

# OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

# 6534X-X

# 65365-X

RELEASED: 6-29-94  
REVISED: 1-12-01  
(REV. L)

## 3-1/4" AIR MOTORS

**6534X-X**  
**4" STROKE**

**6536X-X**  
**6" STROKE**



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

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

### THIS MANUAL COVERS THE FOLLOWING MODELS

MODEL				
4" STROKE:	65341	65344	65345	
6" STROKE:	65365	65365-4		

### SERVICE KITS

637041 for general repair of all 3-1/4" air motors.

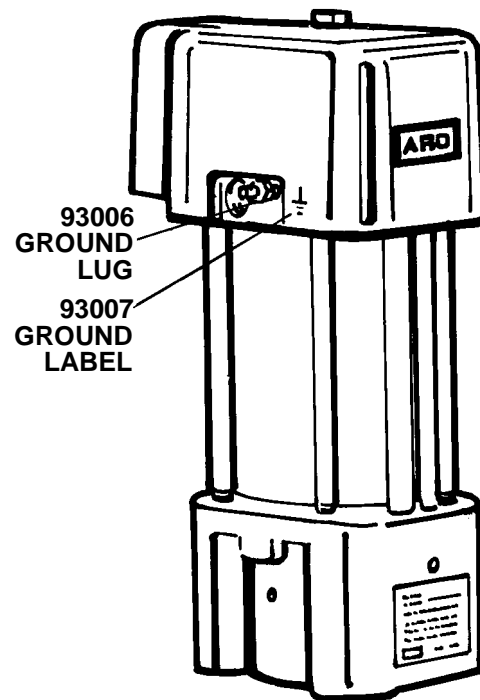
### GENERAL DESCRIPTION

The 3-1/4" air motor is a general purpose power unit and is used with many 2-ball, 4-ball and chop check pumps. It utilizes tie rod type construction for easy breakdown and it connects to the various lower ends via tie rods for easy operation. Consult pump model operator's manual for specific instructions. It is recommended that a muffler be connected to the exhaust port to reduce noise to acceptable OSHA standards.

Filtered and oiled air will allow the air motor to operate more efficiently and yield a longer life to operating parts and mechanisms. A filter capable of filtering particles larger than 50 microns should be used with an oiler. Keep the oiler supplied with a good grade of S.A.E. no. 90W non-detergent gear oil, set at a rate not to exceed 1 or 2 drops per minute.

### NOTICE

**DO NOT OPERATE AIR MOTOR ABOVE RECOMMENDED AIR PRESSURE OF 150 P.S.I. (10.3 BAR) OR 75 CYCLES PER MINUTE. Air motor may be rated differently in the next assembly. Check pump model plate.**



BASE STYLES MAY VARY  
FROM THAT SHOWN

## AIR MOTOR PARTS LIST / HEAD

Item	Description (Size in inches)	(Qty)	Part No.
1	Screw (3/8" - 16 x 3/4")	(1)	Y6-63-C
2	Washer	(1)	39917
3	Screw (#6 - 32 x 3/8")	(4)	Y154-31
4	Washer (#6)	(4)	Y14-6
5	Plate	(1)	91653
✓6	Gasket	(1)	91656
□7	Spring	(1)	91662
✓8	"O" Ring (1/16" x 3/8" o.d.)	(2)	Y327-10
□9	Piston	(1)	91670
10	Insert	(1)	91654
□11	"O" Ring (1/16" x 9/16" o.d.)	(2)	Y325-13
12	Washer	(1)	91655
□13	Packing Seal (1/8" x 3/8" o.d.)	(1)	Y186-41
14	Cylinder	(1)	91659
□15	Washer (Delrin 3/32" Thick)	(1)	91660
✓16	"O" Ring (3/32" x 1-7/8")	(1)	Y325-131
17	Cap	(1)	91661
18	Screw (#10 - 24 x 1/2")	(4)	Y61-107
19	Nut (1/4" - 20)	(1)	Y192-1-Z
✓20	Packing (3/16 x 1-1/4" o.d.)	(2)	Y186-50
21	Piston	(1)	92208

Item	Description (Size in inches)	(Qty)	Part No.
22	Washer	(1)	92209
23	Washer	(1)	92293
24	Washer (Bronze .010 Thick)	(1)	92295
✓25	Packing Seal (1/8 x 9/16" o.d.)	(1)	Y186-44
26	Head Assembly	(1)	66482
27	Shroud	(1)	92207
28	Bolt (6-1/2") (65341, 65344, 65345)	(4)	91680-2
	Bolt (8-1/2") (65365, 65365-4)	(4)	91680-3
29	Washer (3/8")	(4)	Y14-616
30	Screw	(4)	92206
31	Washer (#6)	(4)	Y14-6
33	Rod Assembly	(1)	66106
34	Body	(1)	92204
35	Plate	(1)	92205
✓36	"O" Ring (1/16" x 7/16" o.d.)	(2)	Y325-11
✓37	Cap	(1)	91665
✓38	"O" Ring (1/8" x 1-5/16" o.d.)	(1)	Y325-215
□39	Insert	(1)	91664
□40	Plate	(1)	92202
✓41	"O" Ring (1/16" x 1/2" o.d.)	(2)	Y325-12
✓	Parts in Repair Kit		637041

□ "Smart Parts", Keep these items on hand in addition to the service kits for fast repair and reduction of downtime.

## DISASSEMBLY OF AIR MOTOR

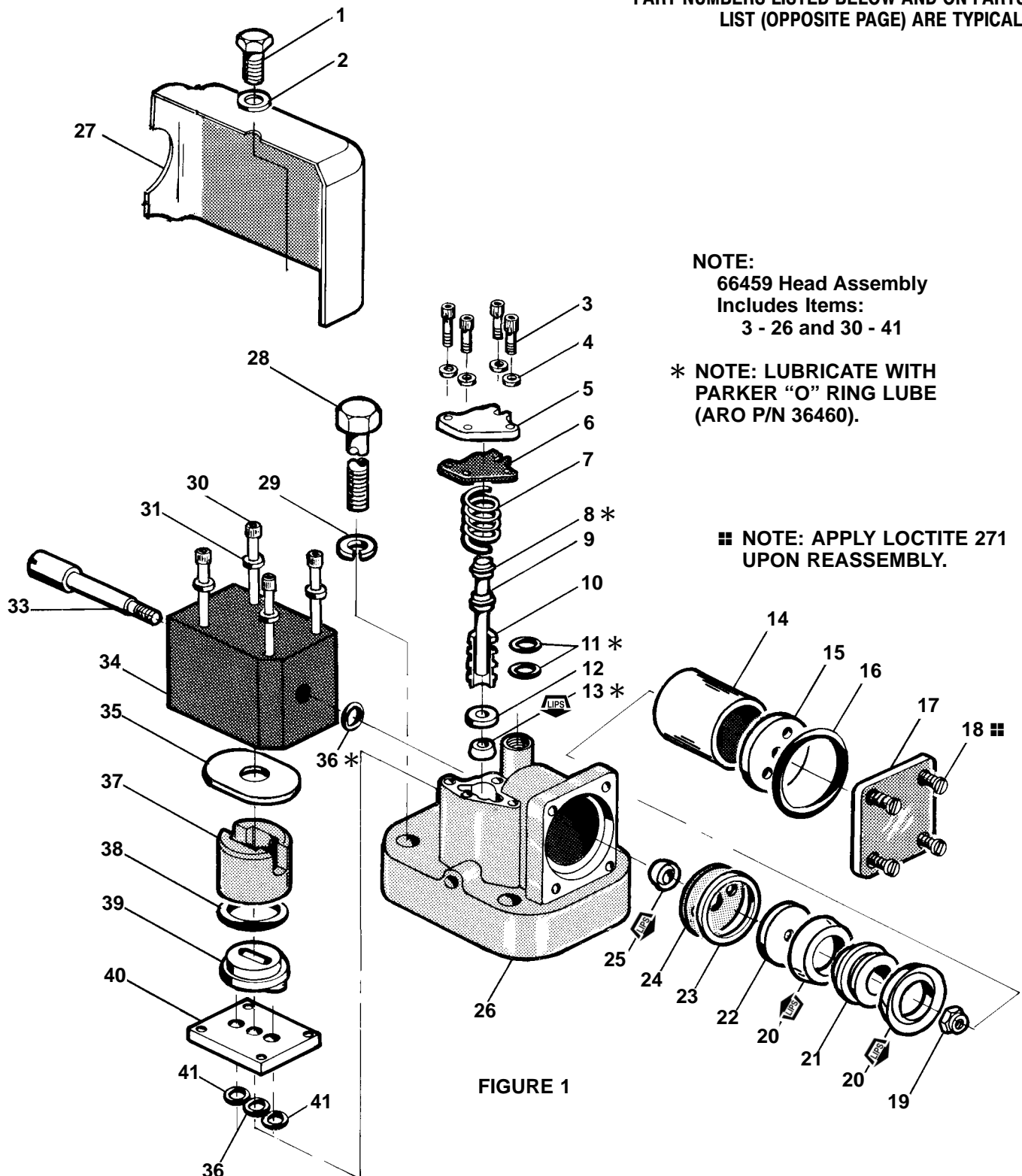
### NOTE: ALL THREADS ARE RIGHT HAND.

- Remove (1) screw, (2) washer and (27) shroud.
- Remove four (18) screws and (17) cap. With the aid of an "O" ring pick, remove (16) "O" ring and (15) washer. Also remove (14) cylinder.
- Remove two outside (30) screws and (31) washers.
- With flat bladed screwdriver hold (33) rod assembly from turning and remove (19) nut.
- Remove (21) piston, two (20) packings, (22) washer, (23) washer, (24) washer and (25) packing seal. An "O" ring pick is very beneficial in removing these parts.
- Remove the remaining two (30) screws and two (31) washers from the (34) body.
- Remove (33) rod assembly, (35) plate, (37) cap, (39) insert, (40) plate from (34) body. Now remove two (36) "O" rings, two (41) "O" rings and (34) body from (26) head assembly.
- Use a flat bladed screwdriver to separate (37) cap from (39) insert. Then remove (38) "O" ring.
- Remove four (3) screws and four (4) washers from (26) head assembly.
- Now remove (5) plate, (6) gasket, (7) spring and (9) piston. To assist in removing (9) piston - place a shop rag over opening created by removing (5) plate and with a blow gun, carefully apply air pressure to the 1/16" breather hole located in side of (26) head near air inlet hole.
- Remove two (8) "O" rings from (9) piston. NOTE: Usually it is not necessary to remove (10) insert, two (11) "O" rings, (12) washer and

- (13) packing seal. The only time it is necessary to remove these parts is when there is a constant air leak out the 1/16" breather hole in side of (26) head when motor is under pressure.
- Remove four (28) bolts and four (29) washers from (26) head assembly.
- Remove (26) head assembly and (42) "O" ring from (43) cylinder.
- Remove (42) "O" rings from (26) head assembly.
- Remove (58) tube assembly, two (52) tube assemblies from (53) base assembly.
- Remove two (57) "O" rings from (58) tube and four (48) "O" rings from (52) tube.
- Remove (43) cylinder and (42) "O" ring from (53) base assembly.
- On Model 65345, remove (56) pin from (55) adapter and unscrew (55) adapter from (54) piston rod. On Model 65365, remove (62) adapter from (54) piston rod. NOTE: Use provided wrench flats on (64) piston rod to assist in accomplishing this step.
- Pull upward on (54 or 59) piston rod assembly removing it from (53 or 61) base assembly.
- On Model 65341, with the aid of an "O" ring pick, remove (60) "O" ring from (53) base. On other models, remove (49) snap ring, (50) washer and (51) "U" cup from (53 or 61) base assembly.
- Remove (71) screw and (72) "O" ring from (53 or 61) base assembly.
- Remove (72) "O" ring from (71) screw.

# AIR MOTOR HEAD

PART NUMBERS LISTED BELOW AND ON PARTS LIST (OPPOSITE PAGE) ARE TYPICAL.



## NOTE:

66459 Head Assembly  
Includes Items:  
3 - 26 and 30 - 41

\* NOTE: LUBRICATE WITH  
PARKER "O" RING LUBE  
(ARO P/N 36460).

■ NOTE: APPLY LOCTITE 271  
UPON REASSEMBLY.

FIGURE 1

## DISASSEMBLY OF AIR MOTOR (CONTINUED)

23. Remove (69) piston and two (70) "O" ring from (53 or 61) base.  
NOTE: To assist in this step, carefully apply air pressure through the breather hole in (53 or 60) base assembly which is located above serial number plate.

**CAUTION: Hold rag over opening.**

24. Remove two (70) "O" rings from (69) piston.

25. NOTE: Usually it is not necessary to remove (65) packing, (66) washer, (67) insert and (68) "O" ring. The only time it is necessary to remove these parts is when there is a constant air leak out the breather hole mentioned in step 23.

26. Unscrew (44) nut and remove (45) washer, two (46) washers, (47) piston from (54 or 59) piston rod.

## AIR MOTOR PARTS LIST / PISTON ROD AND BASE

Item	Description (Size in inches)	(Qty)	Part No.
✓42	Seal Washer (.066 x 3.239 i.d.)	(2)	Y241-42
43	Cylinder (65341, 65344, 65345)	(1)	91678-2
	Cylinder (65365, 65365-4)	(1)	91678-3
44	Nut (7/16" - 20)	(1)	Y11-7-C
45	Washer	(1)	91036
46	Washer	(2)	91676
✓47	Piston	(1)	91674
✓48	"O" Ring (1/16" x 3/8" o.d.)	(4)	Y327-10
49	Retaining Ring (1-5/16" dia.)(except 65341)	(1)	Y147-131
50	Washer (except 65341)	(1)	73986
✓51	"U" Cup (1/4" x 1-1/8" o.d.)(except 65341)	(1)	Y186-14
52	Tube (65341, 65344, 65345)	(2)	91679-2
	Tube (65365, 65365-4)	(2)	91679-3
53	Base (65341)	(1)	65453
	Base (65344, 65345)	(1)	65459
54	Piston Rod (65344)	(1)	91673
	Piston Rod (65345)	(1)	92175
	Piston Rod (65365, 65365-4)	(1)	91682
55	Adapter (65345)	(1)	92176
56	Cotter Pin (1/16" dia. x 3/4") (65345)	(1)	Y15-22
✓57	"O" Ring (3/32" x 9/16" o.d.)	(2)	Y325-110

Item	Description (Size in inches)	(Qty)	Part No.
58	Tube (65341, 65344, 65345)	(1)	91681-2
	Tube (65365, 65365-4)	(1)	91681-3
59	Piston Rod (65341)	(1)	65455
✓60	"O" Ring (1/8" x 1-5/8" o.d.) (65341)	(1)	Y325-220
61	Base (65365)	(1)	65452
	Base (65365-4)	(1)	65452-4
62	Adapter (65365)	(1)	65461
	Adapter (65365-4)	(1)	60722
63	Plate (65365, 65365-4)	(1)	91685
64	Screw (8 - 32 x 1/4") (65365, 65365-4)	(2)	Y8-83-C
□65	"U" Cup Packing (1/8" x 3/8" o.d.)	(1)	Y186-41
66	Washer	(1)	91655
67	Insert	(1)	91654
□68	"O" Ring (1/16" x 9/16")	(2)	Y325-13
□69	Piston	(1)	91670
✓70	"O" Ring (1/16" x 3/8" o.d.)	(2)	Y327-10
71	Screw	(1)	91677
✓72	"O" Ring (3/32" x 11/16" o.d.)	(1)	Y325-112
✓	Darina "EP" 2 Grease Packet	(2)	94833
✓	Parts in Repair Kit		637041

NOTE: Some parts may be shown under more than one reference no. therefore the quantity shown may not always reflect the total used in the model.

□ "Smart Parts", Keep these items on hand in addition to the service kits for fast repair and reduction of downtime.

# AIR MOTOR PISTON ROD AND BASE

SEE CHART ON OPPOSITE PAGE FOR EACH MODEL.

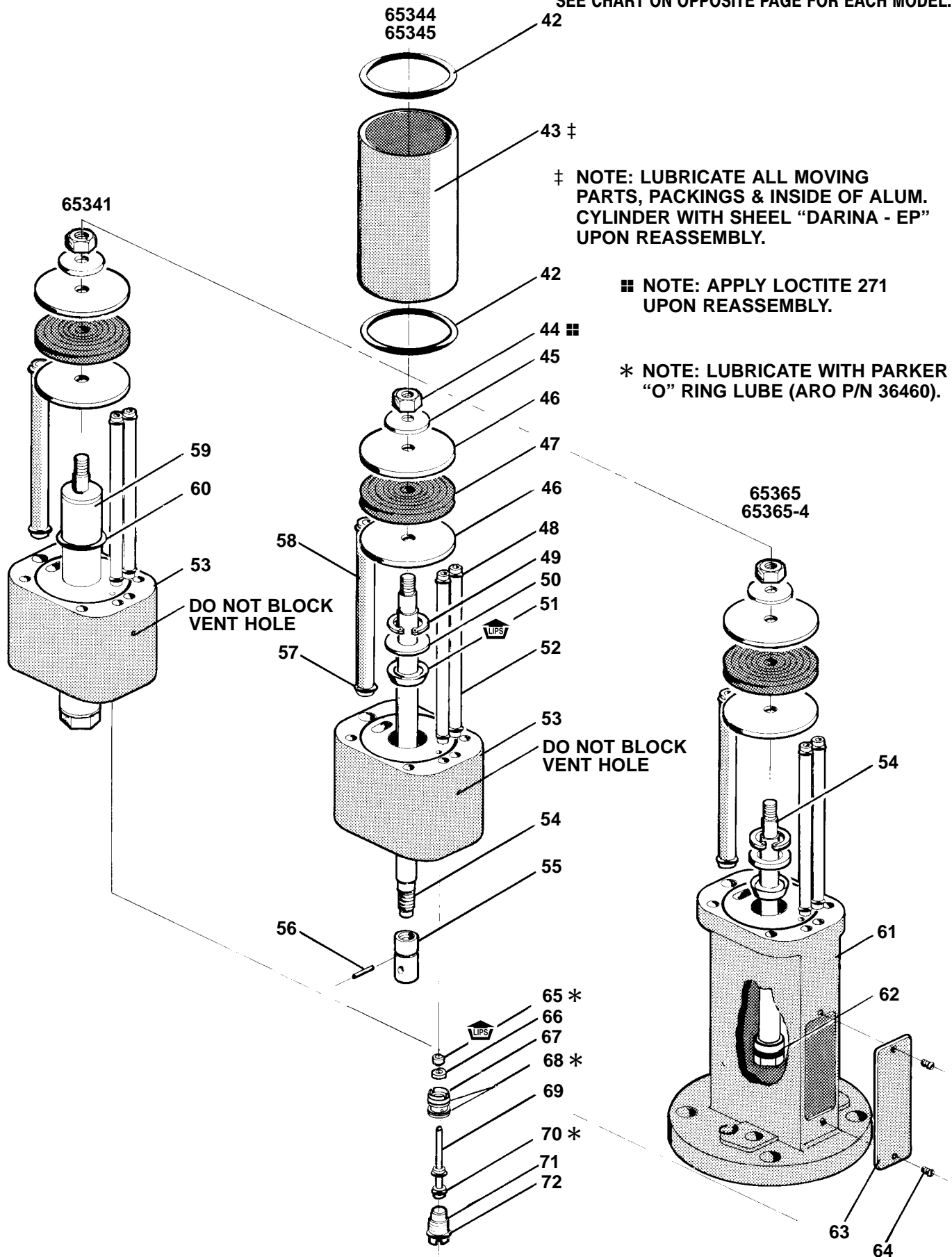


FIGURE 2

---

## REASSEMBLY OF AIR MOTOR

---

### NOTE: THOROUGHLY CLEAN ALL PARTS BEFORE ASSEMBLING.

1. Place (46) washer, (47) piston, (46) washer and (45) washer on (54 or 59) piston rod and fasten with (44) nut. NOTE: Prior to this assembly, clean threads of (54 or 59) piston rod and (44) nut and apply loctite No. 271 to those threads.
2. Install two (70) "O" rings onto (69) piston and (72) "O" ring into (71) screw.
3. Install (69) piston assembly into provided hole in (53 or 91) base and secure with (71) screw assembly.
4. On Model 65341, install (60) "O" ring into (53) base. On other models, install (51) "U" cup (lips up), (50) washer and (49) snap ring into (53 or 61) base.
5. Install (42) "O" ring on (53 or 61) base assembly.
6. Push (54 or 59) piston rod assembly through (51) "U" cup or (60) "O" ring in (53 or 61) base assembly.
7. Slide (43) cylinder down over (47) piston assembly seating it against (42) "O" ring.
8. Put two (57) "O" rings onto (58) tube and install (58) tube assembly into (53 or 61) base.
9. Put four (48) "O" rings onto two (52) tubes and install two (52) tube assemblies into (53 or 61) base.
10. Install (42) "O" ring into (26) head assembly.
11. Install (26) head onto (43) cylinder aligning holes for (52 and 58) tubes.
12. Install four (28) bolts and four (29) washers into (26) head and (53 or 61) base assembly and tighten alternately and evenly.
13. Install two (41) "O" rings and one (36) "O" ring onto (26) head assembly.
14. Install (40) plate onto (26) head assembly over (41 or 36) "O" rings.
15. Insert (38) "O" ring onto shoulder of (39) insert and press (39) insert assembly into (37) cap.  
**NOTE: Be sure the slot in the (39) insert aligns with the boss on the (37) cap.**
16. Lay (33) rod assembly in the groove of (37) cap. Place (35) plate on top (over groove and rod assembly) of (37) cap. Now insert this combination of parts into the open end of (34) body sliding the threaded end of (33) rod assembly through hole (34) body.
17. Place (36) "O" ring over threaded end of (33) rod assembly on outside of (34) body.
18. Place (34) body assembly on top of (40) plate. During this step, slide the threaded end of (33) rod assembly in through the provided hole in (26) head. This step positions (36) "O" ring between (34) body and (26) head.
19. Secure (34) body assembly with two inside (30) screws and (31) washers. Hand tighten only.
20. Place (25) packing seal onto threaded end of (33) rod assembly with lips of seal going on last. Seat the (25) packing seal in the machined recess of (26) head assembly.
21. Install (23) washer and (24) washer over (33) rod assembly.  
NOTE: With a small amount of grease on these washers will help keep them in correct position.
22. Install two (20) packings (lips pointing away from each other) onto (21) piston.
23. Install (22) washer and (21) piston assembly (deep well side away from (22) washer) inside of (14) cylinder. Install this assembly onto (33) rod assembly with (22) washer end going on first.
24. Assemble (19) nut onto (33) rod assembly holding (33) rod assembly with provided screwdriver slot.
25. Place (16) "O" ring around shoulder on (17) cap and install (15) washer into the indentation of (17) cap.
26. Place the (17) cap, (16) "O" ring and (15) washer assembly into position on (26) head and secure with four (18) screws. NOTE: Apply loctite 271 to four (18) screws before assembling.
27. Install (30) screws and (31) washers. At this point, also tighten the two inside (30) screws and (31) washers on (34) body.
28. Install two (8) "O" rings onto (9) piston and position this assembly inside the (26) head assembly.
29. Place (7) spring on top of (9) piston assembly.
30. Align (6) gasket and (5) plate over (7) spring and secure with four (3) screws and four (4) washers.
31. Install (27) shroud and secure with (1) screw and (2) washer.
32. On Model 65345 thread (55) adapter onto (54) piston rod until the holes align. Then install (56) pin in the aligned hole.
33. On Model 65365 thread (62) adapter onto (54) piston rod and tighten. NOTE: Prior to assembly, clean threads of (62) adapter and (54) piston rod and apply loctite 271.

---

---

## TROUBLE SHOOTING

---

PROBLEM		PROBLEM	
Pump fails to operate with constant air leakage around shroud or at main exhaust.		Constant air leak at either bleeder hole.	
		<b>CAUSE</b>	
Worn (36) "O" ring.	<b>CAUSE</b>	(17) cap is loose.	
Replace "O" ring.	<b>REMEDY</b>	<b>REMEDY</b>	
		Tighten screws holding (17) cap evenly.	
		<b>CAUSE</b>	
Damaged or worn (37) cap.	<b>REMEDY</b>		
Replace cap.	<b>CAUSE</b>		
Broken (46) washer on 3-1/4" air piston.	<b>REMEDY</b>		
Replace washer.	<b>CAUSE</b>		
Scored or damaged (40) valve plate.	<b>REMEDY</b>		
Turn valve plate over or replace valve plate.	<b>CAUSE</b>		
Damaged (39) insert.	<b>REMEDY</b>		
Replace insert.			

