RAD TORQUE SYSTEMS

MV-RAD ELECTRIC SERIES

65 - 11.000 Nm

User manual for MV-RAD:

- *MV-RAD 6*
- *MV-RAD 14*
- *MV-RAD 20*
- *MV-RAD 40*
- *MV-RAD 45*
- *MV-RAD 70*
- *MV-RAD 80*
- *MV-RAD 110*

USER MANUAL

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1. General instructions

NOTE: Do not use this torque wrench before reading these instructions. If the torque wrench does not function properly, do not attempt to repair the torque wrench, but contact RAD Torque Systems B.V. immediately

RAD electric torque wrenches are torque-controlled. Correct operation requires the following:
- Impact sockets with locking pin and o-ring
- Proper reaction arm with retaining ring
- These torque wrenches contain metal components that can be dangerous in explosion hazardous areas.

NOTE: The tool can be used with single-phase alternating current. It is grounded in accordance with Class II VDE 0740 and CEE 20. The connection may also be provided by non-grounded electrical outlets. The radio interference suppression meets EC Directive 82/499.

NOTE: Prior to use, check whether the supply voltage matches the operating voltage indicated.

The torque wrench may only be operated, calibrated or repaired by qualified personnel. The torque wrench contains rotating objects. The use of this tool by untrained persons may result in serious injuries.

After performing 20,000 joints, the tool must be maintained, including lubrication of the multiplier. You will receive this message every time you start the tool after reaching 20,000 joints.

2. Description of the functions

1. The torque wrenches of the MV-RAD series are high-capacity, clockwise and counter clockwise rotating torque wrenches equipped with an automatic torque depending shutdown
2. The torque wrench is calibrated to a so-called medium-hard joint
3. The torque wrench responds to soft and hard joints. This also applies to mutual hard or soft joints in different materials. Therefore, the torque wrench must be set to the proper value for each joint, depending on the desired torque. The torque should be determined in advance, using a transducer.
4. To ensure that the tool reaches the pre-set torque, the relevant joint requires an angle of at least 90° from the start of the tightening until reaching the torque. After reaching the set torque, the torque wrench will switch off automatically.
5. For joints for which the tool is used to check the joint, the torque wrench will be loaded to maximum capacity.
6. The torque wrench is not suitable for checking the torque. However, this is possible in combination with our Smart Socket.

3. Setting direction of rotation

Only operate the rotational direction switch when the motor is at standstill, see Figure 1.

Upper position	=	Tightening
Lower position	=	Loosening
Centre position	=	Transportation position, on/off switch

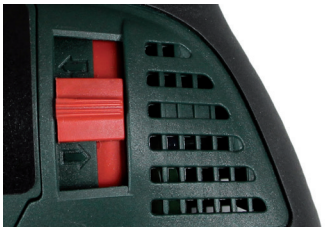


Figure 1

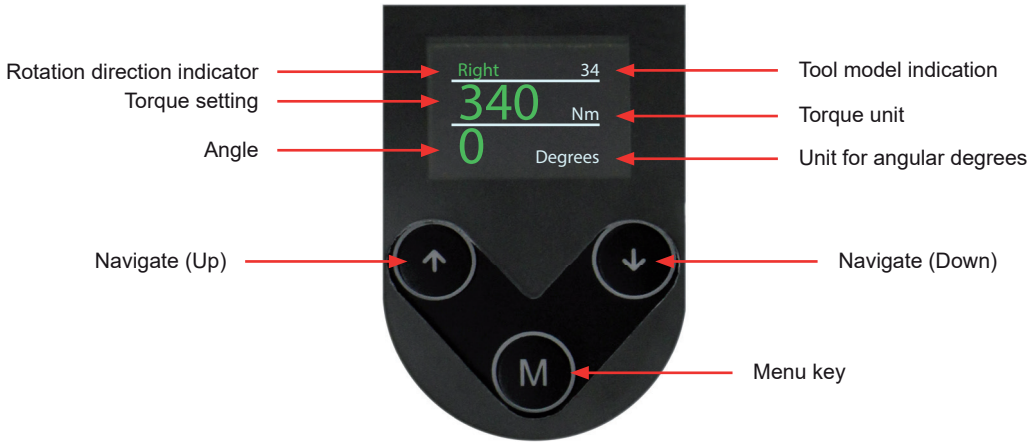
4. Setting the torque

When operating this torque wrench:

1. use only suitable and proper impact sockets
2. the handle can be rotated for ease of installation
3. there may be no clearance between the torque wrench and the reaction arm
4. the reaction arm is placed against the reaction point before the trigger is pulled in order to prevent whipping movements of reaction arm
5. the trigger should be pressed until the torque wrench stops rotating.

4.1 Setting the torque

1. the torque is set via the keypad at the top of the torque wrench
2. the torque value is selected by pressing the centre key “M”
3. the torque can be set using the arrow keys
4. the torque value is confirmed by pressing the centre key “M” once more. This concludes setting the torque. Now, the angle can be set, if this option is available
5. the angle is now selected. Repeat steps 3 and 4.



When the torque wrench is in operation, the reaction arm will move oppositely to the direction of rotation. It is essential that the reaction arm can react off a solid surface (adjacent to the joint to be tightened).

WARNING: To prevent injury, always make sure that the hands of the user remain out of the range of the reaction arm when the torque wrench is in operation.

4.2 Torque Check program (option)

To select the Torque Check program follow the following steps:

1. press the centre key “M”
2. use the arrow keys to navigate to “password“ and press “M“
3. enter 02699 to enable the Torque Check program and press “M“
4. use the arrow keys to navigate to T-Check-Program and press “M“
5. the Torque Check program is now activated, press “Back” 3 times to get back in the torque ready mode

NOTE: To return to the normal program plus angle, enter 09760 in the third step and activate the Norm-Program by press the “M“ button and return to the torque ready mode.

4.3 User menu

Pressing the menu button for more than three seconds will display the user menu. In this menu, the menu options can be selected using the arrow keys and confirmed with the menu key.

1. **Preset**
   This menu option allows you to select and save up to four torques and/or angles as a shortcut. This menu option can be selected using the “M” key. The following sub-menu allows you to select or save a preset. The following sub-menu shows the available settings. The different settings can be selected using the arrow keys. The selection is confirmed by pressing the menu key. When saving the setting, the selected value will be overwritten.
2. **Maintenance counter**
   This option allows you to view the number of joints after the last service interval and schedule the next service interval.
3. **Cycle counter**
   This option displays the total number of joints since the delivery of the tool.
4. **Information**
   This option displays the tool information. This information is required for the telephone detection of errors by RAD Torque Systems B.V.
5. **Password**
   When entering a password, you will enter the following sub-menu. Here, the following options are available:

- Reset the maintenance counter
- Change the menu language (English or German)
- Change the torque setting unit (Nm or ft/lbs)
- Password: 09760

6. **Back**
   With this function, you will return to the main menu and one step back in the menu navigation.

5. Operation of the torque wrench

5.1 Rotating counter clockwise

1. Connect the tool to the supply voltage. Observe the voltage indicated on the rating plate
2. Fix the reaction arm to the jagged side of the unit and secure it
3. Install the impact socket onto the square drive of the tool and secure it with the lock pin and the o-ring. Only use proper impact sockets to this end.
4. Place the torque wrench and impact socket onto the nut
5. Preset the counter clockwise direction of rotation on the reverse lever
6. Rotate the reaction arm against a solid reaction point
7. Press the ON-button until the joint is loosened.

5.2 Rotating clockwise

1. Connect the tool to the supply voltage. Observe the voltage indicated on the rating plate
2. Fix the reaction arm to the jagged side of the unit and secure it
3. Install the impact socket onto the square drive of the tool and secure it with the lock pin and the o-ring. Only use proper impact sockets to this end.
4. Place the torque wrench and impact socket onto the nut
5. Preset the clockwise direction of rotation on the reverse lever
6. Set the torque as specified
7. Rest the reaction arm against a solid reaction point
8. Press the ON-button until the tool switches off automatically.

6. Assembly

1. Make sure the battery is fully charged.
2. Slide in the battery pack until it engages.
3. Fasten and secure the reaction arm on the jagged side of the gearbox with the retaining ring.

4. Spread the retaining ring open with a screwdriver and place the open side in the groove at the end of the gearbox.

5. Then gradually press the retaining ring until it is completely closed.

6. To remove the reaction arm, place a screwdriver at the beginning of the retaining ring and spread the retaining ring open. Then pull the retaining ring off and remove the reaction arm.

7. Movement of the reaction arm

7.1 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 2.

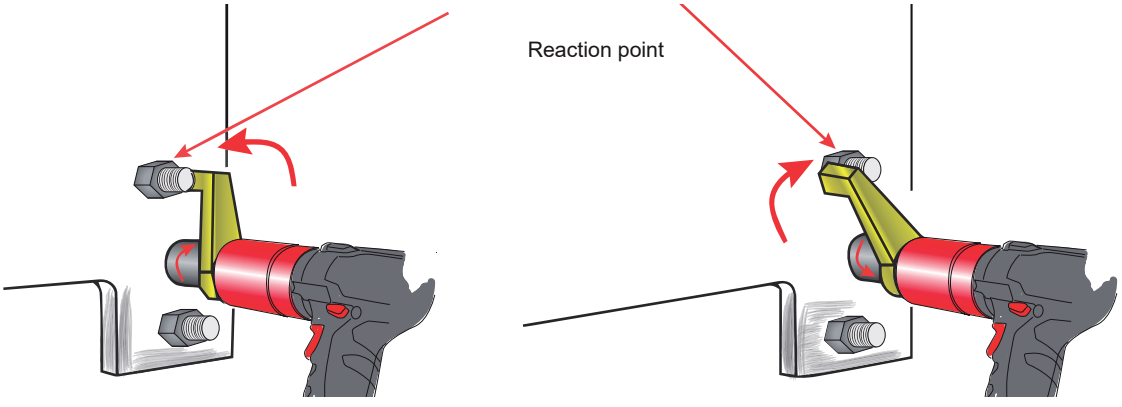


Figure 2

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!

7.2 Reaction arm height

Ensure the height of the socket is even with the height of the reaction arm as seen below in Figure 3A. The height of the socket cannot be shorter or higher than the height of the reaction arm as seen below in Figure 3B and 3C.

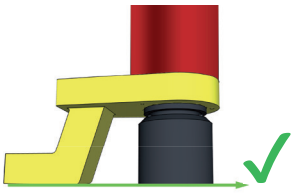


Figure 3A

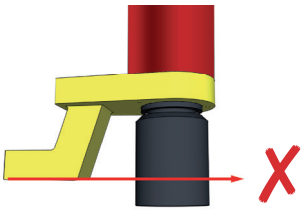


Figure 3B

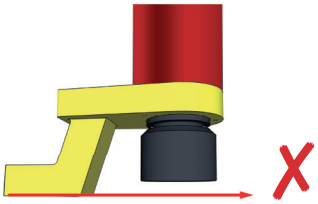


Figure 3C

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

7.3 Reaction arm foot

Ensure the foot of the reaction arm aligns with the length of the nut as seen in Figure 4A. The length of the foot cannot be shorter or longer than the nut as seen in Figure 4B and 4C.

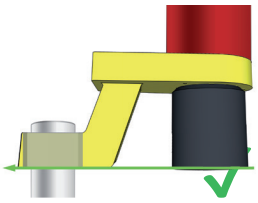


Figure 4A

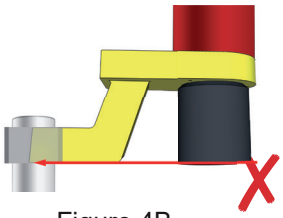


Figure 4B

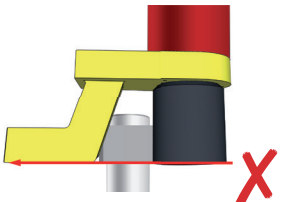


Figure 4C

7.4 Reaction point

Ensure the reaction arm reacts off the middle of the foot as seen in Figure 5A. Do not react off the heel of the reaction foot as seen in Figure 5B.

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

WARNING: Always keep your hands and other body parts away from the reaction arm when the torque wrench is in operation, see Figure 5C.

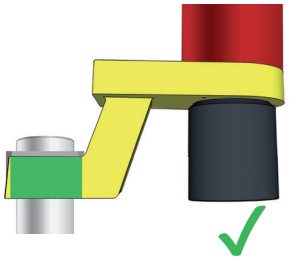


Figure 5A

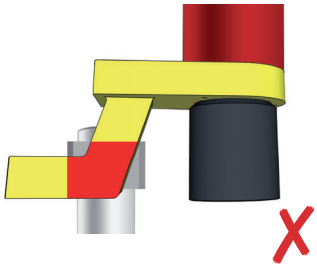


Figure 5B

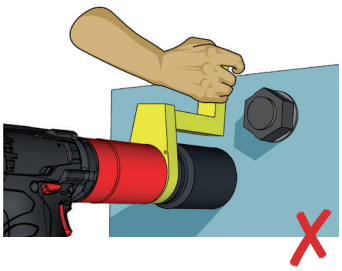


Figure 5C

8. Safety instructions

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:

1. Before using your new tool, get familiar with all its accessories and how they work
2. Always wear safety goggles when the tool is in operation
3. Make sure the reaction arm is in contact with a solid contact point before you operate the tool
4. Make sure the reaction arm snap ring is securely in place to hold the reaction arm 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.

9. Errors

In the case of a malfunction or a message for the user, different messages can be shown on the display. These messages can be confirmed by pressing the “M” key. If certain errors appear on a regular basis, please contact RAD Torque Systems, tel. +31 (0) 35 588 24 50.

ERRORS	MEANING	SOLUTION
Maintenance schedule / Wartung planen / Plan Maint	More than 20,000 joints have been performed. Carry out the maintenance.	This indication can be confirmed by pressing the “M” key. After this, the torque wrench can be used again. If the service interval is performed by RAD Torque Systems B.V., the counter will be reset and the message will not appear until 20,000 joints have been performed.
Fout toerental / Fehler Drehzahl / Impuls Sensor	The impulse sensor is defect.	Contact RAD Torque Systems B.V., tel. +31 (0) 35 588 24 50.
Fout Spanning / Fehler Spannung / Error Voltage	The supply voltage does not correspond to the specifications of the tool.	Check the supply voltage to which the tool is connected.
The settings in the main menu are displayed in red after a joint.	The last performed joint was not tightened according to the setting.	Loosen the joint and repeat the tightening process. Press the switch of the torque wrench until it switches off automatically.
The message “Links / Left / Linksauf” is displayed in red.	Loosening is not possible.	The joint that needs to be loosened is tightened too much. To prevent damage to the drive mechanism, the tool will automatically switch off.

10. Warranty

10.1 New tool warranty

(1) RAD B.V. guarantees the proper performance of the goods delivered for a period of twelve (12) months after delivery to the final customer and is limited to fifteen (15) months after the original RAD B.V. calibration date. (2) Excluded from this warranty are electric components of RAD B.V.'s digital tools (e.g. MB-RAD, MV-RAD, E-RAD, SmartSocket™, RT and TV-RAD) which have a twelve (12) month warranty after date of delivery to the final customer with a maximum of nine (9) months after the original RAD B.V. calibration date. Mechanical components of these tools fall under the terms of paragraph 1.

10.2 Repaired tool warranty

(1) Once a tool is beyond its new tool warranty, RAD B.V., 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 RAD B.V., to be defective in material or workmanship or both. If any tool or part is replaced or repaired under the terms and conditions of this warranty, that tool 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 RAD B.V. must be given immediately upon discovery of such defect, at which time RAD B.V. will issue an authorization to return the tool. The defective tool must promptly be returned to RAD B.V., all freight charges prepaid. When returning a tool, the reaction arm(s) being used with the tool must also be returned.

10.3 Customer cannot invoke a warranty if

(1) the defect, wholly or partly, is due to unusual, inappropriate, improper or careless use of a delivery;
(2) the defect, wholly or partly, is due to normal wear and tear or lack of proper maintenance;
(3) the defect, wholly or partly, is due to installation, assembly, modification and/or repair by the Customer or by third parties;
(4) the delivery is altered, modified, used or processed; (5) the delivery is transferred to a third party;
(6) RAD B.V. has obtained the tool, wholly or partly, from a third party, and RAD B.V. cannot claim compensation under warranty;
(7) RAD B.V. in manufacturing of the tool, has used raw materials, and suchlike on the instructions of the Customer; (8) the tool has a small deviation in its 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 promptly and correctly fulfilled all obligations under the agreement towards RAD B.V.

11. Contact

RAD Torque Systems B.V.
Zuidergracht 19
3763 LS Soest
Phone: +31(0)35 588 24 50
Website: www.radtorque.eu

Notes

Notes

RADIAL®
TORQUE TOOLS

THE EXCLUSIVE MASTER DISTRIBUTOR FOR RAD TORQUE SYSTEMS IN EAST- AND WESTERN EUROPE (EXCLUDING THE UK), NORTH AFRICA AND CENTRAL ASIA:

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