



RAD[®]

TORQUE SYSTEMS - INNOVATION DRIVEN PERFORMANCE

USER MANUAL

DU-RAD BATTERY SERIES

550 - 3.400 Nm



User manual for:

- **DV-RAD 1400**
- **DV-RAD 2000**
- **DV-RAD 3400**



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Figure 1

1. General instructions

NOTE: Do not operate the tool before reading these instructions. If breakdown, malfunction or damage occurs, do not attempt to repair, please contact RAD Torque Systems B.V. immediately.

RAD electric torque wrenches are reversible, non-impacting, torque controlled tightening tools and must always be operated with the following:

- Impact sockets with locking pin and o-ring.
- Proper reaction arm with retaining ring.

NOTE: These torque wrenches contain metal components that can be dangerous in hazardous areas.

- Before using the power tool, read the accompanying safety instructions and operation instructions carefully and thoroughly.
- Keep all of the documents supplied with the tool in a safe place and pass them on to the new owner if you part with the tool.
- This electric power tool is designed for tightening and loosening fasteners and other similar applications.
- The operator bears sole responsibility for any damage caused by inappropriate use.
- Generally recognized accident prevention regulations and the accompanying safety instructions must be observed.

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.

Digital V-RAD torque wrenches have been designed with safety in mind however as with all tools you must observe all general workshop safety practices and specifically the following;

- Before using your new tool, get familiar with all its accessories and how they work.
- Always keep electric motor and unit dry and away from moisture.
- Do not use any unit that has damaged parts or components.
- Do not pick up tool by cord, always pick up by tool handle.
- Do not expose the unit to excess heat.
- Do not attempt to disassemble the gear box or electrical motor.
- Do not use an adapter and do not run the tool through an inappropriate voltage source.
- Always wear safety goggles when the tool is in operation.
- Make sure the reaction arm is in contact with a solid contact point before you operate the tool.
- Keep your body parts clear of the reaction arm and the contact point.
- Make sure the reaction arm snap ring is securely in place to hold the reaction arm or blank in place.

2. Assembly

1. Plug the torque wrench into the power socket.
2. Fasten and secure the reaction arm on the jagged side of the gearbox with the retaining ring.

DV-RAD torque wrench



3. Setting torque

3.1 Setting direction of rotation

To switch your Digital V-RAD into forward and reverse, move the switch up and down, see Figure 3.

Up setting	=	Tightening
Down setting	=	Loosening
Central setting	=	Transportation position



Figure 3



Figure 4

WARNING: On the handle of your V-RAD there will be a small button that is used as a trigger locking mechanism and has been locked out for your safety. Do not try to push this button in and enable the mechanism it will put the user at risk of injury, see Figure 4.

3.2 Operating the torque wrench

- Use only suitable and proper impact sockets.
- The handle can be rotated for ease of installation.
- The reaction arm is placed against a solid reaction point before the trigger is pulled. This prevents movements of reaction arm.
- Check that the desired target torque is selected on the display screen.
- Press the trigger, the trigger can be released at any time to stop the tool and cancel the torque cycle.
- When the tool stops moving the peak torque result will be displayed on the screen. The results will remain displayed for 10 seconds, or until the tool is reversed or a new torque cycle starts.
- When the tool reaches the desired torque, the torque wrench will automatically stop.
- Once "Pass" or "Fail" has been displayed the tool is ready to perform another torque.

WARNING: Keep your hand and body parts clear of the reaction arm and barrel when the tool is in operation.

4. User interface

The Digital V-RAD offers a user friendly LCD interface with push button navigation.

NOTE! Be sure to hold the push button press down for a duration of 1 second. This will ensure that the button was properly registered.

4.1 Main screen

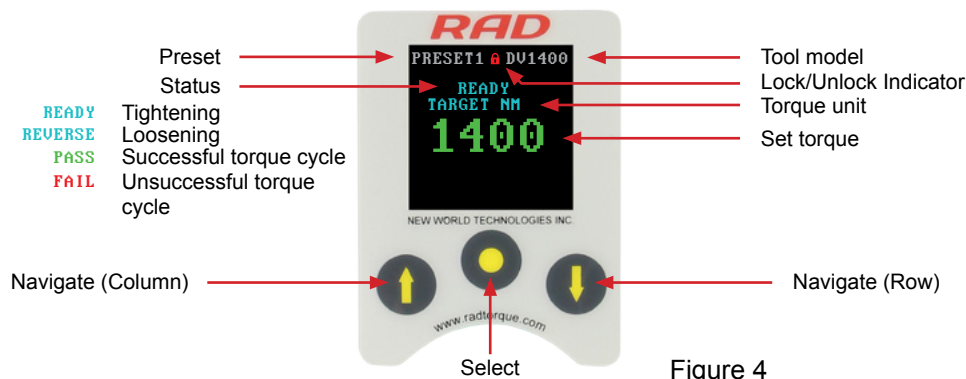


Figure 4

4.2 Main menu

To activate the main menu simply hold down the “select” button from the main screen, see Figure 5. Use the “up arrow” button and the “down arrow” button to highlight the desired menu option and press the “select” button to select the menu option.

PRESET

Select pre-defined target torque values.

SAVE

Modify pre-defined preset values.

HARD JOINT

Allows to operate on a joint with a joint rate of less than 10°.

LOCK

Password protection for three user levels: basic, intermediate and advanced. When activated, a “lock” icon will appear at the top of the screen.

UNITS

Switch between FTLB and Nm.

SETUP

This option contains the calibration mode and clock settings and will only be displayed in advanced lock level.

INFO

This option contains the tool info, last result, life cycles, maintenance cycles, and zero maintenance.

EXIT

Return to main screen.



Figure 5

4.3 Error display screen

The tool could experience some malfunctioning, when this occurs an error message will be displayed on the display screen. The error messages could be one of the following:

- STALL = Tool has detected high torque at start up
- HI CURR = Tool has detected high current during wind-up
- NO CURR = Tool has not detected current during wind-up

5. Movement of the reaction arm

5.1 Installing the reaction arm

Ensure the reaction arm and retaining ring are installed securely to hold the reaction arm in place. Make sure 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, see Figure 6.

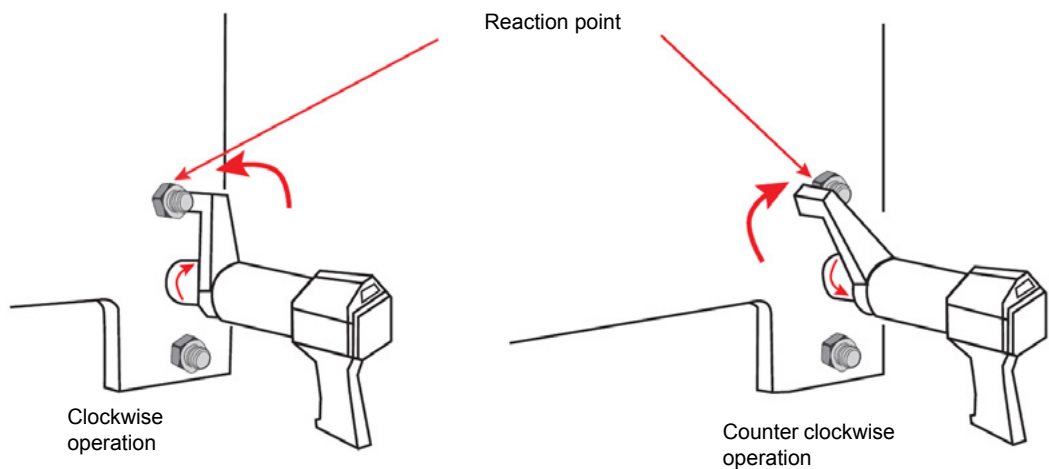


Figure 6

WARNING: In use, this tool must be supported at all times in order to prevent unexpected release in the event of a fastener or component failure!

5.2 Reaction arm height

Ensure the height of the socket is even with the height of the reaction arm as seen below in Figure 7A. The height of the socket cannot be shorter or higher than the height of the reaction arm as seen below in Figure 7B and 7C.

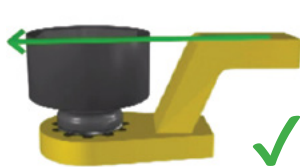


Figure 7A



Figure 7B

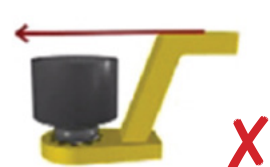


Figure 7C

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

5.4 Reaction arm foot

Ensure the foot of the reaction arm aligns with the length of the nut as seen in Figure 8A. The length of the foot cannot be shorter or longer than the nut as seen in Figure 8B and 8C.

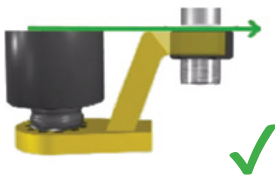


Figure 8A



Figure 8B



Figure 8C

5.3 Reaction point

Ensure the reaction arm reacts off the middle of the foot as seen in Figure 9A. Do not react off the heel of the reaction foot as seen in Figure 9B.

Please contact RAD Torque Systems B.V. or your local RAD authorized distributor for custom reaction arms.

WARNING: Always keep your hand and body parts clear of the reaction arm and barrel when the tool is in operation, see Figure 9C.



Afbeelding 9A



Afbeelding 9B



Afbeelding 9C

6. Safety

RAD tools are developed for tightening and loosening threaded fasteners using very large forces. For your safety and that of others, warning labels and attention labels are prominently attached to the torque wrench and its accessories.

NOTE: Make sure you observe the directions on the warning labels at all times.

RAD tools have been designed with safety in mind however, as with all tools you must observe all general workshop safety practices, and specifically the following:

- Before using your new tool, get familiar with all its accessories and how they work
- Always wear safety goggles when the tool is in operation
- Make sure the reaction arm is in contact with a solid contact point before you operate the tool
- Keep your body parts clear of the reaction arm and the contact point
- Make sure the reaction arm snap ring is securely in place to hold the reaction arm or blank in place.

RAD tools are safe and reliable. Not following precautions and instructions outlined here can result in injury to you and your fellow workers. RAD Torque Systems B.V. incorporated is not responsible for any such injury.

6.1 New tool warranty

Any new tool branded with the RAD name and purchased from RAD Torque Systems B.V., 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 twelve (12) month from the date of delivery to the end user. This guarantee is valid until fifteen (15) months after the original calibration date.

Furthermore, the warranty conditions determine that no warranty applies if:

1. The defect, wholly or partly, is due to unusual, inappropriate, improper or careless use of the product;
2. The defect, wholly or partly, is due to unusual, is due to normal wear and tear or lack of proper maintenance;
3. The defect, wholly or partly, is due to unusual, is due to installation, assembly, modification and / or repair by the customer or by third parties;
4. The product altered, modified, used or processed is;
5. The product is transferred to a third party;
6. RAD Torque Systems B.V. has obtained the product, wholly or partly, from a third party, and RAD Torque Systems B.V. can not claim compensation under warranty;
7. RAD Torque Systems B.V. in manufacturing of the product raw materials, and suchlike has used on the instructions of the customer;
8. The product has a small deviation in it's quality, finishing, size, composition and suchlike, which is not unusual in the industry or if the defect was technically unavoidable;
9. The customer has not fulfilled all obligations under the agreement promptly and correctly towards RAD Torque Systems B.V..

6.2 Repaired tool warranty

After the warranty has expired a three (3) month warranty applies to the original purchaser against defective in material or workmanship or both from the date of repair.

To qualify for the above mentioned warranties, written notice to RAD Torque Systems B.V. must be given immediately upon discovery of such defect, at which time RAD Torque Systems. will issue an authorization to return the tool. Freight costs must be paid in advance. When returning a tool, the reaction arm/s being used with the tool must also be returned.

6.3 Exclusions from warranty

At RAD Torque Systems B.V.'s sole judgment tools or accessories that 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 RAD Torque Systems B.V. will not be covered under this warranty.

Equipment and accessories not manufactured by RAD Torque Systems B.V.. (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.*

For the latest warranty terms, please see our sales conditions on our website www.radtorque.nl.

7. Contact

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