



**16574949**  
Edition 2  
February 2014

# Pencil Grinders

**DG600G2 Series**

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## Maintenance Information



Save These Instructions

**IR** Ingersoll Rand®

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## Product Safety Information

### WARNING

- Failure to observe the following warnings, and to avoid these potentially hazardous situations, could result in death or serious injury.
- Read and understand this and all other supplied manuals before installing, operating, repairing, maintaining, changing accessories on, or working near this product.
- Always wear eye protection when operating or performing maintenance on this tool. The grade of protection required should be assessed for each use and may include impact-resistant glasses with side shields, goggles, or a full face shield over those glasses.
- Always turn off the air supply, bleed the air pressure and disconnect the air supply hose when not in use, before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool or any accessory.
- Do not use this tool if the actual free speed exceeds the rated rpm. Check the free speed of this tool before mounting any accessories, after all tool repairs, before each job and after every 8 hours of use. Check speed with a calibrated tachometer, without the abrasive product installed.

**Note:** When reading the instructions, refer to exploded diagrams in Parts Information Manuals when applicable (see under Related Documentation for form numbers)

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### Lubrication

Whenever one of these Grinders is disassembled for overhaul or replacement of parts, lubricate as follows:

1. Always wipe the Blades (23) with a light film of the recommended oil before inserting them into the vane slots.

2. Inject 0.5 to 1 cc of **Ingersoll Rand** Lubricant No. 10 or a good quality high-speed spindle oil into the Valve Body (6) after assembly.

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### Disassembly

The Model DG600G2 Pencil Grinder can be disassembled into three major unit assemblies. They are the Valve Body Assembly (4), the Motor Assembly (17) and the Air Block Assembly (13). Do not disassemble any major unit assembly that does not require repair.

#### General Disassembly Instructions

1. Do not disassemble the tool any further than necessary to replace or repair damaged parts.
2. 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 and help prevent distortion. This is particularly true of threaded members and housings.

#### Disassembly of the Tool

1. Remove Snap Ring (1) and Exhaust Sleeve (2), allowing removal of Hose Assembly (3).

### CAUTION

**Do not grasp the Motor Housing (28) with pliers or in a vise.**

2. Carefully grasp the flats on the Hose Assembly in a vise.
3. Using 9/16" wrench on flats on the Valve Body, loosen and remove tool from Hose Assembly.
4. Reposition tool in vise and carefully grasp on the flats of the Valve Body.
5. Remove Sleeve (29) by twisting and pulling upward.
6. Place tool horizontally in a suitable holding device and clamp on one of the bottom two grooves of Motor Housing (28).
7. Using 9/16" wrench on flats of Valve Body loosen and remove from Motor Housing (28).

### NOTICE

**The Motor Assembly and Air Block Assembly will be free to fall out of the Motor Housing when the Housing is lifted from the Valve Body.**

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### Assembly

#### General Assembly 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 with threaded parts and housings.

8. Remove the Motor Housing from the vise.

#### Disassembly of the Valve Body

1. Remove Screen (5).
2. Remove Throttle (12).
3. Using a pair of pliers remove Plug (9), being careful not to damage.
4. Using needle nose pliers remove Valve (10) from Valve Body.
5. Remove O-rings (11), if necessary.
6. Remove Bushing (8) and O-ring (7), if necessary.

### NOTICE

**Do not disassemble the Rotor components unless damage is evident.**

#### Disassembly of the Motor

1. Place Motor Assembly (17) in suitable holding device with Ball Bearing (18) facing upwards.
2. Place a punch on the i.d. of the Bearing and tap to remove Bearing, allowing removal of End Plate (24), Cylinder (21) and Blades (23).
3. Place Rotor in special holding device, using wrench 47579 on flats of Collet body (26) loosen and remove from Rotor (22).
4. Using a punch, tap on i.d. of Rotor and remove Bearing (25) and End Plate (24).

#### Disassembly of the Air Block Assembly

1. Grasp Air Block Assembly (13) and pull apart from Motor Assembly.
2. Remove Screen (15) and Snap Ring (14), if necessary.

4. Always clean every part and wipe every part with a thin film of oil before installation.
5. Apply a film of O-ring lubricant to all O-rings before final assembly.

#### Assembly of the Air Block Assembly

1. Assemble Snap Ring (14) and Screen (15) to Air Block (13).

#### Assembly of the Cylinder

1. Assemble Pin (20) to Cylinder (21).

## Assembly of the Motor

1. Assemble End Plate (24) to Rotor (22).
2. Assemble Bearing (25) on Rotor.
3. Using a special holding device clamp on Rotor and tighten Collet Body (26) to Rotor.
4. Screw Insert (27) on Collet Body.
5. Assemble Blades (23) to Rotor slots on Rotor - straight side out.
6. Slide Cylinder over Rotor with Pin facing upward.
7. Assemble End Plate (19) to Rotor (22), aligning hole in End Plate with Pin (20).
8. Assemble Bearing (18) to Rotor. Press on inner race of Bearing.

### NOTICE

#### Install Bearing with retainer toward End Plate.

9. Assemble Air Block Assembly (13) by aligning hole in Block with Cylinder Pin and assemble components to Motor Housing (28).

## Assembly of the Valve Body

1. Apply a thin coat of O-ring Lubricant to O-rings (11) and install them in the grooves in the Valve Body (6).
2. Assemble O-ring and Bushing (8) in front end of Valve Body (6).
3. Insert Valve (10) into Valve Body and rotate Valve until the hole aligns with the slot in the Valve Body.
4. Insert Plug (9) into hole of Valve.
5. Slide Throttle (12) over front end of Valve Body.
6. Insert Screen (5) in rear of Valve Body.

## Assembly of the Tool

1. Insert Motor Assembly with Air Block Assembly attached into Housing (28).
2. Assemble Throttle (12) to Valve Body.

### NOTICE

#### The Throttle must rotate freely when the tool is completely assembled.

3. Assemble Valve Body Assembly (4) to Housing.
4. Place tool in special holding device and clamp on one of the bottom two grooves.
5. Rotate the Throttle to the ON position and tighten Valve Body Assembly to Housing using a 9/16 inch wrench on flats of Valve Body.
6. Rotate the Throttle to the OFF position and remove tool from the special holding device. Grasp Insert Assembly on front end of tool to ensure tool turns freely.
7. Carefully grasp the flats on the threaded end of the Valve Body in vise with the Collet Body (26) upward.
8. Lubricate Sleeve (29) and slide over top of tool.
9. Slide Exhaust Sleeve (2) and Snap Ring (1) over Hose Assembly (3).
10. Remove the assembled tool from the vise and connect the Hose Assembly to the Valve Body.
11. Slide Exhaust Sleeve to groove in Valve Body and secure Snap Ring.

## 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).
	Insufficient lubrication	Inject 0.5 to 1 cc of the recommended oil into the Air Inlet.
	Clogged Muffler	Replace the Muffler.
	Worn or broken Blades	Install a <b>complete</b> set of new Blades.
Rough operation	Worn or broken Cylinder	Replace the Cylinder.
	Improper lubrication or dirt buildup	Inject 3 cc of a clean, suitable cleaning solution into the Inlet, operate the tool for 30 seconds and <b>immediately</b> inject 0.5 to 1 cc of the recommended oil into the Inlet and run the Grinder long enough to coat the internal parts with the oil.
Excessive runout	Worn or broken Rear Rotor Bearing or Front Rotor Bearing	Examine each bearing. Replace the Rear Rotor Bearing if it is worn or broken. Replace the Rotor Assembly if the front rotor bearing is worn or broken.
	Loose Spindle Nut	Tighten the Spindle Nut until snug.
	Worn or damaged Spindle or Spindle Nut	Replace the damaged component and retest.
	Worn or damaged Front Spindle Bearing or Rear Spindle Bearing	Examine each Bearing. Replace any damaged or worn Bearings.

## Related Documentation

For additional information refer to:  
 Product Safety Information Manual 04580288.  
 Product Information Manual 04585170.  
 Parts Information Manual 16573826.

Manuals can be downloaded from [ingersollrandproducts.com](http://ingersollrandproducts.com).

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