



Form 04584314

Edition 1

April 2005

Air Impact Wrench

2934P2 and 2940P2

Maintenance Information



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SETTING THE POWER REGULATOR

Models 2934P/2940P Impacttools are equipped with a combination power regulator/reverse valve designed to provide power adjustment while maintaining full power in the reverse direction. Since the reverse direction is used primarily for loosening right-hand threaded fasteners and full power is required, no provision is made for power adjustment in this direction. The power output is calibrated by the numbers "1" through "5" stamped on the Housing Cover Assembly (44).

NOTICE

The numbers 1 thru 5 on the housing are only for reference and DO NOT denote a specific power output. One (1) designates the lowest power while five (5) denotes the highest.

⚠ WARNING

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

Always turn off air supply and disconnect air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.

LUBRICATION

Each time the Models 2934P and 2940P Impacttools are disassembled for maintenance and repair or replacement of parts, lubricate the tool as follows:

1. Work approximately 6 cc of Ingersoll-Rand Grease No. 170 into the impact mechanism. Coat the Anvil (68) lightly with grease around the Hammer Case Bushing (47). Inject approximately 6 cc of grease into the Grease Fitting.
2. Fill the oil reservoir in the handle with Ingersoll-Rand No. 10 Oil. Inject approximately 3 cc of oil into the air inlet before attaching the air hose. Remove the Oil Chamber Plug (48) 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.

Power Adjustment in the Forward Direction

1. While facing the back of the Impacttool, push the Reverse Lever (32) to the extreme right position.
2. Using a screwdriver, rotate the Power Regulator (39) so that the slot aligns with the desired power calibration.
3. The power of the 2934P/2940P is now adjusted for the forward direction but will still have full power in the reverse direction. This adjustment will not change regardless of how many times you shift the Reverse Lever as long as you do not change the power selection.
4. Do not disassemble the tool unless you have a complete set of new gaskets and O-rings for replacement.

Disassembly of the Impacttool

1. Clamp the handle of the Impacttool in a vise with the square drive upward.
2. Unscrew and remove the four Hammer Case Cap Screws (72).
3. While lightly tapping on the end of the Anvil (68 or 79) with a plastic hammer, lift off the Hammer Case Assembly (69).
4. Grasp Hammer Frame (65) and carefully lift off entire impact mechanism, making certain not to drop the two Hammer Pins (66).

Disassembly of the Impact Mechanism

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

NOTICE

Note the twin Hammers (67) within the Hammer Frame Assembly (65). These are identical but must be placed in the Hammer Frame Assembly 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 the mechanism sitting upright on the workbench, slowly rotate the Anvil (68 or 79) 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 counterclockwise 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 (66) are removed. Do not to drop the Hammers.

4. With the Anvil removed, lift out the two Hammer Pins (66).
5. Remove the twin Hammers.

Disassembly of the Reverse Valve

1. Grasp the Reverse Lever (32) and withdraw the Reverse Valve Assembly (29) from the Reverse Valve Bushing (13).
2. Tap out the Power Regulator Retaining Ball (41) to release the Power Regulator Assembly (39).

Disassembly of the Motor

1. Unscrew the four Housing Cover Cap Screws (43) and remove the Housing Cover Assembly (44), Housing Cover Gasket (50), and Motor Clamp Washer (51).
2. **While holding the Impactool over the workbench**, turn Impactool to bring the square drive upward. This will allow the motor parts to slide out of the Motor Housing Assembly (1). If the motor parts do not slide out freely, gently tap the side of the Motor Housing Assembly with a plastic hammer to jar them loose. Often all of the motor parts except the Front End Plate (58) and Cylinder (52) will slide out easily. Tap the Motor Housing to remove the Front End Plate and Cylinder.
3. Inspect the Vanes (57) for wear. If a Vane is chipped or otherwise damaged, replace the complete set.
4. Check the bore of the Cylinder and the faces of the End Plates for scoring. Replace any scored parts.

Disassembly of the Throttle Mechanism

For Model 2934P

1. Removal of the Inlet Bushing (2) and Washer (3) allows the Exhaust Deflector (4), Air Strainer Screen (5), Throttle Valve Spring (6), Throttle Valve (7), and Throttle Valve Plunger (9) to fall free of the Handle.
2. Remove Exhaust Screen (10), Exhaust Silencer (11), and Exhaust Deflector Seal (12).
3. Use a Hooked Tool to remove the Throttle Valve Face (8) from the Handle.

NOTICE

Trigger is under tension from the Trigger Spring (17) and will fly out unrestrained if Retaining Pin is removed abruptly.

4. With the Impactool turned toward you, and the Trigger (16) secured by an alternate means, use a Pin Punch to drive out the Trigger Retaining Pin (18).
5. Remove Trigger Bushing (19).

For Model 2940P

1. Remove Exhaust Deflector (4) and Silencer (11).
2. Removal of Silencer Cover Screws (38) allows removal of Silencer Cover (37), Exhaust Diffuser (36), and Exhaust Silencer (35).
3. Place the tool on the workbench with the handle pointing toward you and the square drive upward. Use a punch to tap out the Throttle Valve Assembly Retaining Pin (20) from the **right** to the **left** hand side of the handle. Pull upward on the Trigger (27A) to remove the complete Throttle Valve Assembly (21).
4. Punch out the Trigger Retaining Pin (28) from the Throttle Valve Bushing Assembly (22) to separate Throttle Valve Assembly (21) from the Throttle Valve Bushing Assembly.

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 cooper-covered vise jaws. Take extra care with threaded parts and housing.
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

For Model 2934P

1. With the Motor Housing Assembly on the workbench and the handle to the left, press in the Trigger Bushing (19) aligning the Trigger Retaining Pin hole in the Bushing with the hole in the Handle.
2. Place the Trigger Spring (17) on the Trigger (16).
3. Push the Trigger/Spring into the Bushing, aligning the slot in the Trigger with the Retaining Pin hole in the handle and the bevel on the Trigger facing down the Handle.
4. Holding the Trigger in the Handle, drive the Trigger Retaining Pin into the hole.
5. Turn the Motor Housing Assembly handle up.
6. Press the Throttle Valve Face (8) into the intake opening in the Handle using a wooden dowel to seat the Valve Face squarely and without damage.
7. Put the Throttle Valve Plunger (9) into the intake opening.

8. Follow the Plunger with the Throttle Valve (7) spring seat end facing up.
9. Place the Throttle Valve Spring (6), small end first on the Throttle Valve.
10. Place the Air Strainer Screen (5), concave end up on the Spring.
11. Insert Exhaust Deflector Seal (12), Exhaust Silencer (11), and Exhaust Screen (10) in the exhaust port in the Handle.
12. Install the Exhaust Deflector and retain with the Washer (3) and Inlet Bushing (2).
13. Torque Inlet Bushing to 20-25 ft-lb (27-34 Nm).

For Model 2940P

1. Apply O-ring lubricant to the O-rings and place them on the Throttle Valve Bushing (22), large ring on the large diameter grooves, the two smaller rings in the smaller grooves.
2. Insert the Throttle Valve Assembly (21), small end first, into the small diameter of the Throttle Valve Bushing.
3. Align the slot in the Throttle Valve Assembly with the slot in the Throttle Valve Bushing and replace the Trigger Retaining Pin (28). Press on the Trigger (27A).
4. Place the Impactool on the workbench with the handle pointing toward you and the square drive upward. Align the hole in the Throttle Valve Bushing Assembly with the hole in the Housing and drive in the Throttle Valve Assembly Retaining Pin (20) from **left to right**.
5. Place and secure the Exhaust Diffuser (35), Exhaust Silencer (36), and Silencer Cover (37) with the Silencer Cover Screws (38).

Assembly of the Motor

NOTICE

Periodically, as experience indicates and always after disassembly, clean the air strainer screen in the Inlet Bushing (2). Torque the Bushing to 20 to 25 ft-lb (27 to 34 Nm).

Before assembling the Motor, wipe a thin film of oil on the Rotor (56), End Plates (55 and 58), Cylinder (52), and Vanes (57).

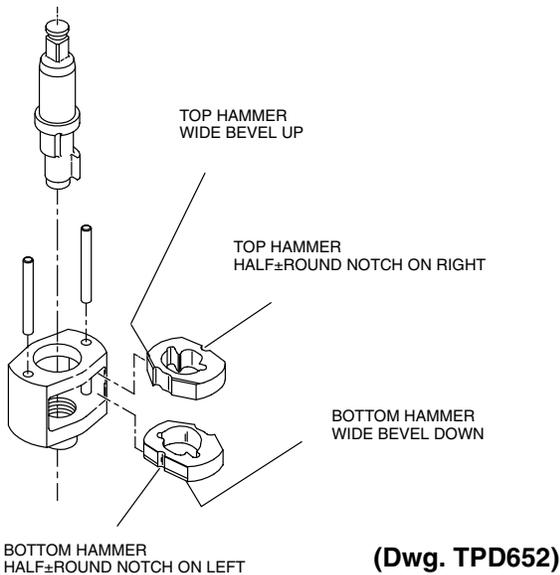
1. Slide the Front End Plate (58), bronze face first, over the splined hub of the Rotor (56).
2. Stand the assembled Rotor and End Plate upright, grasping the splined rotor hub with leather-covered or copper-covered vise jaws.
3. Place a Vane (57) in each vane slot in the Rotor.
4. Slide the Cylinder (52) down over the Rotor, aligning the holes in the Cylinder with those in the Front End Plate.

5. Using a sleeve that will contact only the outer ring of the Rear Rotor Bearing (54), press the bearing into the Rear End Plate (55).
6. Using a sleeve that will contact only the inner ring of the Rear Rotor Bearing, press the assembled bearing and end plate onto the short hub of the Rotor.
7. Before installing the Motor Assembly in the Motor Housing (1), be certain that the Air Port Gaskets (14) and Gasket Retainers (15) are in good condition and positioned with large open end down in the recess in the Motor Housing.
8. Using a 3/16" x 8" rod, insert the rod through the Cylinder Dowel Holes in both End Plates and Cylinder. This will hold all the motor parts in alignment. Allow the 3/16" rod to protrude from the Front End Plate far enough to enter the dowel hole at the bottom of the bore of the Motor Housing.
9. Put the rod into the Dowel Hole in the Motor Housing, then slide the assembled Motor into the Housing. Remove the rod and install the Cylinder Dowel (53).
10. Place the Motor Clamp Washer (51) concave side first, over the hub of the Rear End Plate so that the outer rim of the Washer contacts the End Plate.
11. Install the Motor Housing Cover. Tighten the Motor Housing Cover Cap Screws to 14 to 17 ft-lb (19 to 27 Nm).

Assembly of the Reverse Valve

1. Dampen the Reverse Valve Seal (30) and Power Regulator Seal (40) with O-ring lubricant and install the Seals in their respective grooves on the Reverse Valve Assembly (29) and Power Regulator Assembly (39).
2. Slide the Reverse Valve Assembly into the Reverse Valve Bushing (13), large end first, so that the groove on the trailing end of the Valve is upward.
3. Slide the Power Regulator Assembly into the Reverse Valve Assembly, flat end first, and position it so that the groove on the trailing end of the Regulator is aligned with the small hole in the Reverse Valve Assembly.
4. Place the Power Regulator Retaining Ball (41) in the small hole in the Reverse Valve Assembly, making certain that it engages the groove in the Power Regulator Assembly.
5. Aligning the flats on the Reverse Lever (32) with those on the Reverse Valve Assembly, slide the Reverse Lever on the Reverse Valve Assembly so that the tang on the lever is pointing downward parallel with the handle. Place the Housing Cover Gasket (50) on the Motor Housing.
6. Put the Reverse Lock Spring (34) followed by the Reverse Lock Plunger (33) in the small hole at the bottom of the Housing Cover Assembly (44).

Assembly of the Impact Mechanism



1. Coat the Hammers (67) with a light film of Ingersoll-Rand Grease No. 170.
2. Replace the Hammers in the Hammer Frame Assembly (65) 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. Each Hammer is undercut on one side. When properly installed in the Hammer Frame, these undercuts must face each other.

3. Replace Hammer Pins (66).
4. Examine the base of the Anvil (68 or 69) and note its contour. While looking down through the Hammer Frame, swing the top Hammer to its full extreme one way or the other until you can match the contour of the Anvil. Put the Anvil into the Hammer Frame and through the first Hammer. Swing the bottom Hammer in the opposite direction from the top Hammer and maneuver the Anvil slightly until it drops through the bottom Hammer.

Assembly of the Impactool

1. Secure Impactool in vise.
2. Reinstall the Hammer Case Assembly (69).
3. Secure the Hammer Case Assembly with four Hammer Case Cap Screws (72). Tighten to 20-25 ft-lb (27-34 Nm) torque.
4. Remove Impactool from vise.

— CAP SCREW SPECIFICATIONS —

Tighten the Hammer Case Cap Screws to a minimum of 20 ft-lb (27.1 Nm) torque.

Tighten the Housing Cover Cap Screws to a minimum of 10 ft-lb (13.5 Nm) torque.

TROUBLESHOOTING GUIDE

Trouble	Probable Cause	Solution
Low 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 and Exhaust Silencer.
	Worn or broken Vanes	Replace 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 bore is scored or wavy. Replace End Plates if they are scored.
	Dirty motor parts	Disassemble tool and clean all parts with a clean, suitable, cleaning solution, in a well±ventilated area. Reassemble tool as instructed in this manual.
	Improper positioning of Reverse Valve	Make certain the Reverse Valve is fully 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 Assembly of the Impact Mechanism .

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.



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