RAD TORQUE SYSTEMS

ADVANCED BOLTING TECHNOLOGY

PNEUMATIC

ELECTRONIC

BATTERY

ELECTRIC

SMART SOCKET

WWW.RADTORQUE.COM

PNEUMATIC SERIES USER MANUAL

RAD TORQUE SYSTEMS

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

ELECTRONIC SERIES E-RAD

- **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**
  Unmistakable visual signal indicates status of torque procedure for maximum accuracy and speed

BATTERY SERIES B-RAD

- **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

ELECTRIC SERIES V-RAD

- **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
- **ADVANCED ULTRA-DURABLE ELECTRIC MOTOR DESIGN**
  Extreme duty designed to reduce maintenance cost and increase reliability
- **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
- **BLUE 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

TABLE OF CONTENTS

MANUAL REVISION HISTORY

V2014.07.08:

-Initial Release

V2016.09.06:

-Updated table of Tool Models

V2023.02.22:

-Updated table of Tool Models
-Updated warnings
-Updated section 3.0 – General Operating Instructions
-Updated Table 1.2.1: Torque Ranges
-Updated section 1.1 component list
-Updated service email

IMPORTANT SAFETY NOTICE

WARNING!

READ ALL SAFETY WARNINGS AND ALL INSTRUCTIONS. FAILURE TO FOLLOW THE WARNINGS AND INSTRUCTIONS MAY RESULT IN DAMAGE TO THE TOOL AND/OR SERIOUS INJURY.

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

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

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

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 and throughout this manual.

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 5.0 – 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 and the reaction arm contact point.

Never exceed the Maximum Torque of the RAD® Pneumatic Tool System. Failure to comply, will result in void 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.

1.0 General Information

1.1 System Components

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

- RAD® Pneumatic Tool (Figure 1.1-1)
- Standard Reaction Arm and Snap Ring (Figure 1.1-2)
- Calibration Certificate
- User Manual
- Computer Based Training Video (flash drive)

Figure 1.1-1: RAD® Pneumatic Tool

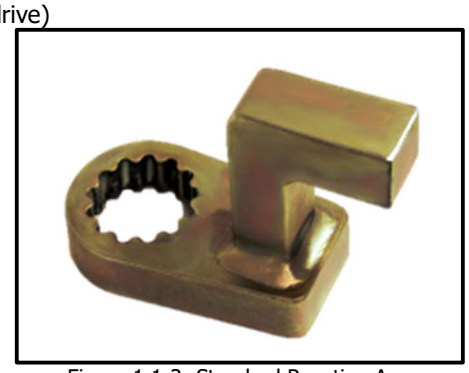


Figure 1.1-2: Standard Reaction Arm

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

1.2 Specifications

CAUTION!

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

1.2.1 Torque Ranges

Pneumatic Model Imperial / Metric	Range (Foot-Pounds) - Ft.Lbs	Range (Newton-Metres) - Nm	Noise Level
200 SL / 275SL	40 – 200	55 – 275	80 dB
350SL / 475SL	50 – 350	70 – 475	80 dB
7GX / 10GX	100 – 700	150 – 950	80 dB
7GX-R / 10GX-R	300 – 700	400 – 950	80 dB
10GX / 14GX	200 – 1000	275 – 1400	80 dB
10GX-2 / 14GX-2	350 – 1000	475 – 1400	80 dB
10GX-NX / 14GX-NX	200 – 1000	275 – 1400	80 dB
15DX / 20DX	300 – 1500	400 – 2000	80 dB
15DX-2 / 20DX-2	500 – 1500	700 – 2000	80 dB
15DX-NX / 20DX-NX	300 – 1500	400 – 2000	80 dB
1800NG / 2400NG	500 – 1800	700 – 2400	85 dB
1800NGX-R / 2400NGX-R	500 – 1800	700 – 2400	85 dB
25GX / 34GX	500 – 2500	700 – 3400	85 dB
25GX-2 / 34GX-2	700 – 2500	950 – 3400	80 dB
30DX-2 /40DX-2	1000 – 3000	1400 – 4000	85 dB
34GX / 46GX	1000 – 3400	1400 – 4600	85 dB
60DX / 80DX	2000 – 6000	2700 – 8000	85 dB
80DX / 110DX	2500 – 8000	3400 – 11000	85 dB
85GX / 115GX	3000 – 8500	4100 – 11500	110 dB
110DX / 150DX	4000 – 11000	5500 – 15000	85 dB

Table 1.2.1: Torque Ranges

1.2.2 Environmental Specifications

	All Models	
	°C	**°F**
Ambient Operating Temperate Range	-20 to 40	-4 to 104
Storage Temperature Range	-25 to 70	-13 to 158
Humidity	10% to 90% non-condensing	
Shock	10G according to DIN IEC 68-2-6/29	
Vibration	1G, 10-150Hz according to DIN IEC 68-2-6/29	
Vibration Emission	Does not exceed 2.5 m/s²	
Required Operating Conditions	Nonexplosive atmosphere Dry location	

Table 1.2.2: 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 may be used in a preliminary assessment of exposure.

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.

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).

CAUTION!

It is recommended that the operator wears hearing protection.

1.2.3 Cycle of Operation

A Cycle of Operation or a Tool Cycle is defined as:

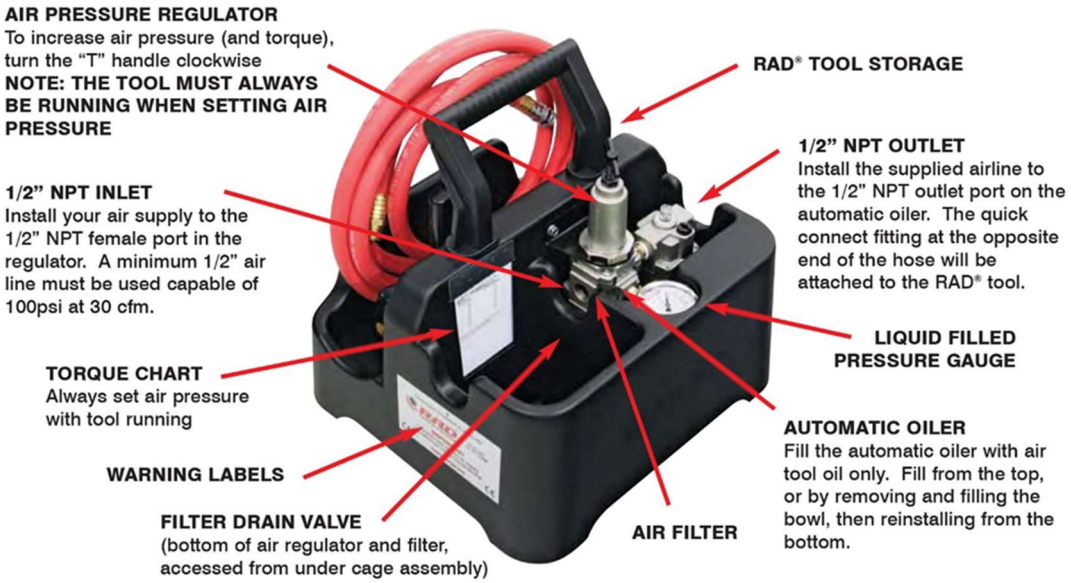
- 10 seconds On (Forward or Reverse)
- 5 seconds Off

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

2.2 Regulator Cage Description



3.0 General Operating Instructions

WARNING!

Only qualified personnel with training in the safe operation of torque tooling and the RAD® Pneumatic Tool should operate this tool.

The RAD® Pneumatic Tool operates in Torque Cycles. The Torque Cycle passes when the Actual Torque reaches the Target Torque and the Cycle fails if it is interrupted and the Actual Torque does not reach the Target Torque.

This section instructs the operator in the assembly of the RAD® Pneumatic Tool, proper use of the Reaction Arm, and how to conduct a Torque Cycle.

3.1 Tool Assembly

1. Blow out hoses before connecting.
2. Connect the wrench Air Inlet to the outside of the Cage Assembly, observing airflow direction.
3. Connect air supply to Inlet side of Cage Assembly using a minimum hose size of ½ inch.
4. Check oil level in lubricator and fil to correct level.
5. Attach Reaction Arm to Spline or Serpentine adjacent to the Output Drive of the wrench and secure with the snap ring.

3.2 Reaction Arm

WARNING!

Always keep body parts clear of the Reaction Arm when the RAD® Pneumatic Tool **is in use. Serious injury could occur.**

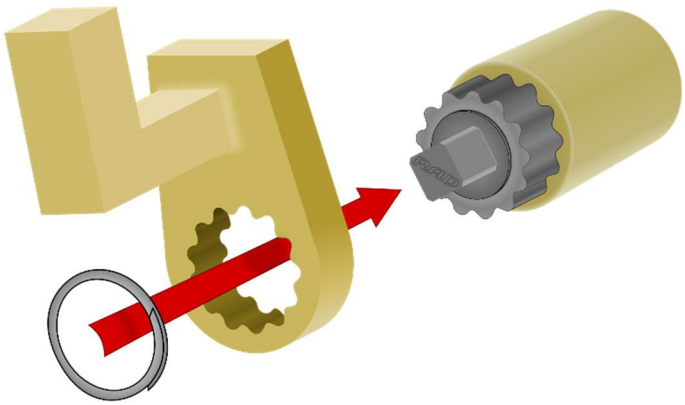
CAUTION!

Ensure that the Reaction Arm has a solid contact point before operating the RAD® Pneumatic Tool. Improper reaction will void warranty and can cause premature tool failure.

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

3.2.1 Installing the Reaction Arm

Slide the Reaction Arm onto the spline or serpentine fitting and secure the Snap Ring to hold the Reaction Arm in place.

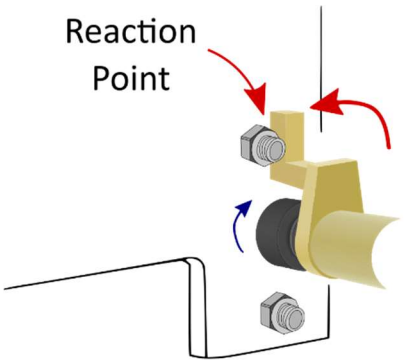


Note: Ensure that the reaction arm and snap ring are installed securely to hold the reaction arm in place.

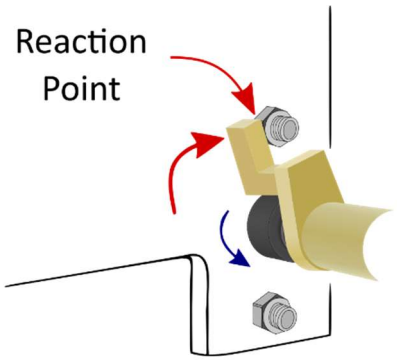
3.2.2 Reaction Points

Make sure that the reaction arm is in contact with a solid reaction point before you operate 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.



Clockwise Operation

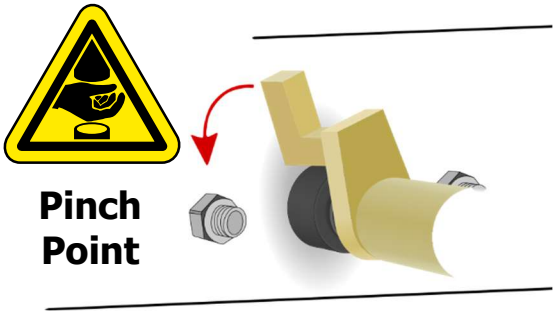


Counter-Clockwise Operation

3.2.3 Personal Safety

CAUTION!

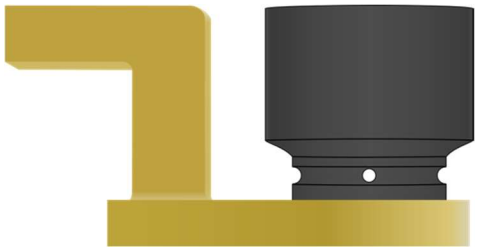
Keep your hands clear of the Reaction Arm and joint when the tool is in operation.



3.2.4 Reaction Arm Height

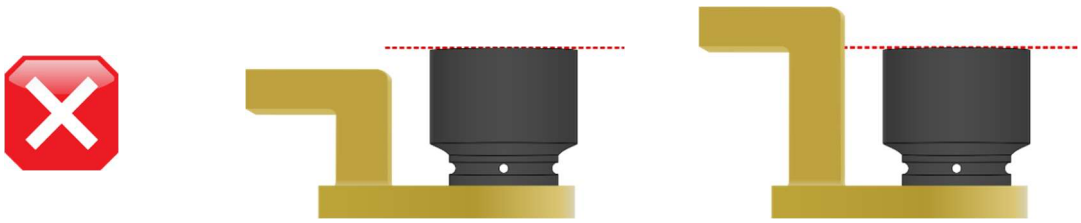
Ensure that the height of the socket is even with the height of the Reaction Arm.

CORRECT: The Reaction Arm and socket are even height.



The height of the socket cannot be shorter or higher than the height of the Reaction Arm.

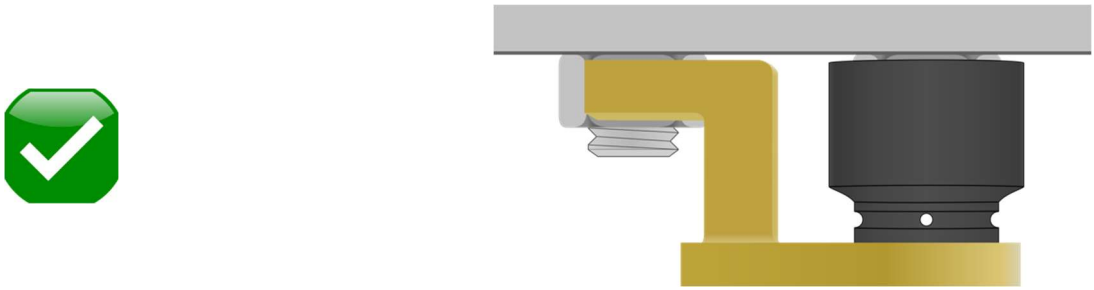
INCORRECT: The leg of the Reaction Arm is too short on the left side, and too long on the right side.



3.2.5 Reaction Arm Foot

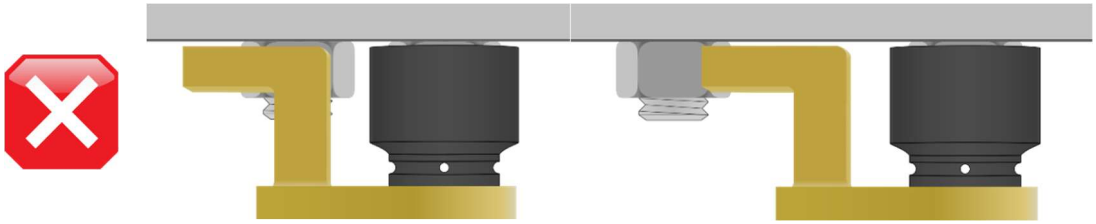
Ensure that the foot of the Reaction Arm aligns with the length of the reaction point.

CORRECT: The foot of the Reaction Arm aligns with the reaction point.



The length of the foot cannot be shorter or longer than the reaction point.

INCORRECT: The reaction point is too close in the left image and too far in the right image. Do not react against the heel of the reaction arm.



Please contact New World Technologies Inc. or your local RAD Authorized distributor for custom Reaction Arms.

3.3 Setting Torque for Bolt Tightening

Every RAD® Torque Wrench is supplied with a Torque Chart which relates output to air pressure. Set the torque as follows:

1. Ensure that the Forward/Reverse switch is set to the Forward position.
2. Establish the air pressure required using the Torque Chart.

Adjust the regulator until the correct pressure is shown on the gauge.

CAUTION!

Do not exceed maximum air pressure setting on the Torque Chart.

IMPORTANT!

The wrench must be free running while adjusting the air pressure to give the correct setting.

3.4 Setting Torque for Bolt Loosening

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.

WARNING!

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

3.5 Operating the Wrench

1. Fit the wrench with the correct size impact socket to suit the bolt to be tightened.
2. Check the Forward/Reverse switch is in the correct position.
3. Rotate the 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 (Figure 3.2.1-1).
5. Squeeze the Trigger partially to bring the Reaction Arm into contact with the Reaction Point.

WARNING!

Keep hands clear of the Reaction Arm.

WARNING!

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

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

4.0 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 5.0 – Contact Us).

5.0 Contact Us

NEW WORLD TECHNOLOGIES INCORPORATED

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Fax: 604-852-0269
Email: info@radtorque.com
Web: www.radtorque.com

Technical Support:
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New World Technologies Inc.
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Abbotsford, BC
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Canada

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 arm/s 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 arm/s 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.*

LIGHTER FASTER STRONGER SAFER

RAD TORQUE SYSTEMS

ABOUT NEW WORLD TECHNOLOGIES INC.

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.

NEW WORLD TECHNOLOGIES INCORPORATED

NEW WORLD TECHNOLOGIES INC

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