10589489
Edition 5
April 2009

50 Series, Power Motor

Models 8664 and 8664-1

Operator's Manual

Save These Instructions

Ingersoll Rand

⚠ WARNING

General Product Safety Information

- **Read and understand this manual before operating this product.**
- **It is your responsibility to make this safety information available to others that will operate this product.**
- **Failure to observe the following warnings could result in injury.**

⚠ WARNING

- **Always operate, inspect and maintain this tool in accordance with American National Standards Institute Safety Code for Portable Air Tools (ANSI B186.1).**
- **For safety, top performance and maximum durability of parts, operate this motor at 90 psig (6.2 bar/620 kPa) air pressure at the inlet with 5/16" air supply hose.**
- **Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool or before performing any maintenance on this tool.**
- **Do not use damaged, frayed or deteriorated air hoses and fittings.**
- **Keep hands, loose clothing and long hair away from rotating end of tool.**
- **Always wear eye protection when operating or performing maintenance on this tool.**
- **Always wear hearing protection when operating this tool.**
- **Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.**
- **Motor shaft may continue to rotate briefly after throttle is released.**
- **Do not lubricate tool with flammable or volatile liquids such as kerosene, diesel or jet fuel.**
- **Do not remove any labels. Replace any damaged label.**
- **Use accessories recommended by Ingersoll Rand.**
- **This tool is not designed for working in explosive atmospheres.**
- **This tool is not insulated against electric shock.**
- **Never exceed rated r.p.m. of motor.**
- **Do not overreach when operating this motor. Keep body stance balanced and firm.**
- **Repeated prolonged operator exposure to vibrations which may be generated in use of certain hand-held motors may produce Raynaud's phenomenon, commonly referred to as Whitefinger disease. The phenomenon produces numbness and burning sensations in the hand and may cause circulation and nerve damage as well as tissue necrosis. Repetitive users of hand held motors who experience vibrations should closely monitor duration of use and their physical condition.**
- **Air powered motors can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.**

Safety Symbol Identification

Wear Respiratory Protection

Wear Eye Protection

Wear Hearing Protection

Read Manuals Before Operating Product

(Dwg. MHP2598)

Safety Information - Explanation of Safety Signal Words

⚠ DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.
NOTICE	Indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

Routine Lubrication Requirements

Lack of or an excessive amount of lubrication will affect the performance and life of this motor. Use only recommended lubricants at below time intervals:

Every 8 Hours of Motor Operation, Fill lubricator reservoir of recommended F.R.L. with spindle oil (29665). If an in line or air line lubricator is not used, apply several drops of spindle oil (29665) in air inlet.

Every 160 Hours of Motor Operation, Lubricate gearing. Pack bearings, coat shafts and lubricate gears with NLGI #1 "EP" grease (33153). Gearing should contain approximately 1/16 oz. (1.8 g) of grease.

Air Supply Requirements

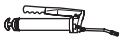
For maximum operating efficiency, the following air supply specifications should be maintained to this air motor:

- AIR PRESSURE - 90 p.s.i.g. (6.2 bar)
- AIR FILTRATION - 50 micron
- LUBRICATED AIR SUPPLY
- HOSE SIZE - 5/16" (8 mm) I.D.

An **Ingersoll Rand** model C28231-810 air line FILTER/ REGULATOR/ LUBRICATOR (F.R.L.) is recommended to maintain the above air supply specifications.

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	Ingersoll Rand 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

Inspection, Maintenance and Installation

Disconnect air supply from the motor or shut off air supply and exhaust (drain) line of compressed air before performing maintenance or service to the motor.

It is important that the motors be serviced and inspected at regular intervals for maintaining safe, trouble-free operation of the motor.

Be sure the motor is receiving adequate lubrication, as failure to lubricate can create hazardous operating conditions resulting from excessive wear.

Be sure that the air supply lines and connectors are of proper size to provide a sufficient quantity of air to the motor.

Maintenance and repair shall be performed by authorized, trained, competent personnel. Hose and fittings shall be replaced if unsuitable for safe operation. Responsibility should be assigned to ensure that guards or other safety devices are installed and being used properly on certain motors. Maintenance and repair records should be maintained on all motors. Frequency of repair and the nature of the repairs can reveal unsafe application.

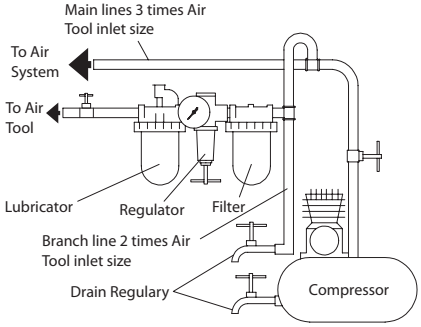
Scheduled maintenance by competent authorized personnel should detect an mistreatment or abuse of the motor and worn parts. Corrective action should be taken before returning the motor for use.

Disassembly should be done on a clean work bench with a clean cloth spread to prevent the loss of small parts. After disassembly is completed, all parts should be thoroughly washed in a clean solvent, blown dry with air and inspected for wear levels, abuse and contamination. Double sealed or shielded bearings should never be placed in solvent unless a good method of re-lubricating the bearing is available. Open bearings may be washed but should not be allowed to spin while being blown dry.

Upon reassembling, lubricate parts where required. Use 33153 grease, or equivalent, in bearings. Use 36460 lubricant for O-Ring assembly. When assembling O-Rings or parts adjacent O-Rings, care must be exercised to prevent damage to the rubber sealing surfaces. A small amount of grease will usually hold steel balls and other small parts in place while assembling.

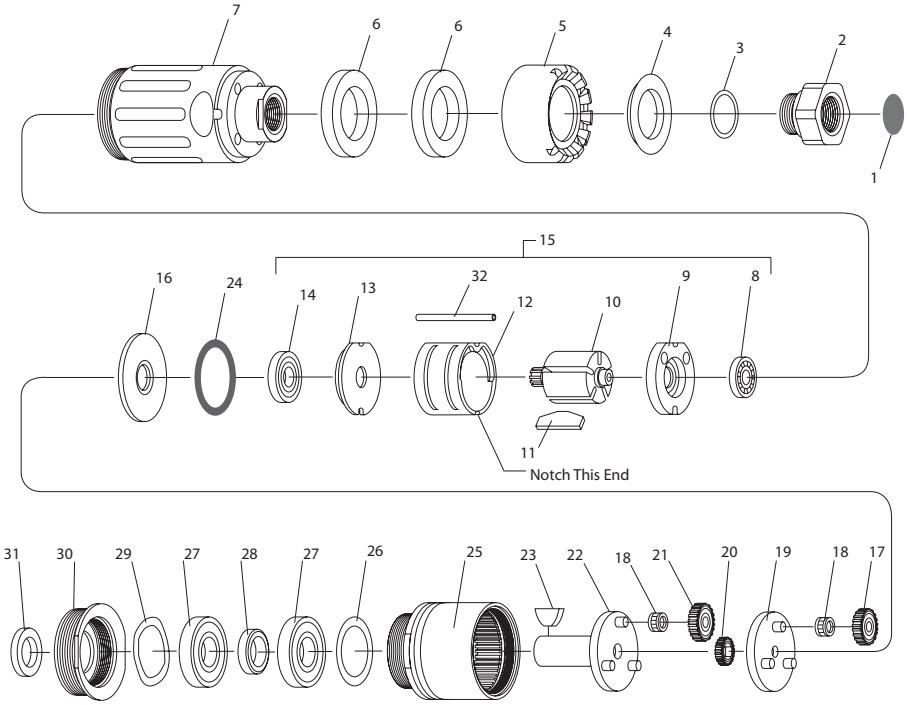
When replacement parts are necessary, consult drawing containing the part for identification. Always use clean, dry air. Dust, corrosive fumes and/or excessive moisture can damage the motor. An air line filter can greatly increase the life of an air motor. The filter removes rust, scale, moisture and other debris from the air lines. Low air pressure (less than 90 p.s.i.g.) reduces the speed of the air motor. High air pressure (more than 90 p.s.i.g.) raises performance beyond the rated capacity of the motor and could cause injury.

Shown below is a typical piping arrangement.



(Dwg. TPD905-2)

8664 and 8664-1 Power Motor - Exploded View



(Dwg. 10589489)

8664 and 8664-1 Power Motor - Part List

Item	Part Description	Part Number	Item	Part Description	Part Number
1	Screen	33911	19	Carrier Assembly (6.67:1 ratio)	46721
2	Inlet Adapter	46377	20	Sun Gear 4.4:1 ratio (15 teeth)	46466
3	Spacer	47205	21	Planet Gear (3 req'd) 4.4:1 ratio (18 teeth)	46900
4	Washer	46449	22	Spindle Assembly 4.4:1 ratio	47644
5	Exhaust Cap	46447	23	Key	Y62-2
6	Filler (2 req'd)	46452	24	O-Ring	Y325-214
7	Housing Assembly	47506	25	Ring Gear	46712
8	Ball Bearing	47724	26	Spacer	46496
9	Rear End Plate	46312-1	27	Ball Bearing (2 req'd)	Y65-13
10	Rotor	46470	28	Spacer	46706
11	Blade (5 req'd)	46413	29	Washer	47682
12	Cylinder	46311	30	Adapter	
13	Front End Plate	47722		For 8664	47228-1
14	Ball Bearing	Y65-13		For 8664-1	47228
15	Motor Assembly (includes items 8 thru 14)	47727	31	Spacer	46705
16	Spacer	46412	32	Locating Pin	47723-2
17	Planet Gear (3 req'd) 6.67:1 ratio (21 teeth)	46901	*	Warning	48176-1
18	Needle Bearing (6 req'd)	42315			

* Not Shown

Disassembly/Assembly Instructions

NOTICE

- 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 **Ingersoll Rand** replacement parts for this tool. When ordering, specify part number, description, model number and serial number.

Gearing Disassembly

- Remove drive feature from spindle (22).
- Remove spacer (31) from spindle.
- Unthread and remove ring gear (25) and components from housing assembly (7).
- Remove spacer (16), carrier (19) with gears (17) and spindle (22) with gears (21).
- Do not remove bearings (27), spacers (26 and 28) from ring gear (25) unless damage is evident.
- To remove bearings (27) and spacers from ring gear, remove adapter (30) and press on spacer (26) from inside splined end of ring gear.

Gearing Assembly

- Assemble spacer (26) into ring gear (25).
- Press bearing (27) into ring gear, pressing on outer race of bearing.
- Coat shafts of spindle (22) and carrier (19) with **Ingersoll Rand** 33153 grease.
- Assemble needle bearings (18) and gears to shafts of spindle and carrier.
- Lubricate gears liberally with **Ingersoll Rand** 33153 grease (see "Routine Lubrication Requirements", on page 3).
- Assemble spindle (22), carrier (19) and gearing into ring gear (25). Rotate spindle and gears to align gear teeth with splines of ring gear.
- Assemble spacer (28) to spindle.
- Assemble bearing (27) into ring gear.
- Assemble washer (29) and adapter (30) to ring gear. Torque to 10-14 ft-lb.
- Thread ring gear (25) to motor and tighten to a final torque of 24-38 ft-lb.
- Assemble spacer (31) to spindle.

Motor Disassembly

- Remove gearing from motor.
- Remove spacer (16) and O-Ring (24).
- Tap front edge of housing to remove motor assembly (15). Locating pin (32) should also come out.
- Tap splined end of rotor (10) with a soft face hammer; motor will come apart.

NOTE: Bearings are light press fit in end plates. Bearing (8) is press fit on rotor.

- Remove end plate (9) and bearing (8) from rotor.

Motor Assembly

- Lubricate bearing (8) with **Ingersoll Rand** 33153 grease and assemble to end plate (9) pressing on outer race of bearing.
- Assemble end plate (9) to rotor, pressing on inner race of bearing.
- Coat five rotor blades (11) with **Ingersoll Rand** 29665 spindle oil and assemble to rotor slots - straight side out.
- Coat inside diameter of cylinder (12) with **Ingersoll Rand** 29665 spindle oil and assemble over rotor.

NOTE: Air inlet slots in end of cylinder must be aligned with two air inlet holes in end plate (9).

- Assemble bearing (14) to end plate (13), pressing on outer race of bearing.
- Assemble end plate (13) to rotor, pressing on inner race of bearing. Be sure rotor turns without binding.
- Insert locating pin (32) into 0.096" diameter blind hole at bottom of motor cavity in housing.
- Align notches of end plates and cylinder and install motor into housing, aligning notches with locating pin (32).
- Lubricate and assemble O-ring (24) to End Plate (13).
- Assemble spacer (16) and gearing to motor.

Housing Disassembly

- Unthread and remove inlet adapter (2).
- Remove spacer (3) washer (4) exhaust cap (5) and fillers (6).
- Remove and clean screen (1).

Housing Assembly

- Assemble fillers (6) and exhaust cap (5) to housing.
- Assemble washer (4) and spacer (3) to exhaust cap (5), securing with inlet adapter (2). Torque to 8-12 ft-lb.
- Assemble screen (1) to inlet adapter.

Product Parts Information

⚠ CAUTION

The use of other than genuine Ingersoll Rand replacement parts may result in safety hazards, decreased motor performance, and increased maintenance, and may invalidate all warranties.
Ingersoll Rand is not responsible for customer modification of motors for applications on which Ingersoll Rand was not consulted. Repairs should be made only by authorized trained personnel. Consult your nearest Ingersoll Rand Authorized Service center.

Manuals can be downloaded from www.irtools.com

Refer all communications to the nearest **Ingersoll Rand** Office or Distributor.

Notes:

Notes:

www.irtools.com

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