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Edition 3
September, 1999

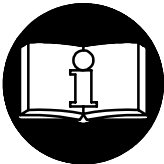
INSTRUCTIONS FOR SERIES DAA AND DAL TORQUE CONTROL WRENCHES

NOTICE

Series DAA and DAL Wrenches/Nutranners are designed for assembly applications requiring precise torque monitoring and control, accuracy, consistency and repeatability.

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 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 3/8" (10 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.
- This tool is not designed for working in explosive atmospheres.
- This tool is not insulated against electric shock.
- Whenever the Angle Head is installed or repositioned, the Throttle Switch or Lever must be positioned so that reaction torque will not tend to retain the throttle in the "ON" position.
- When installing or removing the output device on any tool, ALWAYS grasp a metal component of the tool while tightening or loosening the Coupling Nut or Spindle Cap. Acceptable clamping locations include, but are not limited to, the hex on the Gear Case, the Tool Hanger, the Torque Reaction Arm or any metal Mounting Plate. NEVER grasp the composite tool body or handle in vise jaws to restrain the torque of the Coupling Nut or Spindle Cap. Such practice will result in damage to the tool.
- Do not use power units and gear trains that exceed the capability of the output device.

(Continued on page 1-2)

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.

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INGERSOLL-RAND®
PROFESSIONAL TOOLS

USING THE TOOL (*Continued*)


- The Tube Nut Attachment has an opening on the front side for construction and application purposes. **DO NOT**, under any circumstance place your fingers in this opening.
- The Torque Reaction Bar must be positioned against a positive stop. Do not use the Bar as a dead handle and take all precautions to make certain the operator's hand cannot be pinched between the Bar and a solid object.
- When operated continuously for long periods of time, Series D Nutrunners may become hot at the spindle end of the tool. Take all precautions necessary to avoid skin contact with the hot surfaces. Prolonged contact may result in burns.


- All Series D Torque Control Wrenches and Nutrunners with reverse capability have rotational arrows molded into the housing in the area of the reversing mechanism. When the direction switching device is positioned nearest the molded circular arrow with an "F" in the center, spindle rotation will be forward or clockwise direction. When the direction switching device is positioned nearest the molded circular arrow with an "R" in the center, spindle rotation will be reverse or counterclockwise direction.


WARNING LABEL IDENTIFICATION

WARNING


FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.


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


	▲ WARNING
	Always wear hearing protection when operating this tool.

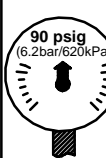
	▲ WARNING
	Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.


	▲ WARNING
	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.

	▲ WARNING
	Do not carry the tool by the hose.

	▲ WARNING
	Do not use damaged, frayed or deteriorated air hoses and fittings.

	▲ WARNING
	Keep body stance balanced and firm. Do not overreach when operating this tool.

	▲ WARNING
	Operate at 90 psig (6.2 bar/ 620 kPa) Maximum air pressure.

	▲ WARNING
	The Torque Reaction Bar must be positioned against a positive stop. Do not use the Bar as a dead handle and take all precautions to make certain the operator's hand cannot be pinched between the Bar and a solid object.

PLACING TOOL IN SERVICE

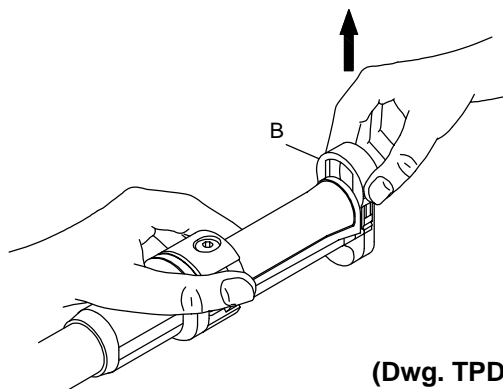
ADJUSTMENTS

Before placing your Ingersoll-Rand D Series Torque Control Wrench in service, several optional adjustments can be made to the tool which will enhance the performance of the tool or improve the comfort of the operator. Selection and adjustments should be made prior to placing the tool in service.

GRIP ADJUSTMENT

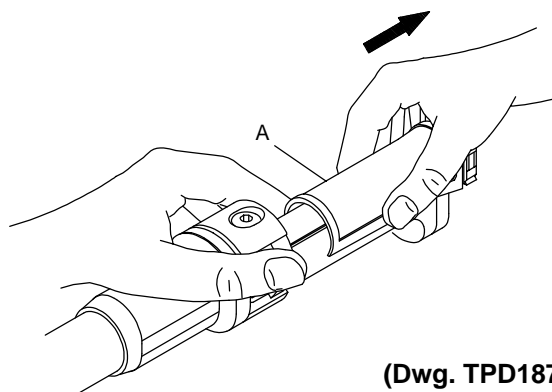
The Handle of the Angle Wrench has an Adjustable Grip which permits individual operators to select one of three handle thickness positions. Operators with large hands can select the bulkiest position and operators with small hands can select the smallest size. To adjust the Grip, proceed as follows:

1. Grasp the grooved ends of the Adjustable Grip Latch (B), and spreading the ends slightly, raise the Latch to its uppermost position. (Refer to TPD1875).



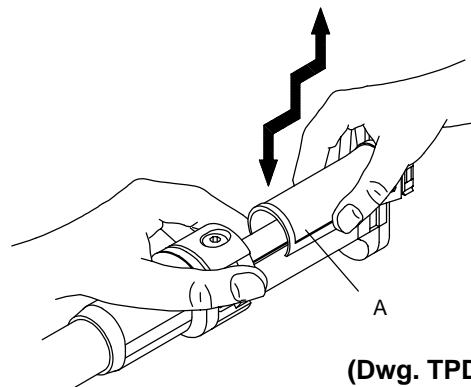
(Dwg. TPD1875)

2. Grasp the Adjustable Grip (A) and slide it rearward until it stops. (Refer to TPD1876).



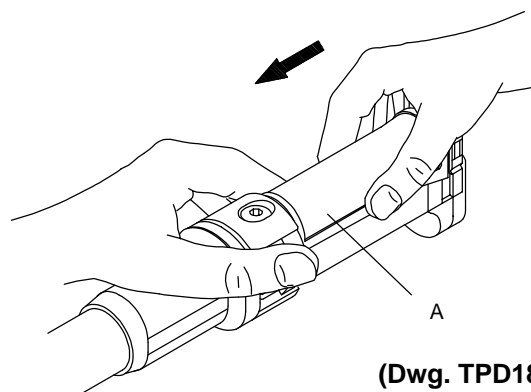
(Dwg. TPD1876)

3. Raise or lower the Grip until the desired grooves inside the Grip align with the appropriate lugs on the Handle. (Refer to TPD1877).



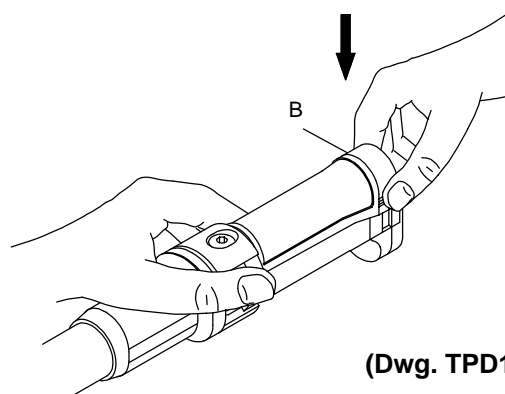
(Dwg. TPD1877)

4. Slide the Grip forward onto the Handle until it butts against the Collar Assembly. (Refer to TPD1878).



(Dwg. TPD1878)

5. Push the Grip Latch downward to its original position to lock the adjustment into position. (Refer to TPD1879).



(Dwg. TPD1879)

PLACING TOOL IN SERVICE

TOP/REAR AIR INLET

The air supply hose can be connected conventionally to the rear of the tool or connected to the side of the Handle if an overhead air supply is available. To change the inlet connection, proceed as follows:

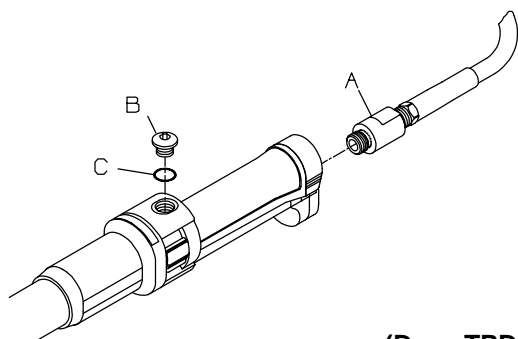
⚠ WARNING

Do not remove the Inlet Plug (B) without first disconnecting the live air supply.

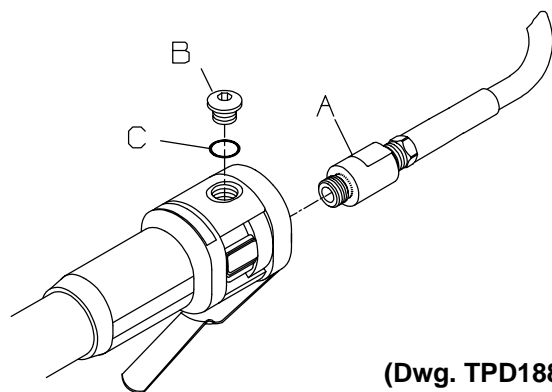
CAUTION

Do not thread pipe thread fittings directly into the Inlet Bushing or inlet Plug locations in the Handle.

1. Disconnect the air supply hose if it is attached to the tool .
2. Using an adjustable wrench, unscrew and remove the Inlet Bushing (A) and Inlet Bushing Seal.
3. Using a 1/4" hex wrench, unscrew and remove the Inlet Plug (B) and Inlet Plug Seal (C).
4. Install the Inlet Plug and Seal in the desired location and tighten the Plug between 30 and 40 in-lb (3.4 and 4.5 Nm) torque. (Refer to TPD1881). (Refer to TPD1882).

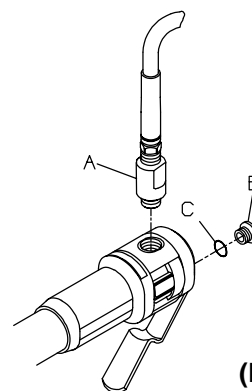
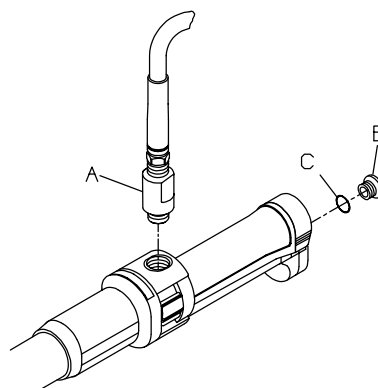


(Dwg. TPD1881)



(Dwg. TPD1882)

5. Install the Inlet Bushing and Seal in the desired location and tighten the Plug between 20 and 30 ft-lb (27 and 40 Nm) torque. (Refer to TPD1880). (Refer to TPD1883).



(Dwg. TPD1883)

LUBRICATION



Ingersoll-Rand No. 10 Ingersoll-Rand No. 67
Ingersoll-Rand No. 90

Adequate lubrication is imperative for maximum performance and durability of the gearing in these tools. Always use an air line lubricator with this tool. We recommend the following Filter-Lubricator-Regulator Unit.

For U.S.A. – No. C18-03-FKG0-28

PLACING TOOL IN SERVICE

Motor

After each eight hours of operation, unless an air line lubricator is used, inject 2 cc of Ingersoll-Rand No. 10 Oil into the Inlet Bushing.

Gearing

After each 50 000 cycles, or one month of operation, inject 3 to 4 cc of Ingersoll-Rand No. 67 Grease into the Grease Fitting in the Gear Case Assembly.

Angle Attachment

After each eight hours of operation, inject 1 to 2 cc of Ingersoll-Rand No. 67 Grease into the Grease Fitting in the Angle Housing Assembly.

Crow Foot Attachment

CAUTION

Excessive lubrication of the Crow Foot Attachment may result in Attachment malfunctions.

After each thirty hours of operation, or as experience indicates, inject 1/2 cc of Ingersoll-Rand No. 90 Grease into the Grease Fitting of the Crow Foot Attachment having two gear stages and 1 cc of Ingersoll-Rand No. 90 Grease into the Grease Fitting of the Crow Foot Attachment having more than two gear stages.

After each eight hours of operation, or as experience indicates, inject 1 to 2 cc of Ingersoll-Rand No. 67 Grease into the Grease Fitting of the Angle Housing Assembly.

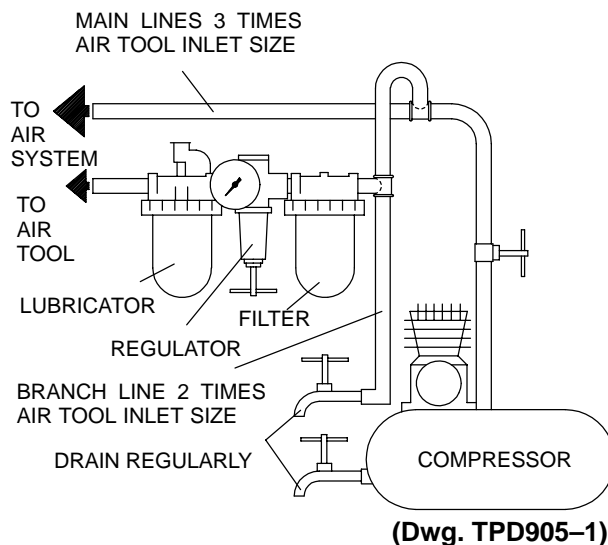
Tube Nut Attachment

CAUTION

Excessive lubrication of the Tube Nut Attachment may result in Attachment malfunctions.

After each thirty hours of operation, or as experience indicates, inject 1/2 cc of Ingersoll-Rand No. 90 Grease into the Grease Fitting of the Tube Nut Attachment having two gear stages and 1 cc of Ingersoll-Rand No. 90 Grease into the Grease Fitting of the Tube Nut Attachment having more than two gear stages.

After each eight hours of operation, or as experience indicates, inject 1 to 2 cc of Ingersoll-Rand No. 67 Grease into the Grease Fitting of the Angle Housing Assembly.



MANUAL AND VIDEO AVAILABLE

Ingersoll-Rand has a manual and video available which provides a better understanding of the relationship between these tools and proper torque tension. To obtain a copy, contact your nearest Ingersoll-Rand Distributor and request the following items:

“Torque Tension and Tools” (Manual)

Form No. 52074

“Torque Tension and Tools” (Video)

Form No. VCR-101

ERGONOMIC INFORMATION

The D Series Torque Control Wrenches incorporate the latest features in ergonomic design. Ingersoll-Rand has a number of informational items available that explain why tools having an ergonomic design are beneficial in the workplace and to the worker. Following is a list of available items:

MANUAL AND VIDEO AVAILABLE

“Ergonomics: Design for a Better Workplace” (Manual)

Form No. 52070

“Ergonomics: Design for a Better Workplace” (Video)

Form No. VCR-100

POSTERS AVAILABLE

Ergonomics Poster – Series #2

Form No. 52109

Ergonomics Poster – Series #1

Form No. 52108

To receive any of the above listed ergonomic informational items, contact:

ERGONOMICS
c/o INGERSOLL-RAND COMPANY
P.O. BOX 1776
LIBERTY CORNER, NJ 07938

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.

NOTES