

INSTRUCTIONS AND REPAIR PART LIST

FOR

SERIES 48N NON-REVERSIBLE

and

SERIES 48R REVERSIBLE

MULTI-VANE GEARED MOTORS

Form 6203
First Edition
April, 1972

LUBRICATION

We recommend using No. NFLU-8 (½" pipe tap inlet) Filter-Lubricator Unit with these motors. Install the Unit as close to the Motor as practical and regulate it to produce a slight oil mist in the exhaust. **Keep** the Lubricator filled with Ingersoll-Rand Pneu-Lube Medium Oil No. 50 or a good grade SAE 20 or 20W motor oil.

Note: If a sight feed lubricator is used, adjust the lubricator to feed 60 drops per minute for continuous duty operation.

Whenever the power unit is disassembled, work some Ingersoll-Rand Light Grease No. 28 or a good quality No. 2 Cup Grease into the Rear Rotor Bearing (11).

Use a good quality SAE 90 Gear Lubricant in the gear box. The amount of lubricant required is dependent upon the size of the gear box and the mounting position of the Motor. Series 48NA and 48RA Motors have the small gear box and require approximately three fluid ounces. Series 48NB and 48RB Motors have the large gear box and require approximately eight fluid ounces.

When lubricating the gear box, refer to the illustration showing the various mounting positions and the fill plugs, vent plug and drain plug. In each case, fill the gear chamber up to the "Level" plug. If the Vent Plug (49) is not located at the position indicated for a given mounting, relocate the Vent Plug by interchanging it with the pipe plug at that location.

Whenever a Series 48NB or 48RB Motor is mounted with the Motor Shaft (45) pointing toward the floor or ceiling, you must install a gravity feed lubrication to make certain the gears in the upper portion of the gear box get adequate lubrication. To do this, remove one of the pipe plugs **other than the Vent Plug** from the upper side of the motor and connect an oil line from a gravity feed reservoir. Connect an overflow line to the Level Plug opening and run it to a pump to return the lubricant to the gravity feed reservoir.

If the Motor is mounted in any position other than that illustrated, contact an Ingersoll-Rand Representative for oil level and venting recommendations.

OPERATION

For top performance and maximum durability of parts, operate these Motors on 90 psi of clean, dry air at the Motor. Use ¾" hose.

When installing one of these Motors, refer to the schematic diagram on Page 3.

DIRECTION OF SHAFT ROTATION

Series 48N Non-Reversible Motors are assembled at the factory so that the Motor Shaft (45) rotates **counterclockwise** when facing the end of the Shaft. When desired, the direction of the shaft rotation can be changed as follows:

1. Unscrew the Motor Mounting Screws (25) and remove the power unit from the gear box.

(Continued on Page 7)

HOW TO ORDER

Order all repair parts for your Ingersoll-Rand Tool by the **NAME** and **NUMBER** shown in the Repair Part List section. **Never** use the illustration numbers which appear in the first column.

For prompt service and genuine I-R parts, place orders with the nearest Ingersoll-Rand Branch Office.

Notice: The use of other than genuine Ingersoll-Rand replacement parts may result in decreased tool performance and increased maintenance, and may, at the Company's option, invalidate all warranties.

Refer All Communications to the Nearest
Ingersoll-Rand Branch Office or Distributor.

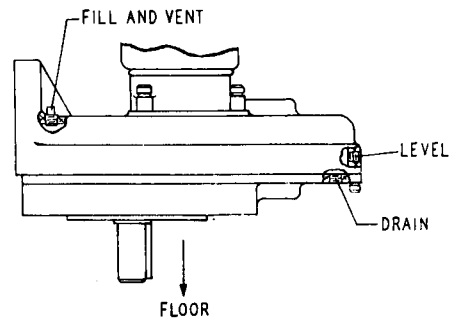
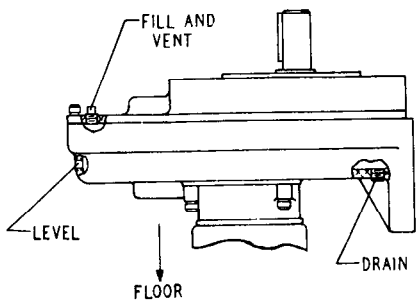
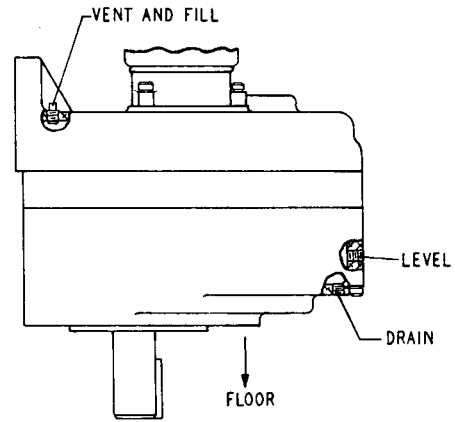
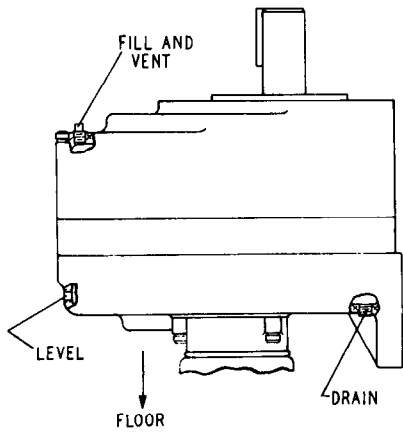
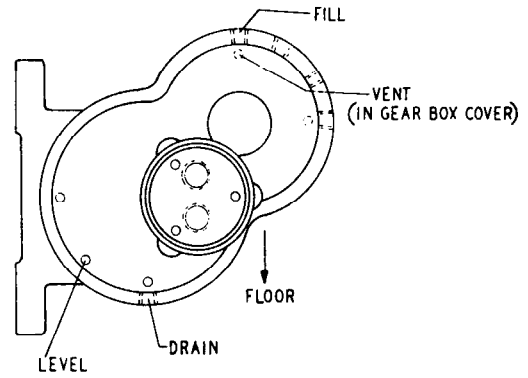
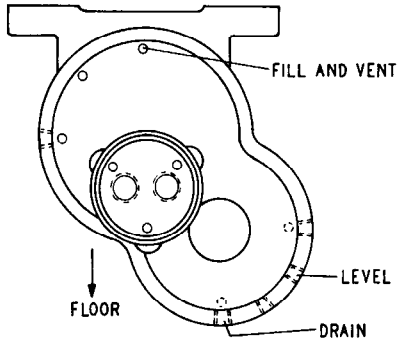
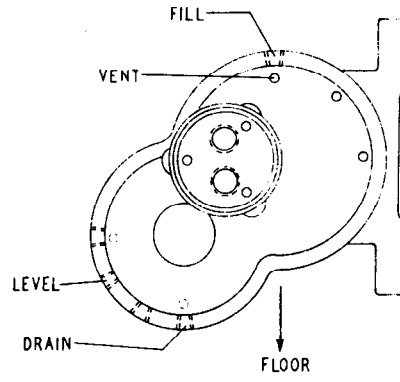
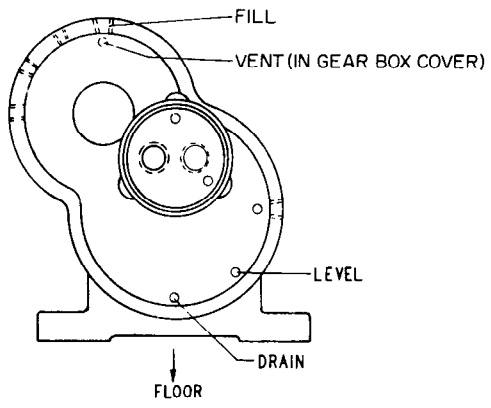
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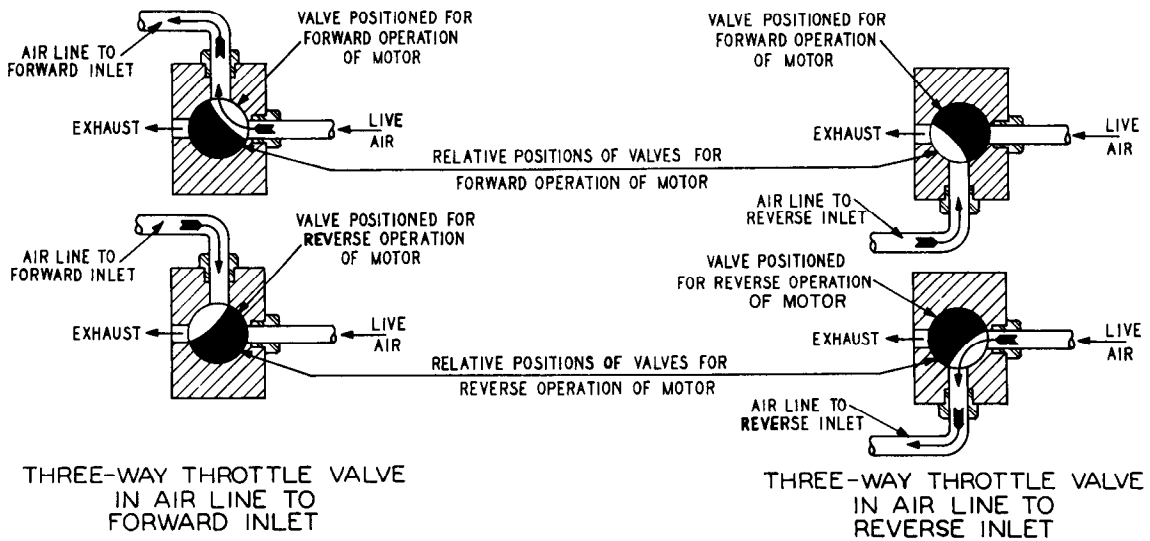
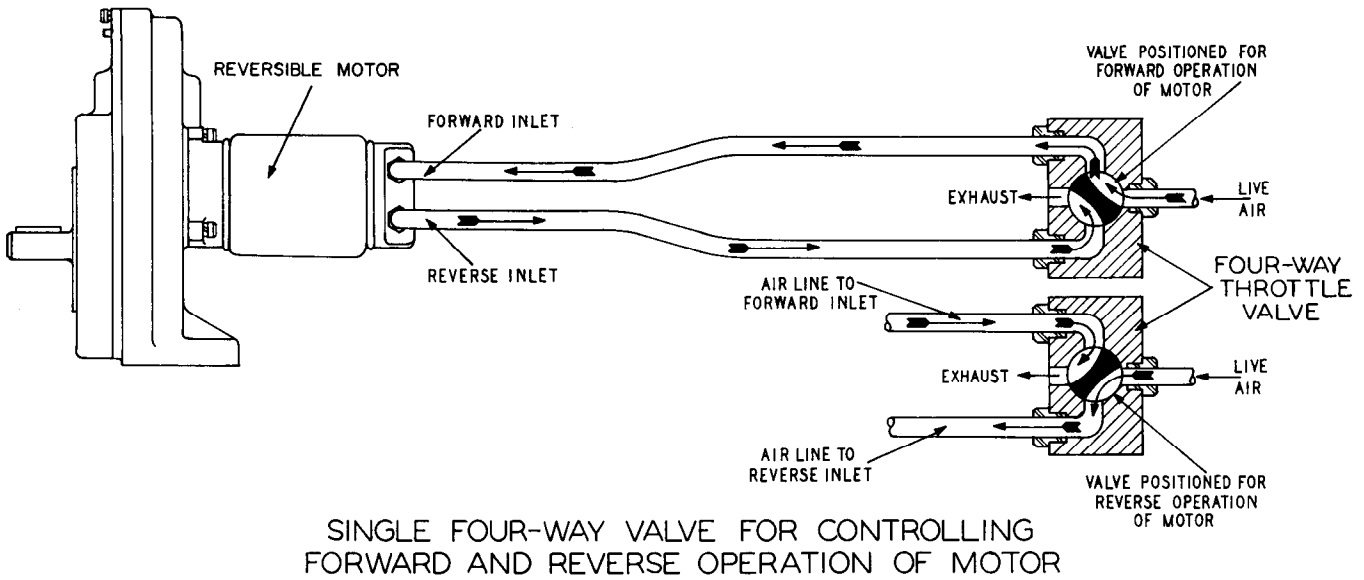
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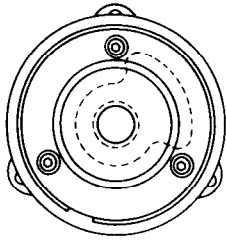


Lubrication Diagram

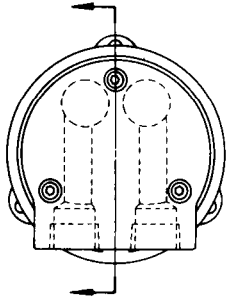
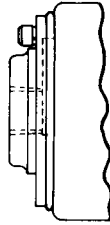
IMPORTANT: When these motors are used on applications requiring a reversible motor, a 4-way throttle valve or two 3-way throttle valves must be used in the air supply line in accordance with the following schematic diagram. When the

application requires a non-reversible motor, a 2-way inline valve can be used in the air supply line. In either case, the inlet and outlet of the valve must be equal in size, and preferably one size larger, than the inlet of the motor.

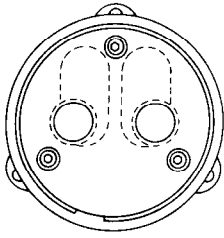




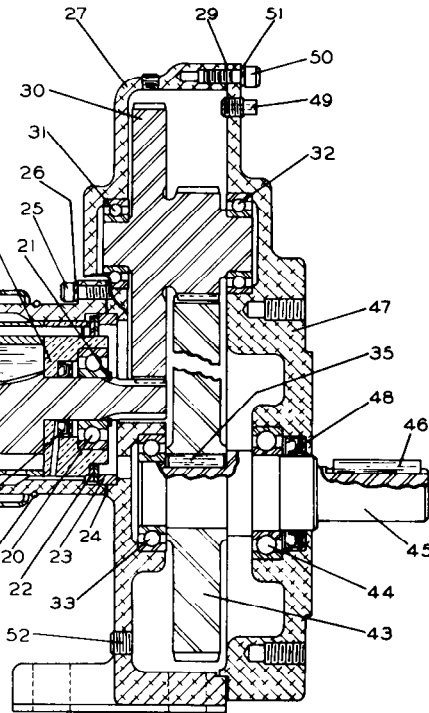
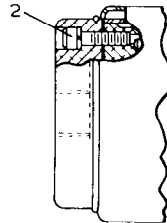
REAR INLET BACK HEAD FOR
SERIES 48N NON-REVERSIBLE MOTORS



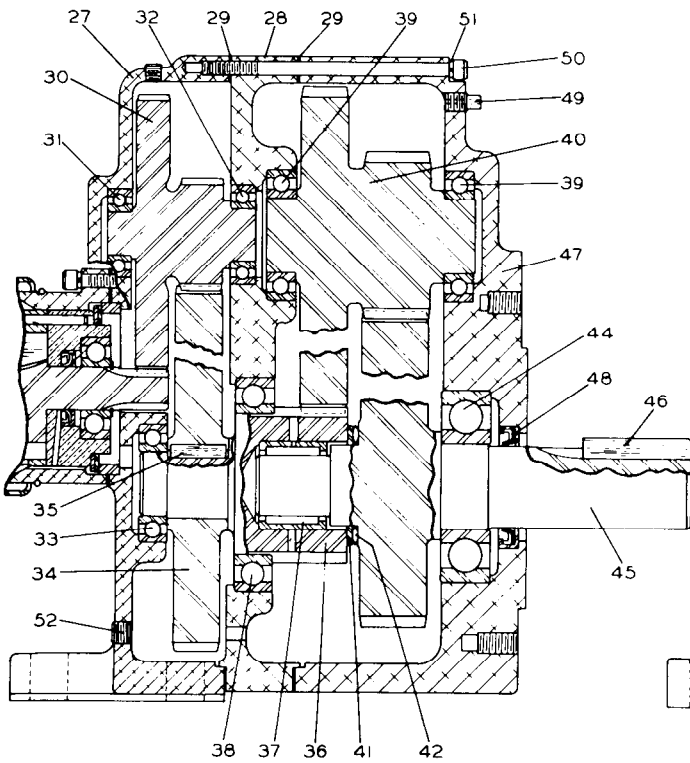
SIDE INLET BACK HEAD FOR
SERIES 48R REVERSIBLE MOTORS



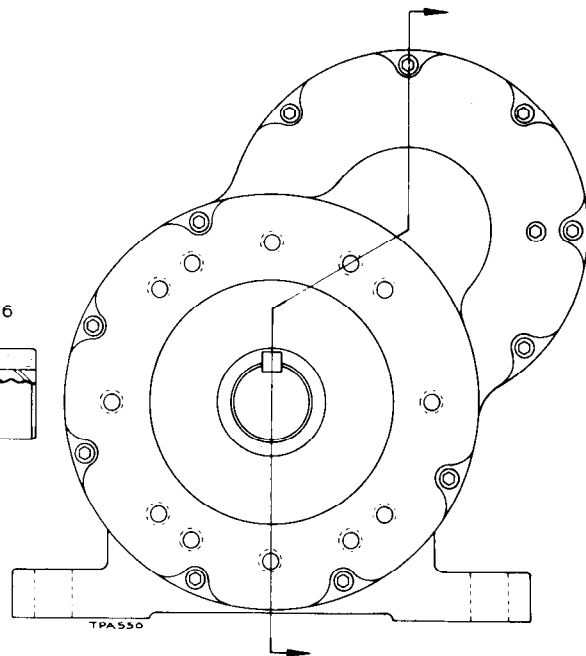
REAR INLET BACK HEAD FOR
SERIES 48R REVERSIBLE MOTORS



SERIES 48RA REVERSIBLE GEARED MOTOR
(MOTOR CONSTRUCTION TYPICAL OF SERIES 48N)



GEAR BOX CONSTRUCTION OF SERIES 48NB AND 48RB
(MOTOR CONSTRUCTION SAME AS SERIES 48RA)



FRONT END VIEW OF SERIES 48N OR 48R GEARED MOTORS

REPAIR PART LIST

ILLUSTRATION NUMBER (Do not use for ordering)	PART NAME FOR ORDERING Parts Indented After An Item Are Included With That Item	PART NUMBER FOR ORDERING
1	Back Head for Series 48N	48N-102
	for Series 48R with side inlet	R4901-102
	for Series 48R with rear inlet	48R-102
2	Back Head Cap Screw (3) for Series 48N and 48R with rear inlet	5080-638
	for Series 48R with side inlet	518-104
3	Back Head Screw Lock Washer (3)	03073533
● 4	Back Head Gasket for Series 48N	R4800-283
	for Series 48R	R4840-283
5	Exhaust Deflector with slotted exhaust ports	R4800-23
	with pipe-tapped exhaust port	R4800-A123
● *	Deflector Rear Seal (for pipe-tapped Exhaust Deflector)	MOV003AA-739
● *	Deflector Front Seal (for pipe-tapped Exhaust Deflector)	R4800-210
8	Exhaust Deflector Retaining Ring (2)	R4800-323
9	Muffler	R4800-175
10	Motor Housing	R4800-40
● 11	Rear Rotor Bearing (AFBMA No. 15BC03JP).	R2-24A
12	Rear Rotor Bearing Retainer	R4800-119
13	Rear End Plate	R4800-12
14	Cylinder for Series 48N	R4800-3
	for Series 48R	R4840-3
15	Cylinder Dowel	R4800-98
16	Rotor	48N-53
● 17	Vane Packet (set of 5)	R4800-42-5
18	Front End Plate	48N-A11
● 19	Front Rotor Seal	48N-758
● 20	Front Rotor Bearing (AFBMA No. 20BC02)	T02-33
21	Front Rotor Bearing Retainer	R380Q-6
22	Motor Retaining Washer (2)	R4800-81
23	Motor Retaining Ring	R4800-118
● 24	Housing Gasket	48N-284
25	Motor Mounting Screw (3).	5080-638
26	Mounting Screw Lock Washer (3).	03073533
	Gear Box Assembly for Size 48NA005 or 48RA005	48NA-A750-005
	for Size 48NA008 or 48RA008	48NA-A750-008
	for Size 48NA011 or 48RA011	48NA-A750-011
	for Size 48NA014 or 48RA014	48NA-A750-014
	for Size 48NA017 or 48RA017	48NA-A750-017
	for Size 48NA022 or 48RA022	48NA-A750-022
	for Size 48NB029 or 48RB029	48NB-A750-029
	for Size 48NB036 or 48RB036	48NB-A750-036
	for Size 48NB045 or 48RB045	48NB-A750-045
	for Size 48NB078 or 48RB078	48NB-A750-078
27	Gear Box	48NA-750
28	Gear Box Frame (for Series 48NB or 48RB)	48NB-763
● 29	Gear Box Gasket (2 for Series 48NB and 48RB; 1 for others)	48NA-752
30	First Stage Intermediate Gear for Size 48NA005 or 48RA005	48NA-755-005
	for Size 48NA008 or 48RA008	48NA-755-008
	for Size 48NA011 or 48RA011	48NA-755-011
	for Size 48NA014 or 48RA014	48NA-755-014
	for Size 48NA017 or 48RA017	48NA-755-017
	for Size 48NA022 or 48RA022	48NA-755-022
	for Series 48NB or 48RB	48NA-755-022

* Not illustrated.

REPAIR PART LIST (Cont'd.)

ILLUSTRATION NUMBER (Do not use for ordering)	PART NAME FOR ORDERING	PART NUMBER FOR ORDERING
	Parts Indented After An Item Are Included With That Item	
● 31	First Stage Intermediate Gear Rear Bearing (special bearing; purchase from Ingersoll-Rand)	R1AP-97
● 32	First Stage Intermediate Gear Front Bearing (AFBMA No. 25BC10)	R38P-97
● 33	Motor Shaft Rear Bearing or Intermediate Gear Pinion Rear Bearing	48NA-510
34	Second Stage Intermediate Gear (for Series 48NB or 48RB)	48NA-756-022
35	Second Stage Intermediate Gear Key or Motor Shaft Gear Key	R4H-410
36	Intermediate Gear Pinion	
	for Size 48NB029 or 48RB029	48NB-760-029
	for Size 48NB036 or 48RB036	48NB-760-036
	for Size 48NB045 or 48RB045	48NB-760-078
	for Size 48NB078 or 48RB078	48NB-760-078
● 37	Intermediate Gear Pinion Roller Bearing (for Series 48NB or 48RB)	48NB-765
● 38	Intermediate Gear Pinion Front Bearing (for Series 48NB or 48RB)	48NB-764
● 39	Third Stage Intermediate Gear Bearing (2) (for Series 48NB or 48RB)	C6H20A-518
40	Third Stage Intermediate Gear	
	for Size 48NB029 or 48RB029	48NB-761-029
	for Size 48NB036 or 48RB036	48NB-761-036
	for Size 48NB045 or 48RB045	48NB-761-045
	for Size 48NB078 or 48RB078	48NB-761-078
● 41	Motor Shaft Thrust Bearing Race (for Series 48NB or 48RB)	48NB-767
● 42	Motor Shaft Thrust Bearing (for Series 48NB or 48RB)	48NB-769
43	Motor Shaft Gear	
	for Size 48NA005 or 48RA005	48NA-756-005
	for Size 48NA008 or 48RA008	48NA-756-008
	for Size 48NA011 or 48RA011	48NA-756-011
	for Size 48NA014 or 48RA014	48NA-756-014
	for Size 48NA017 or 48RA017	48NA-756-017
	for Size 48NA022 or 48RA022	48NA-756-022
● 44	Motor Shaft Front Bearing	
	for Series 48NA or 48RA	C6H20A-518
	for Series 48NB or 48RB	48NB-766
45	Motor Shaft	
	for Series 48NA or 48RA	48NA-757-4
	for Size 48NB029, 48RB029, 48NB036, 48RB036, 48NB045 or 48RB045	48NB-762-029
	for Size 48NB078 or 48RB078	48BN-762-078
● 46	Motor Shaft Key	
	for Series 48NA or 48RA	107-54
	for Series 48NB or 48RB	R5H51-768
47	Gear Box Cover Assembly	
	for Series 48NA or 48RA	48NA-A751
	for Series 48NB or 48RB	48NB-A751
● 48	Motor Shaft Seal	
	for Series 48NA or 48RA	48NA-759
	for Series 48NB or 48RB	48NB-759
49	Vent Plug	48NA-368
50	Gear Box Cover Cap Screw (11)	
	for Series 48NA or 48RA	R0H-354
	for Series 48NB or 48RB	48NB-354
51	1/4" Lock Washer (11)	03073533
52	Oil Plug (10 for Series 48NB or 48RB; 9 for others)	R2-227

**SPECIAL MOTOR SHAFTS AND MOUNTING FLANGES
FOR USE ON SERIES 48NA AND 48RA**

PART NAME FOR ORDERING	PART NUMBER FOR ORDERING
★ Motor Shaft	
5/8" diameter	48NA-757-1
3/4" diameter	48NA-757-2
7/8" diameter	48NA-757-3
1-1/8" diameter	48NA-757-5
1-3/8" diameter	48NA-757-6
7/8" diameter	48NA-757-7
Motor Shaft Key	
for 5/8", 3/4" and 7/8" diameter Shafts	J5-754
for 1-1/8" diameter Shaft	MOV050AA-754
for 1-3/8" diameter Shaft	MOV075AA-754
Mounting Flange	
9" diameter	48NA-580-1
10" diameter	48NA-580-2
11" diameter	48NA-580-3
14" diameter	48NA-580-4
Mounting Flange Cap Screw (6)	D10-312A
3/4" Lock Washer (6)	D02-321

★ For identification purposes, these Motor Shafts are stamped on their outboard end with the last digit of the part number.

2. Grasp the pinion end of the Rotor (16) and pull the Multi-Vane motor from the Motor Housing (10).
3. Hold the motor in an upright position, and grasp the pinion end of the Rotor in copper-covered vise jaws.
4. Remove the Rear Rotor Bearing Retainer (12) and withdraw the Rear End Plate (13) and Rear Rotor Bearing (11).
5. Lift off the Cylinder (14), turn it end for end, and replace it over the Rotor.
6. Install the Rear End Plate, Bearing and Retainer.
7. Slide the motor in the Motor Housing and replace the power unit on the gear box.
8. Remove the Back Head Cap Screws (2) and rotate the Back Head (1) and Back Head Gasket (4) 120° so that the cavity in the face of the Back Head is aligned with the alternate set of ports in the rear face of the Motor Housing. When the Back Head is correctly installed, the cavity will be over the letter "F" for counterclockwise shaft rotation (when facing the end of the Motor Shaft) and over the letter "R" for clockwise rotation.

The rotational direction of an assembled 48N Non-Reversible Motor can be determined by looking through the tapped opening to see whether the letter "F" or "R" is visible.

Install the Back Head on a Series 48R Reversible Motor so that each cavity in the Back Head is aligned with a group of three ports in the Motor Housing. The inlets in the Back Head of a Series 48R Reversible Motor are identified by the letter "F" or "R". When live air is admitted to the inlet marked "F", motor shaft rotation is counterclockwise when facing the end of the shaft. When live air is admitted to the inlet marked "R", motor shaft rotation is clockwise when facing the end of the shaft.

REPAIR PARTS

To keep costly downtime to a minimum, it is desirable to have on hand certain repair parts. To guide you in the stocking of repair parts, the Illustration Numbers of the Repair Part List are coded to indicate certain parts and quantities we recommend you carry in stock. Codings for the recommended repair parts are:

- One repair part for every four tools in service.
- + One repair part for every two tools in service.
- x One repair part for each tool in service.

If the tools are being used in remote geographical areas, or are subject to unusually severe service, the items and quantities should be increased. Contact the nearest Ingersoll-Rand Company Branch for recommendations.

