16575284
Edition 2
December 2013

Air Screwdrivers

Series 41

Maintenance Information

Save These Instructions

Ingersoll Rand

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.

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

Lubrication

Each time a Series 41 Screwdriver is disassembled for maintenance and repair or replacement of parts, lubricate the tool as follows:

1. Lubricate the clutch with Ingersoll Rand No. 105 or **Ingersoll Rand** No. 115 Grease.
2. Lubricate the gearing with **Ingersoll Rand** No. 105 Grease.
3. Use **Ingersoll Rand** No. 10 Oil for lubricating the motor. Inject approximately 1 to 2 cc of oil into the air inlet before attaching the air hose.

Disassembly

General Instructions

1. Do not disassemble the tool any further than necessary to replace or repair damaged parts.
2. Whenever grasping a tool or 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.
3. Do not remove any part which is a press fit in or on a subassembly unless the removal of that part is necessary for repair or replacement.
4. Do not disassemble tool unless you have a complete set of new gaskets and O-rings for replacement.

Disassembly of the Clutch

NOTICE

The Clutch Housing (105) has left-hand threads.

1. Secure tool in vise with leather-covered or coppercovered jaws, clamping on Inlet Adapter (25). Using a strap type wrench, remove Clutch Housing.
2. Remove clutch assembly from tool.

NOTICE

Springs (82) and (83) are loose and may fall out.

3. Secure a 1/4" hex wrench in a vise. Then place Bit Holder (100) and clutch assembly on it.
4. Remove Snap Ring (84). Using a 7/8" wrench, remove Adjustment Nut (85).
5. Remove Adjustment Washer (86) and Clutch Spring (87).
6. Remove Retaining Rings (88).

NOTICE

Removal of Ball Sleeve (91) releases six Balls (97).

7. Slide off Guide (89), Spring (90), Ball Sleeve, Thrust Race (92) and Thrust Bearing (93).
8. Remove Thrust Race (94), releasing six Balls (98).
9. Remove Retaining Ring (103) and rotate Bit Holder (100) to remove twelve Balls (99).
10. Separate Bit Holder and Spindle (96), releasing eleven Balls (99).

Disassembly of the Gearing

1. Remove clutch from tool. Refer to section on Clutch Disassembly.
2. Using a wrench on flats, remove Ring Gear (67) or (81).
3. Remove Snap Ring (71) and Washer (70).

NOTICE

Keep gears grouped with mating spindle when disassembling double reduction gearing.

Do not remove Bearing (69) and Spacer (68) unless damage is evident.

4. Remove spindle(s) and Gears from Ring Gear.
5. To remove Bearing and Spacer from Ring Gear, press on Spacer (68) from inside splined end of Ring Gear.

NOTICE

Do not remove Gears (62), (72) or (76) from Carrier Assembly (75) unless damage is evident. Gears are press fit on Carrier Assembly.

Disassembly of the Motor

1. Remove Clutch and Gearing from tool.
2. Remove Spacer (60) and O-Ring (59).
3. Tap front edge of housing to remove motor assembly. Locating pin should also come out.
4. Tap drive end of Rotor (52) with a soft face hammer; motor will come apart.

NOTICE

Bearings are light press fit in End Plate (50) or (57). Bearing (51) is press fit on Rotor.

5. Remove End Plate and Bearing from Rotor.

Disassembly of the Motor Housing

Lever Throttle

1. Secure Air Inlet Adapter (2) in a vise with leather-covered or copper-covered jaws.
2. Using a strap type wrench, unthread Housing (15).
3. Remove Spacer (3), Diffuser Washer (4), Exhaust Cap (5), Filler (6), Spring (7) and Valve Assembly (8).
4. Remove Cap (21) and Spring (19), releasing Valve Stem (18).
5. Remove Valve Block (10) and Spring (11), releasing valve Assembly (12).

NOTICE

Do not remove or adjust rubber portion of Valve Assemblies (8) and (12), as they are preset at the factory.

6. Remove O-Ring (13) and Reverse Sleeve (14), releasing Valve Body (17) and Spring (16).

Pistol Grip Housing

1. Remove End Cap (32) and O-Ring (33), releasing Spring (34) and Valve Rod (35).
2. Remove Top Cap (39) and O-Ring (38), releasing Spring (37) and Reverse Valve (36).

NOTICE

Do not remove Roll Pin (47) or Bushing (48) unless damage is evident.

3. To remove Roll Pin or Bushing, press thru to reverse valve cavity.
4. To remove Trigger (44) or Button (46), Drive Pin (40) out of Housing, releasing Trigger or Button, Reverse Cam (43) and Springs (41).
5. **For Models 41TS and 41TP,** remove O-Ring (42), releasing Trigger from Reverse Cam (43).
6. Remove Inlet Adapter (25) and Screen (1).
7. **For Models 41TS and 41TP**, remove Spring (26) and Valve Rod (27).
8. Remove Retaining Ring (29), releasing Screen (30) and Muffler (31).

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 with threaded parts and housings.
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.
6. Check every bearing for roughness. If an open bearing must be cleaned, wash it thoroughly in a suitable cleaning solution and dry with a clean cloth.
7. **Sealed or shielded bearings should never be cleaned.** Work grease thoroughly into every open bearing before installation.

Assembly of the Motor Housing

Lever Throttle

1. Install Spring (16) in Housing, securing with Valve Body (17).
2. Install Reverse Sleeve (14) and O-Ring (13) in Housing, securing Valve Body.
3. Lubricate and install O-Ring (9) in Valve Block (10).

NOTICE

Install Valve Block (10) with counterbore towards Cap (21).

4. Install Valve Assembly (12) and Spring (11) in Housing, securing with Valve Block (10).

5. Lubricate and install O-Ring (20) in Cap (21).
6. Assembly Valve Stem (18) and Spring (19) to Housing, securing with Cap.

NOTICE

Assembly Valve Stem with slot turned to accept Valve Assembly (8).

7. Install Filler (6) and Exhaust Cap (5) in Housing, aligning lever with Valve Stem.
8. Install Valve Assembly (8) in Housing, being certain Valve Assembly seats in slot in Valve Stem.
9. Install Spring (7) in Housing, securing with Diffuser Washer (4), Spacer (3) and Inlet Adapter (2).
10. Clean and install Screen (1) in Inlet Adapter.

Pistol Grip Housing

1. Assemble Muffler (31) and Screen (30) into Housing, securing with Retaining Ring (29).
2. **For Models 41TS and 41TP**, coat Valve Rod (27) with the recommended oil and install Valve Rod and Spring (26) in Housing.
3. Install Inlet Adapter (25) in tool.
4. Clean and replace Screen (1) in Inlet Adapter.
5. Coat Trigger (44) or Button (46) with the recommended oil and install in Reverse Cam (43).
6. **For Models 41TS and 41TP**, lubricate and install O-Ring (42) on Trigger (44).
7. Install Springs (41) on Reverse Cam, flat side away fromReverse Cam, and install Reverse Cam and components in Housing, aligning holes in Trigger and Housing.
8. Install Pin (40) in Housing, securing Reverse Cam and Trigger.
9. Install Bushing (48) in Housing, pressing flush with counterbore in bottom of motor cavity.
10. Install Roll Pin (47) in Housing, pressing flush with bottom of motor cavity.
11. Coat Reverse Valve (36) with the recommended oil and install in Housing, aligning slot in Reverse Valve with Roll Pin (47).
12. Install Spring (37) in Housing.
13. Lubricate and install O-Ring (38) in Top Cap (39) and install Cap in Housing, securing Spring (37) and Reverse Valve (36).
14. Coat Valve Rod (35) with the recommended oil and install in Housing.
15. Install Spring (34) in Housing, where applicable.
16. Lubricate and install O-Ring (33) in End Cap (32) and install Cap in Housing, securing Valve Rod and Spring.

Assembly of the Motor

1. Lubricate Bearing (51) with the recommended grease and install on End Plate (50) or (57), pressing on outer race of Bearing.
2. Install End Plate on Rotor, pressing on inner race of Bearing.
3. Coat Vanes (53) with the recommended oil and install in rotor slots, straight side out. Coat inside of Cylinder (54) with the recommended oil and install over Rotor, aligning air inlet slots of Cylinder with air inlet slots in End Plate.
4. Install Bearing (56) on End Plate (55), pressing on outer race of Bearing. Install End Plate on Rotor, pressing on inner race of Bearing. Be sure Rotor turns without binding.
5. Insert Locating Pin (58) or (61) into 0.081" diameter blind hole at bottom of motor cavity in Housing.
6. Align notches of End Plates and Cylinder and install motor into Housing, aligning notches with Pin.
7. Lubricate and install O-Ring (59) in End Plate.
8. Install Spacer (60) in motor.
9. Install Gearing and Clutch in tool.

Assembly of the Gearing

1. Assemble Spacer (68) into Ring Gear (67) or (81).

NOTICE

Press on outer race of Bearing (69) and press to shoulder or Ring Gear.

2. Press Bearing into Ring Gear.
3. Coat shafts of spindle with the recommended grease.
4. Assemble gears to shafts of mating spindle.
5. Assemble Carrier Assembly to Spindle Assembly of double reduction gearing. Install Spindle(s) and gearing into Ring Gear. Rotate Spindle and Gears to align gear teeth with splines of Ring Gear.
6. Thread Ring Gear to tool and tighten with a wrench of flats.
7. Install Clutch in tool.

Assembly of Clutch

1. Assembly Thrust Race (115) and Wave Washer (114) to Clutch Housing (105), where applicable.
2. Lubricate ball grooves of Clutch Spindle (96) using the recommended grease.
3. Install eleven Balls (99) into groove.
4. Slide Spindle (96) into Bit Holder (100), securing Balls.
5. Assemble twelve Balls (99) into Bit Holder and secure with Retaining Ring (103).
6. Lubricate ball pockets of bit holder using the recommended grease and install six Balls (98) into pockets, securing with Thrust Race (94).

7. Lubricate and assemble Thrust Bearing (93) and Thrust Race (92) to Spindle.
8. Coat Plunger (95) with the recommended oil and assemble to spindle, securing with Balls (97).

NOTICE

Assemble two balls per hole. Secure balls with Ball Sleeve (91).

9. Assemble Spring (90) and Guide (89) to Spindle, securing with Retaining Rings (88). Install Clutch Spring (87).
10. Lubricate face of Adjustment Washer (86) and install on Spindle.
11. Thread Adjustment Nut (85) onto Spindle, securing with Snap Ring (84).
12. Lubricate Ball (101) of Bit Holder, using the recommended lubricant.
13. Assemble Springs (82) and (83) into Spindle.

NOTICE

Assemble Spring (82) with large diameter into Spindle first.

14. Install Clutch Assembly in tool.

NOTICE

The Clutch Housing (105) has left-hand threads.

15. Install Clutch Housing on tool.
16. Refer to **Clutch Adjustment** section in Product Information Manuals 80167356 or 80167364.

Related Documentation

For additional information refer to:
Product Safety Information Manual Form 04585006.
Product Information Manuals Form 80167356 or Form 80167364.
Product Parts List Manual Form 16574592.

Manuals can be downloaded from ingersollrandproducts.com

Notes:

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