



Form 04584256

Edition 1

October 2004

Air Impact Wrench

2908P Series

Maintenance Information



Save These Instructions

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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 accessory on this tool, or before performing any maintenance on this tool.

Lubrication

Each time a Series 2908P Air Impact Wrench is disassembled for maintenance and repair or replacement of parts. Lubricate as follows:

1. Work approximately 6 to 8 cc of **Ingersoll-Rand** Grease No. 105 into the impact mechanism. Coat Anvil (46) lightly with grease around the

Hammer Case Bushing (41). Inject approximately 1 to 2 cc of grease into the Grease Fitting (23).

2. Use **Ingersoll-Rand** Medium Oil No. 10 for lubricating the motor. Inject approximately 1 to 2 cc of oil into the air inlet before attaching the air hose. Remove the Oil Chamber Plug (15) and fill the oil chamber.

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 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 repairs or replacement.
4. Do not disassemble the tool unless you have a complete set of new gaskets and O-rings for replacement.

Disassembly of the Air Impact Wrench

1. Clamp handle of Air Impact Wrench in a vise with square driver upward.
2. Unscrew and remove the four Hammer Case Cap Screws(45).
3. While lightly tapping on end Anvil (46) with a plastic hammer, lift off the Hammer Case (40).
4. Grasp Hammer Frame (36) and carefully lift off entire impact mechanism, making certain not to drop the two Hammer Pins (37). If it is necessary to disassemble the impact mechanism, refer to **Disassembly of the Impact Mechanism** on this Page. If it is unnecessary to disassemble the impact mechanism, set it aside intact.

Disassembly of the Impact Mechanism

1. Set mechanism, driver end up, on a workbench.

NOTICE

Note the twin Hammers within the Hammer Frame. These are identical but must be placed in the Hammer Frame in a certain relationship. Using a felt tipped pen, mark the top Hammer "T▲" and the bottom Hammer "B▲" with the arrows pointing upward. Mark both Hammers on the same end.

2. With mechanism sitting upright on the workbench, slowly rotate the Anvil in a clockwise direction until it comes up solid.

NOTICE

If you continue to rotate the Anvil, it will cam the Hammers out of engagement. Do not allow this to happen; merely rotate the Anvil until it comes up solid.

3. Hold the Hammer Frame firmly and, without disturbing the Hammers, gently lift the Anvil, simultaneously rotating it clockwise about 1/8 of a turn, from Hammer Frame.

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 installing the bearing in a bearing recess.
3. Whenever 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.

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NOTICE

The twin hammers will be free to slide from the Hammer Frame when the Hammer Pins are removed. Do not drop the Hammers.

4. With the Anvil removed, lift out the two Hammer Pins.
5. Remove the Hammers.

Disassembly of the Motor

1. Lift Rear Hammer Frame Washer (38) and two Motor Clamp Washers (35) from front of motor.
2. Grasp splined end of Rotor (28) and pull assembled motor from Motor Housing (1).

NOTICE

Be careful not to lose the small End Plate Dowel (32)

3. Lift Front End Plate (33) and Front Rotor Bearing (34) from splined end of the Rotor (28).
4. Remove Cylinder and Vanes (29).
5. Remove Rear Rotor Bearing Retainer (25).
6. Lift Rear End Plate and Rear Rotor Bearing (26) from Rotor.
7. Remove Oiler Retaining Ring (12A).
8. Unscrew and remove Air Strainer (13).
9. Withdraw Exhaust Deflector (6), Oiler Assembly (10), Throttle Valve Spring (9) and Throttle Valve (8).
10. Withdraw Trigger Assembly (3).
11. If the Throttle Valve Seat (7) must be replaced, thread a long 3/8" cap screw into it and withdraw it from the handle.

NOTICE

Do not remove the Throttle Valve Seat unless you have a new Throttle Valve Seat on hand for installation.

12. Unscrew Reverse Valve Knob Screw (22) and remove Reverse Valve Knob (21).

NOTICE

This Screw is installed with Loctite®

13. While slowly rotating Reverse Valve (18), withdraw it from Reverse Valve Bushing (16).

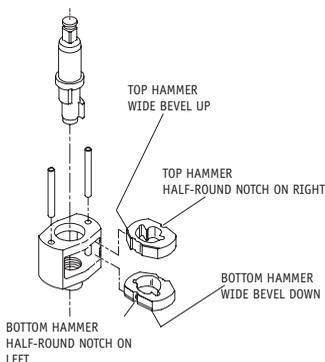
NOTICE

Be careful you do not lose the Reverse Valve Detent Ball (19) and Spring (20) from the hole in the side of the Reverse Valve.

Assembly of the Motor

1. Make certain Reverse Valve Bushing Seals (17) are properly located in undercuts in Reverse Valve Bushing (16).
2. Dampen Reverse Valve (18) with light oil. Install Reverse Valve Detent Spring (20) followed by Reverse Valve Detent Ball (19) in hole in Reverse Valve. With Air Impact Wrench in an upright horizontal position, and while facing handle end of Air Impact Wrench, slowly rotate Reverse Valve and insert it from left to right in splined end of Reverse Valve Bushing.
3. Attach Reverse Valve Knob (21) to Reverse Valve with Reverse Valve Knob Screw (22), and tighten Screw to 60 to 70 in-lb (6.75 to 8.15 Nm) torque.
4. If Throttle Valve Seat (7) was removed from handle, install a new Throttle Valve Seat by pushing it into place with a 1/2" (13 mm) diameter dowel.
5. Insert Trigger Assembly (3) into Trigger Bushing(2).
6. Insert Throttle Valve (8). long stem end first, into the bottom of handle so that the valve stem engages the hole in the Trigger Pin (4).
7. Install Throttle Valve Spring (9), small end first.
8. Make certain two Oiler Body Seals (11) are positioned in annular grooves on Oiler Body (10), and install Oiler Body counterbored end first on handle. The large end of Throttle Valve Spring should seat in the counterbore in Oiler Body. Install the Oiler Retaining Ring (12A).
9. Position Exhaust Deflector (6) on bottom of handle, and retain it with Air Strainer (13). Tighten Air Strainer to 40 to 45 ft-lb (61 to 67.8 Nm) torque.
10. Using a sleeve that will contact only the outer ring of the bearing, press the Front Rotor Bearing (34) into Front End Plate (33) and Rear Rotor Bearing (26) into Rear End Plate (27).
11. Slip Front End Plate and Bearing over splined hub of the Rotor (28).
12. Grasp splined hub of Rotor in copper-covered vise jaws so that Rotor is in a vertical position.
13. Dampen each Vane (29) with light oil and insert a Vane into each vane slot.
14. Set Cylinder (30) over Rotor and onto Front End Plate.
15. Slide Rear End Plate and Bearing onto rotor hub and against Cylinder.
16. Install Rear Rotor Bearing Retainer (25) in groove on rotor hub.
17. Align dowel hole in both End Plates with the one through the Cylinder, and insert a guide rod 3/16" (4.7 mm) diameter x 6" (152 mm) long. Allow rod to protrude from Rear End Plate.
18. Grasp handle of Motor Housing in copper-covered vise jaws so that bore of the Motor Housing is horizontal.
19. Wipe a thin film of light grease on End Plate Gasket (24) and press Gasket firmly against Rear End Plate.
20. Insert protruding end of guide rod into dowel hole in bore of Motor Housing, and slide motor along rod until it is completely seated.
21. Remove guide rod and replace it with the Cylinder Dowel (31). Install End Plate Dowel (32) in the matching notches of Front End Plate and Motor Housing.
22. Re-position Motor Housing in the vise so that the open face of the Motor Housing is upward.
23. Place two Motor Clamp Washers (35), convex side first against Front End Plate so that the inner rim of leading Washer contacts the End Plate, and outer rim of trailing Washer contacts Hammer Case Pilot (43).
24. Place Rear Hammer Frame Washer (38) over hub of Rotor and against Front Rotor Bearing.

Assembly of the Impact Mechanism



(Dwg. TPD652)

1. Coat the Hammers with a light film of **Ingersoll-Rand Grease No. 105**.
2. Replace Hammers in the Hammer Frame exactly as they were when you marked them prior to disassembly.

NOTICE

If you are installing new Hammers or want to change the location of the existing Hammers to utilize both impacting surfaces, slide the Hammers in the Hammer Frame so that the half-round notch on one Hammer is located on one side of the Frame and the half-round notch on the other Hammer is located on the other side of the Frame.

3. Replace them Hammer Pins.
4. Examine base of Anvil and note its contour. While looking down through the Hammer Frame, swing top Hammer to its full extreme one way or another until you can match the contour of the Anvil. Enter Anvil into Hammer Frame and through the first Hammer. Swing bottom Hammer in opposite direction from top Hammer and maneuver the Anvil slightly until it drops into the bottom Hammer.

Assembly of the Air Impact Wrench

1. Set assembled impact mechanism down over splined hub of Rotor.
2. Smear a thin film of **Ingersoll-Rand Grease No. 105** on inside surface of the Hammer Case Bushing (41), and place Hammer Case (40) down over the Anvil (46) and against Motor Housing.
3. Install Hammer Case Cap Screws (45) and Lock Washers (44). Tighten Hammer Case Cap Screws to 14 to 17 ft-lb (19 to 23 Nm) torque.

Troubleshooting Guide

Troubleshooting Guide		
Trouble	Probable Cause	Solution
Loss of Power	Dirty Inlet Bushing or Air Strainer Screen and/or Exhaust Silencer.	Using a clean, suitable, cleaning solution in a well ventilated area, clean Air Strainer Screen, Inlet Bushing Exhaust Silencer.
	Worn or broken Vanes.	Replace the complete set of Vanes.
	Worn or broken Cylinder and/or scored End Plates.	Examine Cylinder and replace it if it is worn or broken or if the bore is scored or wavy. Replace the End Plates if they are scored.
	Dirty motor parts.	Disassemble the tool and clean all parts with a suitable cleaning solution, in a well ventilated area. Reassemble the tool as instructed in this manual.
	Improper positioning of the Reverse Valve.	Make certain that the Reverse Valve is fully engaged to the left or right.
Motor will not run	Incorrect assembly of the motor.	Disassemble the motor and replace worn or broken parts and reassemble as instructed.
	Insufficient lubricant in the impact mechanism.	Remove the Hammer Case Assembly and lubricate the impact mechanism.
Tool will not impact	Broken or worn impact mechanism parts.	Remove the Hammer Case and examine the impact mechanism parts. Replace any worn or broken parts.
	Impact Mechanism not assembled correctly.	Refer to Assembly of the Impact Mechanism .

Related Documentation

For additional information refer to:
Air Impact Wrench Product Safety Information Manual Form 04580916,
Air Impact Wrench Product Information Manual Form 04584785,
Air Impact Wrench Parts List Manual Form 04584389.

Manuals can be downloaded from www.irttools.com.



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