RAD TORQUE SYSTEMS

radtorque.com



USER MANUAL

PNEUMATIC SERIES

RAD TORQUE SYSTEMS

RAD PNEUMATIC SERIES



- **PATENTED PLANETARY GEAR REDUCTION**
  Delivers one of the highest power-to-weight ratios of any pneumatic controlled bolting system.
- **SMOOTH CONTINUOUS FLOW OF CONTROLLED TORQUE**
  Eliminates destructive hammering.
- **LIGHTWEIGHT ERGONOMIC PISTOL GRIP DESIGN**
  Reduces operator strain and injury; resulting in increased productivity.
- **UNMATCHED RELIABILITY AND QUALITY**
  Delivered by one of the most advanced engineered gear boxes on the market.

E-RAD® BLU SERIES



- **PUSH-BUTTON SELECT TORQUE**
  Fast and convenient error-free digital single increment torque settings.
- **DIGITAL TORQUE CONSOLE DISPLAY**
  Maximum accuracy by seeing the set torque value and the actual delivered torque value.
- **LIGHTWEIGHT AND ERGONOMIC PISTOL GRIP DESIGN**
  Advanced low-profile handle to reduce operator fatigue and increase productivity.
- **EXTREMELY LOW NOISE LEVEL ONLY 75DB**
  World's quietest extreme torque gun, ideal for sensitive environments and standards.
- **LED GREEN (PASS) OR RED (FAIL) INDICATOR LIGHTS**
  Clear visual signal shows torque status for fast, accurate results.

B-RAD X® SERIES



- **Award-winning cordless technology**
  Proven cordless innovation delivers powerful performance without the need for hoses or external power sources.
- **Torque + Angle functionality**
  Provides greater fastening control for applications that require precise torque and angle specifications.
- **Extended battery runtime**
  High-capacity 18V lithium-ion batteries help keep crews working longer between charges.
- **Patented Planetary Gearbox Technology**
  Engineered for dependable torque delivery, durability, and consistent performance in tough working conditions.

B-RAD® SERIES



- **QUICK ADJUST TORQUE SETTINGS**
  Fast and accurate "dial a torque" for maximum versatility and efficiency.
- **SOFT-START VARY SPEED TRIGGER**
  Allows operator to safely and quickly set reaction arm before full torque is applied.
- **EQUAL POWER IN FORWARD AND REVERSE**
  Convenience and cost effective use of same tool for break away and final torque.
- **IMAGINE THE FREEDOM – NO AIR LINES, NO POWER CORDS!**
  The lightweight design of the B-SERIES makes it ideal for any application, especially where compressed air and electricity are not readily available.
- **ADVANCED GEARBOX DESIGN**
  PATENTED planetary gear reduction drive system delivering one of the highest power-to-weight ratios of any controlled bolting system.

SMART SOCKET™ SERIES



- **MEASURE AND DISPLAY PEAK TORQUE**
  Transducer technology combined with a custom socket measures the actual torque applied to the bolt during a torque cycle.
- **PASS OR FAIL INDICATION**
  Unmistakable digital signal indicates peak torque achieved for maximum accuracy.
- **BLUETOOTH® TECHNOLOGY**
  View and download logs onto your smartphone or tablet.
- **IDEAL ON SITE CALIBRATION TOOLS**
  Comparable in size to a standard socket, it's the perfect tool for inspecting bolted joints and can function as a master calibrator for your torque tools.

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Pneumatic – Original Instructions

IMPORTANT SAFETY NOTICE

WARNING!

READ ALL SAFETY WARNINGS AND ALL INSTRUCTIONS. FAILURE TO FOLLOW THE WARNINGS AND INSTRUCTIONS MAY RESULT IN ELECTRIC SHOCK, FIRE, AND/OR SERIOUS INJURY.

NEW WORLD TECHNOLOGIES INCORPORATED IS NOT RESPONSIBLE FOR ANY SUCH INJURY.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

GENERAL TOOL SAFETY WARNINGS

The RAD Pneumatic Tool System should be inspected before each use.

The intended use of the RAD Pneumatic Tool System is for commercial and industrial bolting applications.

The use of the RAD Pneumatic Tool System for anything other than its intended purpose is forbidden.

Do not operate the RAD Pneumatic Tool System before reading and understanding this user manual and noting the Safety Notices displayed on the RAD Pneumatic Tool System.

Only qualified personnel with training in the safe operation of torque tooling and the RAD Pneumatic Tool System should attempt the installation, operation, and diagnosis of the RAD Pneumatic Tool System.

The RAD Pneumatic Tool System contains external rotating parts. Improper training and use can cause serious or fatal injury.

Do not disassemble or attempt to repair the RAD Pneumatic Tool System, doing so will void warranty. If breakdown, malfunction, or damage occurs and the RAD Pneumatic Tool System fails to operate correctly, contact New World Technologies Inc. Technical Support (refer to Section 6.0 – Contact Us).

The RAD Pneumatic Tool System should only be used if the environmental storage and operation specifications have been met. Refer to Section 1.2.2 – Environmental Specifications.

Do not operate the RAD Pneumatic Tool System in explosive atmospheres, including, but not limited to, the presence of flammable liquids, gases, or dust. The RAD Pneumatic Tool System may create sparks which could ignite these substances.

Do not expose the RAD Pneumatic Tool System to wet conditions. Water in the RAD Pneumatic Tool System will cause damage to the tool.

While operating the RAD Pneumatic Tool System always wear safety goggles and keep all body parts clear of moving parts including the reaction arm contact point.

Never exceed the maximum torque of the RAD Pneumatic Tool System. Failure to comply will result in voided warranty.

The RAD Pneumatic Tool System has been calibrated by a qualified calibration technician. Calibration must be done by a qualified calibration technician. Improper calibration can cause damage to the tool and joint.

1. General Safety Rules

a. For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the RAD Pneumatic Tool System. Failure to do so can result in serious bodily injury.
b. Do not modify this RAD Pneumatic Tool System. Modifications can reduce the effectiveness of safety measures and increase the risks to operator.

c. Do not discard the safety instructions; give them to the operator.
d. Do not use the RAD Pneumatic Tool System if it has been damaged.
e. Tools shall be inspected periodically to verify that the ratings and markings required by ISO 11148-6-2012 are legibly marked on the tool. The employer/user shall contact the manufacturer to obtain replacement marking labels when necessary.

2. Safety Instructions for Pneumatic Power Tools

a. Air under pressure can cause severe injury
- Always shut off air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs.
- Never direct air at yourself or anyone else.

b. Whipping hoses can cause severe injury. Always check damaged or loose hoses and fittings.
c. Cold air shall be directed away from hands.
d. Do not exceed the maximum air pressure stated on the tool.
e. For the RAD Pneumatic Tool System, the air pressure has a safety critical effect on performance. Therefore, requirements for length and diameter of the hose shall be specified (refer to Section 1.1 System Components).
f. Never carry an air tool by the hose.

3. Work Area Safety

a. Keep work area clean and well lit. Cluttered and dark areas invite accidents.
b. Do not operate tools in explosive atmospheres, such as environments with the presence of flammable liquids, gases, or dust. Tools can create sparks which may ignite the dust or fumes.
c. Keep children and bystanders away while operating the tool. Distractions can cause you to lose control.

4. Personal Safety

a. Stay alert, watch what you are doing, and use common sense when operating the RAD Pneumatic Tool System. Do not use the tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.
b. Use personal protective equipment and always wear eye protection. Protective equipment such as a dust mask, non-skid steel-toed safety shoes, hard hat, gloves, and hearing protection used in appropriate conditions will reduce personal injuries.
c. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
d. Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
e. Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles. A careless action can cause severe injury within a fraction of a second.
f. Keep all body parts clear of moving parts and the reaction contact point. Careless placement can cause severe injury within a fraction of a second.

5. Power Tool Use and Care

a. Store idle tools out of the reach of children and do not allow persons unfamiliar with the tool or these instructions to operate the tool. Power tools are dangerous in the hands of untrained users.
b. Maintain tools and accessories. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool repaired before use. Many accidents are caused by poorly maintained tools.
c. Use the tool, accessories, and reaction arms etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the tool for operations different from those intended could result in a hazardous situation.
d. Keep handles and grasping surfaces dry, clean, and free from oil and grease. Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

6. Service

a. Have your RAD Pneumatic Tool System serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the tool is maintained.

Hazards

1. Entanglement Hazards

a. Entanglement hazards can result in choking, scalping, and/or lacerations if loose clothing, personal jewellery, neckwear, hair, or gloves are not kept away from the tool and accessories.
b. Gloves can become entangled with the rotating drive, causing severed or broken fingers.
c. Rotating drive sockets and drive extensions can easily entangle rubber-coated or metal-reinforced gloves.
d. Do not wear loose-fitting gloves or gloves with cut or frayed fingers.
e. Never hold the drive, socket, or drive extension.
f. Keep hands away from rotating drives.

2. Operating Hazards

a. The use of the tool can expose the operator's hands to hazards including crushing, impacts, cuts, abrasions, and heat. Wear suitable gloves to protect hands.
b. Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.
c. Hold the tool correctly; be ready to counteract normal or sudden movements and have both hands available.
d. Maintain a balanced body position and secure footing.
f. Release the start-and-stop device in the case of an interruption of the energy supply.
e. Use only lubricants recommended by New World Technologies Inc. (refer to Section 1.2.4 Lubricant Recommended).
g. Do not use in confined spaces and beware of crushing hands between tool and workpiece, especially when unscrewing.

3. Repetitive Motions Hazards

a. When using a power tool for an extended period the operator can experience discomfort in the hands, arms, shoulders, neck, or other parts of the body.
b. While using the RAD Pneumatic Tool System, the operator should adopt a comfortable posture while maintaining secure footing and avoid awkward or off-balanced postures. The operator should change posture during extended tasks, which can help avoid discomfort and fatigue.
c. If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations, or stiffness, these warning signs should not be ignored. The operator should tell the employer and consult a qualified health professional.

4. Accessory Hazards

a. Disconnect the RAD Pneumatic Tool System from the energy supply before changing the inserted tool or accessory.
b. Do not touch sockets or accessories during operation, as this increases the risk of cuts, burns, or vibration injuries.
c. Use only sizes and types of accessories and consumables that are recommended by the RAD Pneumatic Tool System; do not use other types or sizes of accessories or consumables.

5. Workplace Hazards

a. Slips, trips, and falls are major causes of workplace injury. Be aware of slippery surfaces caused by the use of the tool and of trip hazards caused by the air line or hydraulic hose.
b. Proceed with care in unfamiliar surroundings. Hidden hazards, such as electricity or other utility lines, can exist.
c. The RAD Pneumatic Tool System is not intended for use in potentially explosive atmospheres and is not insulated against coming into contact with electric power.
d. Make sure there are no electrical cables, gas pipes, etc., that can cause a hazard if damaged by use of the tool.

6. Noise Hazards

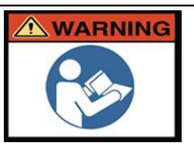
a. Exposure to high noise levels can cause permanent, disabling hearing loss and other problems, such as tinnitus (ringing, buzzing, whistling, or humming in the ears). Therefore, a risk assessment and implementation of appropriate controls for these hazards are essential.
b. Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.
c. Operate and maintain the RAD Pneumatic Tool System as recommended in the user manual to prevent an unnecessary increase in noise levels.
d. The RAD Pneumatic Tool System has a silencer, always ensure it is in place and in good working order when the RAD Pneumatic Tool System is operating.
e. Select, maintain and replace the consumable/inserted tool as recommended in the user manual to prevent an unnecessary increase in noise.

7. Vibration Hazards

a. Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms.
b. Keep the hands away from the sockets.
c. Wear warm clothing when working in cold conditions and keep your hands warm and dry.
d. If you experience numbness, tingling, pain, or whitening of the skin in your fingers or hands, stop using the tool, tell your employer and consult a physician.
e. Operate and maintain the RAD Pneumatic Tool System as recommended in the user manual to prevent an unnecessary increase in vibration levels.
f. Do not use worn or ill-fitting sockets or extensions, as this is likely to cause a substantial increase in vibration.
g. Select, maintain and replace the consumable/inserted tool as recommended in the user manual to prevent an unnecessary increase in vibration levels.
h. Sleeve fittings should be used where practicable.
i. Support the weight of the tool in a stand, tensioner, or balancer, if possible.
j. Hold the tool with a light but safe grip, taking account of the required hand reaction forces, because the risk from vibration is generally greater when the grip force is higher.

Symbol Identification

These are symbols that can be found on the tool or in this manual and information about them.

	ISO-7010-M002	Refer to instruction manual/booklet. Used to signify that the instruction manual/booklet must be read.
	ISO-7000-0434A	To indicate that caution is necessary when operating the device or control close to where the symbol is placed. To indicate that the current situation needs operator awareness or operator action in order to avoid undesirable consequences.
		Indicates the direction the output drive of the tool will move in based on which position the toggle switch located above the trigger is in.
		CW – Indicates clockwise rotation.
		CCW – Indicates counter-clockwise rotation.

1.0 GENERAL INFORMATION

1.1 System Components

CAUTION!
The lubricator arrives from RAD Torque empty and closed. It must be filled and the drip-rate set before use.

The RAD Pneumatic Tool System is shipped from New World Technologies Inc. with a tool regulator cage and the following items:

- RAD pneumatic tool handle (Figure 1.1-1)
- Snap ring
- Standard reaction arm (Figure 1.1-2)
- Tool regulator cage (Figure 1.1-3)
- Air hose – 12′ (3m) (Figure 1.1-3)
- Optional input extension (Figure 1.1-4)
- Calibration certificate
- Torque chart
- User manual



Figure 1.1-1: RAD Pneumatic Tool



Figure 1.1-2: Standard Reaction Arm



Figure 1.1-3: Tool Regulator Cage with 12′ Air Hose



Figure 1.1-4: Input Extension

Note: Some distributors may ship additional parts with the RAD Pneumatic Tool System.

1.2 Specifications

1.2.1 Tool Model Specifications

Tool Model Imperial / Metric	Torque Range (Imperial)	Torque Range (Metric)	Speed	Weight (Tool Handle)
RAD 75SL/100SL-M	25 – 75 ft·lb	30 – 100 N·m	225.0 RPM	6.1 lb / 2.8 kg
RAD 200SL/275SL-M	40 – 200 ft·lb	55 – 275 N·m	75.9 RPM	5.4 lb / 2.4 kg
RAD 3.5GX/5GX-M	50 – 350 ft·lb	70 – 475 N·m	46.2 RPM	6.8 lb / 3.1 kg
RAD 350SL/475SL-M	50 – 350 ft·lb	70 – 475 N·m	47.3 RPM	6.8 lb / 3.1 kg
RAD 350SL-2/475SL-2-M	50 – 350 ft·lb	70 – 475 N·m	268.2 RPM	7.1 lb / 3.2 kg
RAD 5GX/7GX-M	100 – 500 ft·lb	135 – 700 N·m	30.0 RPM	6.8 lb / 3.1 kg
RAD 7GX/10GX-M	100 – 700 ft·lb	135 – 950 N·m	22.0 RPM	8.0 lb / 3.6 kg
RAD 7GX-2/10GX-2-M	300 – 700 ft·lb	400 – 950 N·m	105.5 RPM	9.9 lb / 4.5 kg
RAD 7GX-R/10GX-R-M	300 – 700 ft·lb	400 – 950 N·m	105.5 RPM	11.8 lb / 5.4 kg
RAD 10GX/14GX-M	200 – 1000 ft·lb	275 – 1400 N·m	9.7 RPM	8.0 lb / 3.6 kg
RAD 10GX-2/14GX-2-M	350 – 1000 ft·lb	475 – 1400 N·m	72.3 RPM	9.9 lb / 4.5 kg
RAD 10GX-NX/14GX-NX-M	200 – 1000 ft·lb	275 – 1400 N·m	9.7 RPM	7.9 lb / 3.6 kg
RAD 15DX/20DX-M	300 – 1500 ft·lb	400 – 2000 N·m	10.0 RPM	8.8 lb / 4.0 kg
RAD 15DX-2/20DX-2-M	500 – 1500 ft·lb	700 – 2000 N·m	55.7 RPM	10.5 lb / 4.8 kg
RAD 15NDX-R/20NDX-R-M	300 – 1500 ft·lb	400 – 2000 N·m	10.1 RPM	14.8 lb / 6.7 kg
RAD 15DX-NX/20DX-NX-M	300 – 1500 ft·lb	400 – 2000 N·m	10.0 RPM	8.7 lb / 3.9 kg
RAD 1800NG/2400NG-M	500 – 1800 ft·lb	700 – 2400 N·m	13.2 RPM	13.3 lb / 6.0 kg
RAD 1800NG-2/2400NG-2-M	500 – 1800 ft·lb	700 – 2400 N·m	64.1 RPM	14.8 lb / 6.7 kg
RAD 1800NGX/2400NGX-M	500 – 1800 ft·lb	700 – 2400 N·m	13.2 RPM	26.3 lb / 12.0 kg
RAD 1800NGX-R/2400NGX-R-M	500 – 1800 ft·lb	700 – 2400 N·m	13.2 RPM	27.0 lb / 12.2 kg
RAD 25GX/34GX-M	500 – 2500 ft·lb	700 – 3400 N·m	9.0 RPM	13.9 lb / 6.3 kg
RAD 25GX-2/34GX-2-M	700 – 2500 ft·lb	950 – 3400 N·m	51.7 RPM	13.7 lb / 6.2 kg
RAD 30DX/40DX-M	1000 – 3000 ft·lb	1400 – 4000 N·m	8.1 RPM	14.4 lb / 6.5 kg
RAD 30DX SPL/40DX-M SPL	1000 – 3000 ft·lb	1400 – 4000 N·m	8.1 RPM	14.7 lb / 6.7 kg
RAD 30DX-2/40DX-2-M	1000 – 3000 ft·lb	1400 – 4000 N·m	51.0 RPM	16.1 lb / 7.3 kg
RAD 30DX-2 SPL/40DX-2-M SPL	1000 – 3000 ft·lb	1400 – 4000 N·m	51.0 RPM	16.1 lb / 7.3 kg
RAD 30NDX-R/40NDX-R-M	1000 – 3000 ft·lb	1400 – 4000 N·m	8.1 RPM	24.8 lb / 11.3 kg
RAD 34GX/46GX-M	1000 – 3400 ft·lb	1400 – 4600 N·m	9.9 RPM	21.3 lb / 9.7 kg
RAD 50DX/70DX-M	1500 – 5000 ft·lb	2000 – 7000 N·m	5.9 RPM	23.3 lb / 10.6 kg
RAD 50DX SPL/70DX-M SPL	1500 – 5000 ft·lb	2000 – 7000 N·m	5.9 RPM	23.3 lb / 10.6 kg
RAD 50/RAD 70-M	1500 – 5000 ft·lb	2000 – 7000 N·m	6.1 RPM	25.1 lb / 11.4 kg
RAD 60DX/80DX-M	2000 – 6000 ft·lb	2700 – 8000 N·m	4.9 RPM	26.9 lb / 12.2 kg
RAD 80DX/110DX-M	2500 – 8000 ft·lb	3400 – 11000 N·m	4.3 RPM	30 lb / 13.6 kg
RAD 85GX/115GX-M	3000 – 8500 ft·lb	4100 – 11500 N·m	3.8 RPM	39.7 lb / 18.0 kg
RAD 110DX/150DX-M	4000 – 11000 ft·lb	5500 – 15000 N·m	3.0 RPM	41.8 lb / 19.0 kg
RAD 150DX/200DX-M	5500 – 15000 ft·lb	7400 – 20000 N·m	2.1 RPM	55.0 lb / 25.0 kg

Table 1.2.1-1: Tool Model Torque Ranges and Weights

Note: Stated speed may vary slightly from observed speed.

1.2.2 Environmental Specifications

CAUTION!

Only operate the RAD Pneumatic Tool System if the following storage and operation conditions have been met.

WARNING!

The vibration emission during actual use of the power tool can differ from the declared total value depending on the ways in which the tool is used.

Hearing protection should be worn when operating the tool.

Identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

	All Models	
	°C	°F
Ambient Operating Temperature Range	-20 – 40	-4 – 104
Storage Temperature Range	-25 – 70	-13 – 158
Required Operating Conditions	Non-explosive atmosphere, dry location	
Humidity	10% to 90% non-condensing	
Shock	10G according to DIN IEC 68-2-6/29	
Vibration Emission / Uncertainty = K In accordance with ISO 2827-2	Does not exceed 2.5 m/s^2 ; K = 1.5 m/s^2	
Noise Emissions in accordance with ISO 15744		
A-weighted sound pressure level - LpA	Does not exceed 100dB(A)	
A-weighted sound power level – LWA	110.0dB(A)	
Uncertainty = K	K = 3dB	

Table 1.2.2-1: Environmental Specifications

Note: The declared vibration total value has been measured in accordance with a standard test method and may be used for comparing one tool with another and in a preliminary assessment of exposure.

1.2.3 Cycle of Operation

A cycle of operation or a tool cycle as used in this manual is defined as:

- 10 seconds on (forward or reverse)
- 10 seconds off

Note: the “on” here is defined as where torque is applied to the system.

Note: An actual torque cycle may vary from the general definition above.

1.2.4 Lubricant Recommended

WARNING!

Dispose of oil in accordance with environmental and local regulations.

The lubricator arrives from New World Technologies Inc. empty, and as such it is recommended to use the lubricant identified in Table 1.2.4-1.

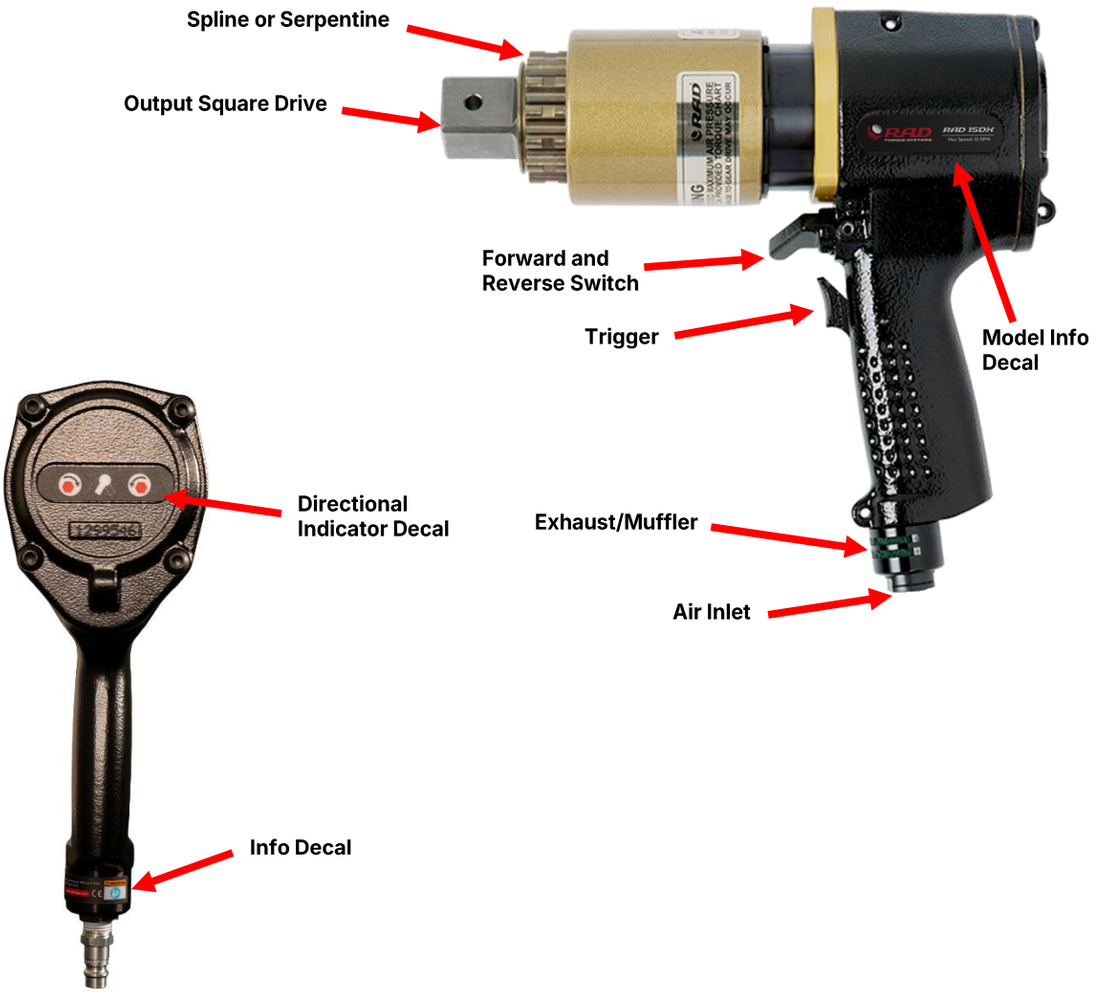
Manufacturer	AMSOIL INC.
Product Name	Synthetic Compressor Oil – ISO 32, Synthetic Compressor Oil – ISO 46, Synthetic Compressor Oil – ISO 68

Table 1.2.4-1: Lubricant Specifications

2.0 TOOL SYSTEM

The following sections give a visual and functional description of the tool handle and regulator cage.

2.1 Tool Handle Description



Model Info Decal



Model Name

Max Speed of Model

Directional Indicator Decal



CCW – Indicates counter-clockwise rotation.

Forward and Reverse Switch Position Icon

CW – Indicates clockwise rotation.

Info Decal

Max Air Pressure that is safe for tool



MFG Date
Year the tool was manufactured in

Read the manual before use warning

RAD® URL

CE logo indicating conformity

2.2 Regulator Cage Description

WARNING!
DO NOT use if hose is damaged.



Torque Chart
Always set air pressure with tool running

RAD Tool Storage

Input Extension

12′ Air Hose

Air Pressure Regulator
To increase air pressure (and torque), turn the "T" handle clockwise.
Note: The tool must always be running when setting air pressure.

Automatic Oiler
Fill the automatic oiler with air tool oil only. Fill from the top, or by removing and filling the bowl, then reinstalling from the bottom.

½" NPT Inlet
Install the air supply to the ½" NPT female port in the regulator. A minimum ½" air line must be used capable of 100psi at 30 cfm.

½" NPT Outlet
Install the supplied airline to the ½" NPT outlet port on the automatic oiler. The quick connect fitting at the opposite end of the hose will be attached to the RAD tool.

Liquid Filled Pressure Gauge

Info Label

Air Filter

Filter Drain Valve
(bottom of air regulator and filter, accessed from under cage assembly)

3.0 SETUP AND MAINTENANCE INSTRUCTIONS

CAUTION!

Only qualified personnel with training in how to perform setup and maintenance safely on the RAD Pneumatic Tool System should perform either on the RAD Pneumatic Tool System.

3.1 Tool System Assembly

WARNING!

Do Not use if hose is damaged.

CAUTION!

The RAD Pneumatic Tool System should be inspected before assembly to ensure no parts are damaged.

1. Check oil level in lubricator and fill to correct level (refer to Section 3.3 Lubricator – Replenish Lubricant).
2. Make sure the hoses are clear of any contaminants or obstructions.
3. Connect the supplied 12′ air hose to the outlet side of the regulator cage assembly.
4. Connect the tool handle air inlet to the other end of the 12′ air hose, observing airflow direction.
5. Connect air supply to inlet side of regulator cage assembly using a minimum hose size of ½ inch.

Note: Attach the optional input extension between air supply and Inlet side of regulator cage assembly if desired.

6. Attach reaction arm to spline or serpentine adjacent to the output square drive of the tool handle and secure with the snap ring (refer to Section 4.1 Reaction Arm).
7. Couple the socket and output square drive together with a dowel pin and secure with a locking ring (refer to Section 4.1 Reaction Arm).

3.2 Setting up Filter, Regulator, Lubricator (FRL) Oiler For Use

CAUTION!

The lubricator arrives from New World Technologies Inc. empty and closed. It must be filled and the drip-rate set before use (refer to Section 3.3 Lubricator – Replenish Lubricant).

Every RAD Pneumatic Tool System is supplied with the FRL oiler set to no drips.

Set the FRL oiler as follows:

1. Connect the tool handle air inlet via the 12′ air hose to the outlet side of the FRL assembly.
2. Connect air supply to inlet side of FRL assembly using a minimum hose size of ½ inch.
3. With the tool able to spin freely, press the trigger so the tool operates.
4. With the tool operating, adjust the oiler so that it drips every 3-5 seconds (refer to Section 3.4 Lubricator – Adjustment of Dripping Amount).

3.3 Lubricator – Replenish Lubricant

CAUTION!

Be sure to wear protective glasses when supplying lubricant.

The lubricator arrives from New World Technologies Inc. empty and closed. It must be filled and the drip-rate set before use.

Dispose of oil in accordance with environmental and local regulations.

AL40-D can replenish lubricant while being pressurized.

When supplying lubricant under pressure, loosen the lubrication plug slowly by approximately one turn to exhaust the air in the bowl. After confirming that the exhaust is complete, remove the lubrication plug (there is a small leakage even after the exhaust is complete). There is always a small leakage from the lubrication port.

Supply lubricant slowly up to the oil level limit so that an oil film is not generated.

Note: If an oil film appears on the lubrication port, oil may overflow. Air containing oil may come out.

Supply lubricant until the oil surface comes between the lower and upper limits of the oil level of the bowl. See Figure 3.3-1.

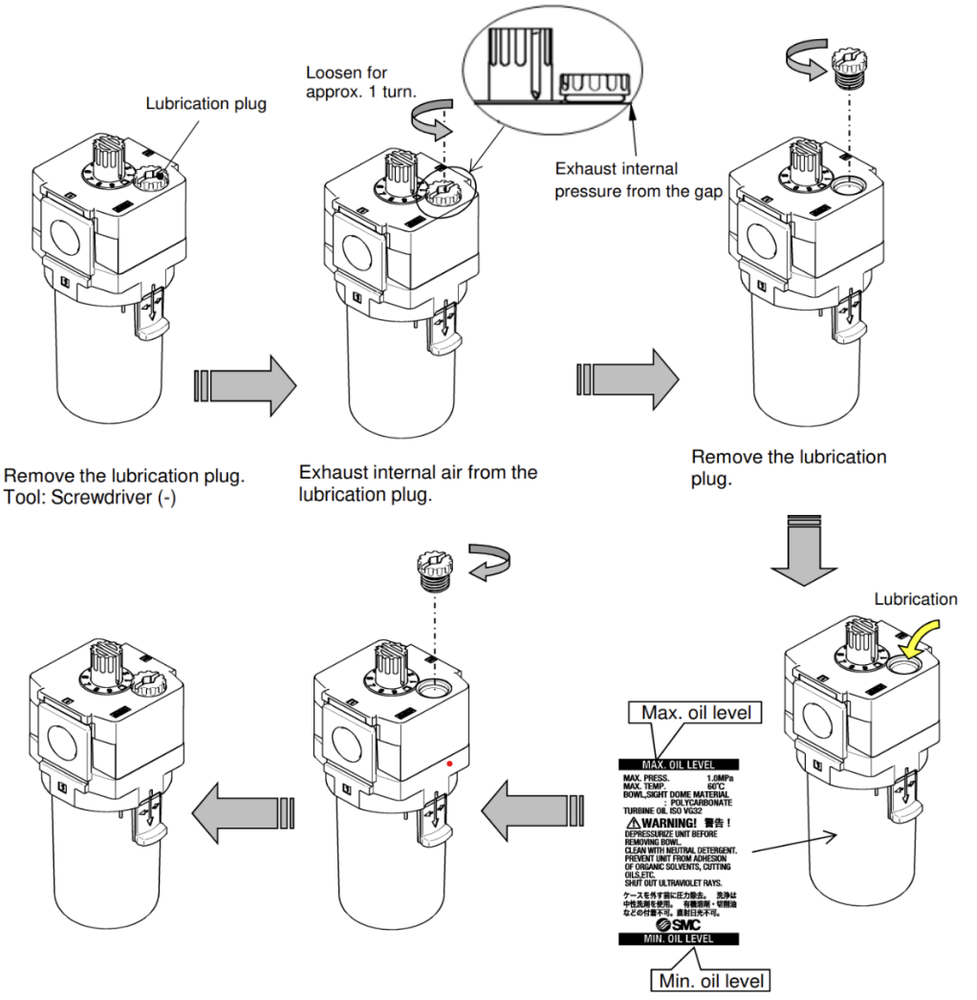


Figure 3.3-1: Adding Lubricant

After supplying lubricant, check the mounting condition of the lubrication plug O-ring and screw it in gently. Because of the O-ring seal structure, it is not necessary to screw strongly.

Recommended tightening torque:

- AL40-D: 0.55+/-0.05 N m

3.4 Lubricator – Adjustment of Dripping Amount

CAUTION!

Oil may drip even when the oil regulating valve is at a fully closed position.

If dripping is not acceptable, please stop using the lubricator.

1. While supplying air, rotate the oil regulating valve to adjust the amount of oil.
2. Rotate the valve in the direction of the arrow shown in Figure 3.4-1 to increase the amount of oil supplied.
   Note: The amount of oil decreases when rotated in reverse.
3. From the fully closed position, three rotations will bring it to the fully opened position. Do not rotate it any further than this.

Note: The numbered scale markings are guidelines for adjusting the position, and not indicators of the dripping amount.

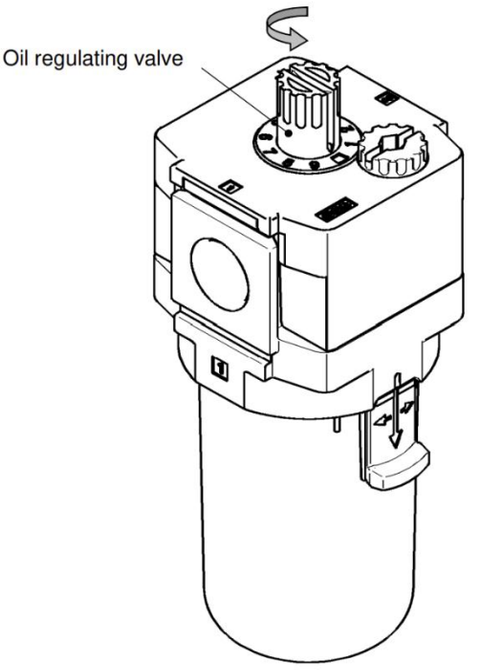


Figure 3.4-1: Lubricator – Oil Regulating Valve

3.5 Regulator – Draining Filter with Drain Cock

CAUTION!
The filter must be periodically drained to prevent water ingression in the air motor.

Drain discharge mechanism is different depending on the bowl assembly.

Check the bowl assembly and discharge the drain following the method in the following sections.

3.5.1 Push Type – with and without barb fitting

1. Pressurize the inside of the filter regulator when discharging drain.
2. The drain will not be discharged properly if not pressurized.
3. To discharge the auto drain manually, push the button on the drain cock as shown in Figure 3.5.1-1.

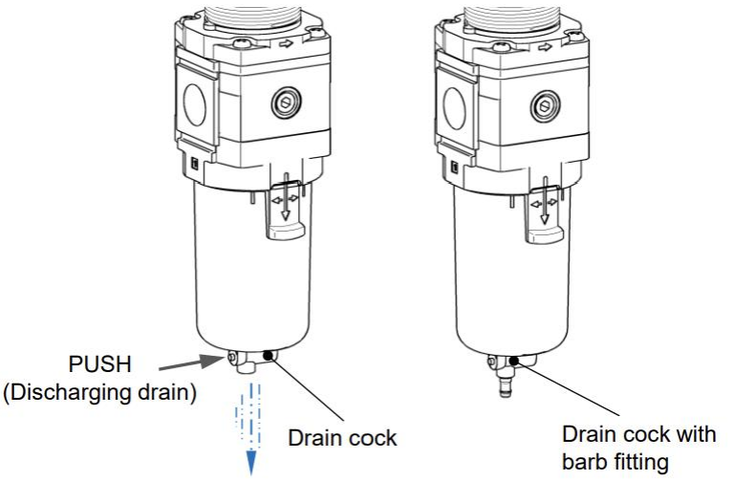


Figure 3.5.1-1: Push Type Drain Cock

3.5.2 Rotation Type

1. Pressurize the inside of the filter regulator when discharging drain.
2. The drain will not be discharged properly if not pressurized.
3. To discharge the auto drain manually, turn the drain cock by hand as shown in Figure 3.5.2-1.
4. After discharging the drain, rotate the drain cock in the opposite direction by hand until the seal inside seals correctly.

Note: Use of a tool can damage the product.

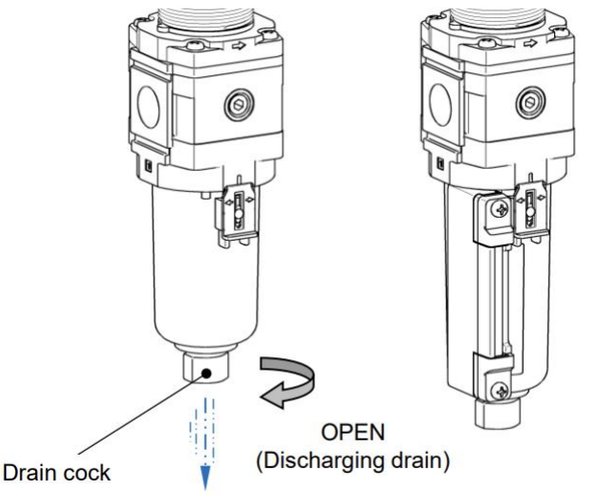


Figure 3.5.2-1: Rotation Type Drain Cock

3.5.3 Auto Drain Type

1. Pressurize the inside of the filter regulator when discharging drain.
2. The drain will not be discharged properly if not pressurized.
3. To discharge the auto drain manually, turn the drain cock by hand as shown in Figure 3.5.3-1.
4. After discharging the drain, rotate the cock in the opposite direction by hand to close the drain valve.

Note: Use of a tool can damage the product.

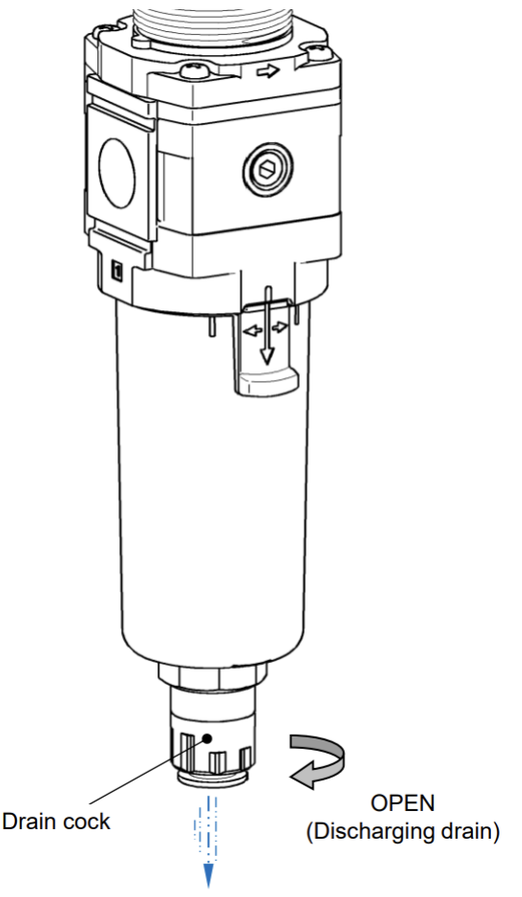


Figure 3.5.3-1: Auto Drain Type Drain Cock

4.0 General Operating Instructions

CAUTION!

Only qualified personnel with training in the safe operation of torque tooling and the RAD Pneumatic Tool System should operate this tool. Refer to the Important Safety Notice for more information.

The RAD Pneumatic Tool System operates in torque cycles. The torque cycle passes when the actual torque reaches the target torque. The cycle fails if it is interrupted and the actual torque does not reach the target torque.

4.1 Reaction Arm

WARNING!

Always keep body parts clear of the reaction arm when the RAD Pneumatic Tool System is in use. Serious injury could occur.

CAUTION!

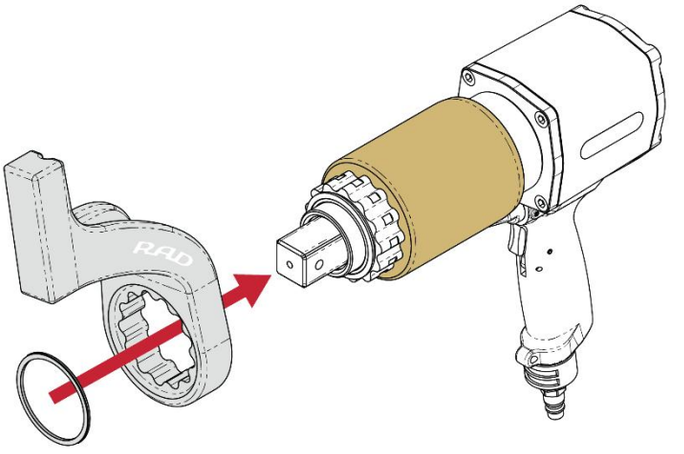
Ensure that the reaction arm has a solid contact point before operating the RAD Pneumatic Tool System.

Improper reaction will void warranty and can cause premature tool failure.

Please contact New World Technologies Inc. or your local RAD authorized distributor for information on custom reaction arms.

Installing the Reaction Arm

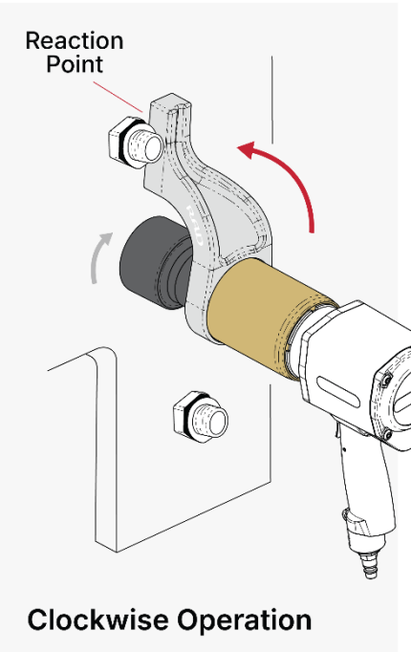
Slide the reaction arm onto the serpentine fitting and secure the snap ring to hold the reaction arm in place. Couple the socket and square drive together with a dowel pin and secure with a locking ring.

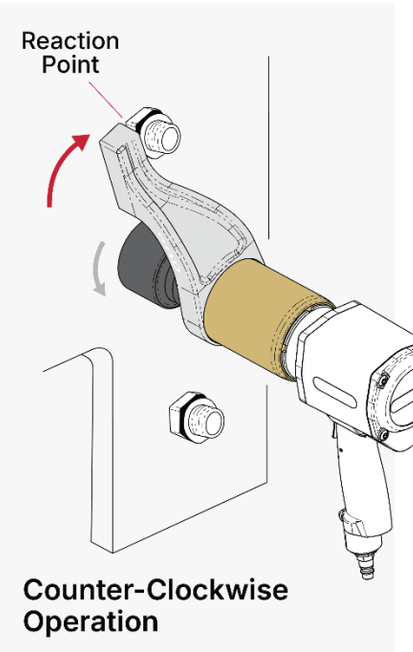


Reaction Points

Make sure that the reaction arm is in contact with a solid reaction point before operating the tool.

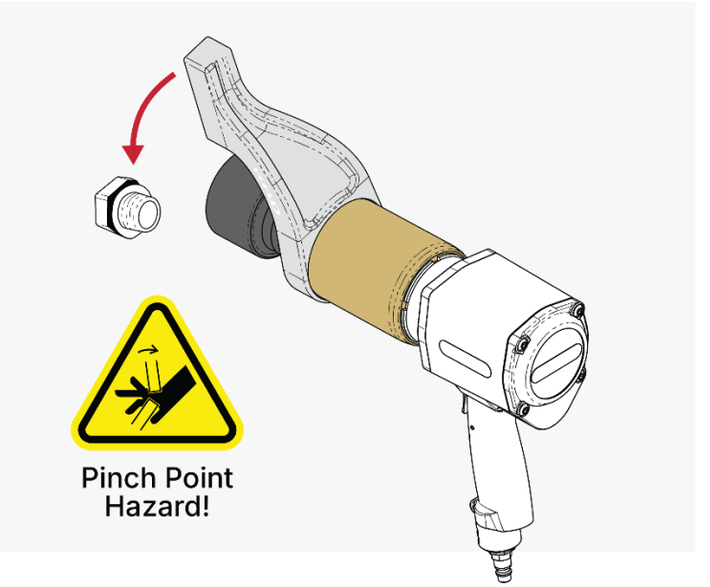
When the tool is in operation, the reaction arm rotates in the opposite direction to the output square drive and must be allowed to rest squarely against a solid object or surface adjacent to the bolt to be tightened.





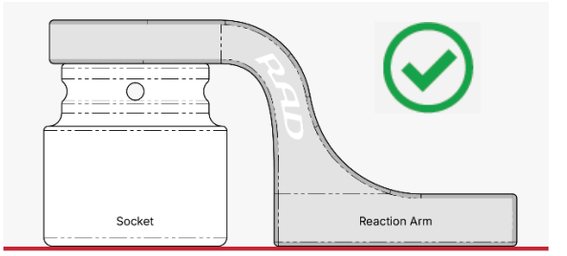
Personal Safety

CAUTION!
Keep hands clear of the reaction arm and joint when the tool is in operation.

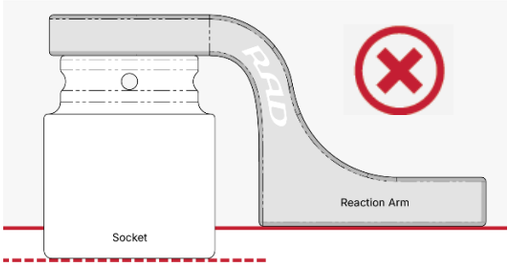


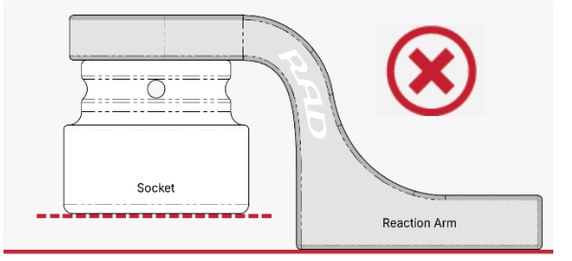
Reaction Arm Height

For proper tool function, ensure that the height of the socket is even with the height of the reaction arm.



Correct: The socket and reaction arm are aligned

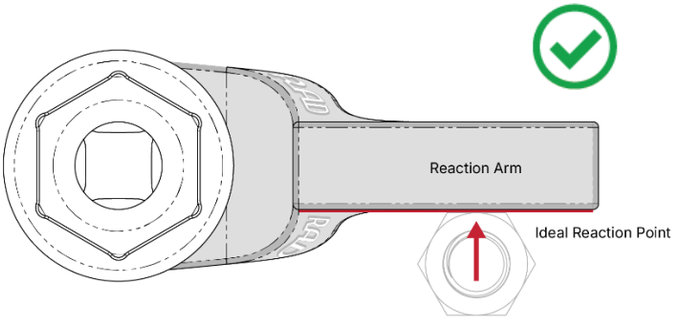




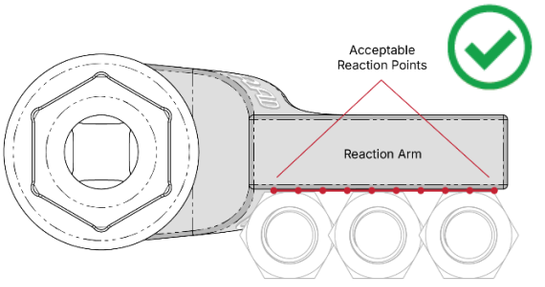
Incorrect: The leg of the reaction arm is too short in the left image and too long in the right image

Reaction Arm Foot

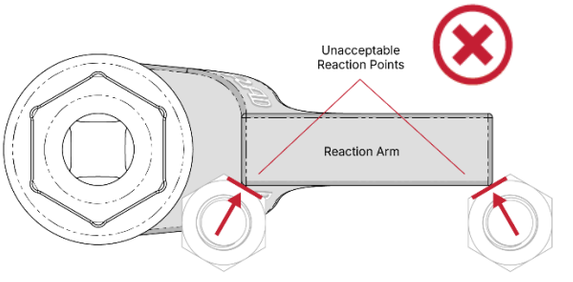
Make sure the foot of the reaction arm is positioned directly against the reaction point to ensure correct function



Reaction Point



Good reaction point:
Reacting perpendicular to the reaction arm



Bad reaction point:
Reacting at the angle towards the heel or the toe of the reaction arm

4.2 Setting Torque for Bolt Tightening

CAUTION!

Do not exceed maximum air pressure setting on the torque chart.

IMPORTANT!

The RAD Pneumatic Tool System must be free running while adjusting the air pressure to give the correct setting.

It is important that the air pressure be set while the tool is running and air is flowing.

Every RAD Pneumatic Tool System is supplied with a torque chart which relates output to air pressure.

The regulator is used to configure the target torque of the RAD Pneumatic Tool System. To accurately set the target PSI, the operator will need to know the pressure value that corresponds with the target torque, which can be found by comparing the values on the calibration chart provided.

Set the torque as follows:

1. Make sure the air supply and tool handle are attached to the regulator cage.
2. Ensure that the forward/reverse switch is set to the forward position.
3. Establish the air pressure required using the torque chart.
4. Make sure the output square drive of the RAD Pneumatic Tool System can run freely without any impedance.
5. Depress the trigger and ensure the RAD Pneumatic Tool System is free running and air is flowing.
6. While keeping the trigger depressed, adjust the regulator by following the method described below until the correct pressure is shown on the gauge.
   a) Unlock the regulator adjustment knob (ex: pull the knob up, loosen locking nut).
   b) Turn the knob clockwise to increase the outlet pressure and turn it counterclockwise to decrease the pressure.
   c) After adjusting the pressure, lock the knob in place.

4.3 Setting Torque for Bolt Loosening

WARNING!

Exceeding the maximum air pressure will overload the tool and may cause serious damage.

1. Ensure that the forward/reverse switch is set to the reverse position.
2. Establish maximum air pressure from the torque chart and set the air pressure the same as with tightening.

4.4 Operating the Tool

WARNING!

Keep hands clear of reaction arm.

The tool must be supported at all times during use to prevent unexpected release in the event of a fastener or component failure.

1. Fit the tool handle with the correct size socket to suit the bolt to be tightened.
2. Check the forward/reverse switch is in the correct position.
3. Rotate the tool handle to a convenient position relative to the reaction arm.
4. Fit the tool to the bolt to be tightened with the reaction arm adjacent to the reaction point.
5. Squeeze the trigger partially to bring the reaction arm into contact with the reaction point.

6. Fully depress the trigger and keep fully depressed until tool stalls. If the trigger is released before the tool stalls, full torque will not be applied to the bolt.
7. Release the trigger and remove the tool from the bolt.

5.0 TROUBLESHOOTING

IMPORTANT!
Disassembling or attempting repair will void warranty.

If breakdown, malfunction, or error occurs, contact New World Technologies Inc. Technical Support (refer to Section 6.0 Contact Us).

6.0 CONTACT US



TF: 1-800-983-0044 **F:** 604-852-0269
W: www.radtorque.com **E:** info@radtorque.com

Technical Support
P: 1-800-983-0044 (EXT. 227)
E: service@radtorque.com

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Canada

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Pneumatic Series Limited Warranty

NEW TOOL WARRANTY

Any new tool branded with the RAD name and purchased from New World Technologies Inc., or through one of its authorized distributors or agents, is warranted to the original purchaser against defects in materials and workmanship for a period of one (1) year from the date of original calibration. Electric drive components such as electric motors, switches, and batteries etc., are covered for a period of six (6) months from the date of original calibration. Under the terms of this warranty, New World Technologies Inc., at its option and F.O.B. either its factory or an authorized service center, will replace or repair for the original purchaser, free of charge, any part or parts, found upon examination by New World Technologies Inc., to be defective in material or workmanship or both. If any product or part is replaced or repaired under the terms of this warranty, that product or part will carry the remainder of the warranty from the date of original calibration.

REPAIRED TOOL WARRANTY

Once a tool is beyond its new tool warranty, New World Technologies Inc., for a period of three (3) months from the date of repair, will replace or repair for the original purchaser, free of charge, any part or parts, found upon examination by New World Technologies Inc., to be defective in material or workmanship or both. If any product or part is replaced or repaired under the terms and conditions of this warranty, that product or part will carry the remainder of the warranty from the date of original repair.

To qualify for the above mentioned warranties, written notice to New World Technologies Inc. must be given immediately upon discovery of such defect, at which time New World Technologies Inc. will issue an authorization to return the tool. The defective item must promptly be returned to New World Technologies Inc. all freight charges prepaid. When returning a tool, the reaction arms being used with the tool must also be returned.

NEW WORLD TECHNOLOGIES INC. | T: 1.800.983.0044 | E: INFO@RADTORQUE.COM

EXCLUSIONS FROM WARRANTY

Tools or accessories found by New World Technologies Inc.'s sole judgement to have been altered, damaged, misused, abused, badly worn due to excessive utilization, lost, or improperly maintained will NOT be covered under the terms of this warranty.

Tools returned without the reaction arms will not be covered under the terms of this warranty.

Consumable parts and accessories (such as extensions, reaction blanks/arms) are not covered under this warranty.

Tools that have been relabeled without prior written consent of New World Technologies Inc. will not be covered under this warranty.

Equipment and accessories not manufactured by New World Technologies Inc. (measuring equipment, etc.) are warranted only to the extent of the original manufacturer's warranty.

**There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose are limited to one year from date of calibration and to the extent permitted by law. Liability for consequential damages under any and all warranties are excluded to the extent exclusion is permitted by law.*

RAD®
TORQUE SYSTEMS

TRUSTED POWER.

New World Technologies is a leading Canadian manufacturer of pneumatic, battery powered, and electronic pistol grip torque wrenches. Our advanced products have proven to be successful all over the world in such industries as oil and gas, petrochemical, mining, aerospace, and manufacturing. We continue to invest in and employ the latest technology to achieve the highest level of Innovation, quality, and performance - which has resulted in multiple patents for our products.

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