45586039
Edition 1
February 2008

Air or Gas Motor (Reversible)

MVA017B/VSM-5842

Operation and Maintenance Information

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

Product Safety Information - When Placing the Product in Service

- **These motors are designed for gas operation at a maximum inlet pressure of 150 psig. It is not totally sealed in dynamic operation since the exhaust must be vented or piped away and there is a possibility of leakage around the output shaft when rotating.**
- **When assembling a gas operated motor always perform the steps as directed in the section titled Gas Operation Test Procedure.**
- **Always operate, inspect and maintain this motor 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 150 psig (10.3 bar/1030 kPa) maximum air/gas pressure at the inlet with 1/2" (13 mm) air/gas supply hose.**
- **Always turn off the air/gas supply and disconnect the air/gas supply hose before installing, removing or adjusting any accessory on this motor or before performing any maintenance on this motor.**
- **Do not use damaged, frayed or deteriorated air hoses and fittings.**
- **Do not lubricate motor with flammable or volatile liquids such as kerosene, diesel or jet fuel.**
- **Do not remove any labels. Replace any damaged label.**

WARNING

Product Safety Information - When Using the Product

- **Caution should be taken when operating this motor on gas because of the danger of fire, explosion or inhalation.**
- **Always wear eye protection when operating or performing maintenance on this product.**
- **Always wear hearing protection when operating this product.**
- **Anticipate and be alert for sudden changes in motion during start up and operation of any motor.**
- **Keep hands, loose clothing and long hair away from rotating end of motor.**
- **Motor shaft may continue to rotate briefly after air/gas line is removed.**
- **Use accessories recommended by Ingersoll Rand.**
- **This motor is not insulated against electric shock.**

Safety Symbol Identification

Wear Respiratory Protection

Wear Eye Protection

Wear Hearing Protection

Read Manuals Before Operating Product

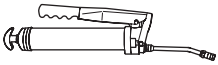
Safety Information - Explanation of Safety Signal Words

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.

NOTICE

- **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 Servicenter.**

Lubrication



Ingersoll Rand No. 28
Grease

Ingersoll Rand No. 20
Oil

Always use an air line lubricator with this motor.

Installation and Operation

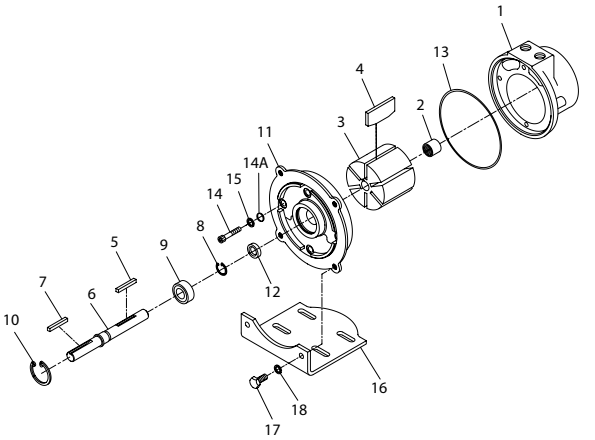
Air Supply and Connections

Always use clean, dry air at 150 psig maximum air pressure. Dust, corrosive fumes and/or excessive moisture can ruin the motor of an air tool. An air line filter can greatly increase the life of an air tool. The filter removes dust and moisture. Make sure all hoses and fittings are the correct size and are tightly secured.

WARNING

It is imperative that gas-operated motors be properly sealed to prevent gas leakage. Refer to Gas Operation Test Procedure when making repairs.

MVA017B/VSM-5842 Motor, Exploded Diagram



Dwg. TPB476-1

MVA017B/VSM-5842 Motor, Parts List

Item No	Description	Part Number	Item No	Description	Part Number
1	Cylinder Assembly	MVA017-A3	14	Front Head Cap Screw (4)	R3F-7
2	Rear Rotor Shaft Bearing	MVA008-22	14A	Front Head Cap Screw Seal (4)	MLK-211
3	Rotor	MVA017-53	15	Front Head Cap Screw Retainer (4)	16922
4	Vane Packet (set of 6)	MVA017-42-6	*	Mounting Foot Kit	MVA008-K4
5	Rotor Key	J5-754	16	Mounting Foot	MVA008-4
6	Rotor Shaft	MVA017-52	17	Mounting Foot Bolt (2)	D02-506
7	Rotor Shaft Key	J5-754	18	Mounting Foot Lock Washer (2)	D02-321
8	Rotor Shaft Retainer	MVA008-218	*	Name Plate	MVA008-301
9	Front Rotor Shaft Bearing	R2H-97	*	Name Plate Screw (2)	MVA008-302
10	Front Rotor Shaft Bearing Retainer	S12-118	*	Warning Tag	TA-GAS-150
11	Front Head Assembly	MVA008-A240A			
12	Rotor Shaft Seal	VSM-4565			
13	Front Head Seal (2)	MVA008-103			

* Not Shown

Maintenance

Gas Operation Test Procedure

Ingersoll Rand carefully assembled this motor with specially selected sealing materials to prevent gas leakage, and tested this motor to detect leaks.
When reassembling a motor, follow the procedures to properly test the motor for leaks:

1. Plug one inlet (either forward or reverse).
2. Connect non-pressurized air line to the inlet that is not plugged.
3. Pressurize motor with air to 40 psi.
4. Fully submerge motor in water.
5. Monitor for a minimum of 2 minutes for bubbles in water.

6A. If the motor DOES NOT release bubbles during the two minute test, the motor is ready for gas operation.

6B. If the motor releases ANY bubbles during testing, the motor must be reworked and retested.

NOTICE

If the motor operates sluggishly, flush it with a clean,non-toxic, nonflammable commercial solvent in a well ventilated area.

To flush the motor:
1. Disconnect the air line and muffler.
2. Pour 6 to 8 cc of solvent into each inlet.
3. Rotate the rotor shaft by hand in both directions several times to ensure all internal parts of motor are thoroughly cleaned.
4. Apply air pressure to the inlet and slowly increase the air flow until there is no trace of the solvent in the exhaust.
5. After flushing, shut off the air supply and disconnect air supply line.
6. Pour 6 to 8 cc of a high detergent SAE 10 motor oil into the air inlet.
7. Reconnect the air supply line, slowly increase the air pressure to ensure all internal parts of motor will be covered with a film of oil.
8. If the motor is still low in power, check for damaged vanes or foreign material in the vane slots in the Rotor.

NOTICE

Periodically, check the Vanes for wear. Always replace Vanes in sets, never replace an individual Vane.

Assembly / Disassembly Instructions

⚠ WARNING

Always wear eye protection when operating or performing maintenance on this motor.

Always turn off air / gas supply and disconnect supply hose before installing, removing or adjusting any accessory on this motor, or before performing any maintenance on this motor.

Disassembly

General Instructions
1. Always disconnect the air / gas line at the motor before attempting any disassembly.
2. Do not disassemble the motor any further than necessary to replace or repair damaged parts.
3. When grasping a pan in a vise, always use leather-covered or copper-covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.
4. Do not remove any part which is a press fit in or on a subassembly unless the removal of that part is necessary for repairs or replacement.
5. If it necessary to disassemble a motor, always have new seals on hand. Do not use old seals.

Assmbly

General Instructions
1. Always wipe all parts with a thin film of oil before installing them in the motor.
2. Always press on the inner ring of a ball-type bearing when installing the bearing on a shaft.
3. Always press on the outer ring of a ball-type bearing when pressing the bearing into a bearing recess.
4. Whenever grasping a part in a vise, always use leather-covered or copper-covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.
5. Lubricate the Rotor (3) and Vanes (4) with a good quality SAE 10 non-detergent oil. Lubricate the Bearings with Ingersoll-Rand No. 28 Grease. Coat the Rotor Shaft (6) with a good quality SAE 10 non-detergent oil.
6. If using gas to power the motor always test for leaks after assembly. Refer to the Gas Operartion Test Procedure.

Trouble Shooting Guide

Trouble	Probable Cause	Solution
Low power or low free speed	Low air pressure at the inlet	Check air pressure at the inlet. For top performance and durability of parts, the air pressure must be 150 psig (10.3 bar /1030 kPa) at the inlet.
	Worn or broken Vanes	Install new set of Vanes
	Improper lubrication or Dirt building up in the Motor	Lubricate as instructed under LUBRICATION. If this does not help, flush the Motor as instructed under MAINTENANCE.
Rough operation	Worn or broken Rotor Bearings	Examine each Bearing. Install new bearing where necessary.
Scoring of End Plates and/or Cylinder	Rotor does not have proper clearance	Motor must be refurbished.

Notes:

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