



Form P7373

04576070

Edition 2

June 2009

Random Orbital Sander

Model R025A-CFS

Installation and Maintenance Information



Save These Instructions

 **Ingersoll Rand**

Product Safety Information

Intended Use:

A Rotary Air Sander, Polisher or Buffer is a compressed air powered, hand-held, rotary power tool equipped with a flexible pad or drum that is driven in a rotary or rotary/orbital motion. A Sander has a fiber disc or abrasive paper attached to the pad or a band attached to the drum and is used for material removal. A Buffer will have softer material such as a buffing wheel or polishing bonnet attached. A Polisher is a buffer that is used with a polishing compound. A guard is not supplied for these tools.

For additional information refer to Safety Information Manual Form 04580387. Manuals can be downloaded from www.irttools.com.

Lubrication

This tool is designed to operate without air line lubrication. Introduction of a lubricant with a standard filter/regulator/ lubricator will not affect tool life.

After each 160 hours of operation, inject one or two strokes of **Ingersoll Rand No. 68** Grease thru threaded end of Spindle (27) for lubrication of needle bearing contained in Counterbalance (26). Sanding pad must be removed from Spindle to allow injection of grease.

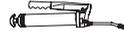


CAUTION

Do not mark any nonmetallic surface of this tool with customer identification codes. Such action could affect tool performance.



Ingersoll Rand No. 10

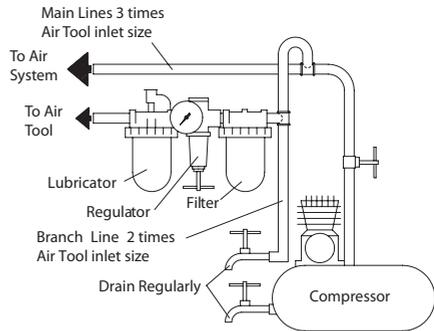


Ingersoll Rand No. 68

Installation

Air Supply and Connections

Always use clean, dry air at 90 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. Make sure all hoses and fittings are the correct size and are tightly secured.



(Dwg. TPD905-1)

R025A-CFS Series Random Orbital Sander Parts List

Item	Part Description	Part Number	Item	Part Description	Part Number
1	Housing (includes pin)	04561429	23	Key	39442
2	Valve Stem	48065-2	24	Counterbalance (includes needle bearing)	49808-5
3	Lever	48274-2			
4	Roll Pin	Y178-134	25	Spindle Assembly (includes bearing)	49807
5	Grip Ring	49798	26	Retaining Ring	Y147-125
6	Seat	48071	27	Sanding Pad Assembly	04595955
7	Tip Valve	48070	28	Wrench	30131-2
8	Spring	32858	29	Coupling	04556445
9	Inlet Adapter	49824	30	Swivel Connector	04556437
10	Muffler Tube	48263-1	31	Hose	04595856
11	Muffler	49818	32	Housing Adapter	04595864
12	Shroud	48266-1	33	Spring Clamp	04595872
13	Retaining Ring	44533		Supply Tube Assembly	04595922
14	Bearing (2)	48169-1	34	Supply Tube	04595914
15	Rear End Plate	48872	35	Retaining Ring	Y147-87
16	Cylinder (includes roll pin)	49815	36	Spacer	04595898
17	Seal	49819	37	Compression Fitting	04595930
18	Rotor	48253-1	38	Adapter Sleeve	04595906
19	Vane Packet (set of 5 Vanes)	48254-1	39	O-ring	04556460
20	Front End Plate	48871	40	O-ring	04556452
21	O-ring	Y325-223	41	Roll-Pin	Y178-4
22	Motor Lock Ring	48257-1	*	Service Kit	49837

* Not Shown

Maintenance

WARNING

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

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.

Lubrication

Whenever one of the Sanders is disassembled for overhaul or replacement of parts, lubricate as follows:

- Always wipe the Vanes (21) with a light film of oil before inserting them into the vane slots.

- Inject 0.5 to 1.0 cc of **Ingersoll Rand No.10** Oil into the air Inlet Bushing (1) after assembly.

Disassembly

General Instructions

1. Do not disassemble the tool any further than necessary to replace or repair damaged parts.
2. Do not press any needle bearing from a part unless you have a new needle bearing on hand for installation. Needle bearings are always damaged during the removal process.
3. When grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws to protect the surface of the part or tool 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.

Removal of the Sanding Pad

1. Place a 1/8" hex wrench in the set screw in the center of the Pad (27).
2. Holding the set screw in place, unscrew the Pad from the set screw.
3. Remove the spacer from the set screw.
4. With the Pad removed, lubricate the counterbalance needle bearing by injecting one or two strokes of **Ingersoll Rand No. 68** Grease into the threaded end of the Spindle.

Disassembly of the Base Adapter

1. Remove the Cold Air Channel from the tool by removing the Spring Clamp (33).
2. Remove the Shroud to expose two Roll Pins (41).
3. Using pliers or a vise, remove the Roll Pins.
4. The Housing Adapter (32) will slip out of the Sander face, exposing the Motor Lock Ring (24).

Assembly

General Instructions

1. Always press on the **inner** ring of a ball-type bearing when installing the bearing on a shaft.
2. Always press on the **outer** ring of a ball-type bearing when pressing the bearing into a bearing recess.
3. Whenever grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws. Take extra care not to damage threads or distort housings.
4. Except for bearings, always clean every part and wipe every part with a thin film of oil before installation.
5. Check every bearing for roughness. If an open bearing must be cleaned, wash it thoroughly in clean solution and dry with a clean cloth. Sealed or shielded bearings should not be cleaned. Work grease into every open bearing before installation.
6. Apply a film of O-ring lubricant to every O-ring before installation.
7. Unless otherwise noted, always press on the stamped end of a needle bearing when installing a needle bearing into a recess. Use a bearing inserting tool similar to the one shown in Dwg. TPD786.

Disassembly of the Spindle

1. Remove the Sanding Pad and Base Adapter.
2. Remove the Retaining Ring (26).
3. Remove the Spindle Assembly (25) including bearing.

NOTICE

Do not attempt to remove the bearing from the Spindle.

4. Remove the Motor Lock Ring (22) and pull the motor and Seal (17) from the Housing (1).
5. Remove the Retaining Ring (13).
6. Using special brass blocks to fit around the outside diameter of the Cylinder (16), clamp around the Cylinder and press the shaft of the Counterbalance (24) through the Bearing (14) and Rear End Plate (15).
7. Remove the Vanes (19), Rotor (18) and Key (23).
8. Remove the Front End Plate (20) and Bearing (14).

Disassembly of the Throttle

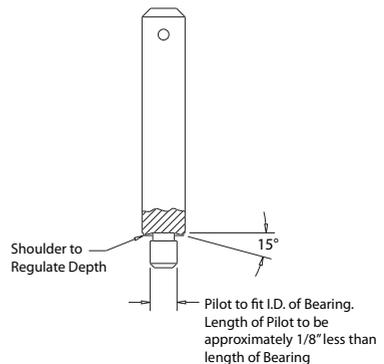
1. Remove the Inlet Adapter (9). This will release the Spring (8) and Tip Valve (7).

NOTICE

Do not remove the Seat (6) unless it has been damaged.

2. Remove the Muffler (11), releasing the Muffler Tube (10).
3. To remove the Valve Stem (2), remove the Roll Pin (4) and Lever (3).

Needle Bearing inserting Tool



Dwg. TPD-786.

Assembly of the Throttle

1. Install Valve Stem (2) in Housing (1) so that the hole in the Valve Stem aligns with the hole in the Housing to accept the Tip Valve (7).
2. Install the Seat (6) in the Housing with the rounded corners on the Seat entering the Housing first.
3. Install the Tip Valve in the Housing. Secure it with the Valve Stem (2).
4. Install the Spring (8) and Inlet Adapter (9) in the Housing to secure the throttle components.
5. Install the Lever (3) on the Housing and secure it with the Roll Pin (4).

Assembly of the Motor

1. Coat O-ring (21) with O-ring lubricant and install it on the Motor Lock Ring (22).
2. Assemble the Motor Lock Ring over the Counterbalance (24).
3. Install the Bearing (14) into the Front End Plate (20), pressing on the **Outer** race of the Bearing.
4. Install the Key (23) in the key slot.
5. Install the Rotor (18) on the Counterbalance, aligning the keyway to the Key.
6. Install the Vanes (19) in the slots in the Rotor .
7. Install the Cylinder (16) over the Rotor, aligning the roll pin in the Cylinder with the slot in the Front End Plate.
8. Install the Bearing (14) in the Rear End Plate (15), pressing on the **Outer** race of the Bearing.
9. Install the Rear End Plate with assembled Bearing on the Counterbalance, pressing on the **Inner** race of the Bearing.

NOTICE

Align the slot in the Rear End Plate with the slot in the Cylinder.

Cold Air Channel

NOTICE

The Cold Air Channel and its components can be serviced as a separate unit. It is not necessary to disassemble the tool to perform maintenance on the Cold Air Channel.

Disassembly of the Cold Air Channel

1. Remove the Spring Clamp (33) from the Sander.
2. Slide the Supply Tube Assembly (34) out of the Housing (1). This now leaves the Sander and Cold Air Channel free for maintenance.
3. Slide the Hose (31) off of the Adapter Sleeve (38).
4. Unscrew the Swivel Connector (30) from the Compression Fitting (37) and pull off the O-ring (39).
5. Remove the Retaining Ring (35).
6. Pull out the Supply Tube and Compression Fitting (37) with Spacer (36).

NOTICE

Do not disconnect the Supply Tube and Compression Fitting.

7. Remove the Hose Connector from the Coupling (29).
8. Unscrew the Swivel Connector (30) and unscrew the Coupling from the Hose.

10. Install the Retaining Ring (13) in the groove in the Counterbalance with the bow in the Retaining Ring positioned as shown in Drawing TPA1667.
11. Install the Seal (17) in the grooves in the Cylinder.
12. Install the motor assembly in the Housing aligning the Seal (19) with the air inlet.
13. Tighten the Motor Lock Ring (22) to secure the motor assembly.
14. Lubricate the needle bearing in the counterbalance by injecting one or two strokes of **Ingersoll Rand No. 68** Grease into the threaded end of the Spindle Assembly (25).
15. Install the Spindle Assembly on the Counterbalance, securing it with the Retaining Ring (26).

Assembly of the Base Adapter

1. Slide the Housing Adapter (32) into the motor bore and align holes.
2. Press the Roll Pins (41) into the Housing and Housing Adapter (32).
3. Make sure the O-ring (39) is on the end of the cold air channel.
4. Replace the Cold Air Channel on the tool and secure it with the Spring Clamp (33).

Installation of the Sanding Pad

1. Thread set screw into the Spindle until it locks in place.
2. Slip the spacer onto the set screw.
3. Holds the set screw in place with a 1/8" hex wrench and screw the pad onto the set screw until it is tightened securely.

Assembly of the Cold Air Channel

1. Screw the Coupling (29) on the Hose (31).
2. Screw on the Swivel Connector (30).
3. Insert the Hose in the Coupling.
4. Install the Supply Tube (34) and Compression Fitting (37) with Spacer (36).
5. Install the Retaining Ring (35).
6. Install the O-ring (40) and screw the Swivel Connector on the Compression Fitting.
7. Slide the Hose over the Adapter Sleeve (38).
8. Slide the Supply Tube Assembly (34) into the sander housing.
9. Install the Spring Clamp (35) to secure the Hose.

Troubleshooting Guide

Trouble	Probable Cause	Solution
Low power or low free speed	Insufficient air pressure	Check air line pressure at the Inlet of the tool. It must be 90 psig (6.2 bar/620 kPa).
	Cold air head frozen	Shut down the CFS200A Unit and allow the tool to warm for about 1/2 hour.
	Clogged muffler elements	Disassemble the tool and agitate the bare Motor Housing and Flange in a clean, suitable cleaning solution. If the elements cannot be cleaned, replace the Motor Housing and/or the Flange.
	Plugged Inlet Screen	Clean the Inlet Screen in a clean, suitable, cleaning solution or replace the Screen.
	Worn or broken Vanes	Install a complete set of new Vanes.
	Worn or broken Motor Housing	Replace the Motor Housing.
	Internal air leakage in the Motor Housing indicated by high air consumption/ low speed.	Replace the Motor Housing.
	Grit buildup under the Throttle Lever restricting full Throttle Valve Plunger movement.	Remove the Throttle Lever and clean the groove in the Motor Housing.
	Bent stem on Throttle Valve	Replace the Throttle Valve
Excessive runout	Bent Arbor	Replace the Arbor.
Scoring of Eng Plate	Worn Front End Plate.	Install a new Front End Plate.
	Worn Front Rotor Bearing	Install a new Front Rotor Bearing.
Leaky Throttle Valve	Dirt accumulation on Throttle Valve or Throttle Valve Seat	Disassemble, inspect and clean parts.
	Worn Throttle Valve or Throttle Valve Seat	Replace the Throttle Valve and/or Throttle Valve Seat.
	Excessive dirt build-up beneath the Throttle Lever	Clean out the slot area.
	Bent Throttle Valve Plunger	Replace the Plunger.
Front Rotor Bearing runs hot	Incorrect Front Rotor Bearing installation orientation	Remove the Bearing and install it correctly or replace the Bearing.
Slow tool idle	Bent or leaky Throttle Valve	Replace the Throttle Valve.
Rough operation/vibration	Improper lubrication or dirt buildup	Disassemble the tool and clean in a clean, suitable, cleaning solution. Assemble the tool and inject 3 cc of the recommended oil into the Inlet and run the Buffer long enough to coat the internal parts with the oil.
	Worn or broken Rear Rotor Bearing or Front Rotor Bearing	Replace the worn or broken Bearings.
Excessive ice build-up on cold air head	Air pressure is set too high in either the idle or operating mode	Shut CFS200A Unit down and allow it to warm for approximately 1/2 hour.

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