



SDM Battery Series

USER MANUAL



User manual for:

- SDM Battery 340P
- SDM Battery 680P
- SDM Battery 1400P
- SDM Battery 1400P OFFSET

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1. GENERAL INFORMATION

1.1. Receiving and inspection

The SDM Battery is shipped with the following:

- SDM Battery tool
- Two Li-Ion battery packs
- Battery charger
- Standard reaction arm
- Calibration certificate
- User Manual



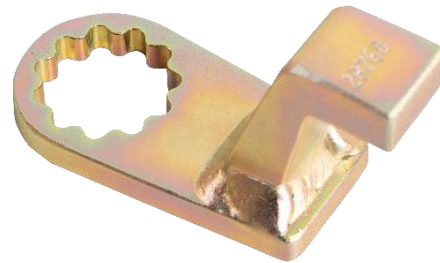
SDM Battery tool



Li-Ion battery pack



Battery charger



Standard reaction arm

1.2. Model specifications

The following tables outline the torque ranges of the available SDM Battery models:

| Model | Torque Range (Newton-Metres) |
|-------------------------|---------------------------------|
| SDM Battery 340P | 40 – 340 Nm |
| SDM Battery 680P | 70 – 680 Nm |
| SDM Battery 14000P | 130 – 1.400 Nm |
| SDM Battery 1400 OFFSET | 130 – 1.400 Nm |

2. GENERAL INSTRUCTIONS



Note: Do not operate the tool or charge the batteries before reading the safety instructions and warnings detailed in this manual. If breakdown, malfunction, or damage occurs, DO NOT attempt to repair, contact Radial Torque Tools B.V. immediately.

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

- Fully charged battery.
- 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.

2.1. 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.

2.2. Setting direction of rotation

Only operate the rotational direction switch when the motor is at standstill.

Right setting (F) = Tightening

Left setting (R) = Loosening



3. GENERAL SAFETY RULES

This tool is developed for tightening and loosening threaded fasteners using extremely high forces. For your safety and that of others, warning labels and attention labels are prominently attached to the torque wrench and its accessories.



WARNING!

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

This tool has 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 retaining ring is securely in place to hold the reaction arm or blank in place.

This tool is safe and reliable. Not following precautions and instructions outlined here can result in injury to you and your fellow workers. Radial Torque Tools B.V. is not responsible for any such injury.



WARNING!

Always observe the safety regulations applicable in your country to reduce the risk of fire, electric shock, and personal injury. Understand the following safety instructions before attempting to operate this product. Always wear eye protection when working with power tools. Keep these instructions in a safe place.

3.1. Work area safety

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

3.2. Personal safety

- **Stay alert, watch what you are doing and use common sense when operating a power tool.** Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
- **Dress properly.** Do not wear loose clothing or jewellery. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewellery, or long hair can be caught in moving parts.
- **Do not overreach.** Keep proper footing and balance at all times. Proper footing and balance enables better control on the tool in unexpected situations.
- **Use safety equipment.** Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

3.3. Tool use and care

- Use clamps or other practical ways to secure and support the work piece to a stable platform. Holding the work piece by hand or against your body is unstable and may lead to loss of control.
- Do not force tools. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
- Do not use tool if switch does not work. Any tool that cannot be controlled with the switch is dangerous and must be repaired.

- Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.
- Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
- Use only accessories that are recommended by the manufacture for your model. Accessories that may be suitable for one tool, may become hazardous when used on another tool.

3.4. Service

- Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.
- When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.
- Tool service is recommended every year or 10.000 cycles, whichever comes first. Tool repair and maintenance should only be carried out by authorized, trained personnel. When service or repair is required, contact Radial Torque Tools B.V..

3.5. Additional safety rules for cordless tools

3.5.1. Battery charger

**WARNING!**

To reduce risk of injury, charge only the authorized batteries. Other types of battery may burst, causing personal injury and damage.

- Before using battery charger, read all instructions and cautionary markings on batteries, chargers and products using batteries.
- Do not allow anything to cover or clog the charger vents.
- Do not expose charger to rain, snow, or wet conditions.
- To reduce the risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
- Use of an attachment not recommended or sold by the manufacturer may result in a risk of fire, electric shock, or injury to persons.
- Make sure cord for charger is located so that it will not be stepped on, tripped on, tripped over, or otherwise subjected to damage or stress.
- Do not abuse the power cord. Never use the cord to carry the charger. Keep cord away from heat, oil, water, sharp edges, or moving parts. Replace damaged cords immediately.
- Do not operate charger if it has been damaged in any way, take it to a qualified service centre for repair.
- To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- Do not disassemble charger or battery cartridge, take it to a qualified service centre when repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

3.5.2. Battery pack

- Do not charge battery pack when temperature is below 0°C (32°F) or above 40°C (104°F).
- Do not attempt to use a step-down transformer, an engine generator or DC power receptacle.
- Do not short the battery pack: Do not touch the terminals with any conductive material. Avoid storing battery cartridge in a container with other metal objects such as nails, coins, paper clips, etc.
- Do not expose battery cartridge to water or rain. A battery short can cause large current flow, overheating, possibly burns and even a break-down.
- Do not store the machine and battery pack in locations where the temperature may reach or exceed 50°C (122°F).

- Do not incinerate the battery pack even if it is severely damaged or completely worn out. The battery pack can explode in a fire.
- Be careful not to drop, shake, or strike the battery.
- Do not charge inside a box or container of any kind. The battery must be placed in a well-ventilated area during charging.
- Do not dispose of battery packs into household waste, fire, or water. Battery packs should be collected, recycled, or disposed of in an environmentally friendly manner. Call the authorized warranty centers for places to dispose of damaged or inoperable batteries.

3.6. Reaction arm



WARNING! Always keep body parts clear of the reaction arm when the SDM Battery tool is in use. Serious injury could occur.

Please contact Radial Torque Tools B.V. for information on custom reaction arms.

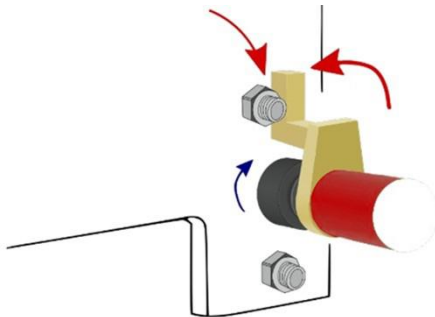


WARNING! Ensure that the reaction arm has a solid contact point before operating the SDM Battery tool.

3.6.1. Reaction points

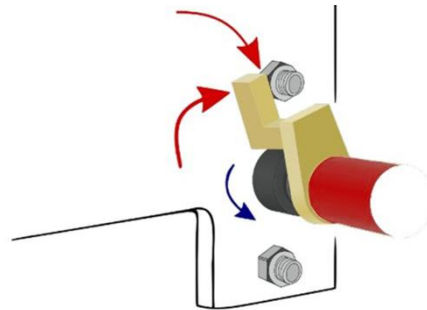
Make sure that the reaction arm is in contact with a solid reaction point before you operate the tool. When the tool is in operation, the reaction arm rotates in the opposite direction to the square drive and must be allowed to rest squarely against a solid object or surface adjacent to the bolt to be tightened.

Reaction point



Clockwise operation

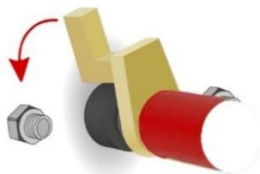
Reaction point



Counter-clockwise operation



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





WARNING! While 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.

3.6.2. Reaction arm height

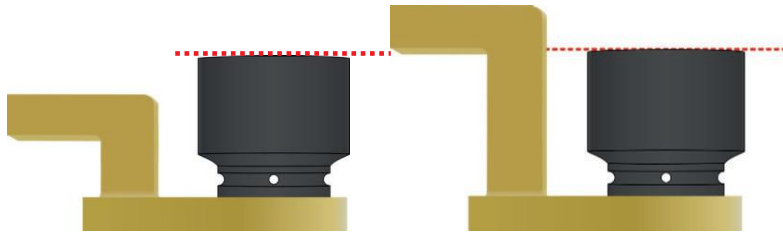
Ensure that the height of the socket is even with the height of the reaction arm.

CORRECT: The reaction arm and socket are even.



The height of the socket cannot be shorter or longer than the height of the reaction arm.

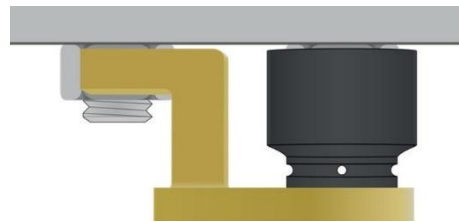
INCORRECT: The leg of the Reaction Arm is too short in the left image and too long in the right image.



3.6.3. Reaction arm foot

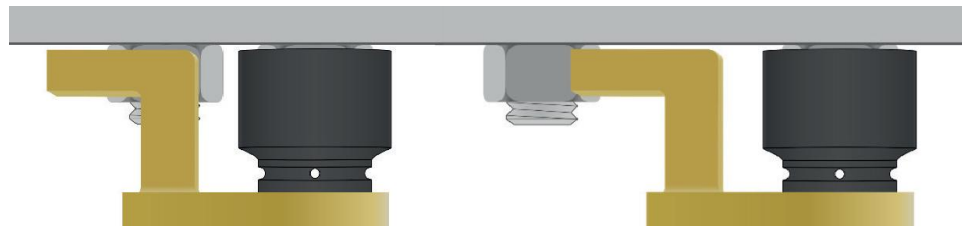
Ensure that the foot of the reaction arm aligns with the reaction point.

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.



4. BATTERY AND CHARGING

4.1. Light indications charger

| | | |
|---|---|--|
|  |  | <p>Red lit</p> <p>Charger is plugged into the AC outlet. Ready to charge.</p> |
|  |  | <p>Yellow flashing</p> <ol style="list-style-type: none"> When the temperature of the battery is too low (<0°C (<32°F)), it is in a trickle charge mode until the temperature of the battery goes up to over 0°C (32°F). The light will change from the Yellow Flashing to Green Flashing automatically and start to charge. (If after 70 minutes, the light changes from yellow flashing to yellow lit, consult an authorized dealer.) When the temperature of the battery is too high (>40°C (104°F)), it is in a trickle charge mode until the temperature of the battery drops to under 40°C (104°F). The light will change from the Yellow Flashing to Green Flashing automatically and start to charge. (If after 70 minutes, the light changes from yellow flashing to yellow lit, consult an authorized dealer.) When the voltage of the battery is too low (below 12.5 voltage), it is in a trickle charge mode until the voltage of the battery reaches to the standard value. The light will change from the Yellow Flashing to Green Flashing automatically and start to charge. (If after 20 minutes, the light changes from yellow flashing to yellow lit, contact Radial Torque Tools B.V..) |
| |  | <p>Yellow lit</p> <p>The battery and the charger are not connected. If the yellow lit still on after trying re-attach the battery, consult an authorized dealer.</p> |
|  |  | <p>Green flashing</p> <p>Now start charging.</p> |
|  |  | <p>Green flashing</p> <p>Battery is approximately 50% charged.</p> |
|  |  | <p>Green flashing</p> <p>Battery is approximately 80% charged.</p> |
|  |  | <p>Green lit</p> <p>Charging is complete (fully charged).</p> |

4.2. Charging the battery

**Note:**

- When charging a cool battery pack (below 0°C (32°F) in a warm place, leave the battery pack at the place and wait for more than one hour to warm up the battery to the level of the ambient temperature. Otherwise, battery pack may not be fully charged.
- Cool down the charger when charging more than two battery packs consecutively.
- Do not insert your fingers/ nails into contact hole, when holding charger or any other occasions.

1. Place charger in a relatively cool and well- ventilated area.
2. Plug charger into the AC outlet.



WARNING! Ensure that the power source to be utilized conforms to the power requirement specified on the product nameplate.

3. Turn the battery up-side-down and slide the battery into charger while keeping the alignment marks line up. Slide the forward in the direction of the arrow. Do not force battery as it should slide easily into place with nominal force. Any difficulty doing so would indicate an incorrect alignment.

Alignment marks



4. the power light (red) does not light immediately or goes out soon after the charger is plugged in, consult an authorized dealer.
5. During charging, the charging light (green) will start flashing. When charging is completed, an internal electronic switch will automatically be triggered to prevent overcharging.
 - a. Charging will not start if the battery pack is warm. For example, immediately after heavy- duty operation. The yellow standby light will be flashing until the battery cools down.
6. If the temperature of the battery pack is 0°C or less, charging takes longer to fully charge the battery pack than the standard charging time. Even when the battery is fully charged, it will have approximately 50% of the power of a fully charged battery at normal operation temperature.

Once the battery is fully charged, the green light will be lit to indicate the gone into a trickle charge mode.

4.3. Li-ion battery pack

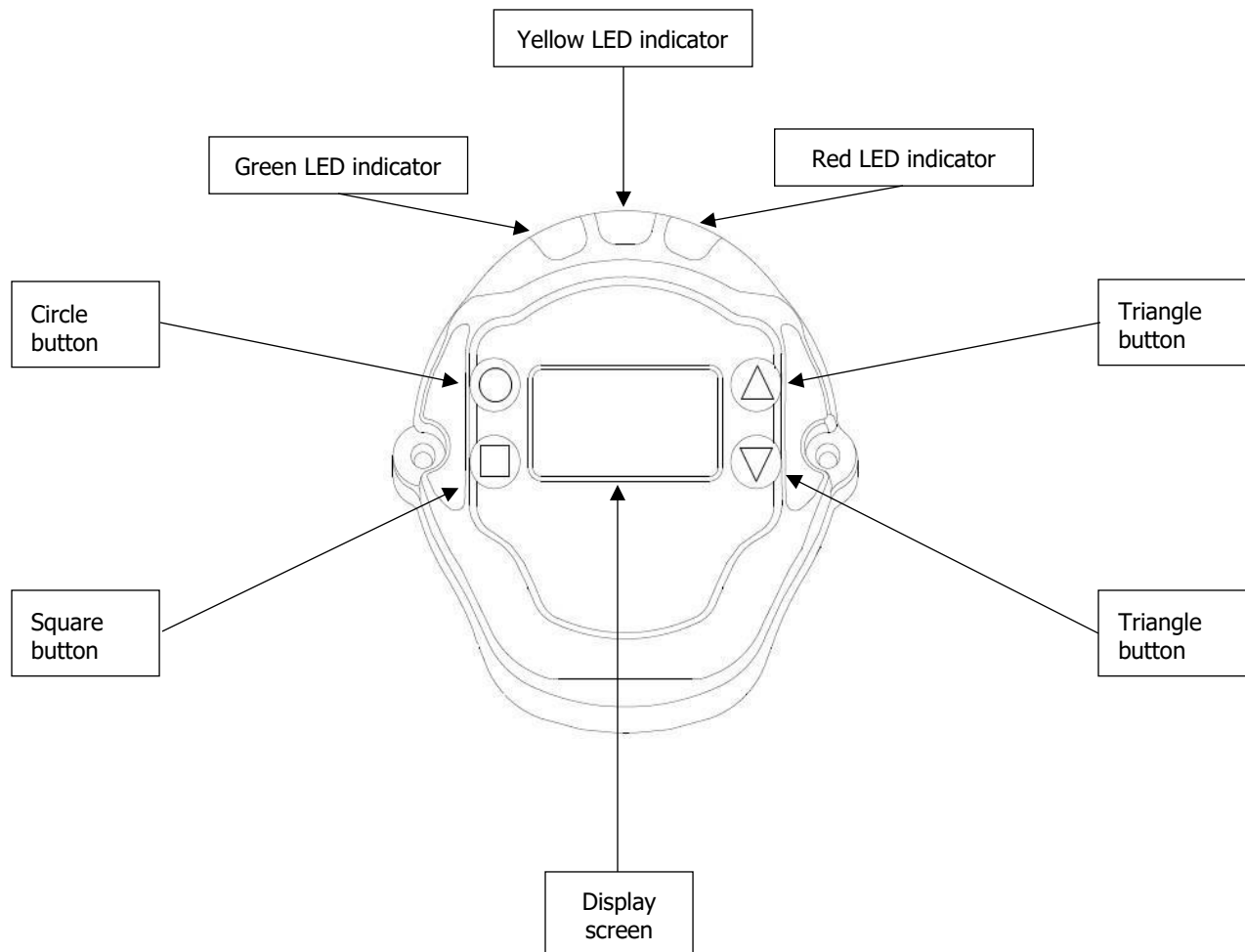
**Note:**

- Your battery pack is not fully charged at the time of purchase. Be sure to charge the battery before first use.
- Remove the battery pack when the tool is not in use, to avoid damage to the battery pack and reduce the service life.
- Recharge the battery pack once every 6 months even if the battery is not in use.

5. DISPLAY SCREEN

5.1. General display description

The following image is the display screens of SDM Battery tool with the LED indicator light and the function keys.



LED indicators explained:

Green: OK

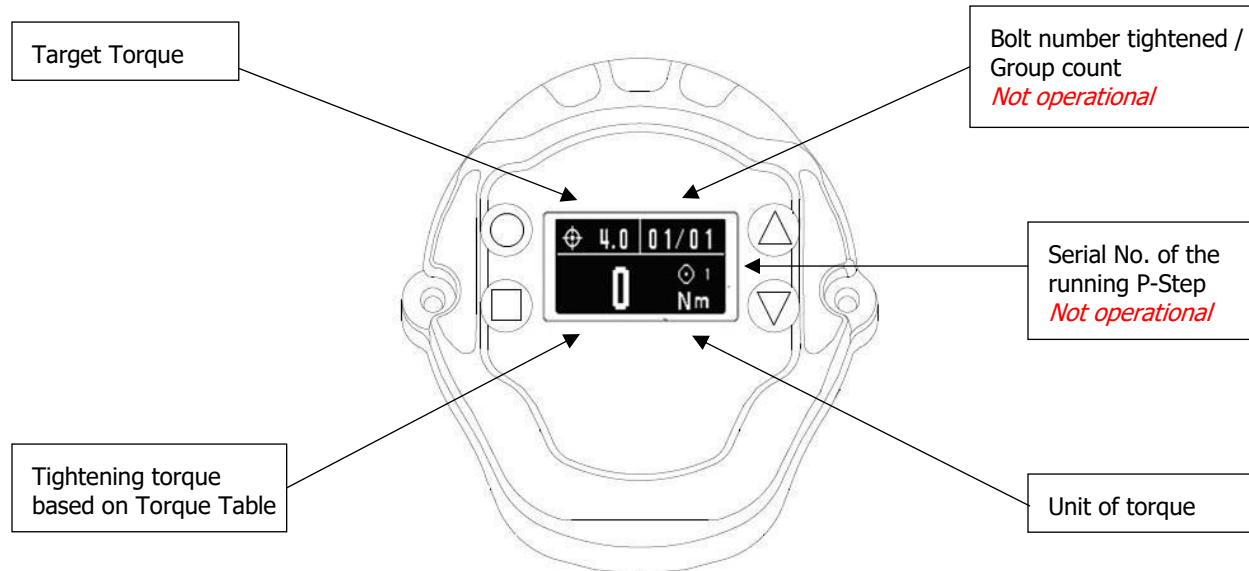
Red: Not OK

Blue: Reverse

Yellow: Battery lock

5.2. Main screen

1. Upper secondary display (left): Target Torque.
2. Upper secondary display (right): Bolt number tightened / Group count (not operational).
3. Primary display (centre): Tightening torque based on Torque Chart, Serial number of the running P-Step (not operational) and the Unit of torque.






5.3. Torque Chart

The SDM Battery Series cannot be set to the high torque values on screen. To determine the import torque a Torque Chart must be used. Totally 140 torque settings can be chosen.

Please look up the setting on the Torque Chart that can be found on the gearbox sticker and an extended Torque Chart can be found on the calibration certificate.

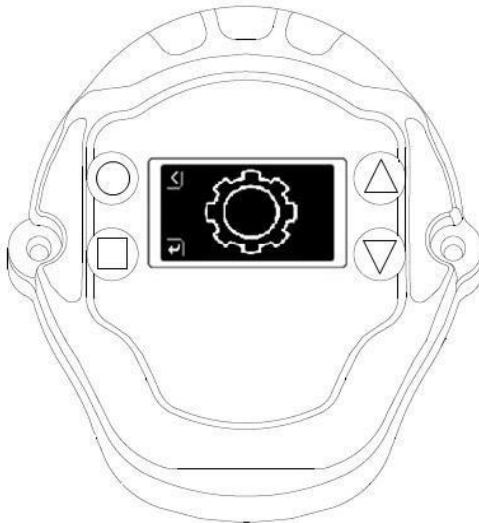
5.4. Set torque









The primary display shows the torque value next to  icon.

1. Press  and  simultaneously to enter the torque setting screen.

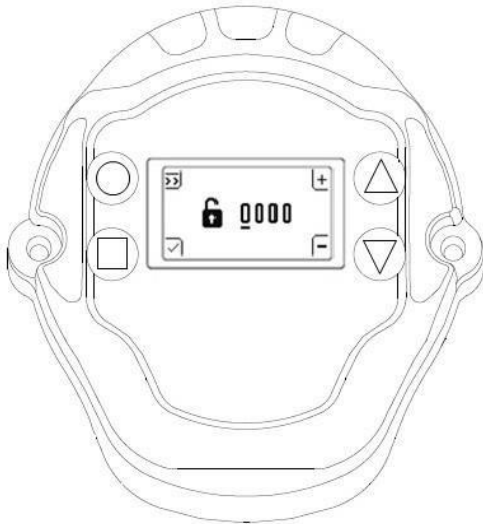


2. Press  /  to enter the password screen first.





- Press  /  to move the cursor to the number wish to be adjusted.
Press  /  to increase the number, up to 9. If press and hold, the number field will increase rapidly.
Press  /  to decrease the number, down to 0. If press and hold, the number field will decrease rapidly.
Press  /  to confirm the password.



If the password is valid, the display will be unlocked, and the torque settings can be adjusted. If the password is invalid, the display will return to the setting screen.

**Note:**







The standard password is 0000. To reset the password, contact your local distributor.

- Press  /  3 times to go to the torque setting screen.





5. Press  /  to adjust the torque settings.



6. Press  /  to increase the torque setting
Press  /  to decrease the torque setting
Press  /  to confirm the selected torque setting



Find the corresponding torque to 1 Nm – 9 Nm at the torque chart and calibration certificate.

7. Press  /  2 times to return to the main screen.



8. The selected torque value is now shown on the top left corner of the screen. Hold the trigger until the torque is reached. When the tightening reaches the torque, the tool will automatically shut off and the tightening is completed.





Note:

Make sure to set the tool in the right direction. For clockwise the LED indicators shows **Green** and for counterclockwise the LED indicators show **Blue**.

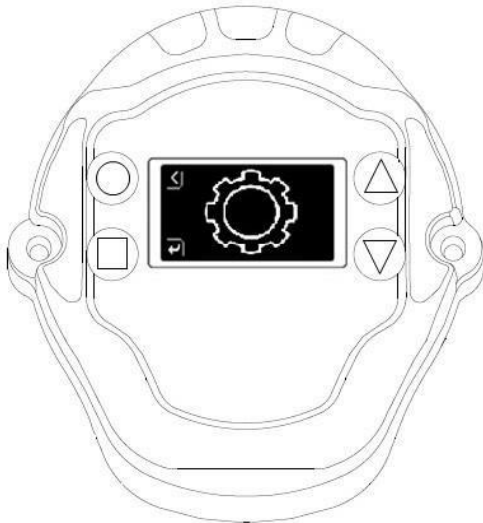
5.5. Presets









Select the preset number that you wish to adjust its configuration, there are a total 8 presets available.

1. Press  and  simultaneously to enter the torque setting screen.

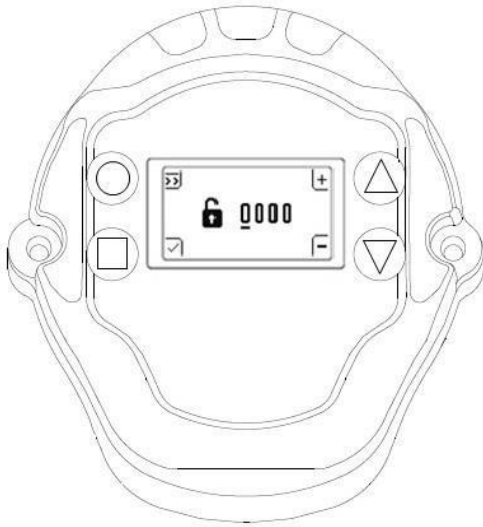


2. Press  /  to enter the password screen first.





- Press  /  to move the cursor to the number wish to be adjusted.
Press  /  to increase the number, up to 9. If press and hold, the number field will increase rapidly.
Press  /  to decrease the number, down to 0. If press and hold, the number field will decrease rapidly.
Press  /  to confirm the password.



If the password is valid, the display will be unlocked, and the torque settings can be adjusted. If the password is invalid, the display will return to the setting screen.

**Note:**





The standard password is 0000. To reset the password, contact your local distributor.

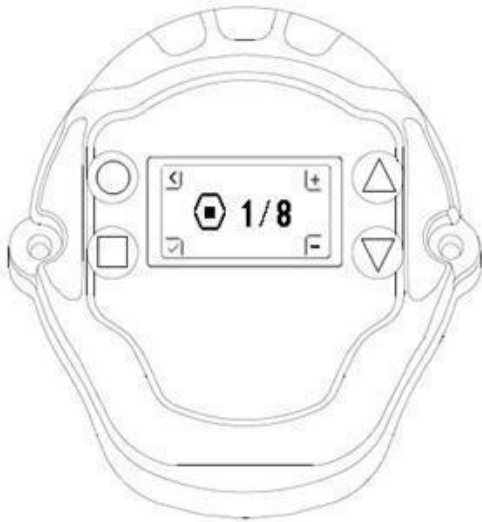
- Press  /  1 time to go to the preset setting screen.



5. Press  /  to enter for setting. The screen background turns to white from black.



6. Press  /  to select bigger number
7. Press  /  to select smaller number



8. Press  /  to confirm and save, and press  /  the screen background colour turns to black from white.
9. Press  /  to go to next setting, or press  /  back to last setting, or press  /  to return the run screen.

6. WARRANTY

6.1. New tool 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.

6.2. Repaired tool warranty

1. Once a tool is beyond its new tool 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.

6.3. 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 tool, wholly or partly, from a third party, and Radial B.V. cannot claim compensation under warranty.
7. Radial 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 Radial B.V..

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

7. CONTACT US

Radial Torque Tools B.V.

Zuidergracht 17

3763 LS Soest

Phone: +31 35 588 24 50

Website: www.radialtorque.eu

CE CERTIFICATE

English translation of: 5797_EGvO_CE Krachtvermeerderaar

EC DECLARATION OF CONFORMITY

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

We,

Radial Torque Tools
Zuidergracht 17
3763 LS Soest
The Netherlands



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

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

Machine: *SDM Battery Series*

Year: *2024*

In accordance with the provisions of the European Directives below:

Machinery Directive: 2006/42/EG

And in accordance with the standards below:

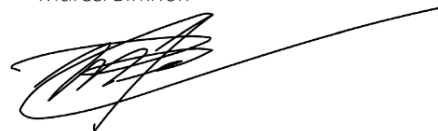
EN-ISO 12100 | EN-ISO 6789-1 | EN-ISO 6789-2

Place and date

Soest, 4-9-2024

Name and signature

Marcel Birkhoff



NOTES

A series of horizontal dotted lines for taking notes, spanning the width of the page.



*MASTER DISTRIBUTOR FOR EUROPE,
CENTRAL ASIA AND NORTH AFRICA:*

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