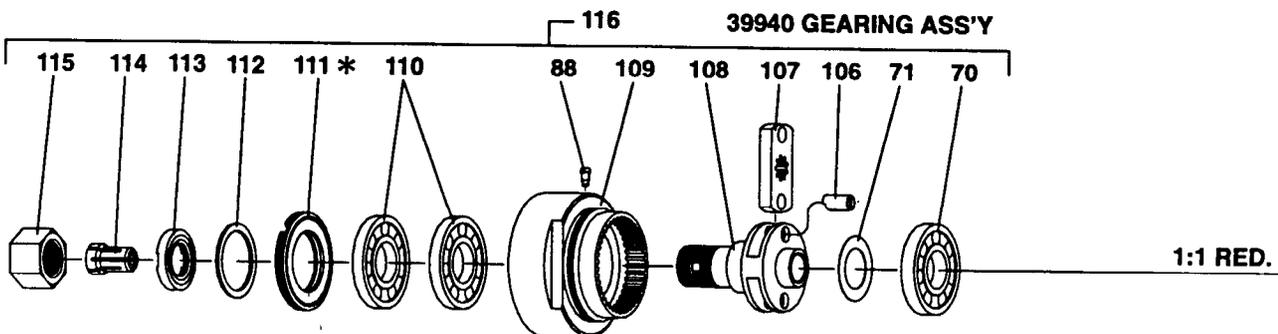
- Remove both caps (12) and "O" rings (13) – models 8255-A-() only.
- Push valve body (14) out thru housing. Handle valve body with reasonable care so the o.d. of valve is not damaged.
- Button bleed valves (27) need not be removed except for replacement.

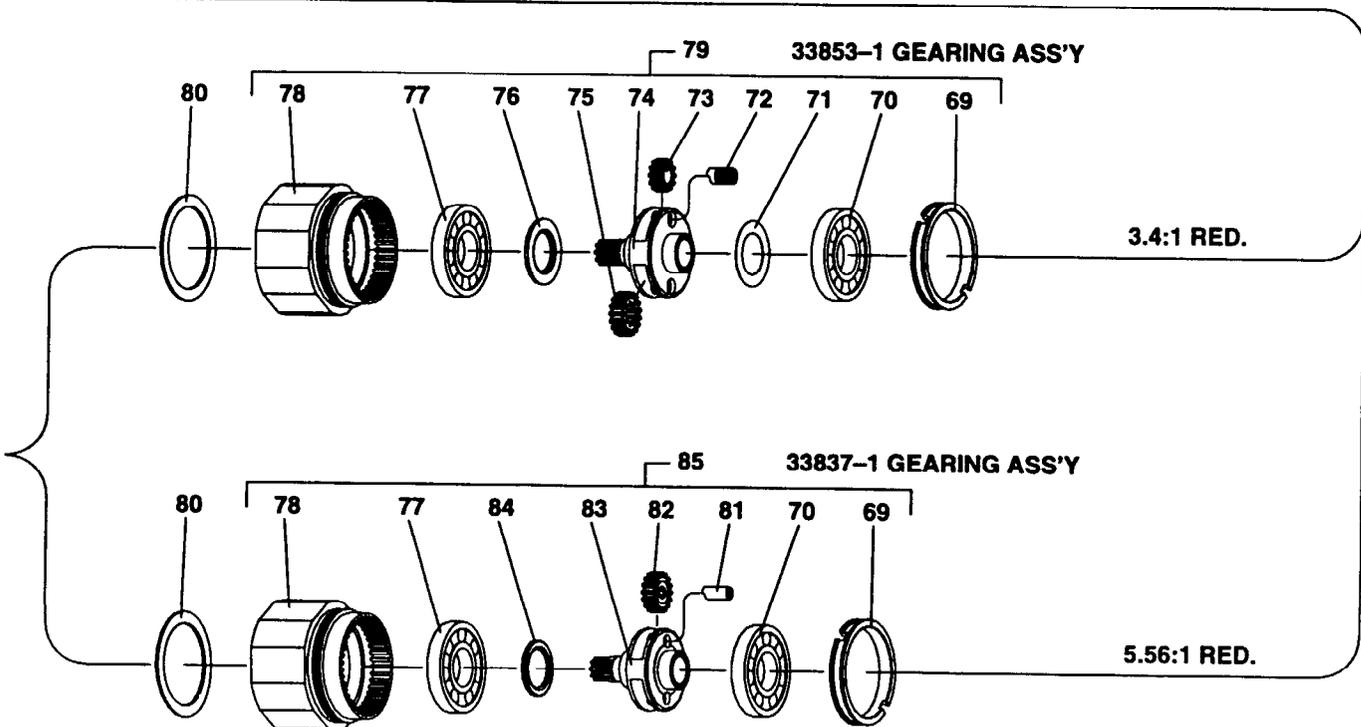
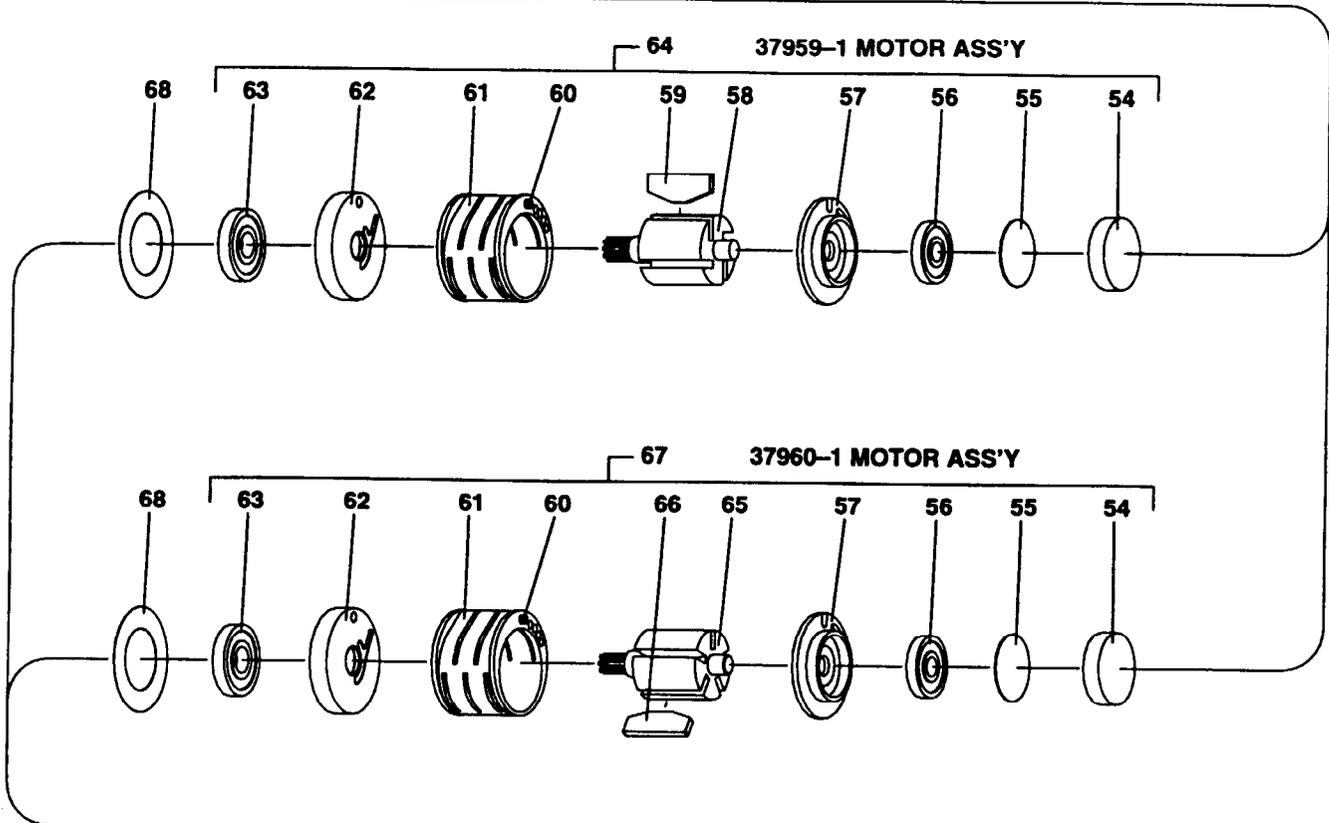
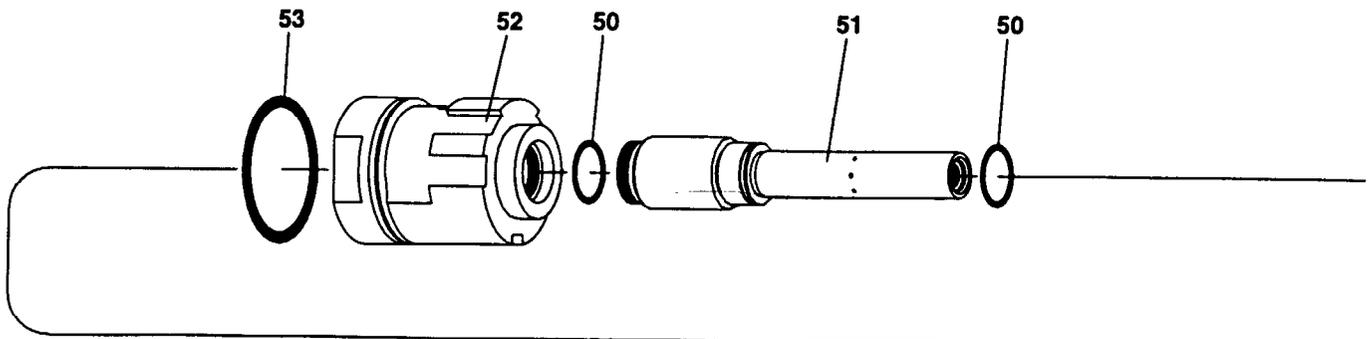
VALVE HOUSING ASSEMBLY

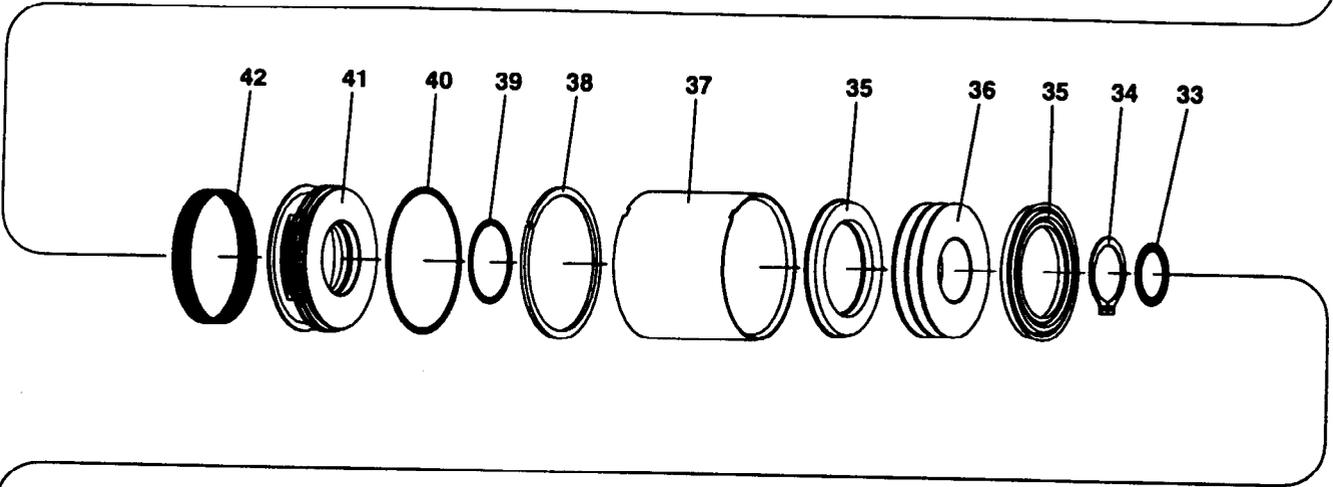
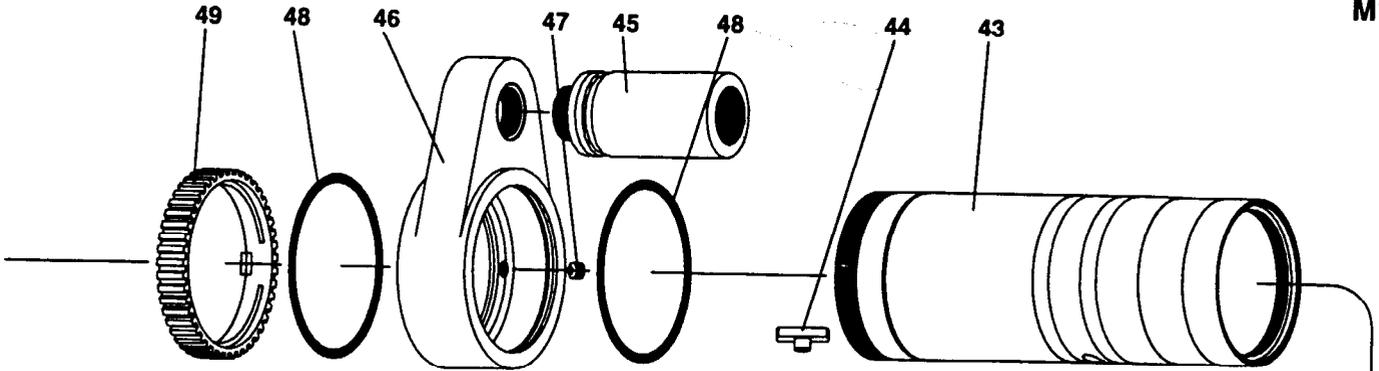
- Replace all "O" rings with new ones.
- Lubricate "O" rings (15) with 36460 lubricant and assemble to valve body – models 8255-A-() only.
- Assemble valve body to housing and assemble caps (12), with "O" rings (13), to housing.
- If check valve(s) (17) have been removed, assemble "O" ring(s) (16) to 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 8255-A-() only.
- 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).



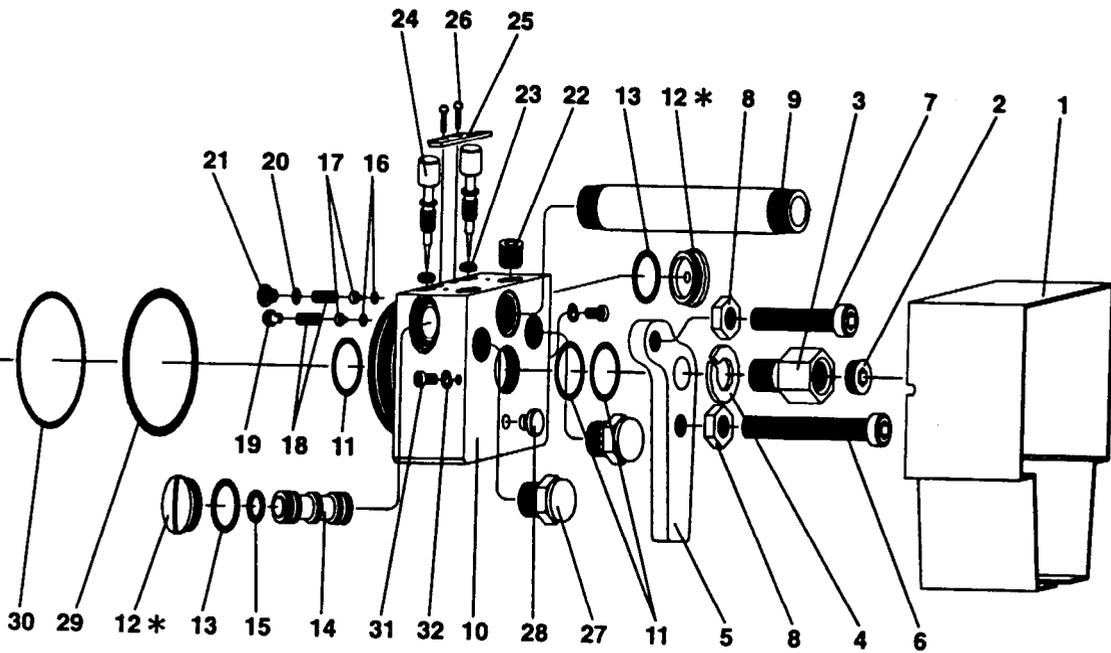
* ASSEMBLE WITH THREAD ADHESIVE SUCH AS LOCTITE 242.







*** ASSEMBLE WITH THREAD ADHESIVE SUCH AS LOCTITE 242.**

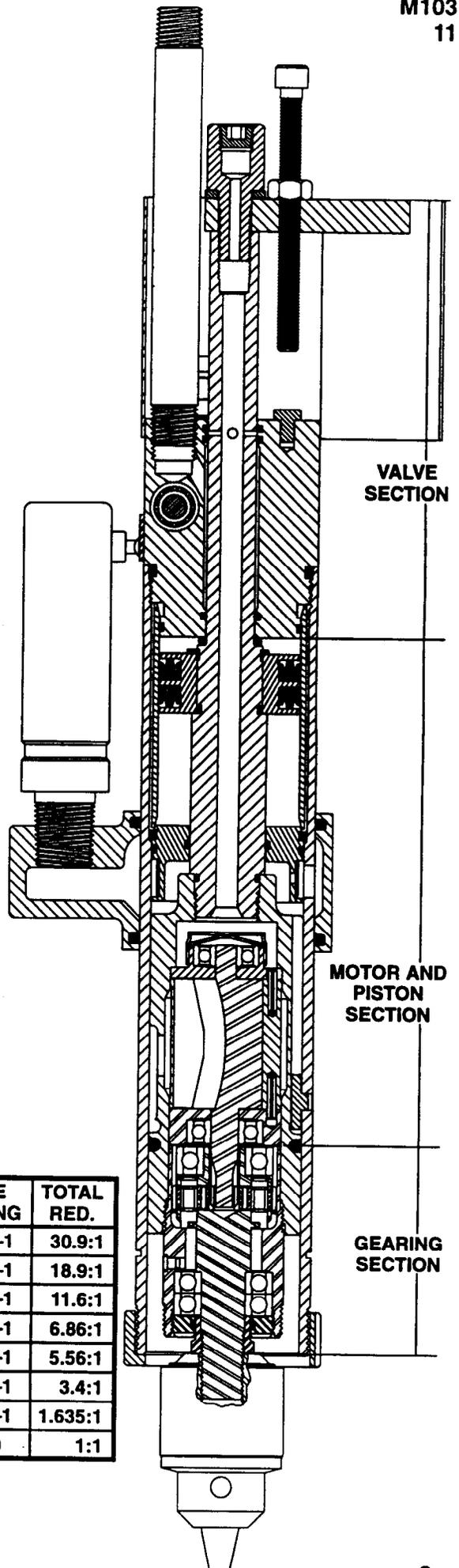


1	Cover models 8255-A()-1 and 8355-A()-1 .. models 8255-A()-2 and 8355-A()-2 .. models 8255-A()-3 and 8355-A()-3 ..	40313-1 40313 40313-2	43	Outer Sleeve models 8255-A()-1 and 8355-A()-1 .. models 8255-A()-2 and 8355-A()-2 .. models 8255-A()-3 and 8355-A()-3 ..	40753 40318 40806
2	Pipe Plug	Y227-2-L	44	Torque Pin	40312-1
3	Adapter	44883	45	Muffler	43551-3
4	Lock Washer	Y14-616	46	Manifold (includes items 47 and 48)	43590
5	Trip Bracket models 8255-A()-()	41713-3	47	Set Screw	Y23-102
	models 8355-A()-()	41713-1	48	"O" Ring (2 req'd)	43588
6	Adjustment Screw "A" models 8255-A()-1, -2 and 8355-A()-1, -2 .. models 8255-A()-3 and 8355-A()-3 ..	40292-2 40292-3	49	Thread Guard	38869
7	Adjustment Screw "B" models 8255-A()-1	40292-1	50	"O" Ring (2 req'd)	Y325-16
	models 8255-A()-2, -3	40292-2	51	Piston Rod models 8255-A()-1 and 8355-A()-1 .. models 8255-A()-2 and 8355-A()-2 .. models 8255-A()-3 and 8355-A()-3 ..	40754-1 40310-1 40807-1
8	Nut (2 req'd on models 8255-A)	Y11-4-C	52	Motor Housing models 8255-A()-1, -2 and 8355-A()-1, -2 .. models 8255-A()-3 and 8355-A()-3 ..	40319 40808
9	Pipe Nipple models 8255-A()-1 and 8355-A()-1 .. models 8255-A()-2 and 8355-A()-2 .. models 8255-A()-3 and 8355-A()-3 ..	40857-5-2 40857-6-2 40857-7-2	53	"O" Ring	Y325-222
10	Valve Housing models 8255-A()-1, -2	40305	54	Cap	38783
	models 8255-A()-3	40805	55	Shield	38805
	models 8355-A()-1, -2	41299-1	56	Bearing	Y65-7
	models 8355-A()-3	41299-2	57	End Plate	37956
11	"O" Ring (3 req'd)	Y325-15	58	Rotor	30745
12	Cap (2 req'd) (models 8255-A only)	46697	59	Blade (4 req'd)	30741
13	"O" Ring (2 req'd) (models 8255-A only)	Y325-14	60	Roll Pin (2 req'd)	Y178-22
14	Valve Body (models 8255-A only)	40307	61	Cylinder (includes item 60)	37958
15	"O" Ring (5 req'd) (models 8255-A only)	41083	62	End Plate	31158
16	"O" Ring (2 req'd on models 8255-A)	Y325-2	63	Bearing	Y65-15
17	Check Valve (2 req'd on models 8255-A)	39587	64	Motor Assembly	37959-1
18	Spring (2 req'd on models 8255-A)	35733	65	Rotor	31633
19	Screw Plug (models 8255-A only)	39652	66	Blade (5 req'd)	31363
20	"O" Ring	Y325-3	67	Motor Assembly	37960-1
21	Screw Plug	38863	68	Spacer	32310
22	Pipe Plug (2 req'd)	Y227-2-L	69	Spacer	32305
23	"O" Ring (2 req'd on models 8255-A)	Y325-7	70	Bearing	32325
24	Needle Valve (2 req'd on models 8255-A)	48441-1	71	Spacer	37676
25	Plate	48440-1	72	Shaft (2 req'd) (includes 15 needle bearings per shaft)	33686
26	Cap Screw (2 req'd)	Y211-1	73	Gear (2 req'd) 12 teeth	30899
27	Button Bleed Valve (2 req'd) (models 8255-A only)	24130	74	Spindle	37667
28	Stud	46558	75	Drive Gear (9 interior - 17 exterior teeth)	30901
29	"O" Ring	Y325-129	76	Spacer	32314
30	"O" Ring	Y325-29	77	Bearing	32325
31	Screw (2 req'd)	Y154-19	78	Adapter	38892
32	Washer (2 req'd)	Y14-4	79	Gearing Assembly (3.4:1 reduction)	33853-1
	Housing and Valve Assembly (includes items 10 thru 32) models 8255-A()-1, -2	40814-1	80	Spacer	38894
	models 8255-A()-3	40814-2	81	Shaft (2 req'd)	33436
	(includes items 10, 11, 16, 17, 18, 20 thru 26 and 28 thru 32) models 8355-A()-1, -2	41302-1	82	Gear (2 req'd) 16 teeth	33440
	models 8355-A()-3	41302-2	83	Spindle	33425
33	"O" Ring	41535	84	Spacer	32312
34	Retaining Ring	Y145-23	85	Gearing Assembly (5.56:1 reduction)	33837-1
35	Seal (2 req'd)	38860	86	Spindle	38888
36	Piston	38867-1	87	Ring Gear (includes item 88)	38882
37	Air Cylinder models 8255-A()-1 and 8355-A()-1 .. models 8255-A()-2 and 8355-A()-2 .. models 8255-A()-3 and 8355-A()-3 ..	38866-1 38866 38866-2	88	Grease Fitting	35967
38	Retaining Ring	35619	89	Bearing (2 req'd)	48305-1
39	"O" Ring	Y325-20	90	Lock Nut	38250
40	"O" Ring	Y325-30	91	Seal	38895
41	Muffler Cap	38865	92	Spindle Nut	38893-1
42	Screen	38886	93	Gearing Assembly (3.4:1 reduction)	33835-1
			94	Spindle	38889
			95	Gearing Assembly (5.56:1 reduction)	33836-1
			96	Gear (2 req'd) 17 teeth	33438
			97	Spindle	38890
			98	Gearing Assembly (6.86:1 reduction)	34009-1
			99	Spacer	48052-1
			100	Spindle	48048-1
			101	Retaining Ring	Y145-21
			102	Ring Gear (includes item 88)	48053-1
			103	Needle Bearing	48051-1
			104	Spindle	48046-1
			105	Gearing Assembly (1.635:1 reduction) ..	48044-1

PART NUMBER FOR ORDERING →

M103
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106	Shaft (2 req'd)	30765
107	Splined Driver	32833
108	Spindle	39934
109	Ring Gear (includes item 88)	39984
110	Bearing (2 req'd)	34682
111	Lock Ring	38719
112	Seal	38720
113	Bearing Lock Nut	38718
114	Collet	31812-8
115	Collet Nut	38721
116	Gearing Assembly (1:1 reduction)	39940
117	Chuck	33907



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

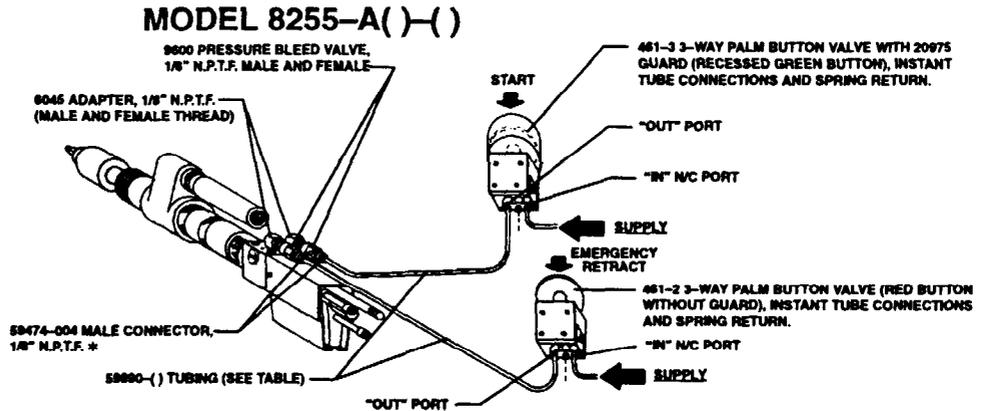
MODEL NUMBER	R.P.M.	MOTOR ASSEMBLY	AUXILIARY GEARING	DRIVE GEARING	TOTAL RED.	
8255-A5-()	8355-A5-()	500	37959-1	33837-1	33836-1	30.9:1
8255-A8-()	8355-A8-()	850	37959-1	33837-1	33835-1	18.9:1
8255-A14-()	8355-A14-()	1450	37959-1	33853-1	33835-1	11.6:1
8255-A21-()	8355-A21-()	2100	37960-1		34009-1	6.86:1
8255-A28-()	8355-A28-()	2800	37959-1		33836-1	5.56:1
8255-A50-()	8355-A50-()	5000	37959-1		33835-1	3.4:1
8255-101-()		10,000	37959-1		48044-1	1.635:1
8255-172-()	8355-172-()	17,000	37959-1		39940	1:1

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

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

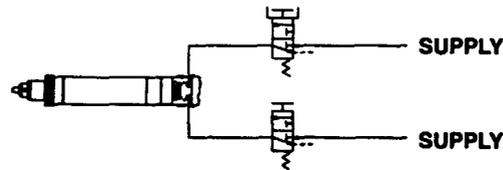
Remote operation of the unit may be achieved by connecting a 3-way valve to the remote start and/or remote retract ports, as shown above.

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.

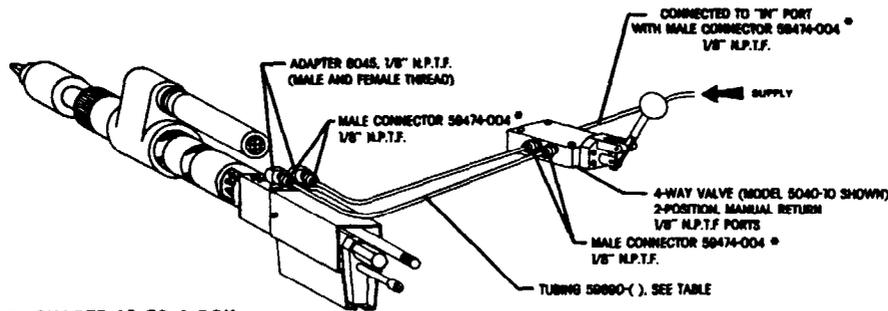
EMERGENCY RETRACT – Depress the emergency button momentarily. This signal to the unit will shift the built-in pressure operated valve, commanding the unit to retract immediately to the initial position, whereupon the unit will stop.

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.



MODEL 8355-A () ()



• PACKAGED 10 TO A BOX

REMOTE OPERATION

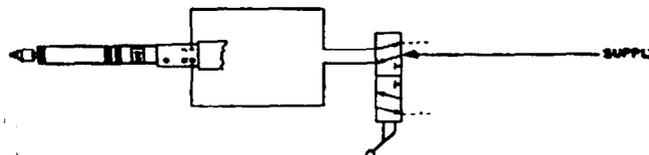
Remote operation is achieved by connecting a 4-way valve to the remote start and remote retract ports, as shown above. This valve supplies power directly to the feed piston in the tool.

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.



TROUBLE SHOOTING

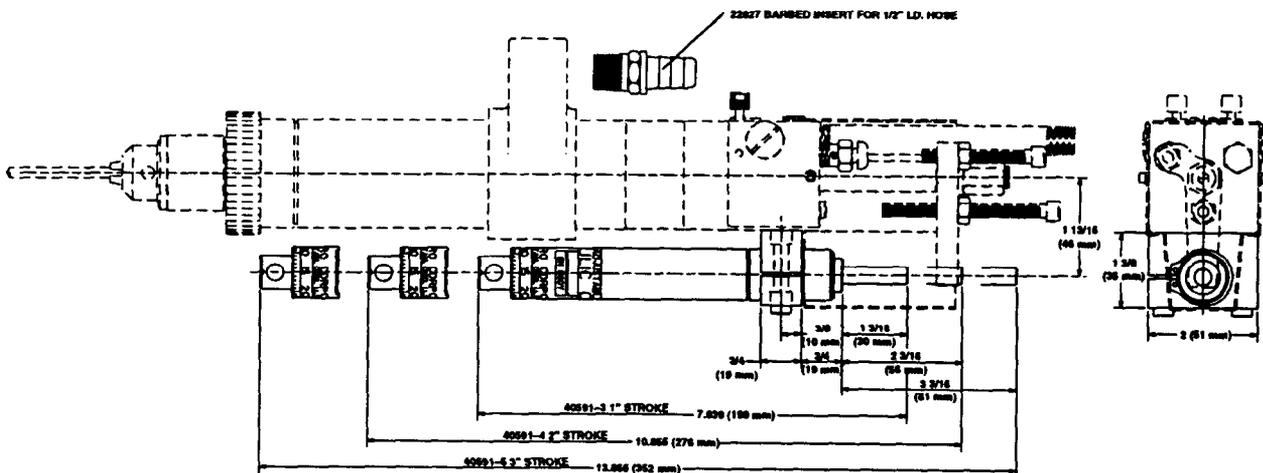
M103

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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.

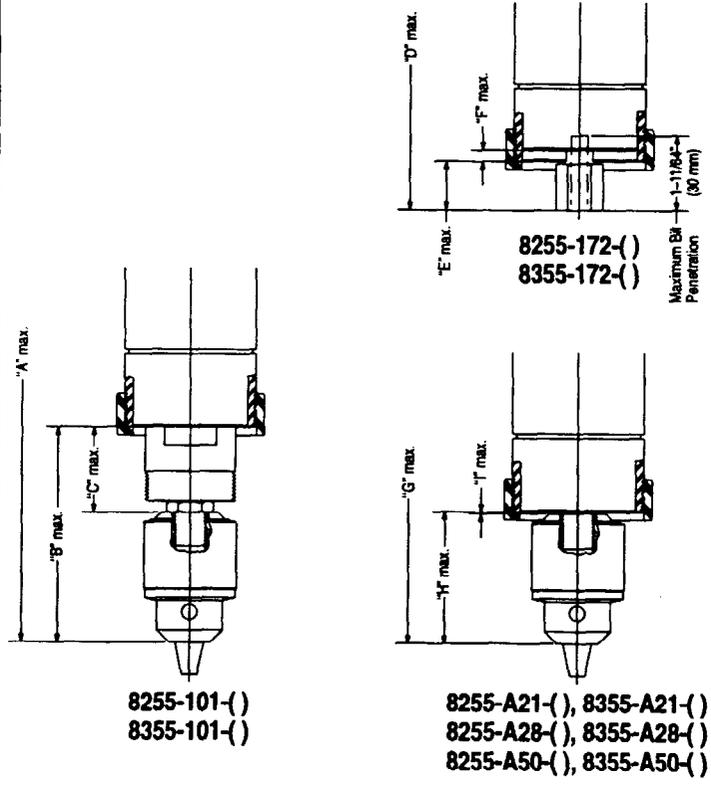
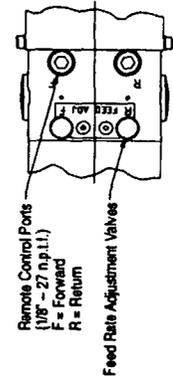
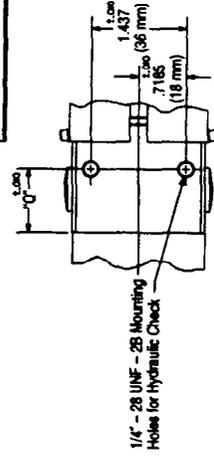
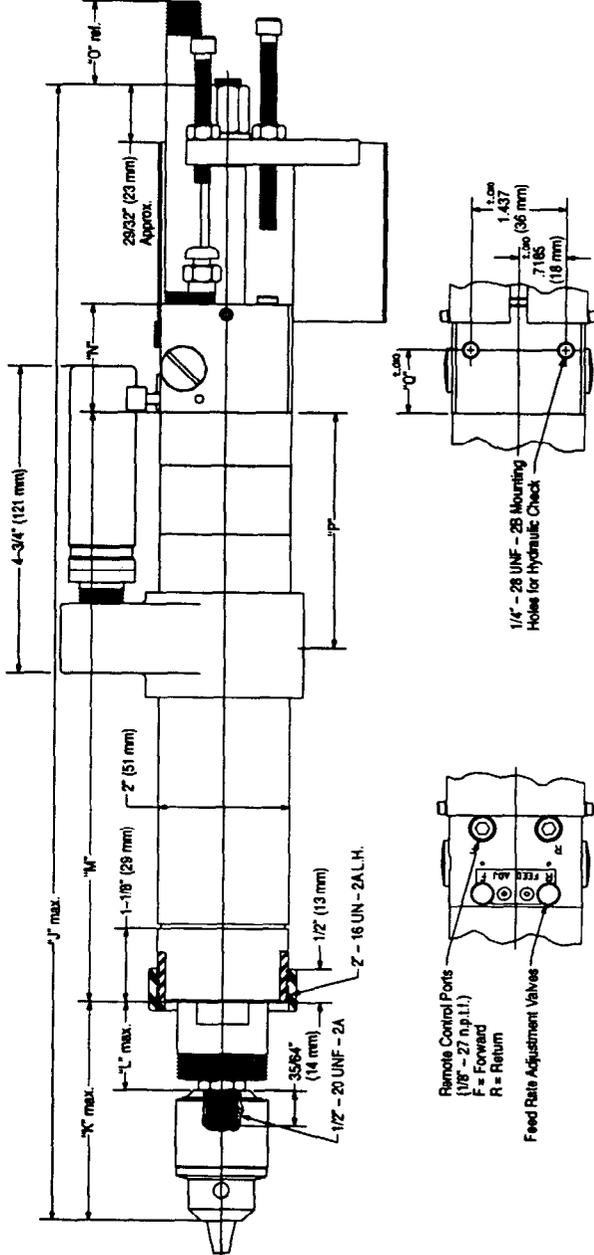
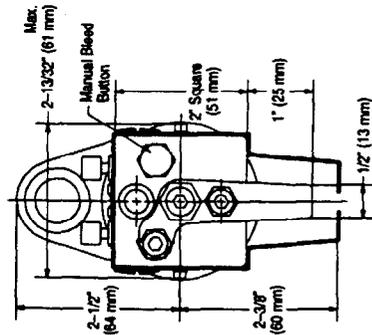
CONDITION	POSSIBLE CAUSE	CORRECTIVE ACTION
FAILURE TO FEED OR IRREGULAR OR ERRATIC FEED.	<ol style="list-style-type: none"> 1. INADEQUATE AIR SUPPLY. 2. FEED CONTROL VALVES IMPROPERLY ADJUSTED. 3. AIR LEAK AROUND CAP (12). 4. DIRT OR DAMAGED "O" RINGS ON SPOOL VALVE (14). 5. CLOGGED AIR PASSAGE IN VALVE HOUSING. 	<ol style="list-style-type: none"> 1. CHECK AIR SUPPLY FOR CORRECT REGULATOR ADJUSTMENT (90 P.S.I.G. MAX. WHEN TOOL IS OPERATING). 2. REFER TO "SET-UP PROCEDURE", PAGE 1. 3. CHECK FOR DAMAGE TO "O" RING. CHECK AND BE SURE CAPS ARE PROPERLY TIGHTENED. 4. REFER TO VALVE SECTION, PAGE 4, AND REMOVE SPOOL VALVE. INSPECT, CLEAN AND REPLACE "O" RINGS. 5. REMOVE VALVE HOUSING FROM TOOL. DISASSEMBLE AND BLOW ALL AIR PASSAGES CLEAR OF DEBRIS.
LOW SPEED OR MOTOR FAILS TO OPERATE	<ol style="list-style-type: none"> 1. INADEQUATE AIR SUPPLY. 2. CLOGGED AIR PASSAGE IN VALVE HOUSING. 	<ol style="list-style-type: none"> 1. CHECK AIR SUPPLY FOR CORRECT REGULATOR ADJUSTMENT. 2. REMOVE VALVE HOUSING FROM TOOL. DISASSEMBLE AND BLOW ALL AIR PASSAGES CLEAR OF DEBRIS.
MOTOR CONTINUES TO RUN AFTER RETRACTION.	<ol style="list-style-type: none"> 1. PISTON NOT FULLY RETRACTED. 2. DAMAGED "O" RING (11) INSIDE VALVE HOUSING. 	<ol style="list-style-type: none"> 1. BE SURE PISTON IS NOT OBSTRUCTED AND IS RETURNED ALL THE WAY BACK. 2. REMOVE VALVE HOUSING FROM TOOL. REPLACE "O" RINGS.
FAILURE TO RETRACT	<ol style="list-style-type: none"> 1. IMPROPER ADJUSTMENT OR ALIGNMENT BETWEEN ADJUSTMENT SCREW AND BUTTON BLEED VALVE. 2. FEED CONTROL VALVES (24) IMPROPERLY ADJUSTED OR DIRTY. 3. AIR LEAK AROUND CAP (12). 4. DAMAGED "O" RINGS IN MUFFLER CAP, VALVE HOUSING OR SPOOL VALVE OR SEALS ON PISTON. 5. CLOGGED AIR PASSAGE IN VALVE HOUSING. 	<ol style="list-style-type: none"> 1. REFER TO "SET-UP PROCEDURE", PAGE 1. 2. CHECK ADJUSTMENT, REFER TO PAGE 2. REMOVE, INSPECT AND CLEAN. 3. CHECK FOR DAMAGE TO "O" RING. CHECK AND BE SURE CAPS ARE PROPERLY TIGHTENED. 4. DISASSEMBLE, INSPECT AND REPLACE "O" RINGS AND/OR SEALS. 5. REMOVE VALVE HOUSING FROM TOOL. DISASSEMBLE AND BLOW ALL AIR PASSAGES CLEAR OF DEBRIS.

ACCESSORIES



DIMENSIONAL DATA

	8255-A(-)-1 8355-A(-)-1	8255-A(-)-2 8355-A(-)-2	8255-A(-)-3 8355-A(-)-3
"A"	17-13/32" (442 mm)	18-29/32" (480 mm)	22-29/32" (582 mm)
"B"	3-19/64" (84 mm)	2-35/64" (65 mm)	2-35/64" (65 mm)
"C"	1-19/64" (33 mm)	35/64" (14 mm)	35/64" (14 mm)
"D"	14-7/8" (378 mm)	16-3/8" (416 mm)	20-3/8" (518 mm)
"E"	49/64" (19 mm)	1/64" (.4 mm)	1/64" (.4 mm)
"F"	11/64" (4 mm)	59/64" (23 mm)	59/64" (23 mm)
"G"	16-9/64" (410 mm)	17-41/64" (448 mm)	21-41/64" (550 mm)
"H"	2-1/32" (52 mm)	1-9/32" (33 mm)	1-9/32" (33 mm)
"I"	1/32" (.8 mm)	47/64" (19 mm)	23/32" (18 mm)
"J"	17-29/64" (443 mm)	18-61/64" (481 mm)	22-61/64" (583 mm)
"K"	3-11/32" (85 mm)	2-19/32" (66 mm)	2-19/32" (66 mm)
"L"	1-23/64" (35 mm)	19/32" (15 mm)	19/32" (15 mm)
"M"	9-1/16" (230 mm)	10-9/16" (268 mm)	12-9/16" (319 mm)
"N"	1-11/16" (43 mm)	1-11/16" (43 mm)	2-11/16" (68 mm)
"O"	1-3/8" (35 mm)	1-9/16" (40 mm)	1-9/16" (40 mm)
"P"	3-5/8" (92 mm)	4-3/8" (111 mm)	5-3/8" (137 mm)
"Q"	.985" (25 mm)	.985" (25 mm)	1.985" (50 mm)



8255-A5(-), 8355-A5(-)
 8255-A8(-), 8355-A8(-)
 8255-A14(-), 8355-A14(-)