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Edition 2
October, 2000

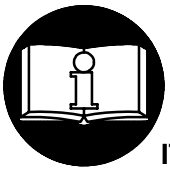
GB

OPERATION AND MAINTENANCE MANUAL FOR SERIES 2925A, 2925B, 2925RA AND 2925RB SUPER DUTY IMPACTOOLS

NOTICE

Series 2925A, 2925B, 2925RA and 2925RB Impactools are designed for use in heavy assembly work and machinery maintenance.

Ingersoll–Rand is not responsible for customer modification of tools for applications on which Ingersoll–Rand was not consulted.



⚠ WARNING

IMPORTANT SAFETY INFORMATION ENCLOSED.
READ THIS MANUAL BEFORE OPERATING TOOL.
IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS MANUAL INTO THE HANDS OF THE OPERATOR.
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

PLACING TOOL IN SERVICE

- Always operate, inspect and maintain this tool in accordance with American National Standards Institute Safety Code for Portable Air Tools (ANSI B186.1).
- Always operate, inspect and maintain this tool in accordance with all regulations (local, state, federal and country), that may apply to hand held/hand operated pneumatic tools.
- For safety, top performance, and maximum durability of parts, operate this tool at 90 psig (6.2 bar/620 kPa) maximum air pressure at the inlet with 1/2” (13 mm) inside diameter air supply hose.
- Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.
- Do not use damaged, frayed or deteriorated air hoses and fittings.
- Be sure all hoses and fittings are the correct size and are tightly secured. See Dwg. TPD905–1 for a typical piping arrangement.
- Always use clean, dry air at 90 psig maximum air pressure. Dust, corrosive fumes and/or excessive moisture can ruin the motor of an air tool.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel.
- Do not remove any labels. Replace any damaged label.

USING THE TOOL

- Always wear eye protection when operating or performing maintenance on this tool.
- Always wear hearing protection when operating this tool.
- Keep hands, loose clothing and long hair away from rotating end of tool.
- Note the position of the reversing lever before operating the tool so as to be aware of the direction of rotation when operating the throttle.
- Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.
- Keep body stance balanced and firm. Do not overreach when operating this tool. High reaction torques can occur at or below the recommended air pressure.
- Tool shaft may continue to rotate briefly after throttle is released.
- Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.
- Use accessories recommended by Ingersoll–Rand.
- Use only impact sockets and accessories. Do not use hand (chrome) sockets or accessories.
- Impact wrenches are not torque wrenches. Connections requiring specific torque must be checked with a torque meter after fitting with an impact wrench.
- This tool is not designed for working in explosive atmospheres.
- This tool is not insulated against electric shock.

NOTICE

The use of other than genuine Ingersoll–Rand replacement parts may result in safety hazards, decreased tool performance, and increased maintenance, and may invalidate all warranties.

Repairs should be made only by authorized trained personnel. Consult your nearest Ingersoll–Rand Authorized Servicenter.

Refer All Communications to the Nearest Ingersoll–Rand Office or Distributor.

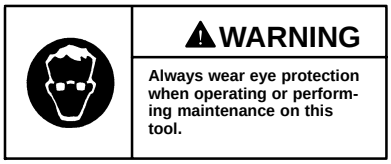
Printed in U.S.A.

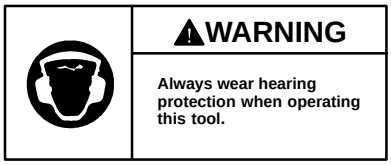
Ingersoll-Rand®

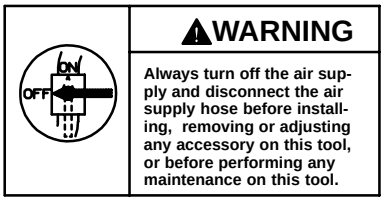
WARNING LABEL IDENTIFICATION

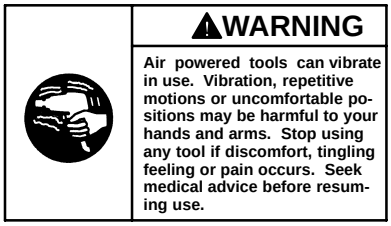
⚠ WARNING

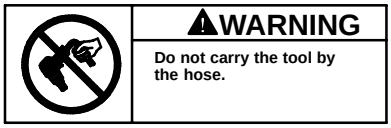
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

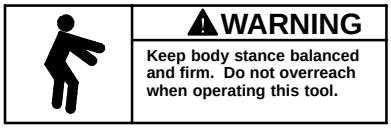


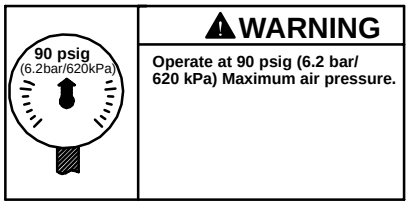












PLACING TOOL IN SERVICE

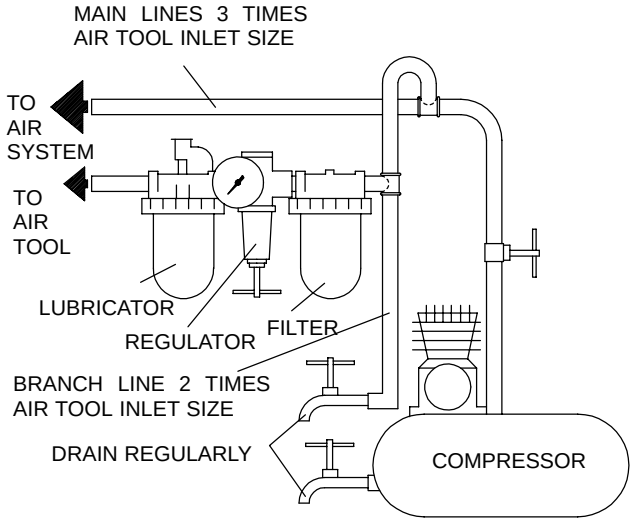
LUBRICATION

Ingersoll–Rand No. 50 **Ingersoll–Rand No. 170**

Always use an air line lubricator with these tools.
We recommend the following Filter–Lubricator–Regulator Unit:

For USA – No. C28–04–FKG0–28
For International – No. C28–C4–FKG0

After each forty–eight hours of operation, or as experience indicates, inject about 4 cc of Ingersoll–Rand No. 170 Grease into the Grease Fitting (15).



(Dwg. TPD905–1)

SPECIFICATIONS

Model	Type of Grip	Drive	Impacts per min.	Recommended Torque Range	
		in.		Forward ft–lbs (Nm)	Reverse ft–lbs (Nm)
2925A2 (non–bias)	inline, outside trigger	1” sq. dr.	900	350–1250 (474–1695)	350–1250 (474–1695)
2925B2 (non–bias)	inline, inside trigger	1” sq. dr.	900	350–1250 (474–1695)	350–1250 (474–1695)
2925RA2 (reverse–bias)	inline, outside trigger	1” sq. dr.	900	300–1000 (406–1356)	400–1500 (542–2034)
2925RB2 (reverse–bias)	inline, inside trigger	1” sq. dr.	900	300–1000 (406–1356)	400–1500 (542–2034)

Model	■Sound Level dB (A)		♦Vibrations Level
	Pressure	Power	m/s^2
2925A2 (non–bias)	100.2	113.2	6.2
2925B2 (non–bias)	100.2	113.2	6.2
2925RA2 (reverse–bias)	100.2	113.2	6.2
2925RB2 (reverse–bias)	100.2	113.2	6.2

■ Tested in accordance with PNEUROP PN8NTC1.2

♦ Tested to ISO8662–7

DECLARATION OF CONFORMITY

We ***Ingersoll–Rand, Co.***

(supplier's name)

Swan Lane, Hindley Green, Wigan WN2 4EZ, U.K.

(address)

declare under our sole responsibility that the product,

Series 2925A and 2925B Impactools

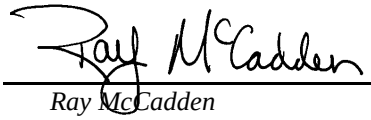
to which this declaration relates, is in compliance with the provisions of

98/37/EC *Directives.*

By using the following Principle Standards: ***ISO8662 PNEUROP PN8NTC1***

Serial No. Range: ***(1999 →) A99L XXXXX →***

D. Rose
Name and signature of authorised persons



Ray McCadden
Name and signature of authorised persons

October, 2000
Date

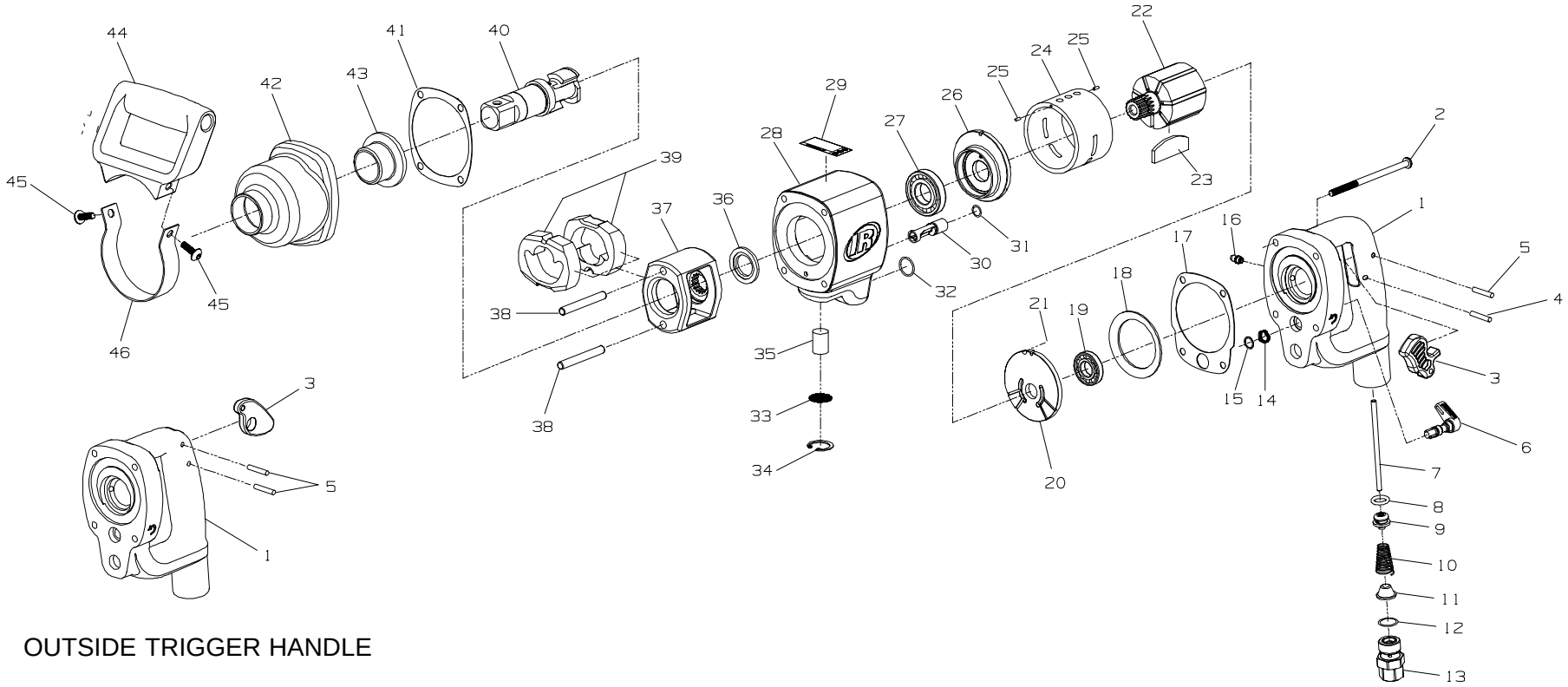
October, 2000
Date

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.

When the life of the tool has expired, it is recommended that the tool be disassembled, degreased and parts be separated by material so that they can be recycled.

SERIES 2925A AND 2925B IMPACTOOLS



OUTSIDE TRIGGER HANDLE

(Dwg. TPA1735–1)

PART NUMBER FOR ORDERING

1	Handle	
	inside trigger	
	(for 2925B2 and 2925RB2)	2925B–92
	outside trigger	
	(for 2925A2 and 2925RA2)	2925A–92
2	Handle Bolt (4)	2080–638
3	Trigger	
	inside trigger	
	(for 2925B2 and 2925RB2)	2925B–93
	outside trigger	
	(for 2925A2 and 2925RA2)	2925A–93
4	Trigger Pin (1 for 2925A2 and 2925RA2)	F02–15
5	Trigger Pin (1 for 2925A2 and 2925RA2, 2 for 2925B2 and 2925RB2)	534–265
6	Reverse Lever	2080–658
7	Trigger Plunger	2925B–94
8	Throttle Valve Seat	2934–159
9	Throttle Valve	2934–50
10	Throttle Valve Spring	2925B–51
11	Inlet Screen	834–61
12	O–ring	AF120–290
13	Inlet	2161–A465
14	Reverse Lever Spring	2080–278
15	Snap Ring	2161–28
16	Grease Fitting	R1–188
17	Handle Gasket	2161–739
18	Motor Clamp Washer	2161–207
19	Rear Rotor Bearing	4E–510
20	Rear End Plate	2925–12
21	End Plate Dowel	2910–74
22	Rotor	2925–53
23	Vane Packet (set of 7 Vanes)	2925–42–7
24	Cylinder	
	for 2925A2 and 2925B2	2925–3
	for 2925RA2 and 2925RB2	2925RB–3
25	Cylinder Dowel (2)	JC3350–538
26	Front End Plate	2925–11
27	Front Rotor Bearing	834–24
28	Motor Housing	2925B–A40
29	Warning Label	WARNING–2–99
30	Reverse Valve	2161–329
31	O–ring	023446
32	O–ring	C321–606
33	Exhaust Cover	2080–123
34	Snap Ring	3CS5492–28
35	Muffler	2080–310
36	Hammer Frame Washer	2161–706
37	Hammer Frame	2925–703
38	Hammer Pin (2)	2910–704
39	Hammer (2)	2925–724
40	Anvil	2910–826
41	Hammer Case Gasket	2161–36
42	Hammer Case Assembly	2161–A727
43	Hammer Case Bushing	2161–641
	Auxiliary Handle Assembly	2080–A48
44	Auxiliary Handle	2080–48
45	Bolt (2)	2080–49
46	Strap	2080–364
*	Tune–up Kit (includes parts 8, 9, 10, 11, 12, 17, 19, 23, 27, 31, 32, 35 and 41)	2925B–TK1

* Not illustrated.

MAINTENANCE SECTION

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

LUBRICATION

Each time a Series 2925 Impactool is disassembled for maintenance and repair or replacement of parts, lubricate the tool as follows:

1. Work approximately 12 to 15 cc of Ingersoll–Rand No. 170 Grease into the impact mechanism. Coat the Anvil (40) lightly with grease around the Hammer Case Bushing (43). Inject approximately 2 to 4 cc of grease into the Grease Fitting (16).
2. Use Ingersoll–Rand No. 50 Oil for lubricating the motor. Inject approximately 1 to 2 cc of oil into the air inlet before attaching the air hose.

DISASSEMBLY

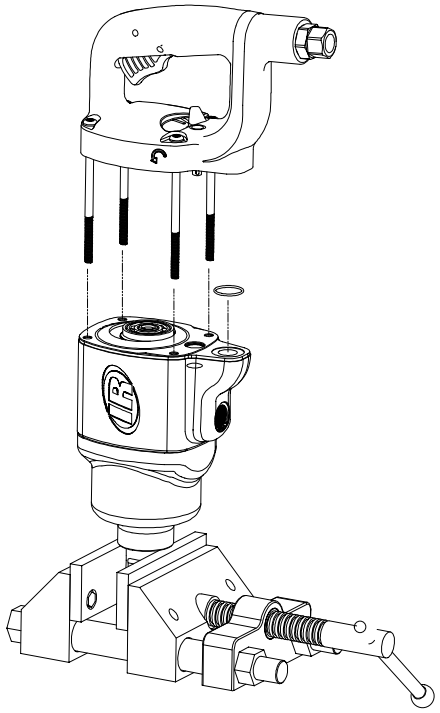
General Instructions

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 the Impactool unless you have a complete set of new gaskets and o–rings for replacement.

Disassembly of the Hammer Case and Anvil Assembly

NOTICE

Before disassembling this tool, clamp the anvil drive in leather–covered or copper–covered vise jaws with the Handle (1) pointing upward. See Drawing TPD2021–1.



(Dwg. TPD2021–1)

1. Using a Torx®* Number 27 drive wrench or bit, unscrew and remove the four Handle Bolts (2).
2. Lift the assembled Motor Housing (28) off of the Hammer Case (42). Make sure that you hold the Backcap in position on the Housing and that the motor does not come out of the Housing.
3. Remove the Hammer Case Gasket (41) and replace with a new one when assembling the Hammer Case to the Housing.
4. Remove the Hammer Case and impact mechanism assembly from the vise. Remove the Hammer Frame Washer (36) from the rear of the Hammer Frame and set it aside on a clean bench.

* Registered trademark of Textron.

5. Place the impact mechanism on a bench with the Anvil pointing upward. Make sure that the Hammer Pins (38) do not drop out of the Hammer.
6. Lift the Hammer Case off of the Anvil (40). If it is unnecessary to disassemble the impact mechanism, set it aside intact.

Disassembly of the Impact Mechanism

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

NOTICE

Note the twin Hammers within the Hammer Frame. These are identical but must be placed in the Hammer Frame in a particular 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 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 do this; 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 the Hammer Frame.
4. With the Anvil removed, lift out the two Hammer Pins.

CAUTION

The twin Hammers are now free to slide from the Hammer Frame. Be careful not to drop them.

Disassembly of the Reverse Valve

1. Using a Torx®* No. 27 drive wrench or bit, remove the four Handle Bolts (2)
2. Lift the Handle (1) off of the rear of the Motor Housing (28).
3. Discard the Handle Gasket (16) and replace it with a new one when assembling the tool.
4. Use a hooked tool to remove the Reverse Valve (30) from the reverse valve bushing. Set the Reverse Valve aside on a clean bench.
5. Remove and discard the Reverse Valve O–ring (31). Replace it with a new one when assembling the Reverse Valve.
6. Use a flat, thin blade screwdriver to remove the Reverse Lever Retaining Ring (15) and Reverse Lever Spring (14) from the Reverse Lever (6).
7. Remove the Reverse Lever from the Backcap.

Disassembly of the Motor

1. Using a Torx®* No. 27 drive wrench or bit, remove the four Handle Bolts (2).
2. Remove the Handle, Motor Clamp Washer (18) and Handle Gasket (17) from from the Housing and set them aside on a clean bench. Discard the Handle Gasket and replace it with a new on when assembling the tool.
3. Lift the Housing from the Hammer Case (42). Place one hand over the rear of the Housing and turn the Housing over so that the assembled motor can slide and be guide out of the Housing.
4. Place the assembled motor on a clean bench with the rotor spline facing upward.
5. Remove the Front End Plate (26) and Cylinder (24).
6. Remove the Rotor (22) from the Rear End Plate (20).
7. Remove the Vanes from the Rotor.
8. Inspect all motor parts including the Front Rotor Bearing (27) and Rear Rotor Bearing (19) and replace all worn or damaged parts.

Disassembly of the Throttle Mechanism

1. Unscrew and remove the Air Inlet Bushing (13).
2. Remove the Screen (11), Throttle Valve Spring (10) and Throttle Valve (9).
3. Remove the Trigger (3) from the Handle.
4. Remove the Trigger Plunger (7) from the Handle.

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 or 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. **Sealed or shielded bearings should never be cleaned.** Work grease thoroughly into every open bearing before installation.

Assembly of the Throttle Mechansism

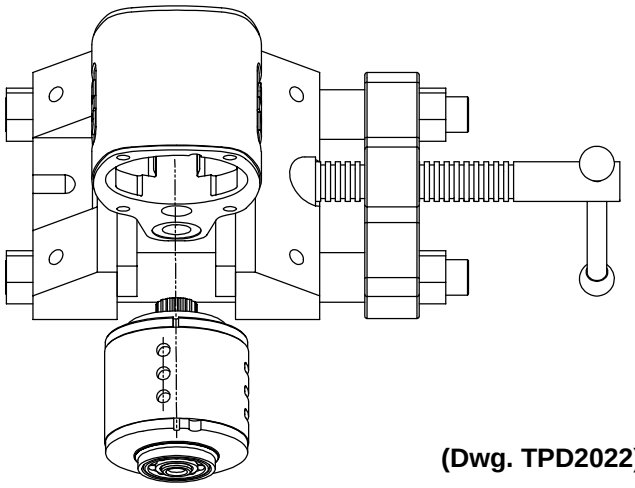
1. Coat the Trigger Plunger (7) with oil and insert it into the hole in the Handle (1).
2. Install a new Throttle Valve Seat (8) in the Throttle Valve (9) and insert it into the Handle, large end first.
3. Install the Throttle Valve Spring (10), small end first, then Screen (11). Replace Inlet O–ring (12). Coat new O–ring with O–ring lubricant and insall it in the Inlet.
4. Screw Inlet into Handle until snug and then tighten to 30–35 ft. lb. (41–47 Nm) torque.

Assembly of the Motor

1. Pack the Front Rotor Bearing (27) and Rear Rotor Bearing (19) with the recommended grease. Install the Front Rotor Bearing in the Front End Plate (26) and the Rear Rotor Bearing in the Rear End Plate (20).
2. Slide the assembled Rear End Plate and Rear Rotor Bearing on the hub of the Rotor (22).
3. Set the assembled Rear End Plate and Rotor on a clean surface with the spline of the Rotor pointing upward.
4. Insert the Vanes (23) in the vane slots on the Rotor.
5. Install the Front and Rear Cylinder Dowels (25) in the Cylinder (24).
6. Slide the Cylinder over the the Rotor and Vanes making sure that the Rear Cylinder Dowel enters the notch in the in the outside diameter of the Rear End Plate.

For 2925R

Assemble Cylinder with exhaust ports to the **LEFT** of top dead center (11 o'clock position).
See Dwg. TPD2022.

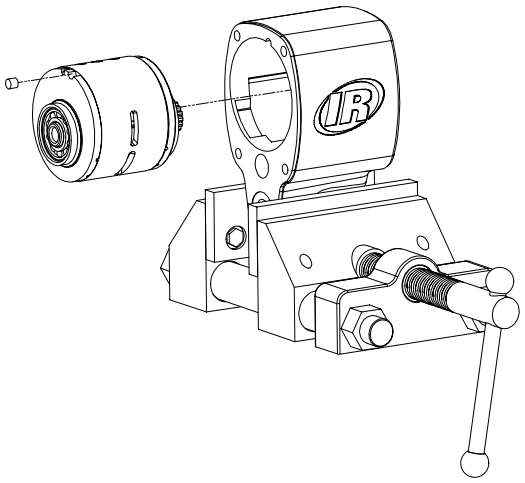


(Dwg. TPD2022)

NOTICE

If more power is needed for forward operation than for reverse operation, install the Cylinder with exhaust ports to the RIGHT of top dead center (1 o'clock position).

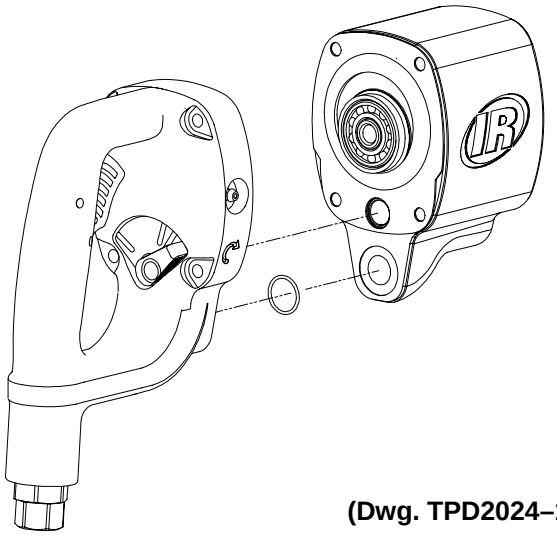
7. Install the assembled Front End Plate and Bearing over the front, splined end of the Rotor making sure that the front Cylinder Dowel fits into the notch in the outside diameter of the Front End Plate.
8. Grasp the Housing with one hand and set it upside down on its top. With the other hand, carefully guide the motor assembly into the Housing, making sure that the side of the motor assembly containing the Cylinder Dowels is oriented to the top of the Housing. Install Locating Pin (21A) into Housing and End Plate.
See Dwg. TPD2023–1.



(Dwg. TPD2023–1)

Assembly of the Reverse Valve

1. Coat a new Reverse Valve O–ring (31) with O–ring lubricant and install it in the groove on the Reverse Valve (30).
2. Install the Reverse Valve in the reverse valve bushing with the slotted end trailing,making sure that the the index mark on the Reverse Valve is aligned with the index mark on the Bushing.
   See Dwg. TPD2024–1.

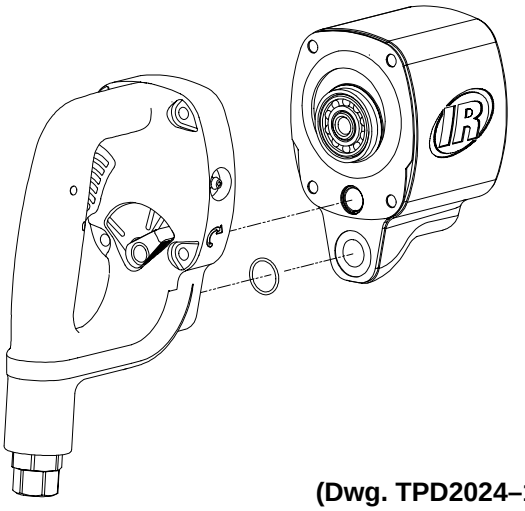


(Dwg. TPD2024–1)

NOTICE

The Reverse Valve must be installed and indexed with the bushing as directed in Step 2 and Dwg. TPD2024. Failure to do so will cause improper operation of the Reverse Valve.

3. Insert the Reverse Lever (6) into the Handle (1).
4. Slide the Reverse Lever Spring (18) over the shaft of the Reverse Lever and secure the Spring and Reverse Lever by installing the the Reverse Lever Snap Ring (15) in the groove in the shaft of the Reverse Lever. Rotate the Reverse Lever so that it is pointing to the symbol for FORWARD (clockwise) ↻ operation.
   See Dwg. TPD2024–1.

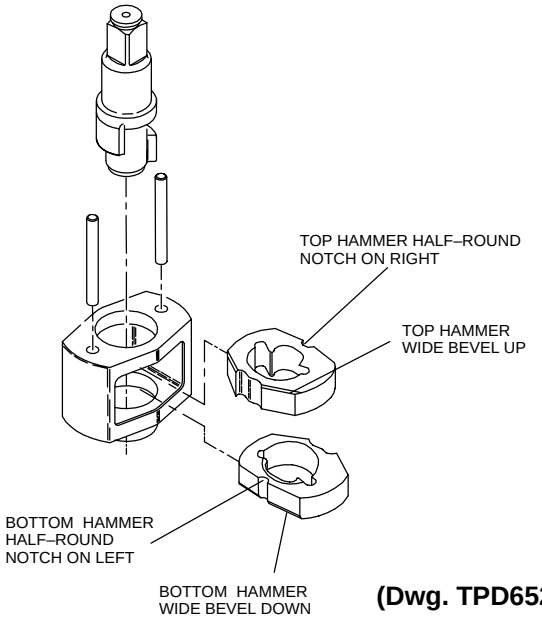


(Dwg. TPD2024–1)

Assembly of the Impact Mechanism

NOTICE

To ensure proper Reverse Valve operation, the Reverse Lever must stay in this position when installing the Backcap and Reverse Valve.



(Dwg. TPD652)

1. Coat the Hammers (39) with a light film of Ingersoll–Rand No. 170 Grease.

2. Replace the Hammers in the Hammer Frame (37) exactly as they were when you marked them prior to disassembly.

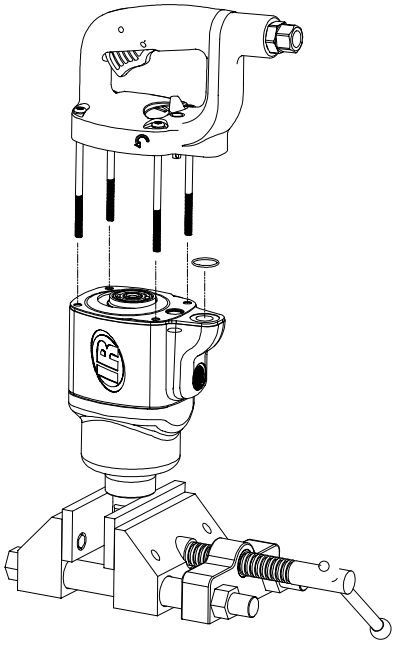
NOTICE

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. These Hammers must be installed with the wide bevels facing the web of the Hammer Frame as illustrated.

3. Replace the Hammer Pins (38).
4. Examine the base of the Anvil (40) and note its contour. While looking down through the 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 the opposite direction from the top Hammer and maneuver the Anvil slightly until it drops into the bottom Hammer.

Assembly of the Tool

1. Wipe a thin film of the recommended grease on the inside of the Hammer Case Bushing (43) and insert the assembled impact mechanism into the Hammer Case (42).
2. Secure the Hammer Case and impact mechanism by the anvil (square drive) end in leather–coverd or copper–covered vise jaws. See Dwg. TPD2021–1.



(Dwg. TPD2021–1)

3. Install a new Hammer Case Gasket (41) on the Hammer Case making sure that the holes in the gasket align with the holes in the Hammer Case.

NOTICE

When installing optional Hanger Kit, place Gasket on the Hammer Case followed by the Hanger.

4. Wipe a small amount of the recommended grease on the flat side of the Hammer Frame Washer (36) and place it on the splined face of the Hammer Frame (37) with the hub end of the washer pointing up.

NOTICE

When installing optional Hanger Kit, place additional washer provided between the Hammer Frame and Hammer Frame Washer.

5. Set the fully assembled Motor Housing over the opening in the Hammer Case. Insert the spline drive of the Rotor into the splined hole of the impact mechanism. Make sure of the wide section of the Hammer Case is just above the Trigger.

6. Place a new Handle Gasket (17) over the rear of the Housing making sure that the holes in the Gasket align with the holes in the Housing and that the profile of the Gaskets matches the profile of the Housing.
7. Place a Motor Clamp Washer (18) over the rear of the motor with the convex side up and matching the large outside diameter of the Rear End Plate.
8. Place O–ring (32) in counterbare around air passage on the housing.
9. Place the Handle (1) over the back of the Housing making sure that the Reverse Valve Lever (6) is in the full–forward (clockwise) position with the lugs in the Lever engaging the slots in the Reverse Valve. Make sure that the index mark on the Reverse Valve lines up with the index mark on the reverse valve bushing.
10. Install the four Backcap Bolts and using a No. 27 Torx®* drive wrench or bit, tighten to 10–12 ft–lbs (13–16 Nm) torque.

TROUBLESHOOTING GUIDE

Trouble	Probable Cause	Solution
Low power	Dirty Inlet Bushing or Inlet Screen and/or Muffler	Using a suitable cleaning solution, in a well ventilated area, clean Inlet Screen, Inlet Bushing and Muffler.
	Worn or broken Vanes	Replace the **complete** set of Vanes.
	Worn or broken Cylinder and/or scored End Plates	Examine the 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 tool and clean all parts with a suitable cleaning solution, in a well–ventilated area. Reassemble tool as instructed in this manual.
Motor will not run	Improper positioning of the Reverse Valve Lever or Reverse Valve	Make certain that the Reverse Valve Lever is in the reverse position or one of the three forward positions. If the tool has been disassembled, refer to Dwg. TPD2024–1 for proper Reverse Valve and Reverse Lever orientation.
	Incorrect assembly of the motor.	Disassemble the motor, replace worn or broken parts and reassemble as instructed.
Tool will not impact	Insufficient lubricant in the impact mechanism	Remove the Hammer Case Assembly and lubricate the impact mechanism.
	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**

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.