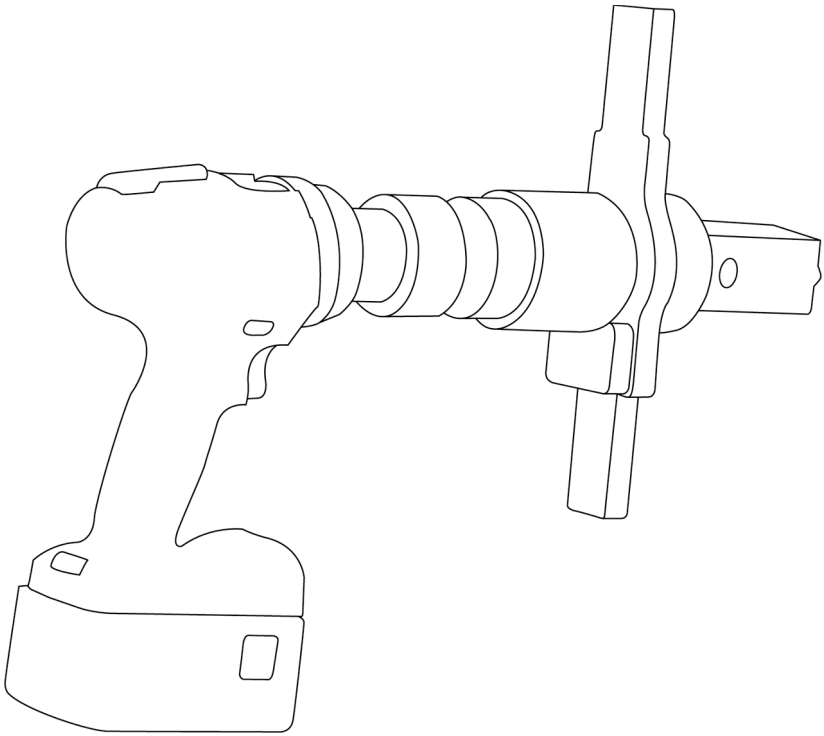
Instruction Manual

Valve Actuator Tools

torcbrain® SD-serie



1 Technical Data....1
2 Product Features / Intended Use....2
3 Safety Instruction....3
3.1 General Product Safety Information....3
3.2 Workplace/Environment....3
3.3 Electrical Safety....3
3.4 Personal Safety....4
3.5 Use and Care of torcbrain® Valve Actuator Tools....4
3.6 Maintenance....6
3.7 Specific Safety Rules for the Product....6
3.8 Emissions Values....7
4 Overview....8
4.1 Female Square Drive....10
4.2 Torque Reaction Arm....10
5 Tool Settings....11
5.1 Changing the Direction of Rotation (forward/reverse)....11
5.2 Changing Gears....11
5.3 Changing the Torque....11
6 Torque Charts....12
7 Operation....13
7.1 Working with the torcbrain® Valve Actuator Tool....13
7.2 Acoustic Warning Signals....15
7.3 Revolution Counter (optional)....15
8 Accessories....16
8.1 Hand Wheel Adaptor....16
8.1.1 Components of the Hand Wheel Adaptor....17
8.1.2 Hydrant Adapter....17
8.1.3 Commissioning....18
8.2 Vario Operating key....19
8.2.1 Intended Use....19
8.2.2 Technical Design....20
9 Care and Maintenance....22
9.1 Disposal....23
9.2 Warranty Terms and Conditions....23
10 EC- Declaration of Conformity....24
11 Charger SCA16 (TBLG6)....25

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11.1 Safety Warnings 26
11.2 Technical Data 27
11.3 Intended Use 27
11.4 Commissioning 27
11.5 Operation 28
11.5.1 Meaning of the LEDs 28
11.5.2 Working Instructions 29
11.6 Service and Maintenance 29
11.7 Environment 29
11.8 General Information 30
12 Akkupack BP 18 Li 5,0 AS(I) 31
12.1 Safety Warnings 31
12.2 Technical Data 33
12.3 Intended Use 33
12.4 Operation 33
12.5 Maintenance and Care 34
12.6 Transport 34
12.7 Environment 34
12.8 General Information 35
12.9 Information about Bluetooth® 35
12.10 Information on data privacy 35
12.11 Lithium Batteries Test Summary 36

1 Technical Data

Type	TB300SD	TB900SD
Operating voltage	18V	18V
Idle speed (drive speed with fully charged battery)		
1. Gear	~0-17 rpm	~0-6 rpm
2. Gear	~0-25 rpm	~0-9 rpm
3. Gear	~0-80 rpm	~0-29 rpm
4. Gear	~0-120 rpm	~0-43 rpm
Max. torque	~ 400 Nm	~ 950 Nm

Adjustable max. torque (speed is reduced in lower gear selections)		
1. Gear	~ 400 Nm	~ 950 Nm
2. Gear	~ 400 Nm	~ 950 Nm
3. Gear	~ 140 Nm	~ 350 Nm
4. Gear	~ 90 Nm	~ 240 Nm
Square drive	3/4" (VK 25)	3/4" (VK 30)
Weight incl. battery	approx. 4 kg	approx. 5,7 kg

Power supply	
Charger type TBLG6_SCA16	Mains voltage 230-240 V ~; Mains frequency 50/60 Hz Charging voltage 10,8-18 V = Fast charge max. 16 A Security class II
Battery type BP 18 Li 5,0	Type li-Ion Voltage 18 V Capacity 5,0 Ah Weight 0,715 kg Charging time ~ 33 Min

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2 Product Features / Intended Use

The **torc**brain® SD-type battery-powered actuator tools are hand tools used to operate (open and close) valves. The included charger is designed to charge the supplied batteries.

Your **torc**brain® valve actuator tool features:

- Square drive: ½", ¾" (DIN 3121) or system adapter VK25 (TB300SD), VK30 (TB900SD)
- System battery interface and charger for Li-Ion battery pack
- Fully electronic torque selection. Automatically shut off when the preset torque is reached
- Integrated thermal overload control
- Undervoltage and overvoltage protection
- Dynamic electrical current control
- Brushless, wear resistant DC motor

3 Safety Instruction

RETAIN THIS MANUAL – This guide includes essential instructions for the startup and operation of the valve actuator tool and its batteries. Carefully read and understand these instructions before using, repairing, or maintaining the equipment. Special notes may be found throughout this manual to provide clarifying information that simplifies procedures.

3.1 General Product Safety Information

Ensure this safety information is always accessible in the tool case.

- You are responsible for sharing this safety information with anyone using or working with this product.
- Failure to follow these instructions may lead to electric shock, fire, or serious injury.
- Always install, operate, inspect, and maintain the valve actuator according to all relevant standards and regulations. Compliance is the user's responsibility.

3.2 Workplace/Environment

- Keep your workplace clean and well-lit, as dark and cluttered areas increase the risk of accidents.
- Ensure you are not distracted by others while performing bolting tasks.
- Prevent anyone from standing below the valve actuator when working at elevated heights.
- Do not use the valve actuator in explosive environments, such as areas with flammable liquids, gases, or dust, as sparks from the tool could ignite these substances.
- Be aware of hidden or potential hazards in the work area, such as power leads, extension cables, pipes or hoses that may contain electrical wires, explosive gases, or hazardous liquids, as these can pose risks of electric shock, fire, or injury.

3.3 Electrical Safety

- Hold the valve actuator tool only by the insulated gripping surfaces or use sufficiently insulating protective clothing when performing tasks where there is a risk of the fastening element contacting hidden live conductors.
- If the tool comes into contact with a live conductor, the exposed metal parts of the actuator tool can also become live, potentially causing the user to suffer an electric shock.

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3.4 Personal Safety

- Stay alert when using the valve actuator. Do not use it if you are tired or under the influence of drugs, alcohol, or medication. Even a moment of inattention can lead to serious injuries during operation
- Always wear your personal protective equipment: Non-slip safety shoes, eye protection, a safety helmet, or hearing protection reduce the risk of injury. Avoid wearing loose clothing or jewellery. Tie back long hair. Keep hair, clothing, and gloves away from moving parts
- Always maintain a stable stance and good balance while working. This improves your control over the fastening tool in unexpected situations.
- Stop using the actuator tool immediately if you feel unwell or experience pain. Vibrations, repetitive motions, or uncomfortable positions can be harmful to your hands and arms. Seek medical advice before resuming work.
- Keep unused tools out of the reach of children. People who are not familiar with the tool or these instructions are not allowed to use it. Tools can be dangerous in the hands of an untrained user.
- Keep your hands away from rotating parts (output square drive, torque reaction arm, side handles).
- Disconnect the actuator tool and its accessories from the power supply before storing it. Before replacing accessories, disconnect the battery pack. This preventive safety measure reduces the risk of the tool being accidentally activated.
- When wearing gloves, always ensure that they do not obstruct the start/stop mechanism.
- Devices with a malfunctioning start button (e.g., if it is stuck) or any other damage must be repaired before use.

3.5 Use and Care of **torc**brain® Valve Actuator Tools

- Before using the battery, read all instructions and warnings provided with the actuator tool. These include: this manual, markings on the device components, and safety data sheets (see also the appendix of this manual). If you do not understand the meaning of the instructions, consult qualified professionals in your company, the dealer from whom you purchased the tool, or contact **torc**brain® directly.
- Do not modify this fastening tool, its safety devices, or accessories. Unauthorised modifications can lead to tool failure, electric shocks, fires, or injuries.
- Do not use the fastening tool in exposed outdoor work areas. It is not equipped with an IP rating. Only use accessories recommended by the manufacturer for your model.
- The actuator tool has comprehensive temperature monitoring features that prevent it from operating when overheating. If it becomes excessively hot, stop operation immediately and

disconnect the battery from the tool. Allow it to cool down first, then check its proper condition (ventilation slots, securely locked battery pack, smooth operation when idle).

– Ensure that the ventilation slots for cooling the tool are not blocked.

– Only use the tool with the approved battery packs. Charge the supplied batteries only with the charger specified by the manufacturer.

– Do not store battery packs together with conductive objects (paper clips, coins, keys, nails, screws, etc.). Short-circuiting the battery terminals can cause burns or fires.

– If the battery is misused, corrosive fluid may leak from it. Avoid contact with the fluid. Rinse any parts that come into contact with this fluid thoroughly with fresh water. If the fluid comes into contact with your eyes, seek medical assistance. Leaked fluid from batteries can cause irritation or burns.

– Stop operation immediately and replace the battery if it becomes excessively hot during use or shows short usage times. Typically, such batteries are aged or damaged due to many charge/discharge cycles. Using an old or damaged battery can lead to injuries or property damage.

– Li-ion batteries lose capacity at temperatures below 0°C. This is a reversible process. If batteries with a low charge are used at temperatures below 0°C, it may cause the tool's safety electronics to shut down. It is recommended to use pre-warmed batteries. As the batteries warm up during operation, this effect may be neutralized after several fastening operations, even in low temperatures.

– Do not disassemble the battery!

– Do not drop the battery or expose it to impacts.

– Never attempt to burn the battery, even if it is severely damaged or fully discharged. The battery may explode in a fire.

– If you need to extinguish a battery that has caught fire, wear appropriate, suitable, and sufficient personal protective equipment, such as protective gloves, clothing, face protection, and respiratory protection. More detailed information on suitable personal protective equipment can be found in the product-specific guidelines of the respective lithium-ion battery manufacturers (see Appendix 1).

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3.6 Maintenance

- Tool maintenance is recommended at least every 50,000 cycles or once per year, whichever comes first, or based on the condition of the tool. Only authorized and properly trained personnel should perform repairs and maintenance on the tool. If maintenance or repair is required, contact your dealer.
- Maintain your tool. Check for misalignment or wear of rotating parts, damage to the housing or gearbox components that could impair its operation. Have the tool repaired before use if damaged.
- Never use the tool without a properly maintained torque support arm and side handles
- Check the fastening nut of the torque reaction arm daily for a secure fit (see chapter 4.2).

3.7 Specific Safety Rules for the Product

- Your distributor can assist you in the safe handling of your actuator tool.
- Only use nuts and adapters that are in good condition and suitable for use with actuator tools.
- Only use inserts and accessories designed for impact wrenches. Do not use (chromed) inserts or accessories for hand tools, as they can easily break when used with valve actuator tools
- If you are using a load balancer device, ensure it is securely attached. If this attachment is not secure, the tool may become uncontrollable, move unexpectedly, or fall.
- Keep your hands away from the rotating output shaft of the actuator tool. This area presents a potential pinch point. Ignoring this warning can result in serious injury.
- Use the actuator tool only with side handles that are securely attached and locked onto the support arm. Hold the side handle only by its plastic grip and start the tool only after you have taken a secure stance and grip. Otherwise, you risk serious injury from the free-rotating support arm or nut.
- Test the tool after repairs or parts replacement to ensure it operates properly.
- Do not apply force when handling the tool.
- Use the correct tool for your application. Your distributor will be happy to assist you in making the right selection. A properly chosen tool performs the job better and more safely when handled correctly.

Caution

For torques above 200 Nm, it is recommended to work with symmetrical torque supports held by two people. When using the TB900SD, at least two people must hold the torque arms / side handles symmetrically to the wrench axis

Ensure a firm and secure stance. If there is a risk of falling or other hazards at the workplace, the work area or worker must be additionally secured. Consult your safety officer or ask your distributor for appropriate safety measures before each new use.

Important: The torque shut-off does not activate during brief torque spikes (e.g., an unevenly running gate)! This can lead to accidents if there is inattention/fatigue, an insecure stance, or insufficient grip on the handle (see personnel safety).

3.8 Emissions Values

Levels determined in accordance with EN60745 are

- Sound pressure level LPA = 73 dB (A)
- Noise Level LWA = 84 dB (A)
- Measurement uncertainty allowance K = 3 dB

Caution

The noise produced during operation can damage your hearing. Wear appropriate hearing protection.

Total vibration values (vector sum of three directions) determined according to **EN 60745**:
Vibration emission value (3-axis): $\mathbf{a_v}$ < 2.5 m/s²; **uncertainty** K = 1.5 m/s².

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4 Overview

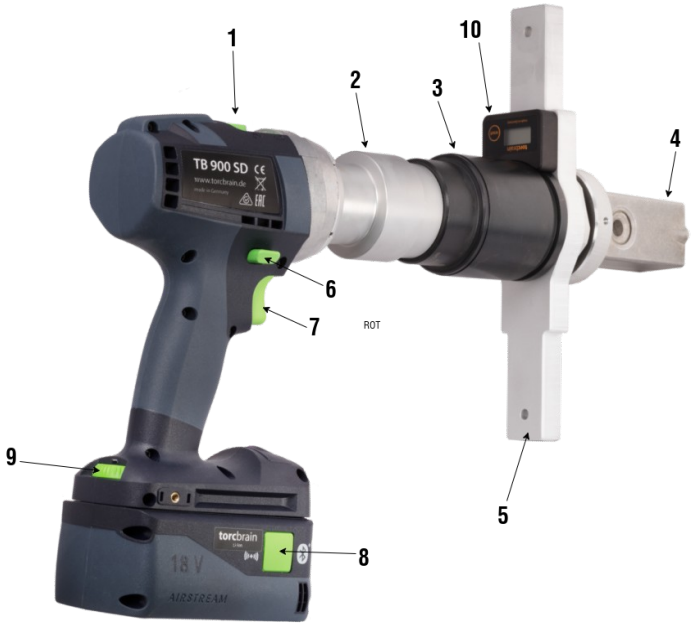


Fig. 1 Overview of the gate valve actuator

1	Gear switch
2	Pivoting joint (360°)
3	Planetary gearbox up to 400Nm (TB300SD) ; 950Nm (TB900SD), pivotable 360°
4	Square drive ¾" or system adaptor VK25 (Model TB300SD) Square drive ¾" or system adaptor VK30 (Model TB900SD)
5	Torque reaction arm
6	Forward/Reverse switch
7	Power switch / fully variable
8	Battery pack release button
9	Torque dial wheel
10	Revolution counter

Details about gear lever and torque dial wheel



Fig. 2: Max. torque value for each gear selection


Fig. 3: Torque dial wheel

The valve actuator wrench offers two ways to influence the shut-off torque. The gear lever (Fig. 2, Gears 1-4) operates similarly to a car:

- First gear rotates slowly but can produce a high torque (like driving slowly up a steep hill in a car).
- Fourth gear rotates quickly with a lower torque (like driving fast on the highway).
- Gears 1 and 2 differ in rotational speed (marked with: turtle, rabbit). The shut-off torques are identical for both gears in each torque setting.

The torque dial wheel (Fig. 3, Settings 1-11) determines the maximum torque for the selected gear. The shut-off values can be found in Chapter 6 and the torque table included with the tool.

Note for extended continuous operation: If the actuator tool shuts off during operation due to overheating, adjust the gear setting to the next lower number to reduce the load on the tool.

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4.1 Female Square Drive

Caution

Always ensure that the valve actuator tool is switched off and the battery is removed before performing any work on it.

Caution

Ensure that the used sockets/accessories are suitable for the actuator tool being used. Make sure that the spring-loaded pin in the system adapter of the actuator tool is properly engaged. Unengaged pins pose a risk of accidents and can damage the output female square drive.

4.2 Torque Reaction Arm

The torque reaction arm is fitted to the gearbox body with a nut. The nut must always be tightened using spanner or socket with a hex size of 50 or 60mm (depending on the gearbox) at a torque of 20-30 Nm. Regularly re-torque of the nut.

Never use the machine without a properly attached torque support arm and side handle(s). Place the arm on the corresponding diameter of the gearbox, as shown in the following illustration:

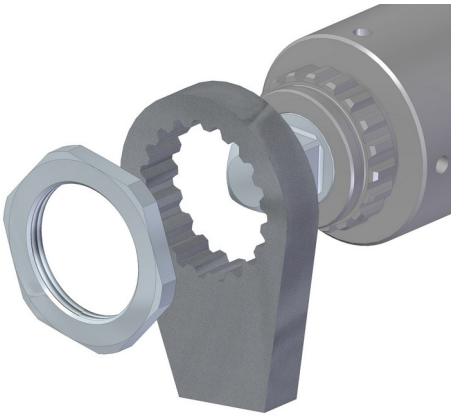


Abb. 4: Mounting the torque reaction arm, sample photo

5 Tool Settings

Adjustments to the settings must only be performed whilst the tool is switched off. Changes will only take effect after restarting the tool.

5.1 Changing the Direction of Rotation (forward/reverse)

The forward/reverse switch [Fig.1-6] allows you to select the direction of rotation.

– Switch from right to left = Clockwise

– Switch from left to right = Counterclockwise

– Middle position = Power switch locked

5.2 Changing Gears

Caution

– Only change gears when the valve actuator tool is switched off.

– Do not change gears while the tool is in operation, as this may damage the gearbox or the gear selection mechanism.

You can change the gear using the **gear switch** [Fig. 1-1]:

– Gear 1 (or scale settings 950, 400): high torque, slow rotation

– Gear 4 (or scale settings 240, 90): low torque, fast rotation

(Refer to Chapter 6: Torque Tables for detailed settings.)

5.3 Changing the Torque

Set the maximum desired target torque using the **torque dial wheel** [Fig. 1-9]:

– Setting 1= lowest torque

– Setting 11 = highest torque

The machine will stop automatically once the set torque is reached. After releasing the **power switch** [Fig. 1-7], the tool can be restarted.

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6 Torque Charts

The following torque values are achieved at the specified settings. The indicated torque values in Nm may deviate by up to 20 % from the stated values.

Shut-off Torque Values TB300SD

Level	1. Gear / 2. Gear 400 Nm	3.Gear 140 Nm	4. Gear 90Nm
1	60	20	10
2	80	25	15
3	100	30	20
4	120	40	25
5	140	50	30
6	170	60	40
7	200	70	50
8	250	85	60
9	300	100	70
10	350	120	80
11	400	140	90

Shut-off Torque Values TB900SD

Level	1. Gear / 2. Gear 950 Nm	3.Gear 350 Nm	4. Gear 240 Nm
1	149	40	20
2	200	60	30
3	260	80	45
4	320	100	60
5	380	120	75
6	440	140	90
7	520	180	110
8	620	220	140
9	730	260	170
10	850	300	200
11	950	350	240

For torques over 250 Nm, it is recommended to operate the actuator tool with two torque support side handles and aminimum of two people.
The shut-off torque values are determined according to ISO 5393 (medium hard). Deviations from the shut-off values: +/- 20%.

7 Operation

7.1 Working with the **torc**brain® Valve Actuator Tool

Warning

In the event of a defective valve, overloading may cause it to break and result in flying debris.

– Always position the socket fully on your bolt/nut/gate valve.

– Wear safety goggles.

Warning

Risk of Crushing!

Never place your hand between the reaction arm and its support point.

Warning

Risk of Injury from Free-Spinning Socket/Reaction Arm!

– Maintain a safe distance.

– Avoid loose clothing, long hair, and jewellery.

Warning

Risk of Injury/Damage with Torques Over 200 Nm!

For torques exceeding 200 Nm, it is recommended to:

– Use two torque support handles or arm.

– Engage at least two operators.

Caution

Risk of Damage to Your Valve or Tool!

Operating the valve actuator tool against a fully opened or fully closed valve may result in torque values up to 20% higher than expected.

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To start to valve actuator tool, press the power switch [Fig. 1-7]. The speed is fully variable depending on how hard you press the power switch. To turn the tool off, release the power switch.

- Rotate the drive unit into an ergonomic working position before starting the bolting process.
- Always keep the machine vertical to the bolt axis during the bolting process. Otherwise, the socket, square drive, or system adapter may be deformed or damaged.
- Never use the machine without a torque reaction arm and side handle. It must be positioned at a suitable support point or held by the operator(s) by the plastic handle during the bolting process.
- When working with the TB900SD, at least two people must hold the torque arms, which are symmetrically mounted to the drive axis. Ensure a firm and stable stance. If there is a risk of falling or other hazards at the workplace, additional safety measures must be taken for both the workplace and the operator. Consult your safety officer or ask your distributor for suitable safety precautions before each use.

Note: Only pull the valve actuator tool by the torque support off the valve, as shown in the following picture. The handle on the drive unit is not suitable for this purpose.

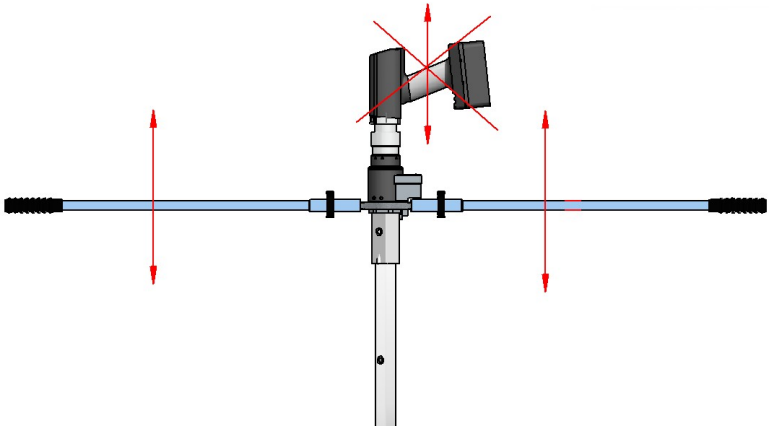


Fig. 5: Correctly removing the tool from the valve using the torque support arms.

7.2 Acoustic Warning Signals

Warning signals occur under the following operating conditions, and the wrench will shut off:

Warning signal	LED Light	Cause	Action required
Beeps once	-	Battery empty/incompatible	Charge/change battery
		Valve actuator tool overloaded	Reduce the load on the tool by selecting a lower gear
		Valve actuator tool overloaded	Resume operation of the wrench after it has cooled down
Beeps twice	-	Set torque reached	-
Beeps continuously	-	Valve actuator tool defective	Contact the manufacturer for troubleshooting

The acoustic signal tone sounds after the machine has stopped upon reaching the shut-off torque. The machine shuts off and will only restart when the trigger switch [Fig. 1-7] is released and pressed again. Wait at least 2 seconds before pressing the on/off trigger again. Rapid repeated pressing of the switch to bypass the overload mechanism may damage the tool or the valve.

7.3 Revolution Counter (optional)

- The revolution counter counts full rotations in both directions (max. display: 9999). The counting process starts when the magnet on the system adapter passes underneath the counter.
- After approximately 15 minutes, the counter enters standby mode. The last counter value is saved automatically.
- The counter display automatically reactivates once the magnet passes underneath the counter. The counter detects this and adds or subtracts from the last recorded value, depending on the rotation direction. Alternatively, the display can be reactivated by pressing the reset button. The last counter value remains unchanged. To reset the counter to zero, the reset button must be pressed while the display is active.
- Counting direction: Clockwise: positive, counterclockwise: negative. The counting direction can be reversed by pressing the reset button five times (within 2 seconds).

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8 Accessories

Use only original **torc**brain® accessories and **torc**brain® consumable materials designed specifically for this machine. These components are engineered to ensure optimal performance and compatibility.
Using accessories or consumable materials from other suppliers may negatively affect the quality of your work, increase machine wear, and void any warranty claims. Additionally, this can increase your personal workload depending on the application.

Protect yourself, your machine, and your warranty claims by always using original **torc**brain® accessories and **torc**brain® consumable materials

8.1 Hand Wheel Adaptor

The hand wheel adaptor is designed for operating valves with 3-spoke or 5-spoke hand wheels. The holes are marked as "3" (for 3-spoke wheels) and "5" (for 5-spoke wheels). Depending on the model, valves can be operated with or without a rising stem. Two diameters of perforated discs are available: 150 mm and 250 mm.The 250 mm perforated disc must be adapted to a 150 mm hand wheel adaptor using the supplied accessories. It cannot be used without this adaptation.

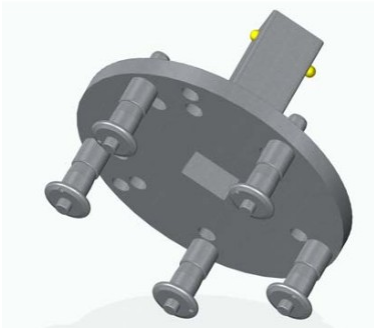


Fig. 6: Hand wheel adaptor D=150mm for hand wheels with 3/5 spokes

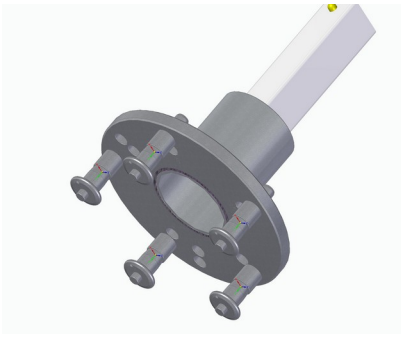


Fig. 7: Hand wheel adaptor D=150mm with short extension (for protruding hubs of hand wheels) for 3/5 spokes hand wheels



Fig. 9: Hand wheel adapter D=150mm for rising spindles with 3/5 spokes

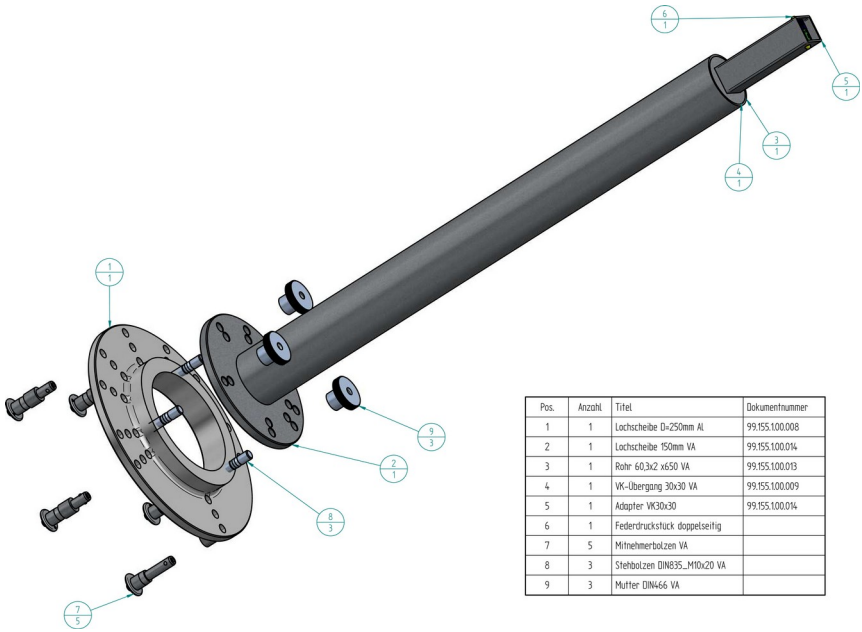


Fig. 8: Hand wheel adapter D=250mm for rising spindles with 3/4/5 spokes

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8.1.1 Components of the Hand Wheel Adaptor

All hand wheel adaptors consist of a **basic body** (D = 150 mm) with various hole patterns, a **spring pressure piece**, and **easily exchangeable driving pins**. These components are made of **stainless steel**. Optionally, a large disc (D=250mm, high-strength aluminium) can be adapted as an extension to all small discs D=150mm



Pos.	Anzahl	Titel	Dokumentnummer
1	1	Lochscheibe D=250mm Al	99.155.1.00.008
2	1	Lochscheibe 150mm VA	99.155.1.00.014
3	1	Rohr 60,3x2 x650 VA	99.155.1.00.013
4	1	VK-Übergang 30x30 VA	99.155.1.00.009
5	1	Adapter VK30x30	99.155.1.00.014
6	1	Federdruckstück doppelseitig	
7	5	Mitnehmerbolzen VA	
8	3	Stehbolzen DIN835_M10x20 VA	
9	3	Mutter DIN466 VA	

In this case, the driving pins are used from the small perforated disc on the large one.

The handwheel adapters are inserted into the system adapter of the valve actuator tool until the spring-loaded pressure pieces of the adapter lock into the holes of the system adapter on the valve machine (25mm square for TB300 and 30mm square for TB900).
The studs of the large disc are inserted into the holes of the small disc marked with lines, until both discs form a flush fit, meaning they align perfectly. Now, the knurled nuts can be tightened by hand (do not use tools!).

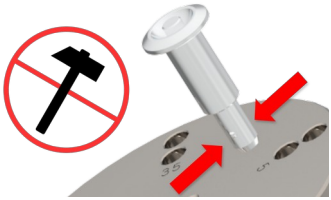
8.1.2 Hydrant Adapter

The hydrant adapters are designed for opening and closing hydrants with four grooves. The adapters are rated for a maximum torque of approximately 200Nm. The maximum torque setting on the valve actuator tool must be adjusted according to the data sheet of the hydrant to be operated.

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8.1.3 Commissioning

- Check whether the handwheel/hydrant or conical valve key adapter (all referred to as the adapters here) is compatible with the valve. Verify that the adapter, the system adapter (square 25/30), and the handwheel adapter itself are in good condition. If any damage (such as deformation, cracks, etc.) is detected, the equipment must be properly repaired before use.
- The valve should be easily accessible. First, check whether the valve to be operated is in good condition. Defective valves or handwheels must not be operated with the adapter or valve actuator tools. Set the correct torque for your valve on the valve actuator tool. Start with Gear 1 and the lowest torque setting (1 of 12) to avoid damaging the valve in case of unclear specifications.
- When operating valves via the handwheels, insert the appropriate number of drive pins into the largest possible circle of the handwheel adaptor. To do this, remove the drive pin by pressing the locking pin and pulling on the pin collar. To insert it into the correct pitch position, hold the locking pin down, insert the pin into the selected hole of the handwheel adaptor until it clicks into place, and then release it.

  The locked pin should no longer be able to be pulled out of its hole. If this is not the case, the pin may be defective and needs to be replaced.
- When operating valve via the valve key or valve stem, fit the correct size conical system adaptor to the valve actuator tool.
- When operating valves with sockets, detach the system adapter from the drive shaft. Only use impact sockets and attach them directly to the tool's square output drive after removing the system adapter.
- **Important!**

  Place the handwheel- or conical adaptor or the socket vertically onto the valve. Ensure that the adapter's rotational axis aligns with the valve's rotational axis, and that the spokes of the handwheel are as close as possible to the driver pins on the perforated plate, while allowing all rotating parts to move freely. Make sure the handwheel adapter remains perpendicular to the handwheel's rotational axis during operation.
- **When using hydrant adapters or valve key adapters, it is crucial that the adapter fits snugly onto the rotating counterpart of the hydrant or valve stem or valve key, and that both axes (hydrant and tool) are aligned. Always start the operating using the lowest possible rotational speed to properly centre the valve-turning tool.**

8.2 Vario Operating key

Caution

Check the operating key for damage before each use! Refer to the maximum allowable torque for your key type (see 8.2.2-4). The key must not be used if its surface shows visible cracks and/or deformations (e.g., due to being run over by vehicles, drops, etc.). We recommend an annual inspection by a safety professional.

8.2.1 Intended Use

- **Single-Person Operation**
  The Vario300 operating key is approved for use by only one person.
- **Intended Application**
  The Vario operating key is solely intended for operating underground gas and water valves. It must not be misused as a lever or impact tool.
- **Avoid Impact**
  Do not strike the surface of the Vario operating key with hard objects, as this may cause damage.
- **No Torque Extension**
  Artificially increasing the torque by extending the cross handle with additional pipes or rods is prohibited.

- **Stable Position**
  Ensure you have a stable and secure stance before using the operating key. Unstable surfaces, soft, or wet ground must be stabilized before starting work.



- **Upright Stance**
  For effective power transmission, adjust the key to match your height. Stand upright and straight relative to the operating key. Avoid unnatural (bent) body postures.



- **Central Rotation**
  Rotate the operating key as centrally as possible to ensure optimal power transmission.



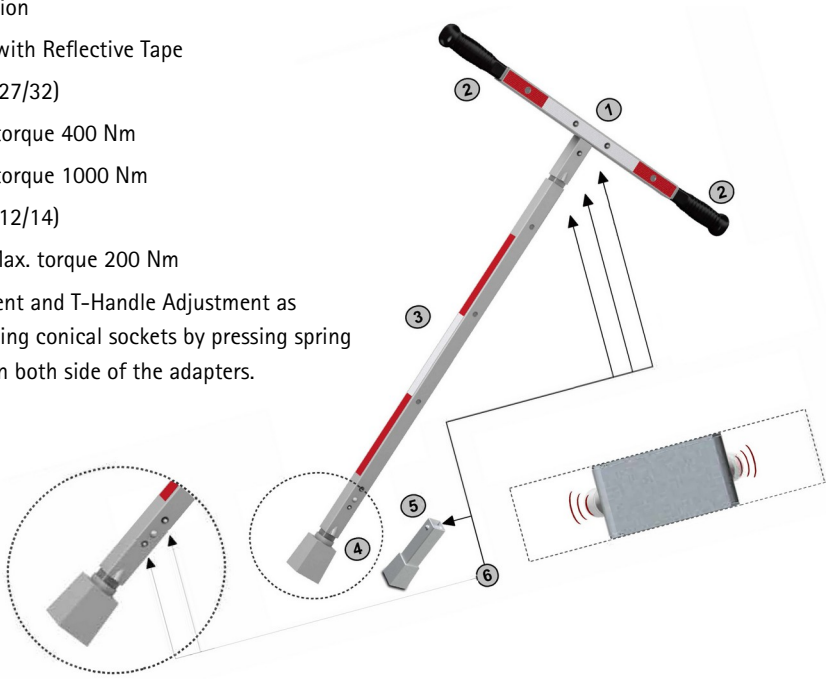
- **Maintenance and Care**
  To ensure long-term functionality, keep the operating key free of sand and dust. Ensure the internal contours of the operating sockets are cleaned before use to achieve a secure fit.



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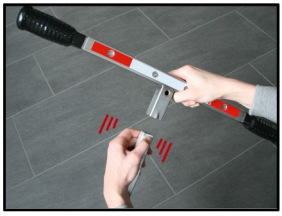
8.2.2 Technical Design

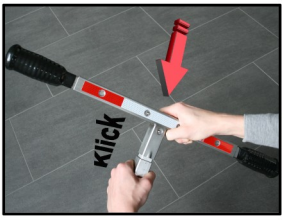
1. T-Handle with Reflective Tape (red/white)
2. T-Handle Extension
3. Extension Tube with Reflective Tape
4. Conical Socket (27/32)
   – vario300: Max. torque 400 Nm
   – vario900: Max. torque 1000 Nm
5. Conical Socket (12/14)
   – vario300/900: Max. torque 200 Nm
6. Height Adjustment and T-Handle Adjustment as well as changing conical sockets by pressing spring loaded pins on both side of the adapters.

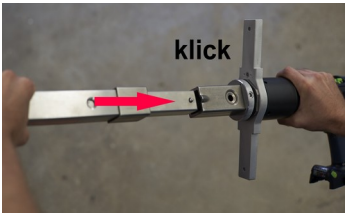


Attaching the Cross Handle

Press both locking pins on the top side of the adapters and slide it into the end of the extension tube. Insert the extension tube into the bottom end of the cross handle so that the locking pins







align parallel with the holes in the T-handle. Slide the T-handle onto the extension tube until the locking pins audibly snap into the designated holes of the T-handle.

Extending the T-Handle

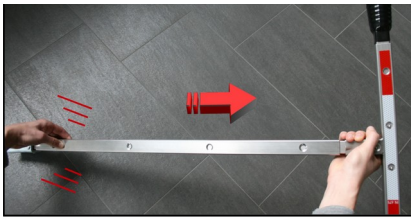
Press both locking pins on one side of the cross handle and pull the T-handle extension tube until the locking pins audibly snap into the designated holes of the T-Handle. Repeat this process on the other side. To retract the T-handle, follow the steps in reverse order.

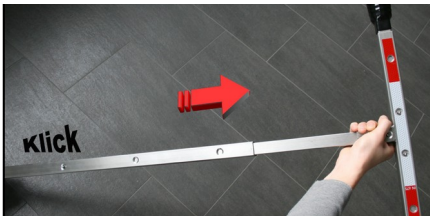




Adjusting the Height

Press both locking pins on the upper adapter of the lower extension tube while simultaneously sliding the operating key upward along the handle.

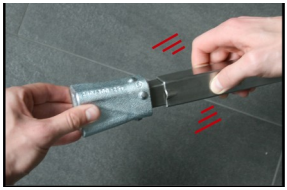


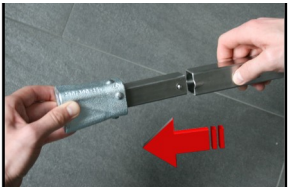


Continue sliding the cross handle until the locking pins of the inner tube audibly snap into the pre-drilled holes of the outer tube. Repeat this process until the desired length is achieved. To retract, follow the steps in reverse order.

Changing the Conical adapters

To remove the conical adapters, press both locking pins on the lower clip and simultaneously pull the operating conical adapter out of the outer tube with the other hand.





To insert a new conical adapter, press both locking tabs on the operating adapter and align them so they run parallel to the pre-drilled holes at the lower end of the outer tube. Slide the adapter into the outer tube until the locking pins audibly snap into the designated holes.

9 Care and Maintenance

Please follow the care and maintenance instructions below:

- Keep the ventilation slots openings on the tool and the charger clean to ensure proper cooling.
- Ensure the connection contacts on the tool, charger, and battery pack are clean.
- Do not update the device firmware yourself or change the factory settings. Unauthorized changes to the device software will void the warranty. Altering the settings may cause damage to the valve actuator tool and the valve. All changes are documented and traceable.

Battery Pack Notes: also refer to Annex 2

- Store battery packs in a dry, cool place at temperatures between 5°C and 25°C.
- Protect battery packs from moisture and heat.
- A significantly shorter operating time per charge indicates that the battery pack is worn out and needs to be replaced.
- The Li-ion battery pack and charger are specifically designed for each other. Integrated electronics prevent harmful overcharging or overheating during charging.
- A new or unused Li-ion battery pack reaches its full capacity only after approximately five charge and discharge cycles.
- Li-ion battery packs are ready to use immediately and can be recharged between uses, even if their capacity is not fully depleted.
- If the Li-ion battery pack is to be stored for an extended period, it should be charged to 40% capacity (approximately 15 minutes of charging) and stored at no more than 25°C.
- The optimal performance of battery packs occurs within a temperature range of 20°C to 30°C.
- Storing the battery pack in the ready-to-use charger keeps it in a charged state due to continuous maintenance charging.
- Do not leave empty battery packs in the charger for more than one month when the charger is unplugged, as this may lead to deep discharge.

9.1 Disposal

Return used or faulty battery packs to your local specialist retailer, **torc**brain® after-sales service, or a designated public waste management facility. The battery packs will then be recycled.

- EU only: According to European Directive 2006/66/EC, faulty or used battery packs/batteries must be recycled.
- Do not dispose of power tools in your household waste! Machines, accessories, and packaging must be disposed of at an environmentally responsible recycling center.
  Follow the valid national regulations.
- EU only: According to European Directive 2002/96/EC, used electric power tools must be collected separately and disposed of at an environmentally responsible recycling center.

9.2 Warranty Terms and Conditions

We provide a warranty for our devices covering material or manufacturing defects in accordance with the statutory provisions of the respective country.

The warranty excludes:

- Damage caused by **natural wear and tear,** overloading, improper handling, or user-caused damage.
- Damage resulting from use contrary to the operating instructions or known at the time of purchase.
- Damage caused by the use of **non-original accessories** and consumables.

Complaints can only be accepted if the device is returned to the supplier or **torc**brain® in an unassembled state.

Please keep the operating instructions, safety instructions, spare parts list, and proof of purchase in a safe place. The manufacturer's current warranty conditions also apply.

Note: Due to ongoing research and development, **torc**brain® reserves the right to make technical changes to its devices without prior notice.

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10 EC- Declaration of Conformity

We hereby declare under our sole responsibility that the following products:

– **Device Type**: Valve Actuator Tool TB300SD, TB900SD

comply with the following standards or documents:
2006/42/EG
2014/30/ EU2), 2014/53/EU3),
2011/65/EU
EN 62841-1: 2015 + AC:2015, EN 62841-2-1:2018,
EN 55014-1: 20172), EN 55014-2:20152),
EN 303 446-1:2019 V1.2.13),
EN 300 328:2016 V2.1.13),
EN 301 489-1:2017 V2.1.13),
EN 301 489-17:2017 V3.1.13), EN 50581:2012

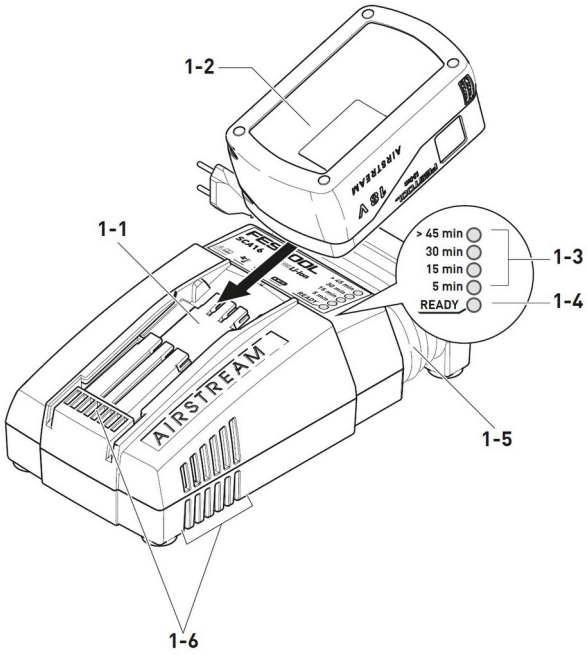
CE

CE2023
Responsible manufacturer
Ingenieurbüro Anlauf
Lanzenberg 1a 87477 Sulzberg
Deutschland

Richard Anlauf



11 Charger SCA16 (TBLG6)



Parts of the Device

[1-1]	Charging station
[1-2]	Battery pack
[1-3]	Remaining charge time display (SCA 16 only)
[1-4]	Charge status display
[1-5]	Mains power cable rewind
[1-6]	Vents (SCA 16 only)

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11.1 Safety Warnings





WARNING! Read all safety warnings, instructions, illustrations and specifications provided with this machine. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

– This appliance can be operated by children over eight years of age and persons with reduced physical, sensory or mental capabilities or a lack of practical experience and knowledge, provided they are supervised or have been instructed to use the appliance safely and understand the dangers of this. Children must not play with the appliance. Cleaning and user maintenance work must not be carried out by children without supervision.

– Do not open the charger.

– Protect the charger from metal components (e.g. swarf) and liquids.

– WARNING! Do not use non-rechargeable batteries with this charger.

– Do not use battery packs from other manufacturers with this charger. Do not use power supply units or battery packs from other manufacturers to operate cordless power tools. Do not use chargers from other manufacturers to charge the battery packs. The use of accessories not expressly authorised by the manufacturer can result in electric shocks and/or serious accidents.

– When the charger is in the Systainer, it must not be connected to the mains outlet.

– Protect the machine from moisture.

– Protect the mains power cable from heat, oil and sharp edges.

– If the supply cord is damaged, it must be replaced by an authorised service workshop in order to avoid a hazard.

– Check for damage before using the device in order to avoid hazards, especially the mains power cable, the mains plug and the housing. In the event of damage, have repaired by an authorised service workshop only.

– Do not cover vent openings on the charger. The charger may overheat and not work properly.

There is a risk of vapours being released if the battery pack is damaged or not used correctly. The vapours may irritate your airways. Seek fresh air and consult a doctor if you feel unwell.

11.2 Technical Data

Power supply (input)	220 - 240 V~
Mains frequency	50 - 60 Hz
Charging voltage (output)	10,8 - 18 V ⎓
Charging current	max. 16 A
Charging times for BP and BPC battery packs, approx.	
5,0 Ah / 5,2 Ah	33 min
Permissible ambient temperature in operation	0 °C bis +40 °C

11.3 Intended Use

Chargers suitable

– for indoor use only

– for charging Festool Li-ion battery packs BP and BPC with the following rated voltages and capacities:
18,0 V (5S1P)3,0 Ah, 3,1 Ah, 4,0 Ah, 18,0 V (5S2P)5,0 Ah, 5,2 Ah, 6,2 Ah, 8,0 Ah

⚠ The user is liable for improper or non-intended use.

11.4 Commissioning

⚠ **Warning**

Unauthorised voltage or frequency. Risk of accidents

► The mains voltage and the frequency of the power source must correspond to the specifications on the name plate.

► In North America, only Festool machines with the voltage specifications 120 V / 60 Hz may be used

Start charging

WARNING! Before commissioning, completely unwind the mains power cable from the cutout [1-5].

– Insert the charger's mains plug in the socket

– Push the battery pack [1-2] into the charging station [1-1].

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11.5 Operation

11.5.1 Meaning of the LEDs

After commissioning the charger, the LED of the charge status display [1-4] switches to yellow.

SCA 16 self-check

Before the LED of the charge status display switches to yellow, all LEDs [1-3] and [1-4] as well as fans [1-6] switch on for approx. 1 s.

Operating statuses of the charger:

LED yellow – steady light	Charger is ready to use
LED green – flashing	Battery pack is charging.
LED green – steady light – READY	The battery pack is > 80% charged and ready for use. In the background, the battery pack will continue to be charged up to 100%
LED red – flashing	General fault indicator, e.g. not in full contact, short circuit, faulty battery pack, etc
LED red – steady light	Battery temperature is outside the permitted range. As soon as the permitted temperature is reached, the charger automatically switches to charging.
Remaining charge time:	Display of anticipated remaining charge time: ► Insert the battery pack The charge status display [1-4] flashes several times. Anticipated remaining charge time is displayed by the corresponding LED [1-3] flashing.

11.5.2 Working Instructions

Continuous or several consecutive charging cycles can cause the charger to heat up. However, this does not do any harm and does not indicate a technical fault. When kept in the charger, battery packs remain fully charged. Only charge battery packs in a well-ventilated area.

11.6 Service and Maintenance

WARNING

Risk of injury, electric shock

► Always pull the mains plug from the socket before performing any servicing and maintenance work.

► All maintenance and repair work which requires the housing to be opened should always be carried out by an authorised service workshop.

Customer service and repairs must only be carried out by the manufacturer or service workshops. You must only use original Festool spare parts. Further information: www.festool.co.uk/service

Observe the following information:

– Clean the charger with a soft, dry cloth to prevent damage. Do not use solvents.

– Keep the connecting contacts on the charger clean.

– Do not cover the vents [1-6] on the SCA 16 charger.

11.7 Environment



Do not dispose of the device in the household waste!

Recycle devices, accessories and packaging. Observe applicable national regulations. In accordance with the European Directive on waste electrical and electronic equipment and implementation in national law, used power tools must be collected separately and handed in for environmentally friendly recycling. Information on collection points for proper disposal can be found at www.festool.com/environment/ Information on REACH: www.festool.de/reach/

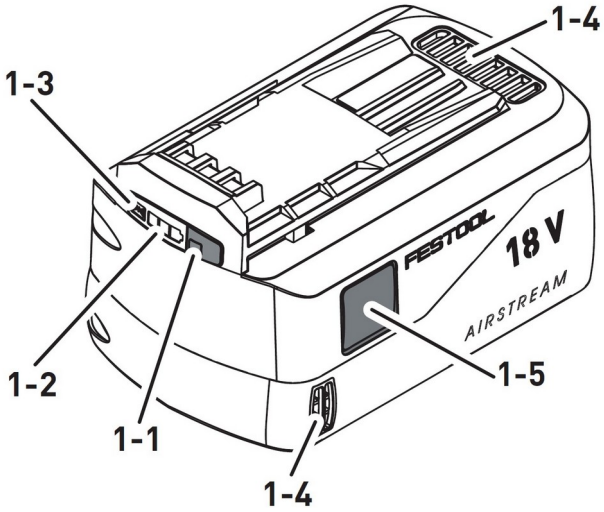
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11.8 General Information

Declaration of conformity: www.festool.com/declaration-of-conformity

License information on any open source licenses used in the product can be found in the Festool app at Information > Power tool open source licenses.

12 Akkupack BP 18 Li 5,0 AS(I)



Parts of the Device

1-1] Capacity indicator button
[1-2] Capacity indicator
[1-3] Bluetooth® indicator (Bluetooth® battery packs only)
[1-4] Vent holes
[1-5] Buttons to release the battery pack

Illustrations may deviate from the original.

12.1 Safety Warnings

WARNING! Read all safety warnings and instructions. Failure to follow the safety warnings and instructions may result in electric shock, fire and/or serious injury.

Save all safety warnings and instructions for future reference. Cells in lithium-ion battery packs are sealed so as to be gas-tight and are non-hazardous provided they are used and handled in accordance with the manufacturer's instructions.

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– Handle discharged batteries with care. Battery packs represent a safety hazard as they can cause a very high short circuit current. Even if Li-ion battery packs appear to be discharged, they are in fact never fully discharged.

– Make sure that the battery pack is not subjected to physical blows or impacts. Impacts and penetrating objects may damage the batteries. This may lead to leakages, the generation of heat or smoke, or cause the battery pack to ignite or explode.

– When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.

– Do not expose a battery pack or tool to fire or excessive temperature. Exposure to fire or temperature above 130 °C (265 °F) may cause explosion.

– Protect the battery pack from constant sunlight.

– Do not open the battery pack. Opening or modifying the battery pack may damage the protective devices. This may lead to the generation of heat or smoke, or cause the battery pack to ignite or explode.

– Do not immerse the battery pack in liquids such as (salt) water or drinks. Contact with liquids may damage the battery pack. This may lead to the generation of heat or smoke, or cause the battery pack to ignite or explode. Do not continue using the battery pack. Consult an authorised Festool customer service agent.

– Do not store the battery pack in areas with high humidity. This could lead to corrosion on the battery pack.

– Keep battery packs out of the reach of children.

– Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.

– Follow all charging instructions and do not charge the battery pack outside the temperature range specified in the instructions. Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

– There is a risk of vapours being released if the battery pack is damaged or not used correctly. The vapours may irritate your airways. Seek fresh air and consult a doctor if you feel unwell.

– Only use the battery pack in conjunction with your Festool machine. This is the only way to ensure that the battery pack is protected against a dangerous overload. Using a different machine poses a fire hazard and may cause personal injury.

– Under abusive conditions, liquid may be ejected from the battery pack; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquidejected from the battery may cause irritation or burns.

– Fluid may leak out of a faulty battery pack and contaminate neighbouring objects. Check the parts affected. Clean them by soaking up the fluid using dry kitchen towel and then rinsing with plenty of water. Wear protective gloves to avoid contact with the fluid. Replace the parts if necessary.
– Do not use a battery pack or tool that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behaviour resulting in fire, explosion or risk of injury.
– Do not use damaged battery packs. Stop using a battery pack immediately if you notice anything unusual such as odour formation, the generation of heat, discolouration or deformation. If you continue to use the battery pack, it may get hot, emit smoke, ignite or explode.
– Do not open, compress, overheat (above 80 °C/176 °F) or burn the battery pack. Failure to observe these precautions is a fire hazard and may result in burns. Observe the manufacturer's instructions.
– Never perform maintenance on damaged battery packs. All maintenance work must always be carried out by an authorised Festool service workshop.

12.2 Technical Data

Li-Ionen battery packs	Weight
BP 18 Li 5,0 AS(I)	0,7 kg (1,5 lbs)

12.3 Intended Use

Battery packs are suitable for use with Festool cordless tools (see the relevant tool) and specified Festool chargers (see image at the beginning of the operating manual).

12.4 Operation

Information for making optimal use of the battery pack
The battery pack is delivered partially charged. To guarantee that the battery pack provides full power, charge it completely in the charger before using it for the first time.

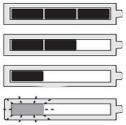
– The battery pack is fitted with a temperature sensor, which only permits charging at temperatures of between 0 °C (32 °F) and approx. 50 °C 122 °F). This ensures a longer battery life.
– The battery pack should ideally be stored in a cool (5 °C to 25 °C/41 °F to 77 °F) and dry location (air humidity < 80%).
– Do not, for instance, leave the battery pack in the car in the summer.

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– Significantly shorter operating times after each charge indicate that the battery pack is worn and should be replaced with a new one.
– Observe the information regarding disposal.

Capacity indicator

When the capacity indicator button [1-1] is pressed, the capacity indicator [1-2] displays the charge status of the battery pack:



70-100%
40-70%
15-40%
< 15% *

Recommendation: Charge the battery pack before any further use.

12.5 Maintenance and Care

WARNING

Risk of injury, electric shock

All maintenance and repair work must always be carried out by an authorised Festool service workshop

– Keep the connecting contacts on the battery pack clean.
– Keep the vent holes [1-4] on the battery pack open.
– If the battery pack stops working, consult an authorised Festool customerservice agent (www.festool.com/service).

12.6 Transport

The Li-ion battery packs included are subject to the requirements of the legislation on hazardous goods. The user must familiarise themselves with the local regulations prior to transport. Special requirements apply to shipping via third parties (e.g. air transport or haulage) and these must be observed. When preparing the item to be sent, a dangerous goods expert must be consulted. Only return the battery pack if it is undamaged. Observe local regulations when shipping. Observe any further national regulations.

12.7 Environment

Used or defective battery packs must only be returned to collection points if discharged, secured against short-circuiting (e.g. by insulating the terminals with adhesive tape) and removed from the old device. The applicable regulations must be observed. Battery packs will then be recycled. In

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accordance with the European Directive on batteries and accumulators and its implementation in national law, faulty or used battery packs/batteries must be collected separately and recycled in an environmentally friendly manner. Information on collection points for proper disposal can be found at www.festool.co.uk/recycling. Information on REACH: www.festool.co.uk/reach

12.8 General Information

Festool GmbH hereby declares that BP 18 Li 5.0 ASI, BP 18 Li 8.0 HP-ASI complies with Directive 2014/53/EU. The complete declaration of conformity for these and the following battery packs BP 18 Li 5.0 AS, can be found at:
www.festool.com/declaration-of-conformity.

12.9 Information about Bluetooth®

As soon as the battery pack is connected to the Festool Work app via Bluetooth® and the secure connection has been authorised, the battery pack will connect automatically to the Festool Work app from this point onwards. The battery pack then regularly sends status information from the tool and battery pack (ID, operating status, etc.) via Bluetooth®
The Bluetooth® word mark and the logos are registered trademarks of Bluetooth SIG, Inc.; they are used by TTS Tooltechnic Systems AG & Co. KG, and therefore by Festool, under licence.

12.10 Information on data privacy

The tool contains a chip which automatically stores machine and operating data. The data saved cannot be traced back directly to an individual. The data can be read in a contactless manner using special devices and shall only be used by Festool for fault diagnosis, repair and warranty processing and for quality im provement or enhancement of the device. The data shall not be used in any other way without the express consent of the customer.

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12.11 Lithium Batteries Test Summary

IN ACCORDANCE WITH SUB-SECTION 38.3 OF UN MANUAL OF TESTS AND CRITERIA

1	Product Manufacturer	Festool GmbH, Wertstraße 20 D-73240 Wendlingen Germany +49 (0)7024 804-0, info@festool.com, www.festool.com
2	Model	BP18 LI 5,2 AS/BP18 Li 5,2 ASI
3	Voltage rating	18V
4	Ah rating	5.2Ah
5	Wh rating	93.6 Wh

All manufactured and factory released Lithium-Ion-Batteries fulfill the UN transport regulation and each cell or battery has a state of charge (SOC) not exceeding 30% of its rated capacity.
These models of Lithium-Ion-Batteries have been successfully tested and are in compliance with the UN Model Regulations, "Manual of Test and Criteria, Part III, subsection 38.3"

PERFORMED TESTS		RESULTS
38.3.4.1 T1	Altitude Simulation	Passed
38.3.4.2 T2	Thermal Test	Passed
38.3.4.3 T3	Vibration	Passed
38.3.4.4 T4	Shock	Passed
38.3.4.5 T5	External Short Circuit	Passed
38.3.4.7 T7	Overcharge	Passed

(Note that tests T6 and T8 are not applicable to batteries.)

The UN 38.3 tests were performed by one of the following test houses and were tested to UN Manual Test and Criteria Revision 3 Amendment 1 or subsequent revisions or amendments.

SIQ Ljubljana
Mašera - Spasićeva ulica 10
SI-1000 Ljubljana Slovenia, +386 (0)1-4778-000 info@siq.si, www.siq.s
LITHIUM CELLS OR BATTERIES TEST SUMMARY IN ACCORDANCE WITH SUB-SECTION 38.3 OF UN MANUAL OF TESTS AND CRITERIA

Product Test Information

Model numbers	Physical Description	Battery weight (kg)	Wh rating	Test report number	Test report date	Applicable UN Numbers acc. to UN Model Regulations
BP 18 Li 5,2 AS	Lithium ion battery	0,750	93,6	T211-0083/17 T211-0923/20 T211-0923/20 A1	10.02.2017 23.11.2000 20.01.2021	UN3480 UN3481
BP 18 LI 5,2 ASI	Lithium ion battery with additional bluetooth modul	0,700	93,6	T211-0083/17 T211-0923/20 T211-0923/20 A1	10.02.2017 23.11.2000 20.01.2021	UN3480 UN3481

For any further information, details or assistance please contact:

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email info@specialtools.com.au