



**04584272**  
Edition 3  
January 2014

# Air Impact Wrench

2906P

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## Maintenance Information



Save These Instructions

**IR** 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 2906P Impactool is disassembled for maintenance and repair or replacement of parts, lubricate the tool as follows:

1. Work approximately 6 to 8 cc of **Ingersoll Rand** No. 105 Grease into the impact mechanism. Coat the Anvil (48 or 100) lightly with grease around the Hammer Case Bushing (45). Inject approximately 1 to 2 cc of grease into the Grease Fitting (25).
2. 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. Remove the Oil Chamber Plug (4) 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 Impactool

1. Clamp handle of Impactool in a vise with square drive upward.
2. Unscrew and remove the four Hammer Case Cap Screws (47).
3. While lightly tapping on end of Anvil (48 or 100) with a plastic hammer, lift off the Hammer Case Assembly (44).
4. Grasp Hammer Frame (41) and carefully lift off entire impact mechanism, making certain not to drop the two Hammer Pins (42).
5. Lift Hammer Frame Washer (43) off Motor Housing (1) and remove Impactool from vise.

#### Disassembly of the Impact Mechanism

##### For Pistol Grip Throttle

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 a workbench, slowly rotate 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 Hammer Frame firmly and, without disturbing hammers, gently lift Anvil, simultaneously rotating it clockwise about 1/8 of a turn, from the Hammer Frame.

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

#### Disassembly of the Reverse Valve

1. Unscrew Reverse Valve Knob Screw (24) and remove Reverse Valve Knob (23).

### NOTICE

**This Screw is installed with a thread locking compound.**

2. While slowly rotating Reverse Valve (20), withdraw it from Reverse Valve Bushing (18).

### NOTICE

**Be careful not to lose the Reverse Valve Detent Ball (21) and Spring (22) from the hole in the side of the Reverse Valve.**

3. Remove the two Reverse Valve Bushing Seals (19) from Reverse Valve.
4. Press Reverse Valve Bushing from Housing Cover (17).

#### Disassembly of the Motor

1. Remove the four Housing Cover Cap Screws (26 and 27) and separate the Housing Cover (17) and Housing Cover Gasket (29) from Motor Housing (1).
2. Slide assembled motor out of Motor Housing.
3. If Motor Clamp Washers (39) remained in Housing, remove them. If Washers remained with motor, lift them off Front End Plate (37).
4. Slide Front End Plate, Front Rotor Bearing (38) and Cylinder (35) off Rotor (33) and remove Cylinder Dowel (36) and Vanes (33).
5. Using snap ring pliers, remove Rear Rotor Bearing Retainer (31) and slide Rear End Plate (34) and Rear Rotor Bearing (30) off Rotor shaft.
6. If Front Rotor Bearing or Rear Rotor Bearing must be replaced, use a drift to tap the Bearing out of End Plate.

#### Disassembly of the Throttle Mechanism

1. Unscrew and remove Oil Chamber Plug (4) and Oil Chamber Plug Seal (5). Drain oil from oil reservoir.
2. Unscrew and remove Air Inlet (16).
3. Lift off Exhaust Deflector (15) and withdraw Exhaust Silencer (14).
4. Using snap ring pliers, remove Oiler Retaining Ring (13) from inside handle.
5. Withdraw Oiler Body Assembly (10), Throttle Valve Spring (9) and Throttle Valve (8) from handle.
6. Withdraw Trigger Assembly which consists of Trigger Pin (2) and Trigger (3).
7. If Throttle Valve Seat (6) must be replaced, thread a long 3/8" cap screw into it and pull it from handle.

### NOTICE

**Do not remove the Throttle Valve Seat unless you have a new Seat on hand for installation. Be careful not to lose the Throttle Valve Seat Support (7).**

## 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.

### Assembly of the Throttle Mechanism

1. If Throttle Valve Seat (6) was removed, install a new Throttle Valve Seat by pushing Seat into place with a 1/2" (13 mm) diameter dowel.
2. Wipe Trigger Pin (3) with some light grease, and insert Trigger Assembly (2) into the trigger bushing.
3. Insert Throttle Valve (8), long stem end first, into bottom of handle so that the valve stem engages hole in Trigger Pin.
4. Install Throttle Valve Spring (9), small end first.
5. Make certain two Oiler Body Seals (12) are positioned in annular grooves on the Oiler (10) and install Oiler, counterbored end first, into handle. The large end of the Throttle Valve Spring should seat in counterbore in Oiler.
6. Install Oiler Retaining Ring (13) in groove in handle.
7. Grasp new (or solution cleaned) Exhaust Silencer (14) by long edge. Fold it lengthwise and while squeezing one end into a round configuration, insert it into the handle flush with exhaust deflector recess.
8. Position Exhaust Deflector (15) on bottom of handle and retain it with Air Inlet (16). Tighten Air Inlet to 30 to 35 ft-lb (40.5 to 47.5 Nm) torque.

### Assembly of the Motor

1. Using a sleeve that will contact only the outer ring of the bearing, press the Front Rotor Bearing (38) into Front End Plate (37) and Rear Rotor Bearing (30) into the Rear End Plate (34).
2. Slip Front End Plate and Bearing over splined hub of Rotor (32).
3. Grasp splined hub of Rotor in leather-covered or copper-covered vise jaws so that Rotor is in a vertical position.
4. Dampen each Vane (33) with light oil and insert a Vane into each vane slot.
5. Set Cylinder (35) over Rotor and onto Front End Plate.
6. Slide Rear End Plate and Bearing onto rotor hub and against Cylinder.
7. Install Rear Rotor Bearing Retainer (31) in groove on rotor hub.
8. Align dowel hole in both End Plates with one through Cylinder, and insert a guide rod 5/32" diameter x 6" long (3.9 mm diameter x 152 mm long). Allow rod to protrude from Front End Plate.
9. Remove assembled motor from vise and grasp handle of Motor Housing (1) in leather-covered or copper-covered vise jaws so that bore of Motor Housing is horizontal.
10. Place two Motor Clamp Washers (39), concave side flat, against Front End Plate. Make certain small holes in Washers fit onto guide rod and outer rim contacts Front End Plate.
11. Insert protruding end of guide rod, Motor Clamp Washers leading, into dowel hole in bore of Motor Housing and slide motor along the rod until it is completely seated.
12. Remove guide rod and replace it with Cylinder Dowel (36).
13. Reposition Motor Housing in vise so that Rear End Plate is upward.
14. Position Housing Cover Gasket (29) and Housing Cover (17) against Motor Housing.
15. Secure Housing Cover with Housing Cover Cap Screws (26 and 27) and Lock Washers (28). Tighten Screws to 50 to 60 in-lb (5.6 to 6.8 Nm) torque.

### NOTICE

**Install the two short Cap Screws (27) in the holes farthest from the Air Inlet and the two long Cap Screws (26) in the holes nearest the Air Inlet.**

16. Remove tool from vise.

### Assembly of the Reverse Valve

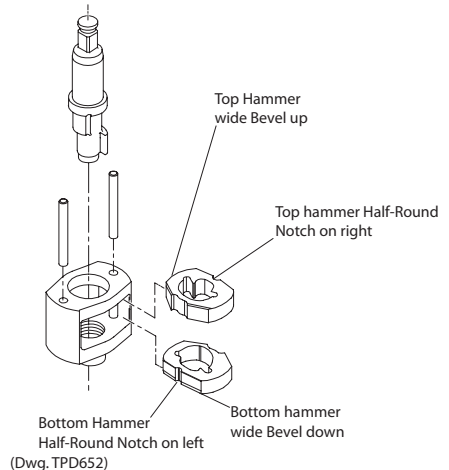
1. If Reverse Valve Bushing (18) was removed, align notch in end of Bushing opposite the internal spline with cast line on Housing Cover (17). The cast line is approximately 180 from the number "5" on Oil Chamber Plug (4) side of Housing Cover. Press the Bushing into Cover until splined end is flush with numbered face of Cover.

### NOTICE

**When properly installed, the notch and cast line will be on opposite sides of the Housing Cover.**

2. Make certain Reverse Valve Bushing Seals (19) are properly located in undercuts in Reverse Valve Bushing.
3. Dampen Reverse Valve (20) with light oil. Install Reverse Valve Detent Spring (22) followed by Reverse Valve Detent Ball (21) in hole in Reverse Valve. With Impactool in an upright horizontal position and while facing handle end of Impactool, slowly rotate Reverse Valve and insert it from left to right in splined end of Reverse Valve Bushing.
4. Apply a thread locking compound to Reverse Valve Knob Screw (24). Attach Reverse Valve Knob (23) to Reverse Valve with Reverse Valve Knob Screw, and tighten Screw to 40 to 50 in-lb (4.5 to 5.6 Nm) torque.

### Assembly of the Impact Mechanism



1. Coat Hammers (40) with a light film of **Ingersoll Rand** Impactool Grease No. 105.
2. Replace Hammers in Hammer Frame (41) 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 Hammer Pins (42).
4. Examine base of Anvil (48 or 100) and note its contour. While looking down through Hammer Frame, swing the top Hammer to its full extreme one way or another until you can match the contour of the Anvil. Enter the Anvil into the Hammer Frame and through the first Hammer. Swing the bottom Hammer in opposite direction from the top Hammer and maneuver Anvil slightly until it drops into bottom Hammer.
3. Place assembled impact mechanism down over splined hub of Rotor.
4. Position Hammer Case Gasket (46) against face of Motor Housing.
5. Smear a thin film of **Ingersoll Rand** No. 105 Grease on inside surface of Hammer Case Bushing (45), and place Hammer Case (44) down over Anvil and against Motor Housing.
6. Install Hammer Case Cap Screws (47) and tighten them to 60 to 70 in-lb (6.8 to 7.9 Nm) torque.

### Assembly of the Impactool

1. Position Motor Housing in leather-covered or copper-covered vise jaws with splined shaft of Rotor (32) upward.
2. Place Hammer Frame Washer (43), small hub leading, over hub of Rotor and against the Front Rotor Bearing (38).

### Troubleshooting Guide

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

### Related Documentation

For additional information refer to:  
 Product Safety Information Manual 04580916.  
 Product Information Manual 04584801.  
 Parts Information Manual 04584421.

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

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