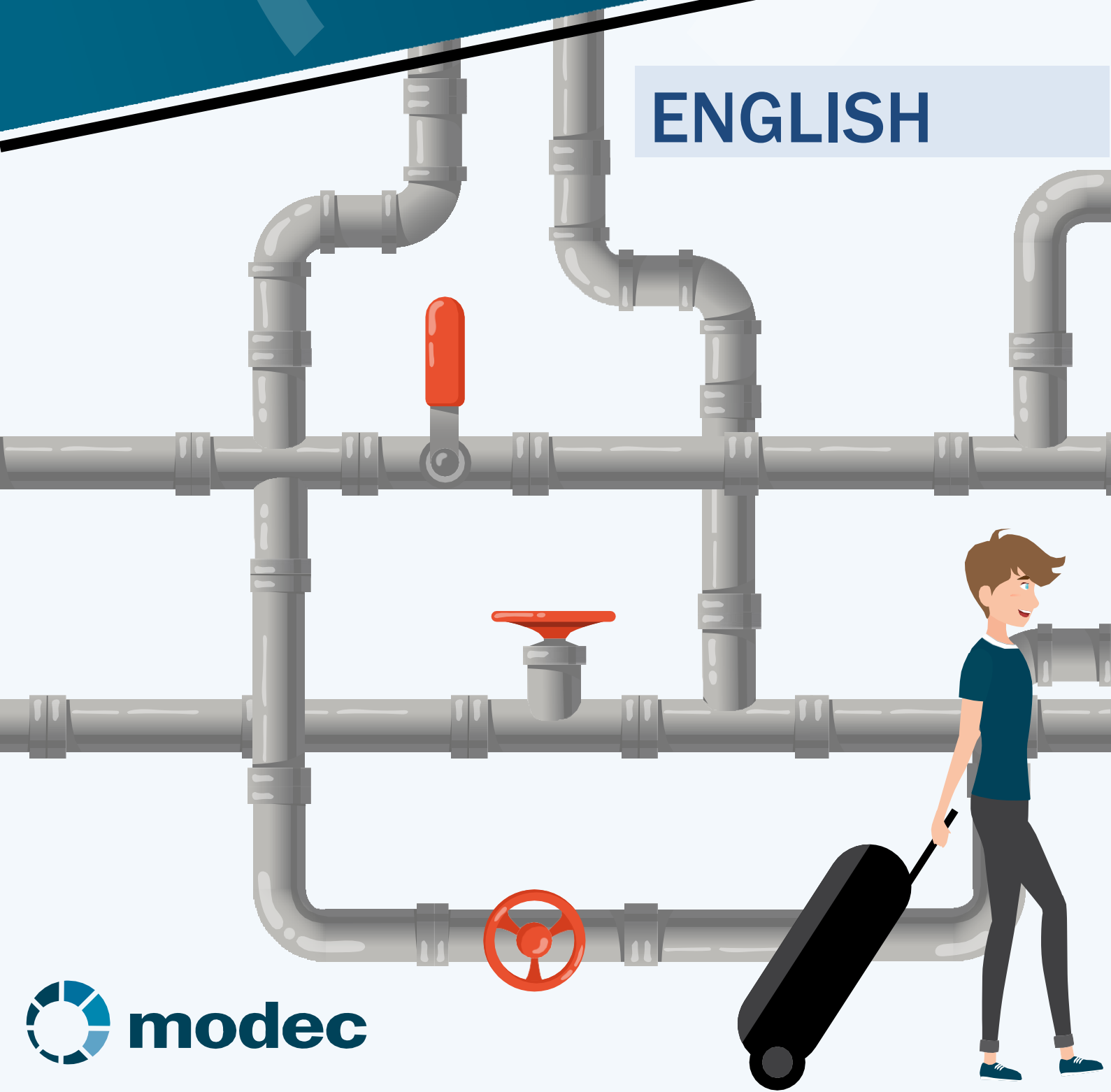


# INSTRUCTION MANUAL WATER KIT

ENGLISH



# TABLE OF CONTENT

<b>MC89 ELECTRIC SERIES .....</b>	<b>3</b>
1. Instruction manual .....	3
2. Introduction.....	4
3. General safety warnings .....	5
a. Transporting the actuator .....	6
b. Storing the actuator .....	6
c. Protecting the environment .....	6
4. Certification CE.....	7
5. Safety equipment .....	8
6. Description and technical specifications.....	8
a. Portable Valve Actuator.....	8
b. Batteries and chargers .....	9
7. Starting up the Portable Valve Actuator.....	11
a. Changing the battery pack .....	11
b. Settings .....	11
8. Setting up and use the water kit .....	13
a. General info.....	13
b. Setting up and use the water kit .....	13
c. Start.....	15
d. Torque reaction safety stop .....	15
e. Events occurring when actuating a valve .....	15
9. Revolution counter (option) .....	16
10. Maintenance and Servicing.....	17
11. Problem solving.....	19
12. Accessories.....	19
a. Foot held articulated reaction system BA012 .....	19
b. Torque reaction arm BR001.....	20
c. Telescopic valve key EB002 and the extension bar EB012 .....	20
13. Instruction Manual : modec Portable Valve Actuators .....	21
<b>WARRANTY .....</b>	<b>22</b>

# MC89 ELECTRIC SERIES

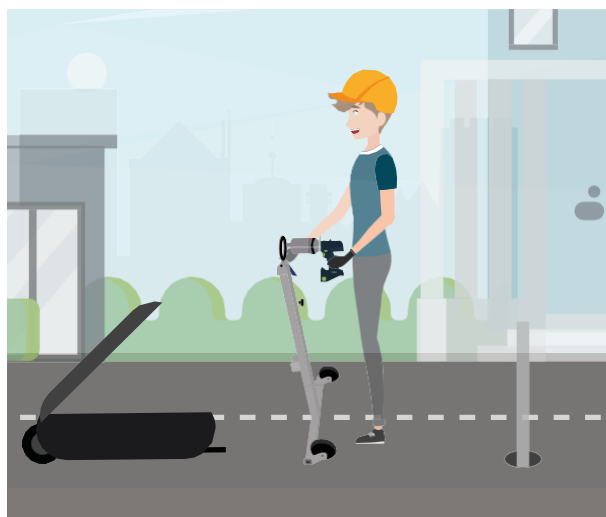
## 1. Instruction manual

The **modéc** H<sub>2</sub>O kit guarantees **ease, speed and safety** when handling underground valves in the water industry.

This kit includes accessories thought, designed and produced for operations on your water system. The MC89 battery-powered portable valve actuator contained in this kit is extremely compact and lightweight, with a torque of up to more than 850 Nm. Its two Lithium Ion batteries guarantee up to one hour of continuous use. The electronic torque limiter integrated in the actuator will allow you to easily and effectively protect your equipment from damage and prevent overheating of the actuator. Finally, because **modéc** focuses its expertise on safety, our H<sub>2</sub>O kit also includes two torque management systems to protect operators in all situations and environments.

All this in a sturdy, compact case that will protect your equipment, easy to carry everywhere.

The essential kit for the hydrant man!



**CAREFULLY READ THE OPERATING HANDBOOK BEFORE USE**



## 2. Introduction

This instruction manual must always be available and kept close to where the actuator will be used.

This document is unique and is owned by the company **modec**. It cannot be corrected, modified or duplicated without prior written agreement. This document should not be considered a replacement for safety rules set out in the Work Code or in any other legislation that applies to the sitewhere the actuator is used.

It belongs to the operators to make sure that all security regulations applicable to both the work site and the Portable Valve Actuator conditions of use are respected.

**modec** products are conceived and fabricated with the utmost care and attention for the safety of both the operator and the equipment. This is certified by the declaration of conformity with the relevant clauses in the European directive 2006/42/CE.

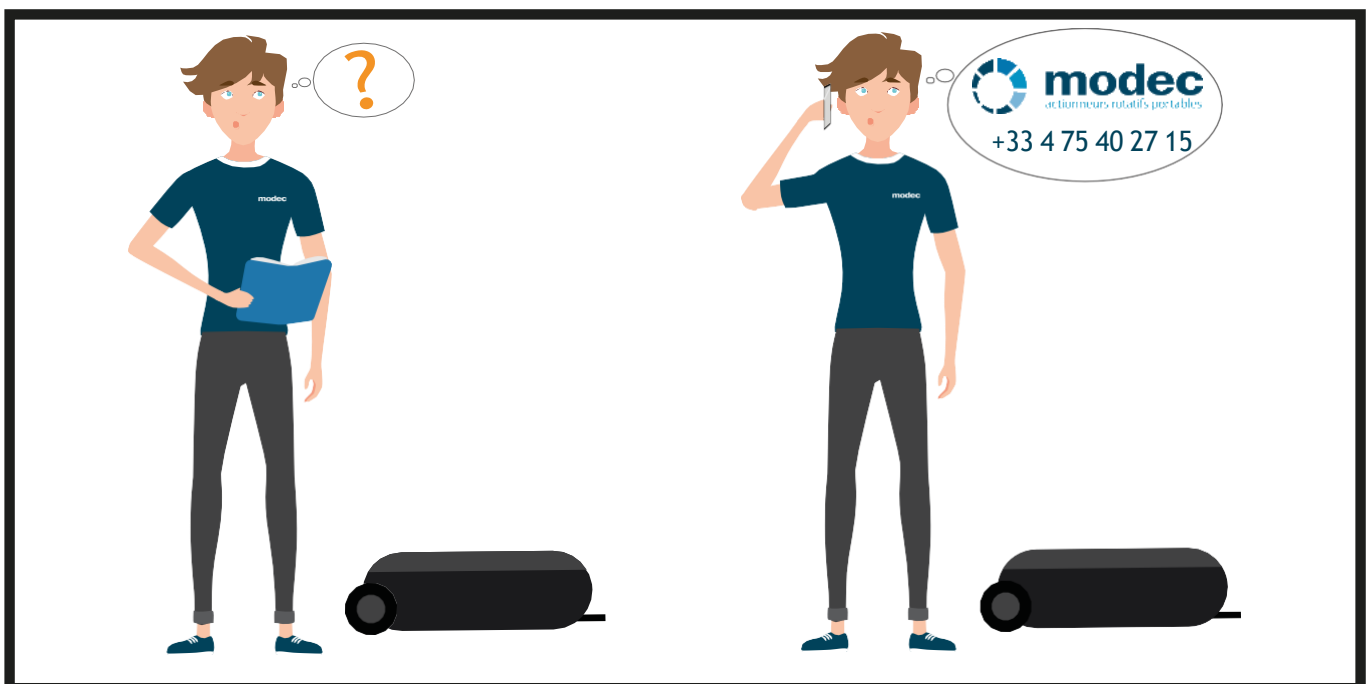
The actuators described in this document may evolve. We reserve the right to modify their specifications, without prior notice. Updates will be available on our website [www.modec.fr](http://www.modec.fr). It is important to refer to the website before setting up or using the actuator, and before carrying out maintenance. Any modifications made to the actuators or their accessories must be approved in writing by **modec**.

Operators in charge of setting up, using or servicing **modec** actuators must have a reasonable knowledge of the equipment. As well as carefully reading this instruction manual, they must be competent in the valve sector and the particularities related to their work environment.



### KEEP THESE INSTRUCTIONS

This manual contains important information and user instructions for the following tools: water kit **modec**. It is **IMPERATIVE** that you read the whole of this user guide before using the tool or carrying out any maintenance operations. Make sure you follow to the letter the instructions and diagrams found in this document. Failure to adhere to the instructions contained in this manual, and any modifications, omissions or the use of replacement parts that do not adhere to the specifications set out in this manual, clears the manufacturer of all responsibility related to the protection of people and equipment.



### 3. General safety warnings

This machine is not intended for use by people with reduced physical, sensory or mental capacity, or by people devoid of experience or knowledge, except if they are supervised by, or have been given instructions by, an intermediary for the person responsible for their security.



Portable Valve Actuators are designed solely for use by professional operators trained in how to use them and educated about the relevant safety measures.

To avoid all risk of injury associated with using a **modéc** Portable Valve Actuator; take care to always follow the user instructions. Make sure you work in a comfortable position that demands minimal effort from your body, arms and wrists. Keep your wrists straight, without excessive, repetitive or prolonged twisting or extension. Do not use force and don't hold the tool tighter than necessary – avoid long exposure to vibrations.

- The **modéc** Portable Valve Actuator is a tool whose use is exclusively for manipulating valve handwheels or rotating systems, such as those described in this document.
- **modéc** Portable Valve Actuators are not adapted for manipulating winches or lifts.
- The company **modéc** declines all responsibility for damages caused by incorrect use and any use other than the one intended.
- The company **modéc** also declines all responsibility for damages resulting from the use of accessories that are not the original.

#### Work zone safety


- Keep the work area clean and well-lit – minimum level lighting of 300 lux
- Aside from the operator, keep any other people at a safe distance within a radius that takes account of fixed points, straps, chains and any other torque retention system used.
- To protect the operator, we recommend that you do not use the PVAs if there is a risk of lightning.

#### Safety of personnel during use and maintenance

- Stay vigilant – watch what you are doing and apply common sense when using the tool. Do not use a tool if you are tired or under the influence of drugs, alcohol or medicines.
- Use the individual safety protection equipment (see the summary table, page 8).
- Do not rush ahead – maintain a suitable position and balance at all times.
- Wear suitable clothing – do not wear baggy clothes or jewelry. It is obligatory to tie back hair and to wear close-fitting clothes (not floaty) to ensure all clothing parts are distanced when moving.
- To avoid the motor starting at the wrong time, before picking up or while carrying the PVA, remove or disconnect the battery.

#### Use and servicing

- Don't use the tool if the switch systems for changing direction, accelerating, starting up or stopping are not working properly. This could pose danger to the operator.
- Observe tool maintenance. Check there if no incorrect alignment or blockage of moving parts or from broken parts or any other problem that could affect how the tool functions. If there is any damage, take the necessary steps and precautions to return the tool and its accessories to good working order.
- Have the tool serviced by a qualified repairer using only **modéc** products when changing parts.
- Only use valve accessories recommended and approved by **modéc**. Think to consult the accessory list provided and/or seek advice from **modéc** for specific uses.
- Before starting up the motor, the operator must, without fail, check the follow points:

- Accessories mounted or activated by the actuator are in good condition and correctly attached.
  - The most suitable torque retention system is being used and it assures the safety of the operator.
  - The system that fixes to the valve is adapted to the valve.
  - Both the actuator and the operator are in a stable position. The operator is placed in opposition to any possible movements the actuator may make while coming to a stop.
- Stop the actuator immediately if it starts to behave differently (a change of noise, increased vibrations). Replace all damaged parts of the actuator and accessories. Damaged parts can burst and cause serious harm, even a potential fatality.
  - Before placing a valve on, or removing it from, the actuator, wait until the actuator has come to a complete stop.
  - Only activate the command to inverse the direction left/right when the actuator is fully stopped, otherwise the operator may find they are working in a poorly adapted position.
  - Always hold down the rotation direction switch until it stops.
-  In certain circumstances, the tool may keep rotating for several seconds after releasing the switch. Never put your hands close to the tool or any moving parts.
- Keep the ventilation slits on the actuator and the batteries free and clean to ensure adequate cooling.
  - Keep the contacts on the machine, charger and battery pack clean.
  - Don't open the battery. Risk of short-circuiting.
  - Protect the battery from heat, for example direct exposure to the sun, to fire, to water and to humidity. There is a risk of explosion.
  - In case of damage or non-conforming use of the battery, vapors could escape. Ventilate the work place and consult a doctor if you feel unwell.



### a. Transporting the actuator

- Keep the original casing for return in case of any revisions or repairs.
- When packing, make sure that all switches are off and without any constraints.
- Always pack the tools in the correct spaces to avoid them knocking against each other.
- Replace the batteries in their allotted casing.
- Lithium-ion batteries are subject to rules regulating the transport of dangerous materials. The operator can transport the batteries by road without taking any additional measures.
- When transporting via a third party (for example, by air or via a transport company), you must conform to the specific measures regarding packaging and labelling. In such a case, it is imperative to take advice from an expert in the transport of dangerous materials when preparing the transportation. Only send the batteries if the packaging is not damaged. Protect the battery connectors and pack the batteries tightly so they cannot move. Please also follow any additional regulations that may apply.

### b. Storing the actuator

**modex** actuators must be stored in a dry and correctly ventilated environment to ensure there is no corrosion of the internal mechanic parts.

### c. Protecting the environment

To eliminate waste, conform to the stated national requirements. The actuators and their accessories must not be thrown in a waste bin. Make sure you dispose of the tools in specialist recycling centers.



## 4. Certification CE

CERTIFICATE  E COMPLIANCE (ANNEX II A)

The undersigned manufacturer

**MODEC** SAS

ZI Sirius Quatre, 80 allée René Higonnet

F-26760 Beaumont lès Valence

N° SIRET : 493 748 917 00017

Declares that the Portable Valve Actuator designated by the following commercial references:

<u>Type</u>	<u>Designation</u>	<u>Serial number</u>
Electric		
MC89E-xxx-xx	Electric Portable Actuator, Easy Duty	MC89E-XXXXXXXXXX
MC89S-xxx-xx	Electric Portable Actuator, Standard Duty	MC89S-XXXXXXXXXX

Complies with the essential requirements of the European Directive 2006/42/EC.

Type :

S/N :

Fait à Beaumont lès Valence,  
XX/XX/XXXX

Mr Pierre-Yves COTE  
Président



## 5. Safety equipment

### Personal Protective Equipment:

Operators or anyone placed close to the actuators must wear the following protection. It is incumbent on the company using the equipment to ensure that safety rules are respected.



Hearing protection



Protective goggles



Safety shoes



Safety gloves (level 3121 according to EN388)



Caution, the use of the material can be dangerous



Before use, read the instructions



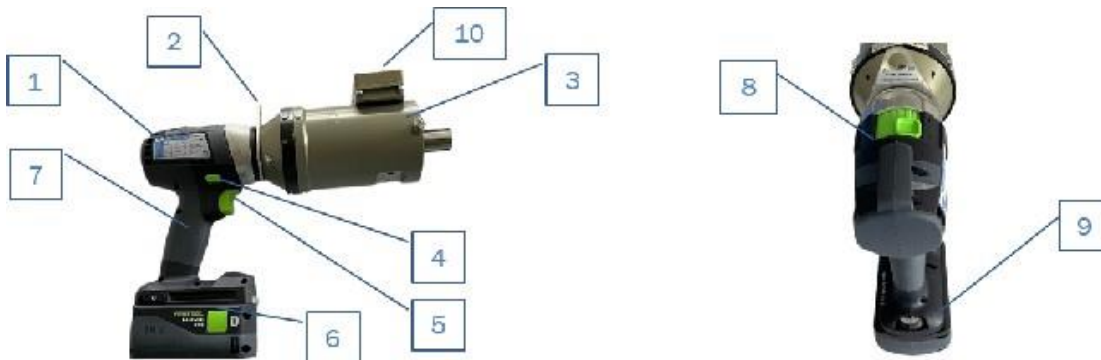
Risk of fire



Do not expose or work in the rain

## 6. Description and technical specifications

### a. Portable Valve Actuator



- 1- Information stickers: Indicate for each rotation direction (D1 & D2) the possible torque settings depending on the head used
- 2- Fixation ring to fix a strap for handling and carrying: Not for torque management.
- 3- Flange: enables the attachment of all **modex** heads, adaptors and torque systems.
- 4- Left/right switch – to choose rotational direction of the actuator.
- 5- Start / Stop trigger: for a progressive start and stop of the actuator when released.
- 6- Removable battery: The mains connection can also be plugged at this place.
- 7- Isolated handle (grey zone): Do not use as a torque reaction device.
- 8- Speed control button (4 possible positions)
- 9- Electronic torque limiter thumbwheel (13 possible positions).
- 10- Revolution counter module (option): it gives a double reading rotating speed and number of turns.



## PERFORMANCES & TECHNICAL CHARACTERISTICS

	Free speed (rpm)	Max torque (Nm (lb.ft))	Weight(kg)	Dimensions (l x d x h)(mm)
MC89E-007	450	115 (85)	5,1	354 x 96 x 269
MC89E-035	94	550(400)	5,1	354 x 96 x 269
MC89E-054	61	850(630)	5,4	367 x 96 x 269

### Sound and vibration levels

Sound and vibration levels are calculated based on the conditions of use at the maximum rated speed. Values apply to the core tool (without added options or accessories). The values can vary significantly depending on the equipment to which the tool is applied. The end operator should establish the actual measurements.

Maximum level of weighted acoustic pressure A at the operator's location	LPA = 73 dB(A)
Maximum level of weighted acoustic power A at the operator's location	LWA = 84 dB(A)
Uncertainty of measure	K = 3 dB

Values established from an equivalent apparatus.

Value of vibration emission	Ah < 2,5 m/s <sup>2</sup>
Uncertainty of measure	K = 1,5m/s <sup>2</sup>

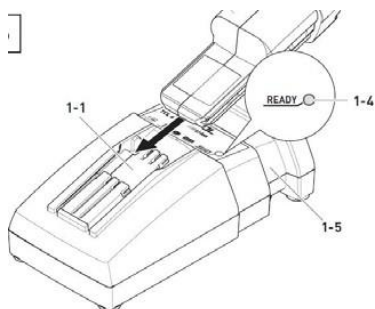
Values established from an equivalent apparatus.

Electric motor voltage: 18V DC

## b. Batteries and chargers

### Chargers

Technical data	BAT145
Mains voltage (input)	220-240 V AC
Mains frequency	50 / 60 Hz
Charging voltage (output)	10,8 – 18 V DC
Rapid charging	Max 6A
Permitted charging temperature range	-5 °C à +55 °C
Safety class	II
Weight	0,8 kg



### Standard charger BAT 145

- 1-1 : Charging station
- 1-4 : Charge status display
- 1-5 : Cable holder

## Start charging:

Before use, the cable must be completely unwound from the recess (1-5).

- Insert the charger mains plug in the socket.
- Push the battery pack (1-2) into the charging station (1-1)

## Meaning of the LEDs:

Then, the charge status display (1-4) on the charger initially changes to the yellow LED (« self-check») and then indicates the operating condition of the charger:

- **Steady yellow LED :** Charger is ready for operation
- **Flashing green LED :** Battery pack is charging
- **Steady green LED:** The battery pack is more than 80% charged and ready for use. In the background, the battery pack will continue to be charged up to 100%.
- **Flashing red LED:** General fault indicator, e.g. not in full contact, short-circuit, faulty battery pack, etc.
- **Steady red LED:** Battery temperature is outside the permitted limit values. As soon as the permitted temperature is reached, the charger automatically switches to charging.

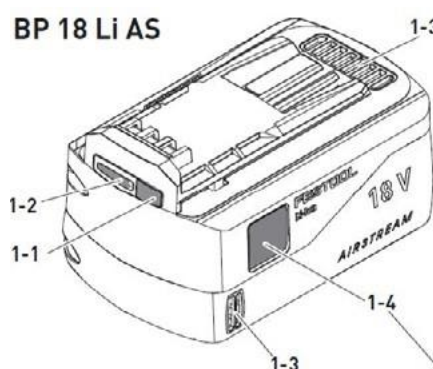
## Batteries:

Technical data	BAT143
Voltage	18 V DC
Capacity	5,20 Ah
Autonomy*	24 minutes
Charging time with standard charger BAT145	45 minutes
Weight	0,7 kg

\*Autonomy is measured with a load equal to 50% of the max torque

## Instructions for use:

BP 18 Li AS



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. It can be charged at any time without reducing the battery life. Interrupting the charging process does not damage it. The battery pack is fitted with a temperature sensor, which only permits charging at temperatures of between 0 °C to 55 °C. This ensures a longer battery life.

The battery pack should ideally be stored in a cool (5 °C to 25 °C) and dry location (air humidity <80 %). Significantly, shorter operating times after each charge indicate that the battery pack is

worn and should be replaced with a new one. Observe instructions regarding disposal. Capacity display when pressing the button, [1-1] the charge indicator [1-2] shows the charge of the battery pack during approx. 2 s:

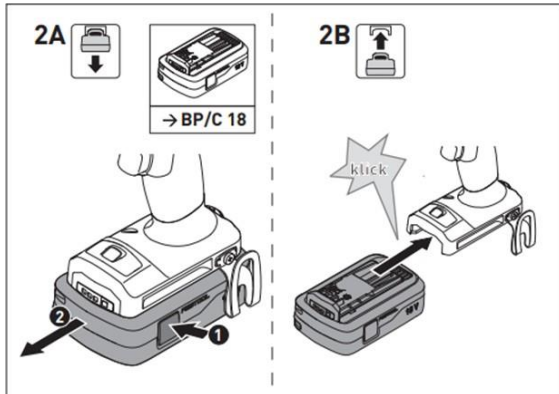
- **3 LED :** Battery pack is charged > 70%
- **2 LED :** Battery pack is charged between 40% and 70%
- **1 LED :** Battery pack is charged between 15% and 40%
- **1 LED flashing :** Battery pack is charged < 15%

Charge the battery pack before any further use. Do not continue until complete discharge. After the portable actuator has switched off automatically, do not press the on/off button, this could damage the battery pack.

## 7. Starting up the Portable Valve Actuator

### a. Changing the battery pack

#### INSERTING / REMOVING THE BATTERY



Before using the battery pack, check that the battery interface is clean. Any contamination of the battery interface may impair correct contact and lead to the contacts being damaged. A faulty contact may result in the machine overheating or being damaged.

### b. Settings



**Risk of injury! Only adjust the settings when the power tool is switched off and free of anyload.**

#### CHANGING DIRECTION OF ROTATION

- Switch to the left = “D1” rotation direction / Right / clockwise
- Switch to the right = “D2” rotation direction / Left / counterclockwise

#### SETTING TORQUE LIMIT AND SPEED

The maximum speed value can be set with the Speed control trigger (8) on the top of the actuator. There are 4 possible positions.

The torque limit can be set with the thumbwheel located at the bottom back of the actuator. Each combination of speed and torque settings provide different rotational speeds and torque limits. The matrix hereafter shows the values for each combination.

Once the desired torque limit is reached, the actuator beeps twice and stops. It restarts only after releasing and pressing the power switch again.

The torque also depends on the selected speed:

**Position 1: Moderate speed / Max torque**

**Position 4: Max speed / Moderate torque**

### Torque / Speed matrix MC89E-007

Speed setting	Torque lim. setting	1	2	3	4	5
1	Max S (rpm)	37	42	48	53	59
	Max T (Nm)	12	38	62	90	115
2	Max S (rpm)	59	66	74	81	88
	Max T (Nm)	11	34	57	81	107
3	Max S (rpm)	180	210	240	270	300
	Max T (Nm)	3	11	20	28	37
4	Max S (rpm)	280	320	370	400	450
	Max T (Nm)	2	8	14	20	26

### Torque / Speed matrix MC89S-035

Speed setting	Torque lim. setting	1	2	3	4	5
1	Max S (rpm)	8	9	10	11	12
	Max T (Nm)	60	180	300	430	550
2	Max S (rpm)	12	14	15	17	18
	Max T (Nm)	50	160	270	390	515
3	Max S (rpm)	38	44	51	57	63
	Max T (Nm)	13	50	100	140	175
4	Max S (rpm)	58	67	77	84	94
	Max T (Nm)	10	35	65	95	125

### Torque / Speed matrix MC89S-054

Speed setting	Torque lim. setting	1	2	3	4	5
1	V (tr/min)	5	6	7	7	8
	Cmax (Nm)	90	280	460	660	850
2	V (tr/min)	8	9	10	11	12
	Cmax (Nm)	80	250	420	600	790
3	V (tr/min)	25	29	33	37	41
	Cmax (Nm)	20	80	150	210	270
4	V (tr/min)	38	44	50	55	61
	Cmax (Nm)	15	55	100	145	190

## 8. Setting up and use the water kit

### a. General info



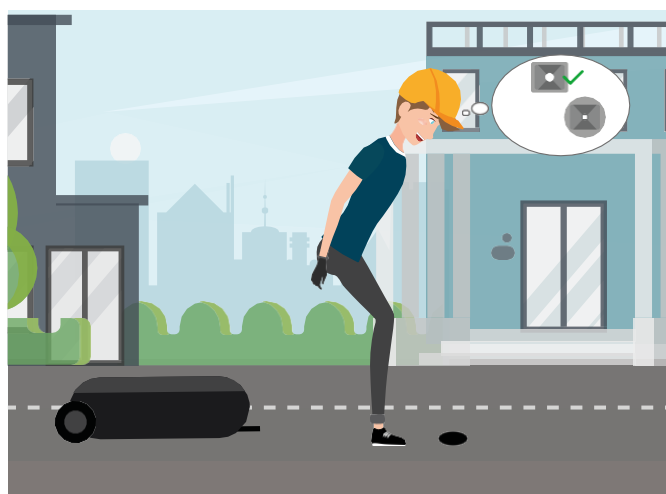
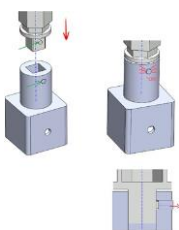
The actuator must be kept stable while turning the valve or handwheel. **modec** Portable Valve Actuators can be used in any position. However, to ensure the operator is working safely and in the best conditions, it is imperative that the actuator is used in the axis of the handwheel being activated.

### b. Setting up and use the water kit

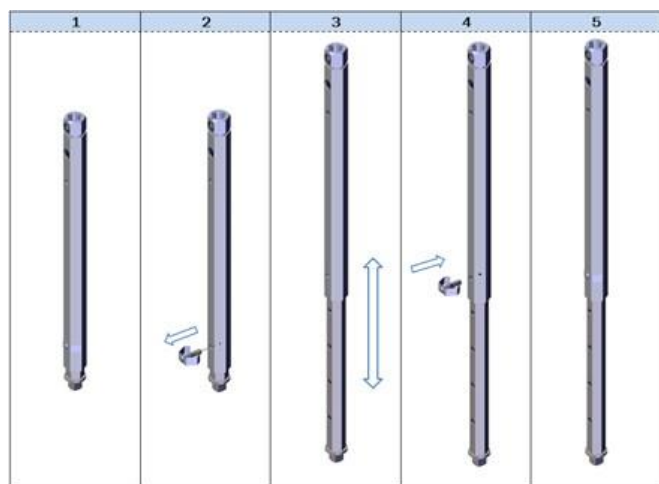
1. Select the interface corresponding to the shape of the drive shaft, and connect it to the telescopic fountain key.



Make sure that the ball on the square at the end of the key is properly engaged in the socket.



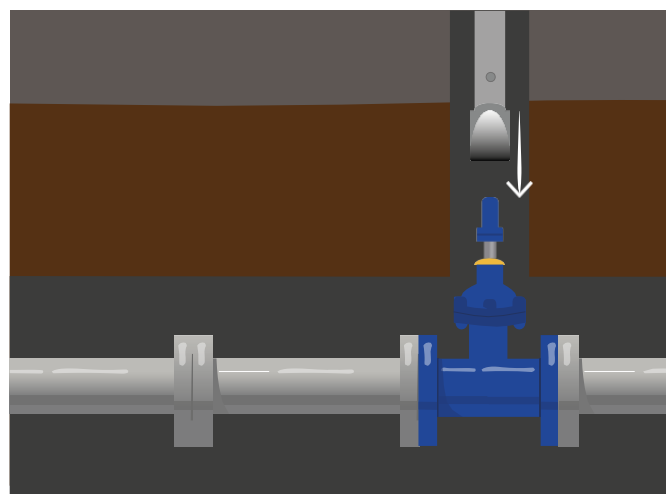
2. Adjust the length of the telescopic key and secure the pin.



3. Add the 0.5m fixed extension if required.

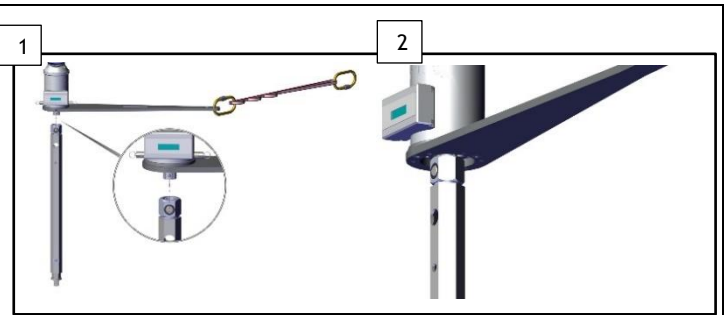
→ See page 14 for installation

4. Lower the telescopic key into the water box until it is connected to the valve drive shaft. Check that the connection is solid.



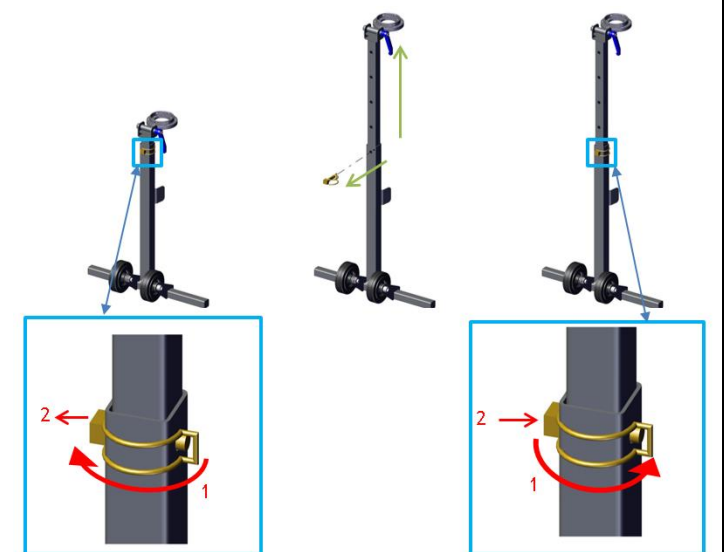
- Attach the torque management system to the front of the portable valve actuator using the two spring loaded pullers.

**Note:** The BA012 torque management system is only valid up to a maximum torque of 350 N.m. It varies according to the nature of the soil (loose earth or bitumen) and the weight of the operator. Always ensure that the maximum torque set on the actuator is 350 N.m or less. If the required torque exceeds 350 N.m, or if it turns out that the BA012 is not enough, use the BR001 which can go up to 1000 Nm.

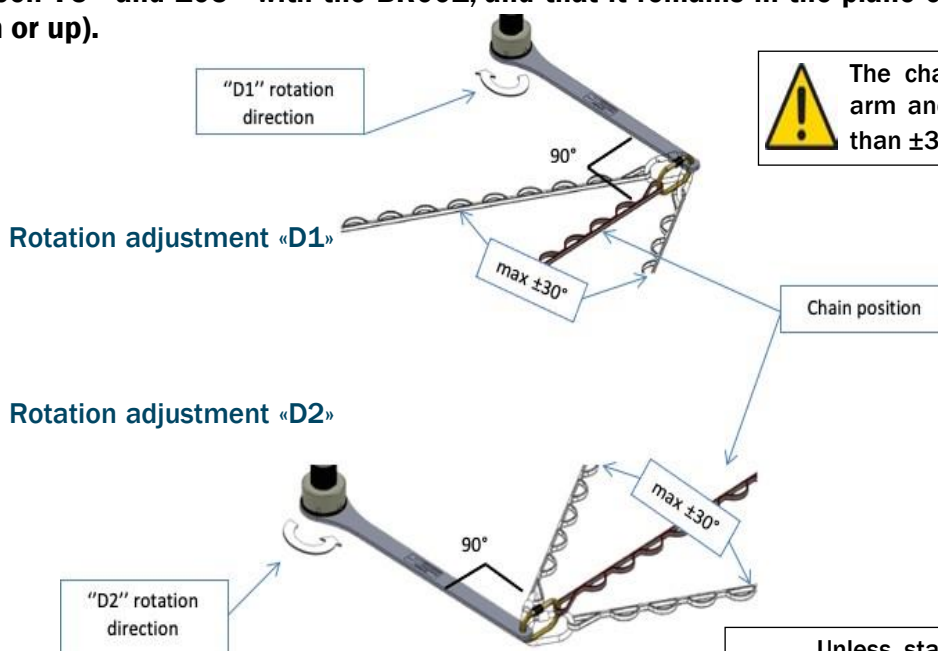


- Tilt the actuator onto the head of the telescopic spanner.

- Adjust the length of the foot articulated reaction arm BA012 so that the operator is stable and comfortable when standing on the horizontal bar on the floor. The wheels must be be up.



If you use the BR001, attach the strap to a strong fixed point, making sure that the strap makes an angle of between  $75^\circ$  and  $105^\circ$  with the BR001, and that it remains in the plane of the BR001 (it should not go down or up).



The chain must remain in the plane of the arm and must not work at an angle greater than  $\pm 30^\circ$  to the perpendicular of the arm.



Unless stated otherwise on the torque reactions system, the maximum torque allowed is 1000 Nm.

### c. Start

1 – Check the equipment is in good condition and use accessories that are the most suitable for the actuator.



**Make sure the torque management system and the hand wheel adapter are compatible with the action about to be carried out.**

2 – Insert the battery. Set the torque limiter to minimum.

3 – Check the rotational direction required for the valve or the hand wheel. Set the defined rotation direction using the actuator's left/right switch.

4 – Position the adaptor on the valve and set up the torque retention system. Consult the instructions for adaptors.

5 – When starting up, always start up slowly in order to **VERIFY** the rotational direction, and to put tension on the torque retention strap or chain.

6 – Check that the strap is set on the correct side compared to the desired rotation direction.

### d. Torque reaction safety stop

In case you don't use a torque reaction system or you don't install it correctly, the actuator may rotate suddenly and unexpectedly when started. If the rotation speed is high, this may be dangerous for the user. In such a case, in order to protect users, the actuator will switch off, beep once, and the LED light will flash continuously.

- Release the On/Off switch
- Install a correct torque reaction system
- Press the On/Off switch again

### e. Events occurring when actuating a valve

1. If the actuator sounds a “beep” it means that the required torque is higher than the torque limit set. Increase progressively the torque limit and try again.



**Make sure that the torque limit set does not exceed the valve maximum allowed torque.**

2. If the actuator is still unable to start even with a high (or maximum) torque limit, the valve may be fully open or closed and the selected direction of rotation may not be correct. In this case, repeat the procedure from the beginning by changing the direction of rotation of the actuator.



**Check again the direction of the torque retention.**

3. In case of resistance resulting from deposits on the stem, turn the valve in both directions several times to ‘clean’ it. modex revolution counter (optional) enables you to always know which position the valve is in.

4. When the closed position is reached, make sure the torque does not exceed the valve maximum allowed torque. Unless the procedure indicates otherwise, reopen the valve with a few turns so that the accelerated fluid “cleans” any potential impurities from the valve, and then close it again at the desired torque.

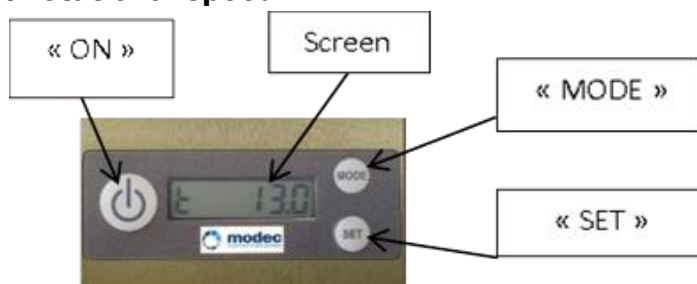
5. When the maximum open position is reached, reclose with a few turns to avoid the valve getting stuck in future.



## 9. Revolution counter (option)

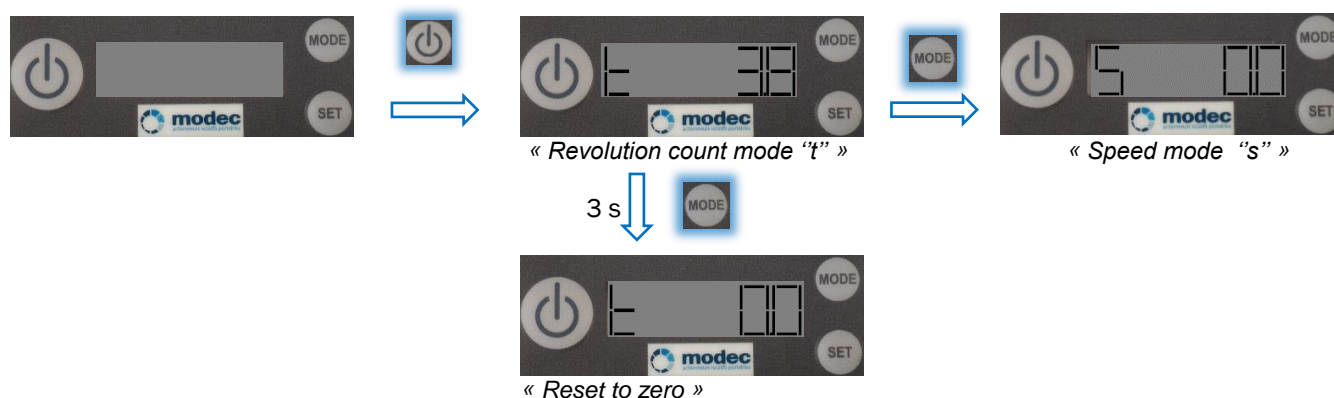
### PRESENTATION

The digital Revolution counter adds up the revolutions in one direction and subtracts them in the other direction in such a way that the operator always knows where he is in relation to the initial set-up. The tool also measures and shows the rotational speed.



**Note 1 :** The instant speed indicator needs several revolutions before it can give a stable and regular speed. In light of this, you have to wait several seconds to get a reliable reading.  
**Note 2 :** The screen turns itself off after 5 minutes.

### HOW IT WORKS



### CHANGING THE BATTERY



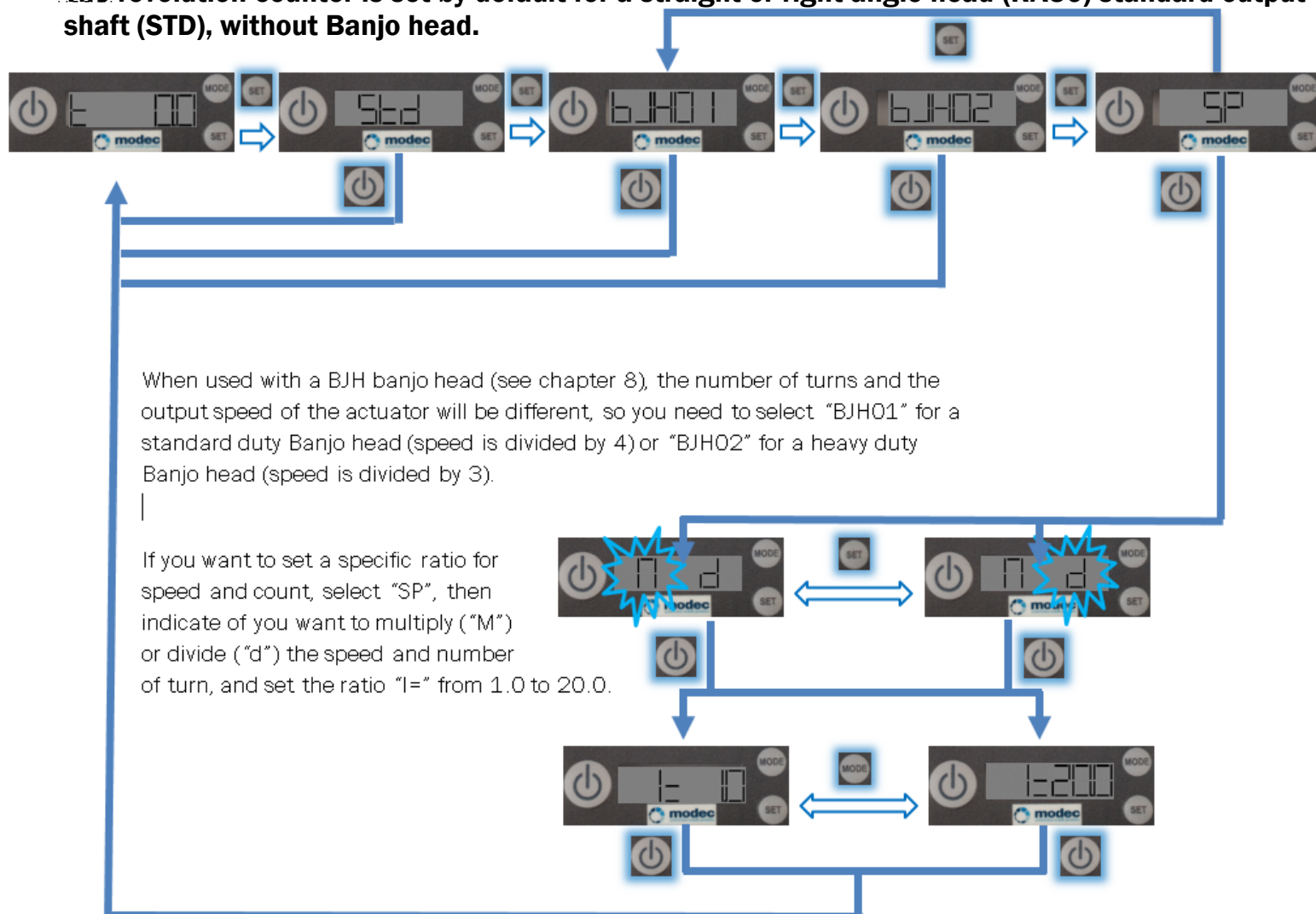
Use a 3mm hexagonal



Use a AA 3,6V Li-SOCL2 battery  
Reposition the wires correctly before tightening the 4 screws

## REVOLUTION COUNTER PARAMETERS

The revolution counter is set by default for a straight or right angle head (RA30) standard output shaft (STD), without Banjo head.



## 10. Maintenance and Servicing

Take the machine to a registered **modtec** distributor for servicing every 400 hours or at least once a month.

Maintenance operation	Weekly	Yearly or as needed
Check and service the actuator by a registered modtec distributor		
Replace the Revolution counter battery (option)		
Check the torque limiter by a registered modtec distributor		

Maintenance to be carried out at the indicated intervals in months or in hours of use, from the first deadline onwards.			Interval			
			After each time used	Every 3 months or 25 hours	Every 6 months or 50 hours	Every year or 100 hours
MC89	Condition of the tool and protective elements	Check	U			
MC89	Functioning of the triggers and Stop/ Start button	Check	U			
MC89	Functioning of the setting systems for the torque, speed and direction inversion	Check	U			

U : user – M : **modec** registered distributor / repairer

### General recommendations

- Take note of all the work health and safety regulatory provisions that apply and any local workplace safety instructions including conditions relating to the work environment, clothing and the operator's individual protective equipment as required by all the applicable regulations.
- It is advisable to keep a maintenance log for all maintenance tasks carried out on the actuator.



Prevent foreign bodies from entering the system by using a clean work surface in order to protect the delicate moving parts from being contaminated by dirt or foreign materials when assembling and disassembling, as this could cause a deterioration of the mechanical parts.

- People who have been trained by modéc should carry out maintenance of the Portable Valve Actuators. Our "After Sales Service" department are ready to help in this respect.
- Systematically disconnect the actuator from the power feed (battery pack or mains) before carrying out any procedure that involves replacing, adjusting, servicing or disassembling the actuator or any of its parts.
- Every time maintenance is carried-out, test the actuator afterwards to check it is working correctly.



Only use approved replacement parts and follow the manufacturer's advice with regard to lubrication and waterproof.

## 11. Problem solving

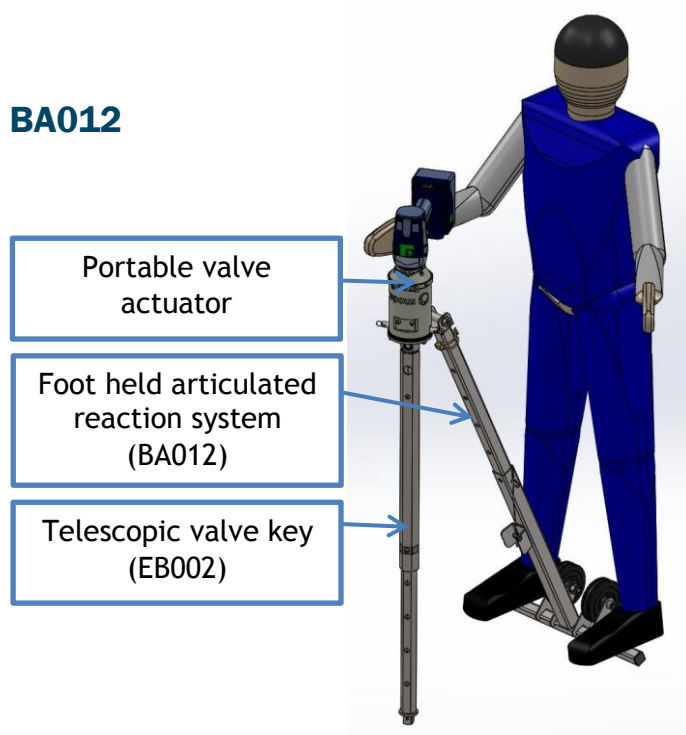
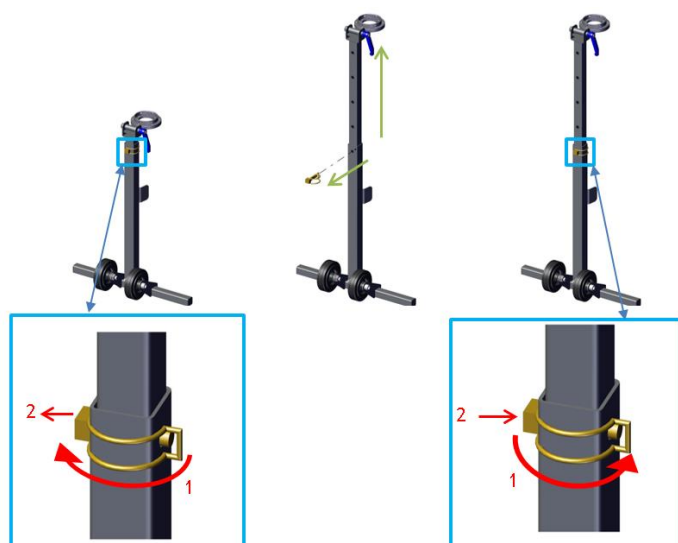
Electric Portable Valve Actuator MC89			
Symptoms	Probable causes	Checks & solutions	Repairer
The actuator doesn't start	Direction switch button is not <b>activated</b>	Press switch correctly to the left or the right	User
	Battery not properly in place	Insert the battery correctly	User
The actuator beeps once and stops	Battery pack is empty / not charged	Charge / change the battery pack	User
	Actuator overloaded (torque is too high)	Reduce load	User
	Actuator has overheated	Let it cool down a few minutes	User
The actuator beeps once and the led flashes continuously	Torque reaction safety has triggered	Release the On/Off switch, fix a torque reaction system and start again	User
The actuator beeps continuously	The motor is faulty	Contact a <b>modec</b> Service center	<b>modec</b> Distributor

Revolution counter (option)					
Symptom	Screen status	Probable causes	Checks	Solutions	Repaired by
The counter doesn't give a reading	Off	Timer elapsed / automatic stop		Activate the "ON" button	User
		Flat battery	Check the state of the battery	Change the battery	User
		Screen is out of order	Check with a registered <b>modec</b> distributor	Change the screen	<b>Modec</b> distributor
The counter is on but doesn't count	On and not moving	Poor connection between the captor and the card	Check the sensor connection	Reconnect the sensor	User / <b>modec</b> distributor
		Captor and/or the card is out of order	Check with a registered <b>modec</b> distributor	Change the electronic card	<b>Modec</b> distributor

## 12. Accessories

### a. Foot held articulated reaction system BA012

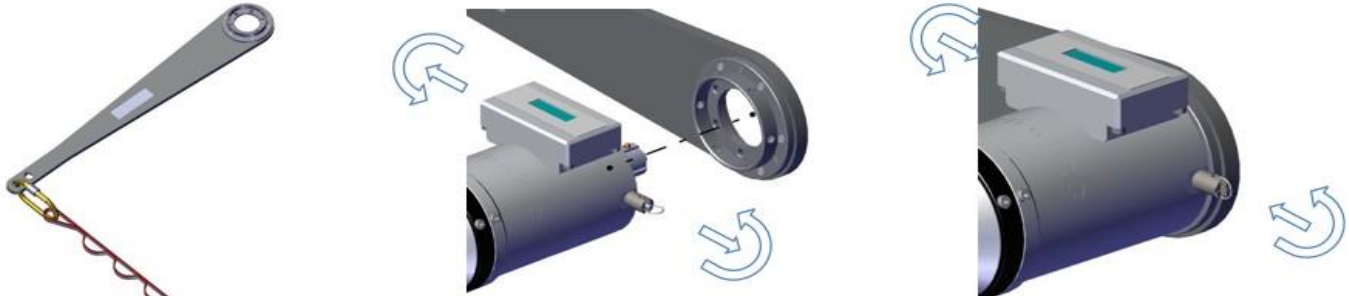
Maximum admissible torque: 350 Nm.



## b. Torque reaction arm BR001

### MOUNTING THE BR001 TORQUE REACTION ARM AND THE ANCHOR STRAP

Pull on each pull-tab with the ring and make a quarter turn so that they remain in the pulled position. Place the black ring of the torque reaction arm on the flange so that the 6 pins fit into the corresponding holes. Make another quarter turn with the rings of the pull-tab and release them, making sure that they are inside. Check that the torque reaction arm is correctly attached to the flange.



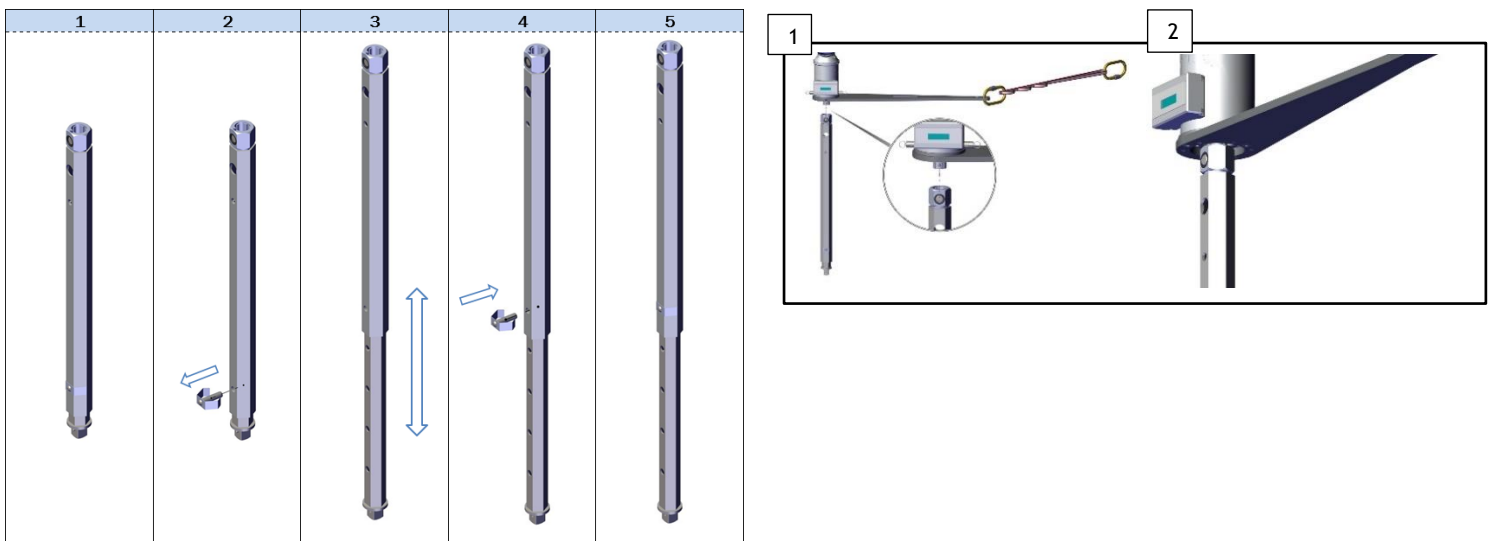
### ROTATION ADJUSTMENT D1 AND D2

→ See page 14

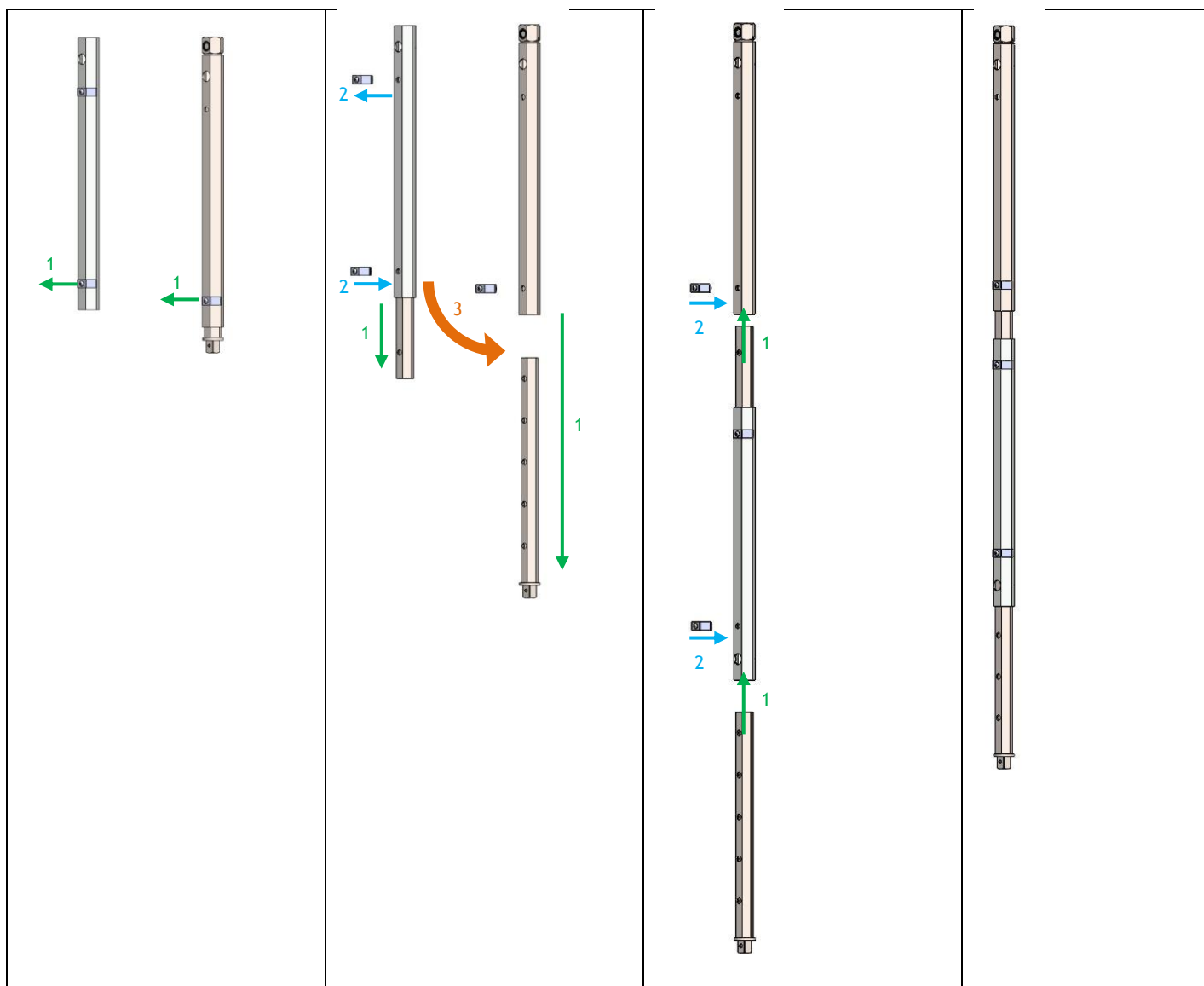
## c. Telescopic valve key EB002 and the extension bar EB012

The EB002 telescopic valve key and its fixed extension EB012 allow the operation of underground valves. It has a 3/4" square at one end to accept a standard socket and a female spline at the other end to accept the actuator output shaft. Its length is adjustable from 0.6m to 0.9m in 8cm increments. The length of the fixed extension EB012 is 0.5m. This gives a total (EB002 + EB012) of 1.4m. Maximum allowable torque: 1000 Nm

### MOUNTING THE PORTABLE ACTUATOR ON A MODEC TELESCOPIC VALVE KEY



## INSERTING THE EB012 EXTENSION INTO THE EB002 TELESCOPIC KEY



## **13. Instruction Manual : modec Portable Valve Actuators**

The Portable Valve Actuators users manual videos



# WARRANTY

## I. Legal Warranty

modec guarantees its equipment in accordance with the following conditions:

During 12 months as of the delivery date, modec warrants its equipment against all material and manufacturing defects, except for consumable parts and elements which are out of order due to normal wear and tear further to standard use 8 hours per business day. During the aforementioned period, modec will replace or repair all parts acknowledged as defective by our departments, which parts shall have been promptly returned by the buyer to modec plants, all carriage costs and duties paid, enclosing a detailed description of the recorded breakdown and the warranty certificate.

Components which were not manufactured by us come under the relevant manufacturer's warranty.

This warranty shall only be applicable if the machine is used with modec consumables. We hold no liability if our products are used in an abnormal manner.

## A. AGREEMENT REVIEW

Significant modifications in the Buyer's economic or financial situation, including the sale, transfer, pledge or contribution of the latter's business or assets, and if payment or acceptance of bill is not performed on the agreed date, even further to partial order performance, may entail revision of the conditions thereof and the overall credit conditions granted.

## B. INTELLECTUAL PROPERTY

We continue to hold all intellectual property rights to our projects, studies and documents which shall not be communicated, exploited or reproduced without our prior written authorization.

## C. FORCE MAJEURE EVENT

modec shall not be held responsible for any breach whatsoever of its contractual obligations that result from causes which are beyond our control such as, amongst others: fire, storms, flooding, earthquake, explosion, accident, strikes and/or industrial disputes, hostile actions, insurrection, war (declared or otherwise), rebellion, sabotage, epidemics, quarantine, impossibility of ensuring supplies of parts, raw materials or machinery, Government decision and legal actions.

## D. APPLICABLE LAW

The agreement shall be governed and construed in accordance with French law.

## E. POWER OF JURISDICTION

All disputes or litigation which have not been amicably settled shall be referred to the Commercial Court of Romans, acknowledged as sole competent jurisdiction by the contractors, including in the event of the introduction of third parties.

## F. OTHER CONDITIONS

Those of the Federation of Mechanical Industrialists of France.



[illegible]

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portable valve actuators