



# **Mobile Calibration**

Installation & maintenance instructions



#### Installation & maintenance instructions for:

• RTT® 12K/16K Mobile Calibration System



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# **1. REQUIRED TOOLS AND EQUIPMENT**

The following tools and equipment are required for the installation, removal, and maintenance of the system: • Open-end wrenches (sizes 17 and 13).

- Torque wrench (compatible with M72 nut).
- Brushes for applying Moly Paste Loctite (PN: 12597). •
- Hand pallet truck. •
- Personal protective equipment (PPE), including safety shoes, gloves.

# **2. EXPLODED VIEW**





#### **3. System Specifications**

- Bolt specification: M72 x 430 hot dip galvanized, 10,9
- Minimum torque Smart Socket<sup>™</sup>: 1.620 nm
- Maximum torque Smart Socket<sup>™</sup>: 16.200 nm
- Maximum deviation Smart Socket<sup>™</sup>: 1% on target (see calibration certificate for more details)
- Maximum torque capacity Mobile Calibration System: 20.000 Nm
- Weight: 120 Kg
- Dimensions: length: 504 mm width: 387 mm height: 726 mm

#### 4. BOLT INSTALLATION

- 1. Tilt plate (2. Exploded View, ref. 13) to a horizontal position.
- 2. Remove the lock plate (2. Exploded View, ref. 10).
- 3. Remove the clamp's (2. Exploded View, ref. 7)
- 4. Place the bolt (2. Exploded View, ref. 6) on the forks of a hand pallet truck.
- Slide the hollow tube (2. Exploded View, ref. 4) over the bolt (2. Exploded View, ref. 6). Note: The bolt (2. Exploded View, ref. 6) must fit completely into the hollow tube (2. Exploded View, ref. 4) and the bolt holder (2. Exploded View, ref. 5).
- 6. Move the hollow tube with the bolt (2. Exploded View, ref. 6) underneath and align it with the hole in the base plate (2. Exploded View, ref. 1).



#### Note:

Ensure the blocks on the hollow tube are aligned with the recesses in the base plate (2. Exploded View, ref. 1).

- Pump the hand pallet truck up so that the bolt passes through the hole in the base plate (2. Exploded View, ref. 1). Stop when the hollow tube (2. Exploded View, ref. 4) is beneath the base plate (2. Exploded View, ref. 1).
- 8. Apply Moly Paste Loctite (PN: 12597) to the threaded end of the bolt (2. Exploded View, ref. 6).
- 9. Screw the M72 nut onto the bolt (2. Exploded View, ref. 6).
- 10. Install the clamps' (2. Exploded View, ref. 7)
- 11. Tilt plate (2. Exploded View, ref. 13) to a vertical position.
- 12. Reinstall the lock plate (2. Exploded View, ref. 10).

## 5. USAGE

1. Visually check whether all components of the Mobile Calibration System remain in place, for instance the correct position of the wear tubes (2. Exploded View, ref. 9).



#### Note:

- Always check if the bolt and nut are sufficiently lubricated with Moly Paste Loctite.
- In case the Smart Socket<sup>™</sup> readings show big variations in torque at the same torque tool settings, the bolt and nut might be worn or insufficiently lubricated.
- If the bolt or nut get very warm during torquing, the bolt might be worn or insufficient lubrication has been applied.
- If the bolt or nut produces unusual noises or has "stick-slips" movements, stop immediately as the bolt and nut are likely damaged and might seize.





#### **Usage Warnings:**

- Always ensure that the threaded end of the bolt is greased with Moly Paste Loctite (PN: 12597).
- Always position the tilt plate (2. Exploded View, ref. 13) vertically before starting.
- Ensure that the wear tubes (2. Exploded View, ref.9) are in place during torquing.
- After each calibration, reapply Moly Paste Loctite (PN: 12597) to the bolt.

## **6.** MAINTENANCE

Lubricate after each calibration (approx.. 40 pulls), and replace the bolt after completing 5 calibrations.



#### Note:

If the bolt is worn or damaged, always replace the complete bolt set, (bolt, washer and nut) with the same type and model.



#### Warning:

Do not use other types of lubrication it likely produces different torque results and wear and tear will increase.



## 7. BOLT REMOVAL

- 1. Ensure the tilt plate (2. Exploded View, ref. 13) is in a vertical position.
- 2. Loosen the M72 nut slightly using a torque tool.
- 3. Move the hand pallet truck underneath the bolt and hollow tube and pump it until just beneath the hollow tube.
- 4. Remove the clamps' (2. Exploded View, ref. 7)
- 5. Remove the M72 nut completely.
- 6. Gradually lower the pallet truck to remove the bolt and hollow tube from under the base plate (2. Exploded View, ref. 1).
- 7. Ensure the hollow tube (2. Exploded View, ref. 4) remains aligned with the bolt to avoid damage.
- 8. Move the pallet truck with the bolt out from under the frame.
- 9. Reinstall the lock plate (2. Exploded View, ref. 10).
- 10. Reinstall the clamp's (2. Exploded View, ref. 7)
- 11. Inspect all components:
  - Check the bolt (2. Exploded View, ref. 6), hollow tube (2. Exploded View, ref. 4), and base plate (2. Exploded View, ref. 1) for wear or damage.
  - Clean all components thoroughly to prepare them for future use or storage.

## 8. SAFETY

#### Notes:

- Ensure the pallet truck is stable and on a flat surface to avoid movement during the process.
- Use proper lifting techniques when handling heavy components like the bolt and hollow tube.
- Always inspect and clean components before reassembling or storing them.
- After each calibration, reapply Moly Paste Loctite (PN: 12597) to the bolt.
- Always wear personal protective equipment (PPE), including safety shoes, gloves, and safety glasses.
- Avoid wearing loose clothing that could get caught in moving parts.
- Keep the workspace clear of obstacles and ensure the floor is level and stable.



#### Warning:

- If the bolt is seized, do not use the RAD Smart Socket<sup>™</sup> to undo the bolt. In case the bolt cannot be loosened at the maximum rating of the Mobile Calibration System use a nut splitter to remove the seized bolt.
- Never use the Mobile Calibration System with a non-lubricated bolt and nut as it will wear very quickly or seize.
- If the bolt or nut produce unusual noise or "stick-slips" movements, stop and check immediately as the bolt and nut are likely damaged. Stick-slip movement under high torque can damage the RAD Smart Socket™.
- Do not use over torque the Mobile Calibration System, the maximum torque rating is 16.200 Nm.

# 9. RAD SMART SOCKET<sup>™</sup>

For instruction on how to use the RAD Smart Socket<sup>™</sup>, see the RAD Smart Socket<sup>™</sup> user manual delivered with this Mobile Calibration System or go to **radialtorque.eu**/en/radtorque/downloads.



# **10.** CONTROL CHECKLIST

#### **10.1. Before Installation**

Is the work area clean and free of obstacles?
Is the hand pallet truck stable and positioned on a flat surface?
Are all necessary tools (e.g., torque tool, wrench) available?
Is personal protective equipment (PPE) like gloves, safety shoes in use?
Is the bolt (2. Exploded View, ref. 6) free from damage or wear?
Is the hollow tube (2. Exploded View, ref. 4) clean and undamaged?
Are all necessary parts (e.g., lock plate (10), base plate (2. Exploded View, ref. 1)) present and in good condition?

#### **10.2.** During Installation

Is the tilt plate (2. Exploded View, ref. 13) in a horizontal position?

- Are the hollow tube (2. Exploded View, ref. 4) and bolt (2. Exploded View, ref. 6) correctly aligned with the base plate (2. Exploded View, ref. 1)?
- Is Moly Paste Loctite (PN: 12597) applied to the threaded end of the bolt?
- Is the M72 nut properly tightened?
- ☐ Is the lock plate (2. Exploded View, ref. 10) correctly reinstalled after assembly?

#### 10.3. Before Use

☐ Is the tilt plate (2. Exploded View, ref. 13) in a vertical position?

 $\Box$  Does the nut run down freely by hand? If not, have you checked the nut or bolt for thread damage?

Are the wear tubes (2. Exploded View, ref. 9) in place?

- Are all components clean and free of debris?
- Is the calibration certificate of the Smart Socket<sup>™</sup> still valid?

#### 10.4. During Use

Are the bolt and nut sufficiently lubricated with Moly Paste Loctite (PN: 12597)?

Are all components in place, including the correct position of the wear tubes (2. Exploded View, ref. 9)?



#### **10.5.** Maintenance

- Is Moly Paste Loctite (PN: 12597) applied to all necessary parts?
- Are all components cleaned and free from debris?
- Are the bolt (2. Exploded View, ref. 6), hollow tube (2. Exploded View, ref. 4), and base plate (2. Exploded View, ref. 1) inspected for damage or wear?
- Are damaged components replaced if necessary?
- Are all components stored in a dry and clean environment?

#### 10.6. During Bolt Removal

Is the tilt plate (2. Exploded view, ref. 13) in a norizontal	al position?
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- Is the hand pallet truck correctly positioned beneath the bolt and hollow tube?
- ☐ Has the M72 nut been loosened before removal?
- Are the bolt (2. Exploded View, ref. 6) and hollow tube (2. Exploded View, ref. 4) being removed safely without misalignment?
- Have all components been checked for wear, damage, or corrosion?
- Are the removed parts cleaned and prepared for storage?

#### 10.7. Safety

Are all safety warnings followed during the process?

- Is proper lifting technique used for heavy components?
- Left all warning sticker in place, including finger pinching hazards?



## **11. WARRANTY**

#### 11.1. Mobile Calibration System warranty

1. Radial 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 calibration date.

#### 11.2. Repaired Mobile Calibration System warranty

1. Once the Mobile Calibration System is beyond its original warranty, Radial 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 Radial 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 Radial B.V. must be given immediately upon discovery of such defect, at which time Radial B.V. will issue an authorization to return the tool. The defective tool must promptly be returned to Radial B.V., all freight charges prepaid. When returning a tool, the reaction arm(s) being used with the tool must also be returned.

#### 11.3. Exceptions to warranty

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. Radial B.V. has obtained the Mobile Calibration System, wholly or partly, from a third party, and Radial B.V. cannot claim compensation under warranty.
- 7. Radial B.V. in manufacturing of the Mobile Calibration System, has used raw materials, and suchlike on the instructions of the customer.
- 8. the Mobile Calibration System 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 Radial B.V..
- 10. There is no warranty on the following wear items: Wear tubes (2. Exploded View, ref. 9), Wear plate plates (2. Exploded View, ref. 3), Bolt set (2. Exploded View, ref. 6) and the wheels (2. Exploded View, ref. 12)
- 11. No warranty can be invoked if the Mobile Calibration System is used above the max torque rating of 16.200 Nm
- 12. No warranty can be invoked on the RAD Smart Socket<sup>™</sup> if the socket is over torqued.

For an up-to-date version of our warranty see, radialtorque.eu/en/general-terms-and-conditions/

# **12.** CONTACT US

#### Radial Torque Tools B.V.

Zuidergracht 17 3763 LS Soest Phone: +31 35 588 24 50 Website: <u>www.radialtorque.eu</u>



## **13. CE CERTIFICATE**

# EC DECLARATION OF CONFORMITY

According to Annex IIA of the Machinery Directive 2006/42/EC

We,

Radial Torque Tools B.V. Zuidergracht 17 3763 LS Soest The Netherlands



We hereby declare that the undersigned is authorized to compile the EC declaration for this machine on behalf of our company.

Furthermore, we declare, entirely under our own responsibility, that the:

Machine: Mobile Calibration System

2024

Year:

In accordance with the provisions of the European Directives below:

Machinery Directive: 2006/42/EG

And in accordance with the standards below:

EN-ISO 12100

Place and date

Soest, 10-01-2025

Name and signature

Marcel Birkhoff

CE



#### Notes




MASTER DISTRIBUTOR FOR EUROPE, CENTRAL ASIA AND NORTH AFRICA:

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