

Portable Valve Actuators

JA73 Electric battery powered

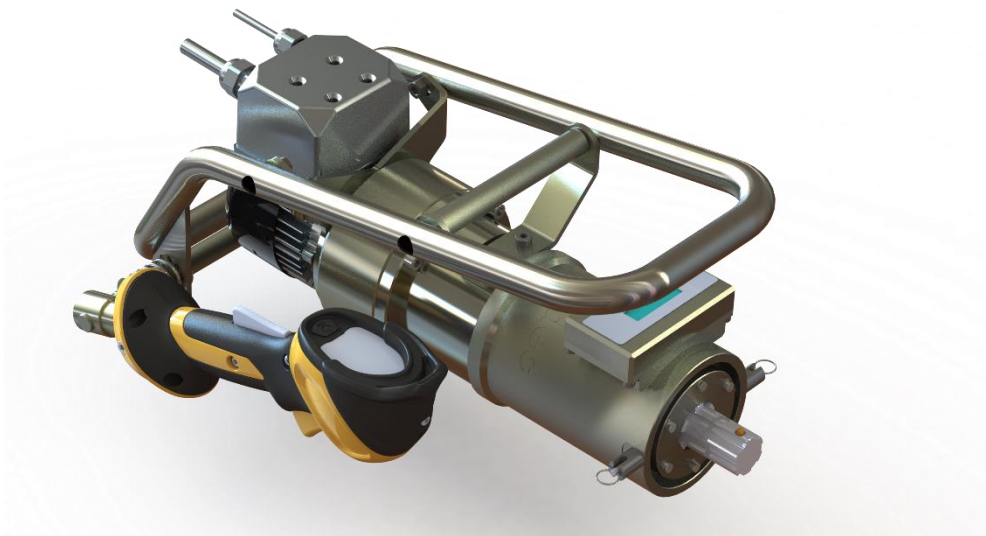
Instruction manual

Light, powerful and fast, **modtec** PVAs (Portable Valve Actuators) offer improved **safety** and **comfort** for operators and protect equipment from damage. They can work with all types of hand wheels, keys and valves, and have a torque that can reach up to 1000Nm.

They come with a large number of **options**, **adaptors** and **accessories** to best meet the particularities of different manoeuvring systems and their environment.

Thanks to its **robustness** and high autonomy batteries, the **JA73 modtec electric portable valve actuator** is able to deliver a **high power** for **more than one hour** continuously. It does not depend on any energy source (electric plug or compressed air network) and can operate freely anywhere. Much more **powerful** than its little brother (MC89), it can deliver **high speed** and **high torque** simultaneously, which makes it **the perfect tool for Heavy duty jobs**. Extremely robust, it has got an **integrated clutch system** which protects the operator and the equipment, even if a valve is completely blocked.

The **smart ergonomic control handle** allows the display and control of the many actuator and battery's functions and parameters in a **simple and intuitive way**. The **integrated electronic torque limiter** allows adapting to any configuration and further improve the **safety of the user and the equipment**.



CAREFULLY READ THE OPERATING HANDBOOK BEFORE USE



Table of contents

1. General safety warnings.....	4
a. Transporting the actuator.....	5
b. Storing actuator	5
c. Protecting the environment.....	5
2. Certification CE	6
3. Safety equipment.....	7
4. Description and technical specifications	8
a. Portable Valve Actuator.....	8
b. Batteries and chargers	9
c. Smart control handle	9
5. Electronic torque limiter	11
a. General info.....	11
b. Accuracy.....	12
c. Use with a « Banjo head ».....	12
6. Setting up the Portable Valve Actuator	12
a. General info.....	12
b. Fixing the actuator on to the torque management device and/or on an adaptor	13
c. Fixing the BR001 torque management arm and anchoring strap.....	13
d. Setting the system for rotation “D1” (CW)	14
e. Setting the system for rotation « D2 » (CCW)	14
7. Using the actuator	15
a. Preliminary checks	15
15	
b. Potential problems when actuating a valve.....	16
8. Options	17
a. Digital Revolution counter	17
9. Servicing and maintenance.....	18
10. Problem solving	19
11. Warranty.....	20

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 site where 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. 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**.

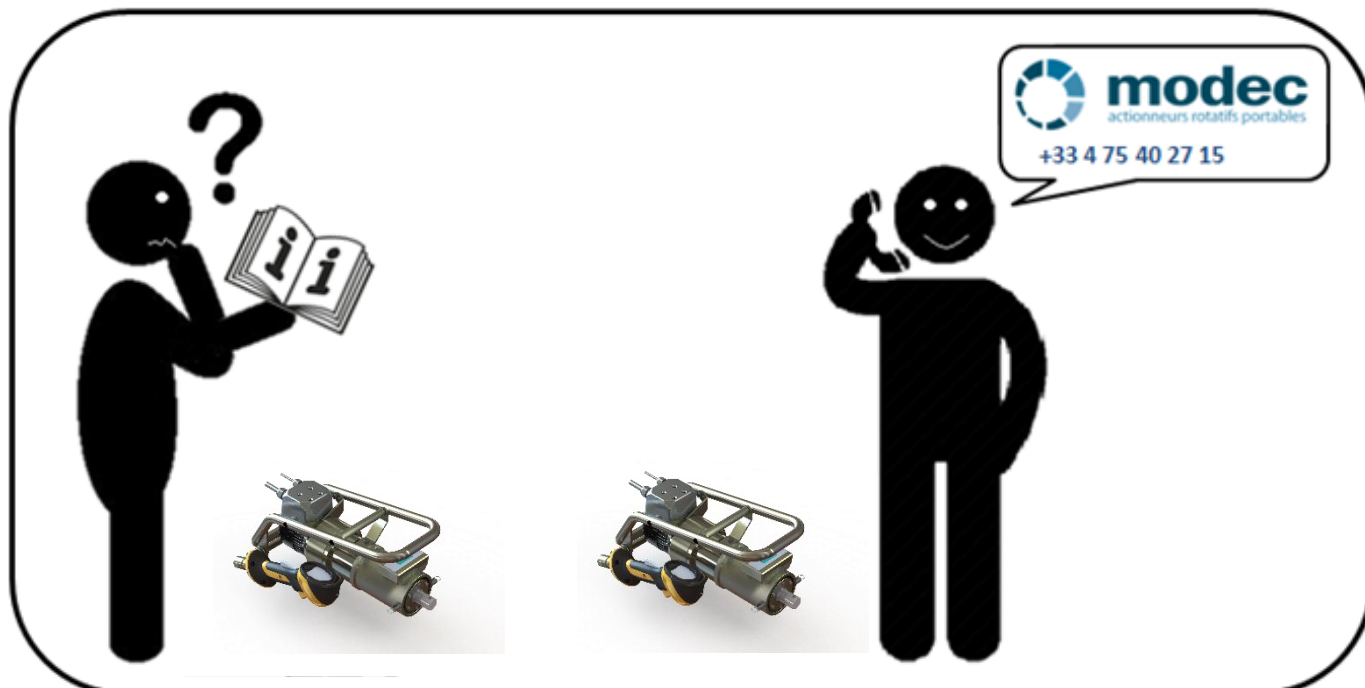
Operators in charge of setting up, using or servicing **modec** actuators must have a reasonable knowledge of the equipment. As well as carefully reading this instruction manual, they must be competent in the valve sector and the particularities related to their work environment.



KEEP THESE INSTRUCTIONS

This manual contains important information and user instructions for the following tools: Electric Portable Valve Actuator JA73x-xxx-xx.

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.





1. 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, always take care to 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 do not 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 hand wheels 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 7).
- 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 and/or unplug the wire from the main.

Use and servicing

- Do not 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 or the handwheel is adapted to the valve or handwheel being actuated.
 - 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 handwheel 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.

- In certain circumstances, the tool may keep rotating for several seconds after releasing the command ; 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.
- Do not 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.



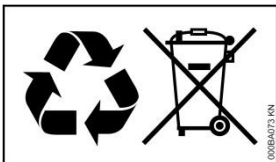
a. Transporting the actuator

- 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 a 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. Cover any unprotected contacts and pack the batteries tightly so they cannot move about. Please also follow any additional regulations that may apply.

b. Storing actuator

modec 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.

2. Certification CE

CERTIFICATE OF COMPLIANCE (Annex II A)

The undersigned manufacturer

MODEC SAS
ZI Sirius Quatre, 80 allée René Higonet
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>
Pneumatic		
HL83E-xxx-xx	Air Portable Actuator, Easy Duty,	XXXXXXXX
HL83S-xxx-xx	Air Portable Actuator, Standard Duty	XXXXXXXX
HL83H-xxx-xx	Air Portable Actuator, Heavy Duty	XXXXXXXX
Petrol gas		
PY68E-xxx-xx	Gas Portable Actuator, Easy Duty	XXXXXXXX
PY68S-xxx-xx	Gas Portable Actuator, Standard Duty	XXXXXXXX
PY68H-xxx-xx	Gas Portable Actuator, Heavy Duty	XXXXXXXX
Electric		
MC89E-xxx-xx	Electric Portable Actuator, Easy Duty	XXXXXXXX
MC89S-xxx-xx	Electric Portable Actuator, Standard Duty	XXXXXXXX
JA73E-xxx-xx	Electric Portable Actuator, Easy Duty	XXXXXXXX
JA73S-xxx-xx	Electric Portable Actuator, Standard Duty	XXXXXXXX
JA73H-xxx-xx	Electric Portable Actuator, Heavy Duty	XXXXXXXX

complies with the essential requirements of the European Directive 2006/42/EC

Type :

S/N :

Beaumont lès Valence,
 XX/XX/XXXX

Mr Pierre-Yves COTE
 Managing Director



3. 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)

Safety signs :

Summary table explaining the pictograms found on the apparatus.



Warning ! Using this
Material can be dangerous



Read the notice,
before use



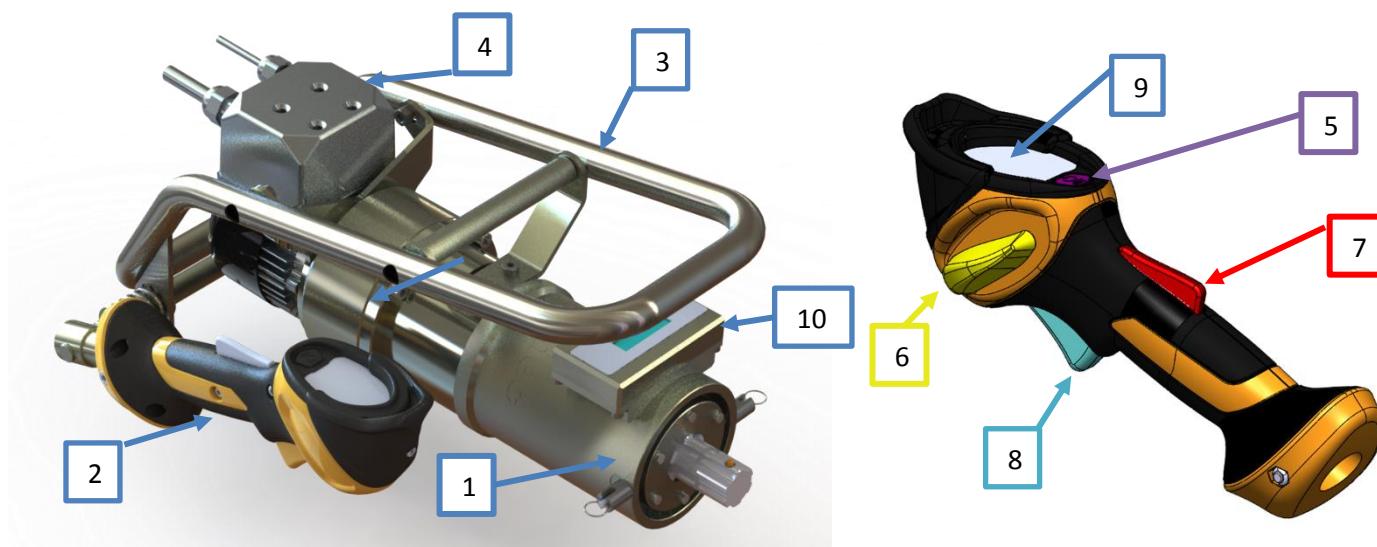
Risk of fire



Do not use in the rain
or in damp surroundings

4. Description and technical specifications

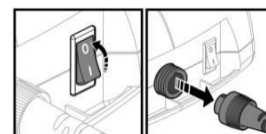
a. Portable Valve Actuator



- 1 – Gearbox and head ; Enables the attachment of all **modéc** heads, adaptors and torque systems.
- 2 – Smart control handle : This handle must not be used for carrying or maintaining the actuator. The handle bar should be used for that.
- 3 – Handle bar: Used for carrying and maintaining the tool.
- 4 – Motor casing and electronic card – this dissipates the heat from the electric equipment. This part may heat up during use without risk of burn.
- 5 – Power button: On/Off and menu selection.
- 6 – Power selection switch (and return to the “Home” screen from the different menus).
- 7 – Safety trigger: prevents inadvertently operating the accelerator – the safety catch must be pressed to be able to use the throttle button (8).
- 8 – Throttle button: used to accelerate and control speed.
- 9 – Control screen.
- 10 – Digital revolution counter (option): it gives a double reading – rotation speed and number of turns.



WARNING Before use, always check that the stop/start switch located in the lower part of the battery is in the stop “0” position and disconnect the power feed cable.



General specifications	JA73E/S/H
Weight (kg) (not including options and accessories)	8.7
Dimensions (L x l x H) in mm	400 x 250 x 185

Batterie / Reference	BAT 520	BAT 750	BAT 1200	BAT 1500
Specifications	43,2V – 12Ah	43,2V – 17,25Ah	43,62V – 28 Ah	43,62V – 35Ah
Weight (kg)	3,6	4,5	6,3	7,5
Autonomy (load = 50% of max load)	25 min	35 min	60 min	90 min
Average service life (nb of charging cycles)	> 800	> 1200	> 1300	> 1300
Charging time	6h30	9h	10h	12h

Straight or with RA30	Free speed (rpm)	Max torque (Nm (lb.ft))	Starting torque (Nm (lb.ft))
JA73E-023	360	44	35
JA73S-077	110	150	120
JA73S-132	63	250	200
JA73H-169	49	325	260
JA73H-309	27	590	470
JA73H-564	15	1080*	860

* Warning ! Do not use the actuator when the torque is higher than 1000 Nm (740 lb.ft) or use the torque limiter

All performance values indicated above have a +/-5% accuracy

With a banjo head BJH01	Free speed (rpm)	Max torque (Nm (lb.ft))	Starting torque (Nm (lb.ft))
JA73E-023	90	180 (130)	140 (100)
JA73S-077	27	590 (440)	470 (350)
JA73S-132	Not available		
JA73H-169			
JA73H-309			
JA73H-564			

With a banjo head BJH02	Free speed (rpm)	Max torque (Nm (lb.ft))	Starting torque (Nm (lb.ft))
JA73E-023	120	135 (100)	105 (77)
JA73S-077	36	440 (320)	350 (260)
JA73S-132	21	760 (560)	600 (440)
JA73H-169	16	975 (720)	780 (580)
JA73H-309	Not available		
JA73H-564			

All performance values indicated above have a +/-5% accuracy

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	L pA = 85 dB(A)
Value of vibration emission	A _h < 2 m/s ²
Uncertainty of measure	1,5m/s ²

Values established from an equivalent apparatus.

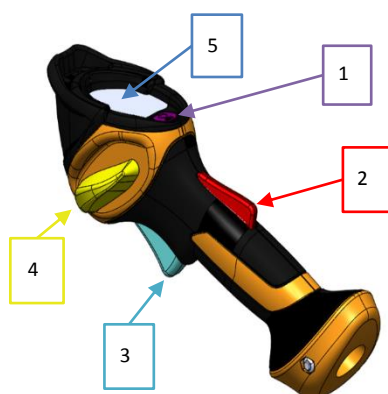
b. Batteries and chargers

See the battery instruction notice joined to the battery

c. Smart control handle



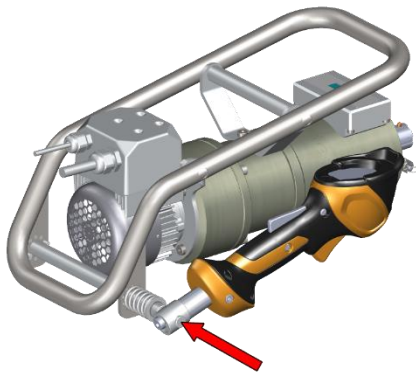
The smart control handle should not be used for carrying or maintaining the actuator. The handle bar should be used for that. Carrying the actuator with that smart control handle may damage it.



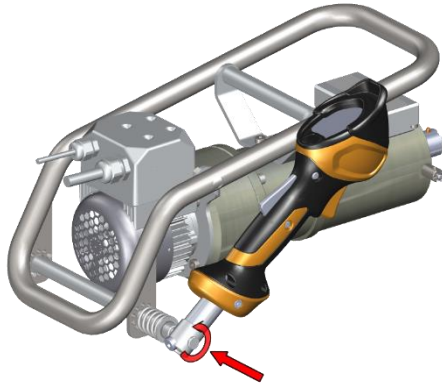
- 1 – Power button: On/Off and menu selection.
- 2 – Safety trigger: prevents inadvertently operating the accelerator – the safety catch must be pressed to be able to use the throttle button (3).
- 3 – Throttle button: used to accelerate and control speed.
- 4 – Power selection switch (and return to the “Home” screen from the different menus).
- 5 – Control screen.

1. Handle position

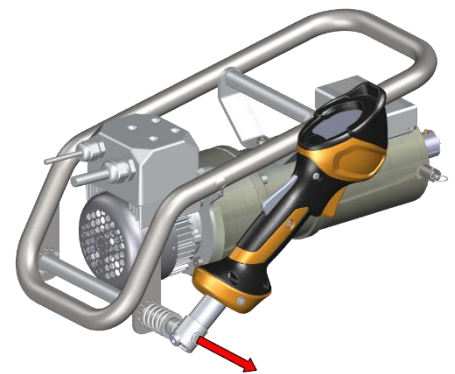
The smart control handle can be oriented in different positions so that the reading on the screen is always easy. To do so, press the handle (picture 1) and rotate it as shown on picture 2 until you get the required position and release it (picture 3).



Picture 1



Picture 2



Picture 3

2. Switch ON/OFF

ON : Switch on the battery

The screen lights up and displays all the elements.

After 1 sec. "ON" appears and "MODEC" scrolls at the bottom of the screen.

After 3 sec. "ON" remains and the battery type appears at the bottom of the screen

After 4.5 sec. the actuator goes into "lock" mode (a small locker appears at the bottom right of the screen) and "1 x CLICK TO START" scrolls at the bottom of the screen.

OFF : Press 5 seconds on the power button (1)

The screen displays "OFF" and a count down from 3 to 0 appears at the bottom of the screen



3. Unlocking the actuator

To unlock the actuator, press the safety trigger (2) and click on the throttle button (3).

Once the actuator is unlocked, the "Home" screen displays the following information:

- « Eco » mode (always visible if power 1 or 2 is engaged)
- Battery charge (always visible):
 - Steady : > 20%
 - Slow flashing : < 20%
 - Fast flashing : < 10%
- Battery charge (visible in Home screen only)
- Rotation direction (D1/D2) (always visible)
- Power level (1 to 4) (always visible)



4. Changing the rotation direction

From the "Home" screen (actuator unlocked) :

- Press the "Power" button (1) once.
The screen displays the rotation direction "D1" (CW) and "0 - ROTATION DIRECTION" scrolls at the bottom of the screen.
- Keep the "Power button" pressed 3s to modify direction:
D1 (Clockwise) will flash and turn into D2 (Counter clockwise) or
D2 (Counter clockwise) will flash and turn into D1 (Clockwise)
- Press the safety trigger (2) and press the throttle (3) once to return to the "Home" screen.
- You can also press the Power selection trigger (4) to return to the 'Home" screen.



5. Power (torque limit*) modification

From the “Home” screen (actuator unlocked) or during operation :

- Press the Power selector (4) downward to increase power
 - D1-1=>D1-2=>D1-3=>D1-4 or D2-1=>D2-2=>D2-3=>D2-4
- Press the Power selector (4) upward to decrease power
 - D1-4=>D1-3=>D1-2=>D1-1 or D2-4=>D2-3=>D2-2=>D2-1

* When setting the JA73 power, the maximum torque that the actuator can perform (stall torque) is impacted. This setting allows choosing different torque limits.

See next page for the torque limits values.



6. Starting the actuator

Once the actuator is unlocked, press the safety trigger (2) and the throttle button (3).

You can control speed by pressing more or less the throttle button (3). The number of triangles shown indicate the percentage of the actuator maximum speed which is used.

When the actuator is running, the screen displays the remaining autonomy in hours (x.xx^H) or in minutes (xx^M) if the autonomy becomes less than one hour.

This time is an estimate that takes into account the speed and power used since the last reset and varies over time.

It also displays the battery charge icon, the “Eco” mode icon (if power is 1 or 2), the rotation direction (D1/D2), the power level (1 to 4) and the speed indication (1 to 4 triangles)



7. Advanced information's available :

You can access the menu when the motor is idle only. Each press on the Power button (1) changes the menu with the following path:

- Rotation direction
- Working time since the last reset
- Average power since the last reset
- Energy used (kWh) since the last reset
- Total number of actuator working hours
- Number of hours remaining before the next maintenance required
- Language : French or English
- HIM version
- CMT version

Hold power button pressed 3s to modify a value or to reset to zero.

Press the Power selector or press the throttle (3) once while holding the safety trigger (2) to escape the menu and go back the Home screen.

5. Electronic torque limiter

a. General info

The Portable Valve Actuator JA73 is equipped with an electronic torque limiter that makes it stop when the desired torque is reached. This way, material is protected against excessive torques that might damage it. It can also be used as a proof that a sufficient torque has been applied to a handwheel for example.

Each JA73 model allows 4 different power settings that give 4 different maximum torque limits.

Straight or with RA30	Power level (torque limit in Nm and (lb.ft))			
	1	2	3	4
JA73E-023	6 (4.4)	16 (12)	30 (22)	44 (32)
JA73S-077	20 (15)	55 (40)	100 (70)	150 (110)
JA73S-132	35 (26)	95 (70)	170 (125)	250 (180)
JA73H-169	45 (33)	120 (90)	220 (160)	320 (240)
JA73H-309	80 (59)	220 (160)	400 (300)	590 (430)
JA73H-564	140 (100)	390 (290)	720 (530)	1080 (800)

With a banjo head BJH01	Power level (torque limit in Nm and (lb.ft))			
	1	2	3	4
JA73E-023	25 (18)	65 (48)	120 (90)	175 (130)
JA73S-077	80 (60)	220 (160)	400 (300)	600 (440)
JA73S-132	140 (100)	380 (280)	Forbidden	
JA73H-169	180 (130)	480 (350)		
JA73H-309	320 (240)			
JA73H-564	560 (410)			

With a banjo head BJH02	Power level (torque limit in Nm and (lb.ft))			
	1	2	3	4
JA73E-023	20 (15)	50 (37)	90 (66)	130 (95)
JA73S-077	60 (44)	160 (120)	300 (220)	450 (330)
JA73S-132	100 (70)	280 (210)	510 (380)	750 (550)
JA73H-169	130 (95)	360 (270)	660 (490)	970 (720)
JA73H-309	240 (180)	660 (490)	Forbidden	
JA73H-564	420 (310)			

b. Accuracy

The above values accuracy is +/- 15%.

When using the actuator at full speed up to the torque limit, the running system inertia may increase the stall torque by 15% (for the high torque and low speed settings) and up to 300% (for high speed and low torque settings). It is thus necessary, in order to improve the torque limit accuracy, to slow the actuator when coming close to the limit required.

c. Use with a « Banjo head »


With some of the references, the use of a Banjo head can be restricted. The standard duty Banjo head (BJH01) can only accept a 150 Nm max input torque (for a 600 Nm output torque) and the heavy duty Banjo head (BJH02) can only accept a 330 Nm max input torque (for a 1000 Nm output torque)

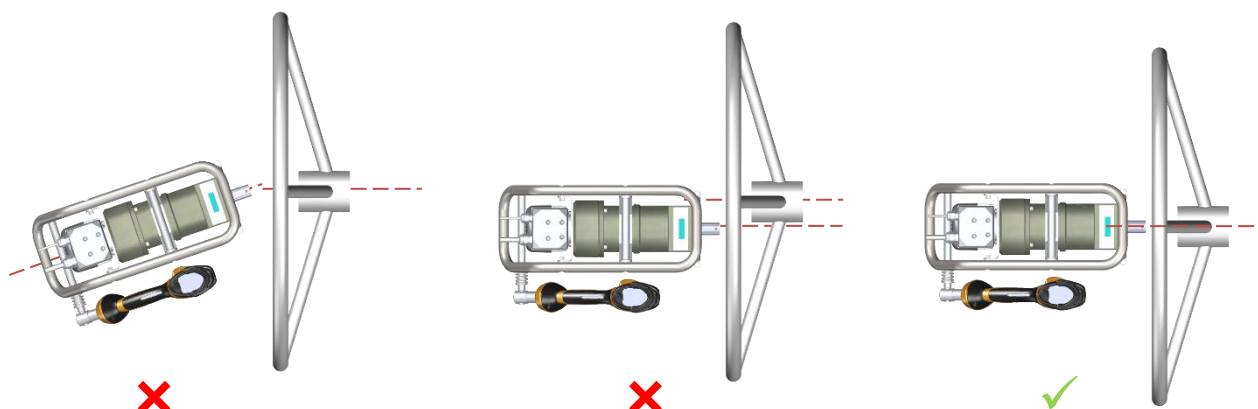
As a consequence, some settings are forbidden (as indicated in the tables above) as they could lead to a break of the Banjo heads.

6. Setting up the Portable Valve Actuator


a. General info

The actuator must be kept stable while turning the valve or hand wheel.

 **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 hand wheel being activated.



b. Fixing the actuator on to the torque management device and/or on an adaptor

 To ensure the operator is working safely and in optimum conditions, it is imperative to use a torque retention system. Our actuators are delivered with:

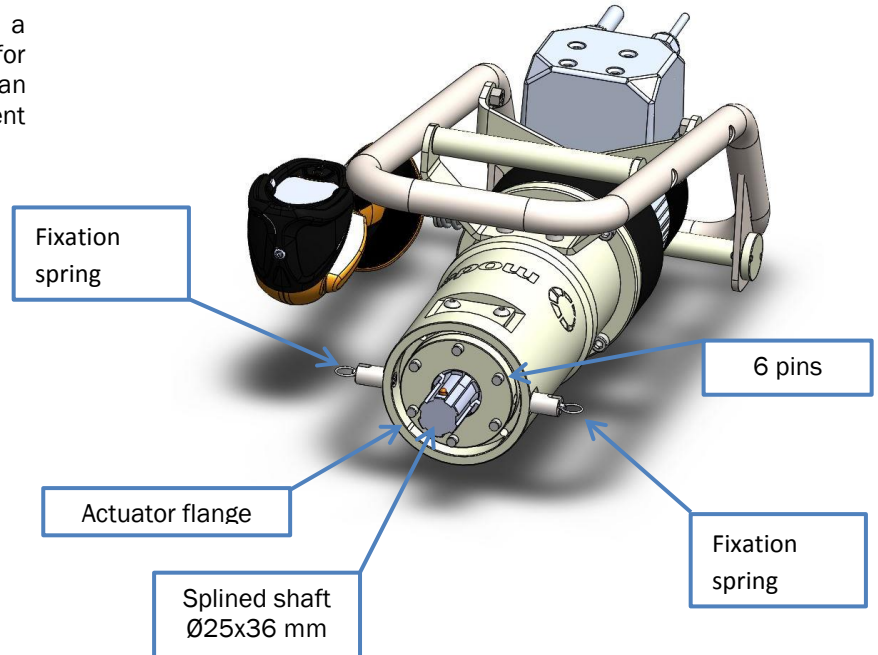
- A BR001 torque management reaction bar
- A strap or a chain
- 2 carabiners

In addition to this basic pack, **modéc** also has a wide range of torque management accessories (see the catalogue and the following presentation for more details).

As well as these standard accessories, **modéc** develops specific systems. If you would like to check your installation or if you have a specific solution request, contact a registered **modéc** distributor.

The **modéc** standard flange and shaft can also accommodate some specific drive heads like the Banjo heads (for handwheels with a rising stem, or simply in order to increase the torque) or a right angle head (for a better operator position during operation). These heads also have a torque reaction system (torque retention arm, strap and carabiners).

If this standard equipment does not provide a torque retention that offers sufficient safety for both operators and equipment, **modéc** can develop and/or adapt special torque management systems.



Never use a portable actuator with a torque management system that is under-sized, unstable or badly positioned

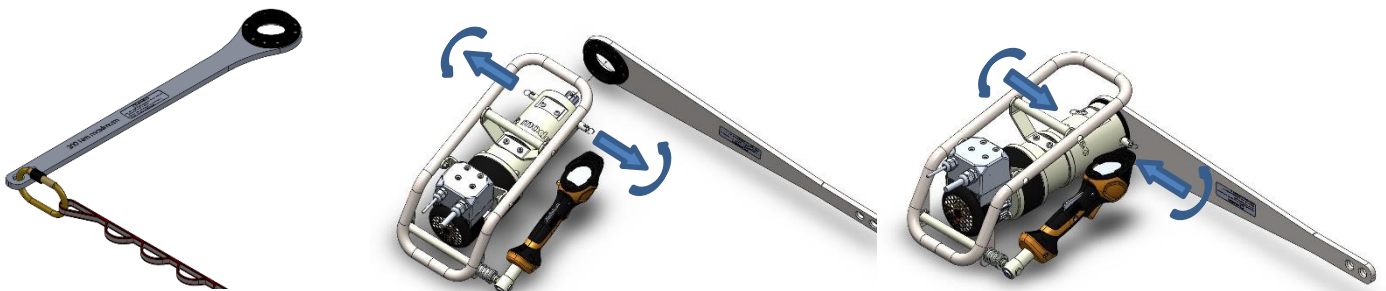
c. Fixing the BR001 torque management arm and anchoring strap

Pull each fixation spring with the ring and rotate for a quarter turn so that they stay in the pulled position.

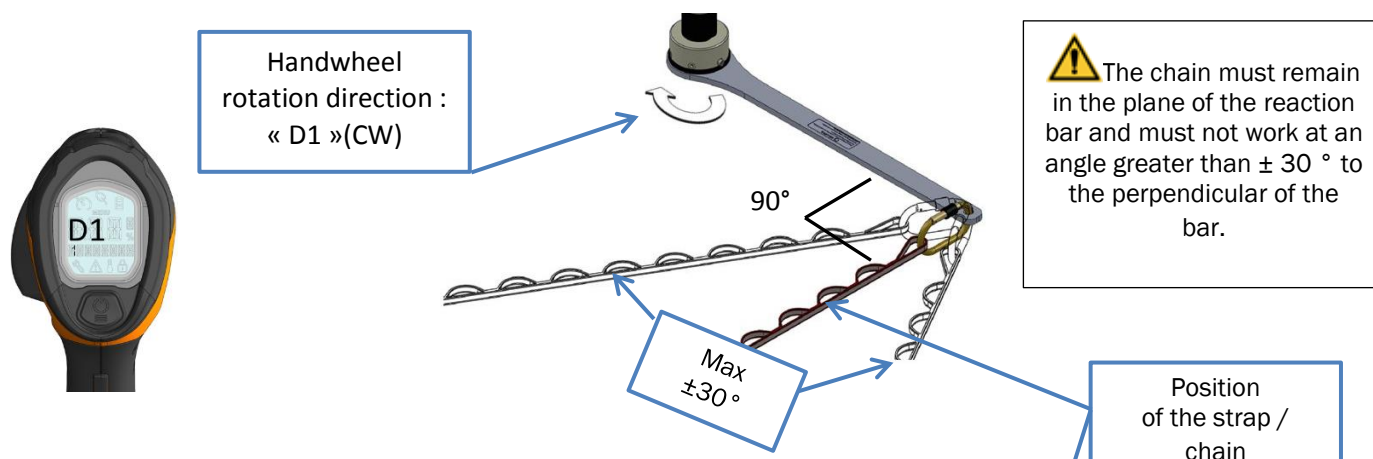
Place the black ring of the torque management bar on the flange so that the 6 pins enter the corresponding holes.

Make a quarter turn with the fixation springs rings and release the springs making sure they come back.

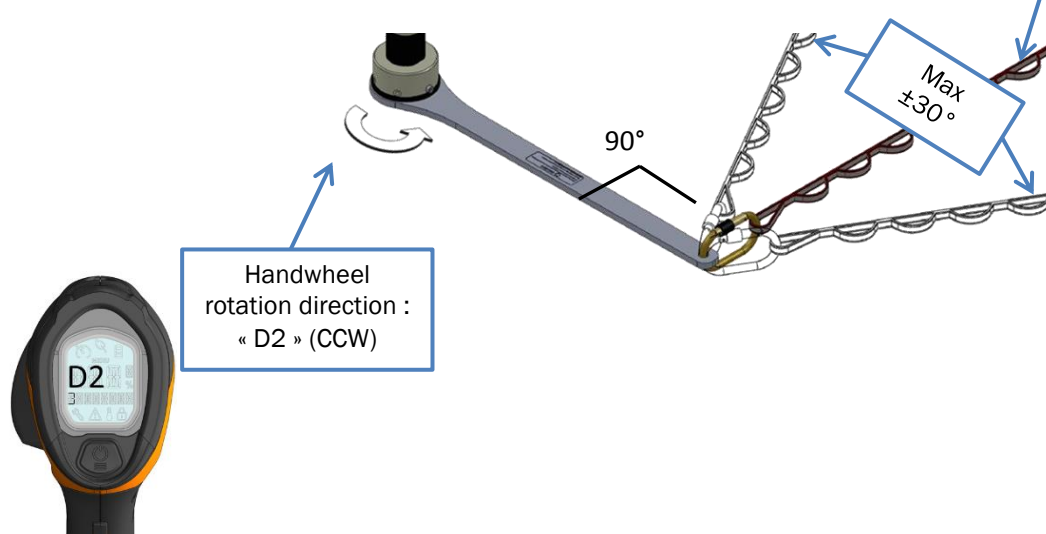
Check that the torque management bar is properly secured to the flange.



d. Setting the system for rotation « D1 » (CW)



e. Setting the system for rotation « D2 » (CCW)



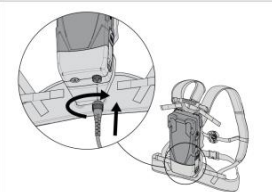



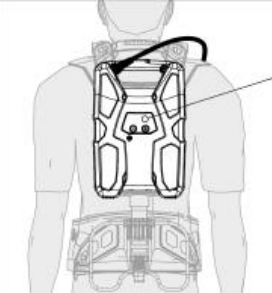


Except if otherwise engraved on the torque reaction system, the maximum torque is 1000 Nm

7. Using the actuator

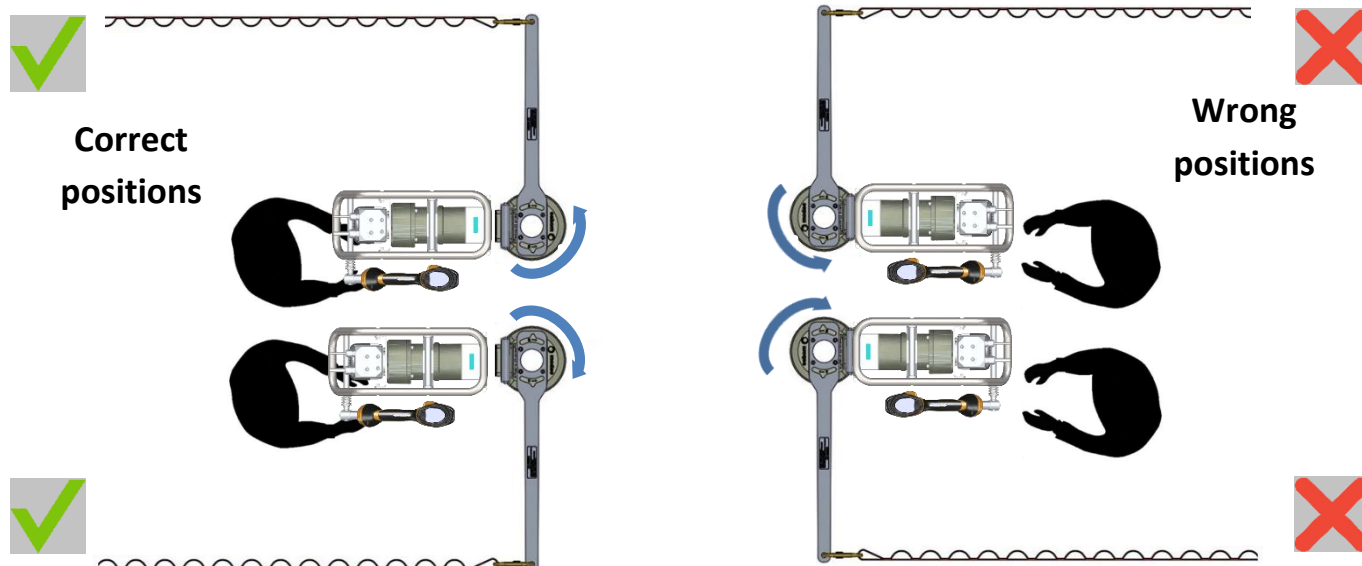
a. Preliminary checks



1. Check the equipment is in good condition and use accessories that are the most suitable for the actuator.
2. **Make sure the torque management system and the handwheel adapter are compatible with the action about to be carried out.**
3. Connect the battery to the actuator with the adequate connection cables.

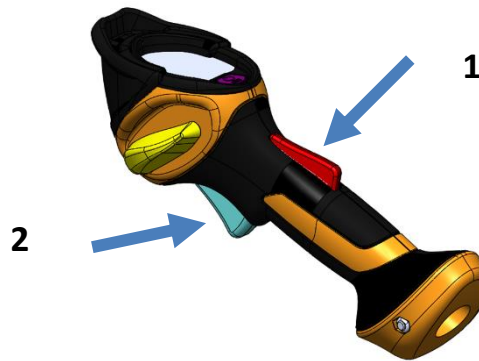
Batteries	Connection cables		Actuator
 <p>BAT 520-1 (battery) BAT 520-2 (harness)</p>	 <p>BAT 520-3 (connection cable)</p>	 <p>BAT 1500-6 (connection cable)</p>	 <p>JA73</p>
 <p>BAT 750 / 1200 / 1500</p>	 <p>BAT 1500-4 (connection cable)</p>	 <p>BAT 1500-6 (connection cable)</p>	

4. Press the battery switch on "I"
5. Switch on the actuators. The smart handle screen identifies it and displays its name.
6. Set power to minimum
7. Check the rotation direction required for the valve, indicated on the handwheel or the manual. Set the defined rotation direction on the handle.
8. Position the adaptor on the valve and set up the torque retention system. Consult the instructions for adaptors.



When starting up always start slowly in order to CHECK the rotation direction, and to gently apply tension on the torque retention strap or chain.

Unlock security by pressing the safety trigger (1) and accelerate progressively (2).



The actuator is equipped with a clutch.
When accelerating, the motor runs before engaging the gearbox and output shaft.
This shift process is normal.

b. Potential problems when actuating a valve

1 – If the valve does not move, release the handle and change the actuator's rotational direction to give it a little nudge.



Check again the direction of the torque retention.

2 – If there is increased resistance from the valve the torque applied to the actuator will increase, the actuator will slow down and will eventually stall when the maximum torque it can face is reached. Be very careful that the applied torque does not exceed the limits the valve can withstand, or use the torque limiter.

3 – In case of resistance resulting from deposits on the stem, turn the valve in both directions several times to 'clean' it. **modec** 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 level that the valve can withstand. Unless the procedure indicates otherwise, reopen the valve with a few turns so that the accelerated fluid "cleans" any potential impurities from the valve, 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 being stuck in future. Doing this also means that the valve is still able to turn when next actuated even if the operator turns it the wrong way, which again helps prevent the valve being stuck.



Take note - **the torque when closing a valve should always be less than the torque when opening a valve**, in order to guarantee that the valve can be reopened. Using the torque limiter for closing and opening a valve means you can be always be sure to have enough torque in reserve for the valve to be reopened or reclosed.

8. Options

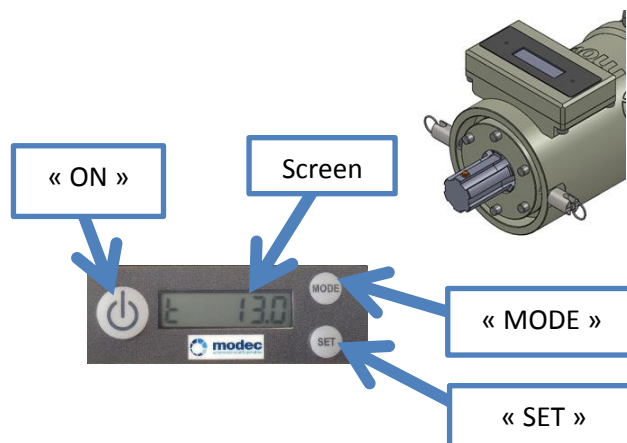
a. Digital Revolution counter

• PRESENTATION

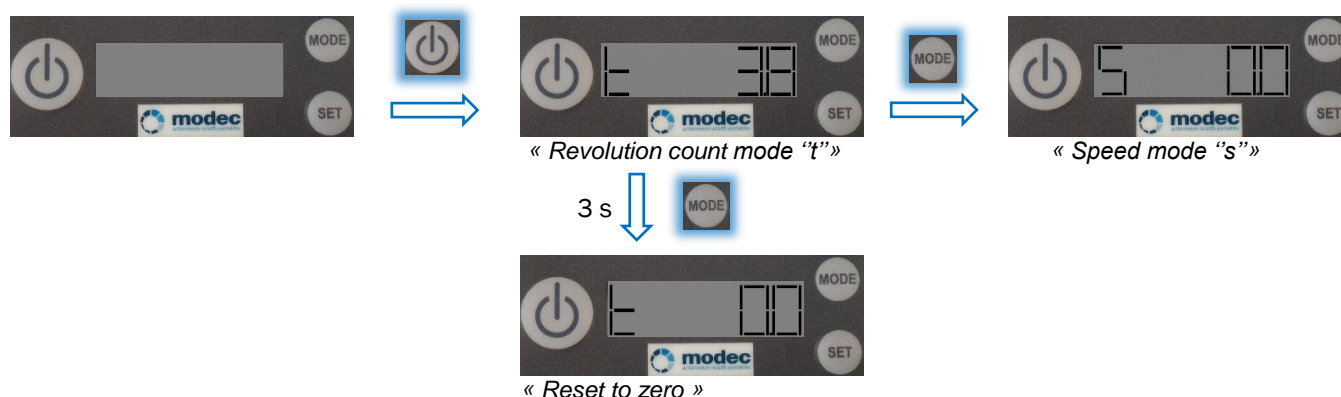
The digital Revolution counter adds up the revolutions in one direction and subtracts them in the other direction in such a way that the operator always knows the valve position compare to the initial status. The tool also measures and displays the rotational speed.

Nota 1 : The instant speed indicator needs several revolutions before it can give a stable and accurate speed. In light of this, you have to wait several seconds to get a reliable reading.

Nota 2 : The screen turns itself off after 5 minutes.

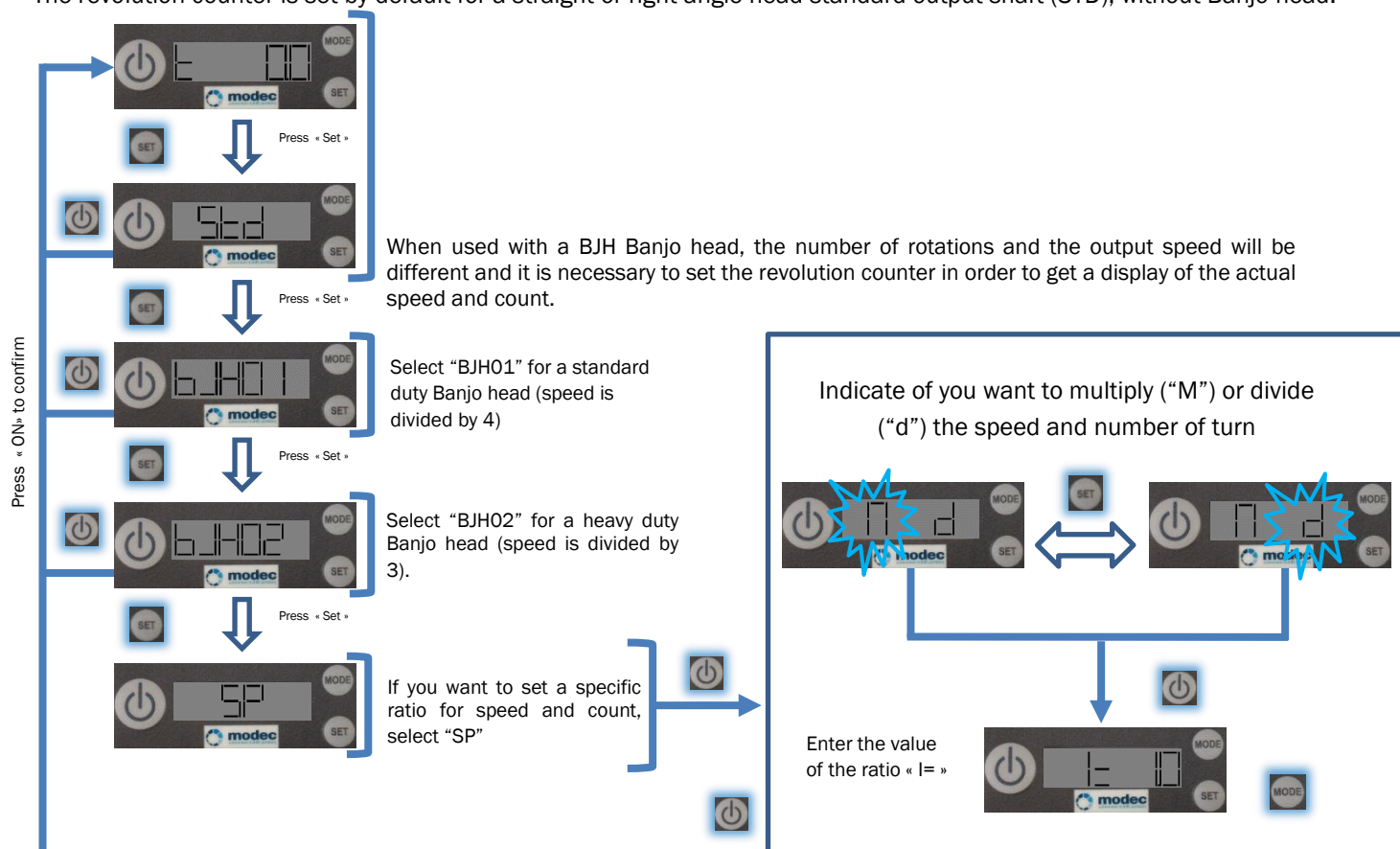


• HOW IT WORKS

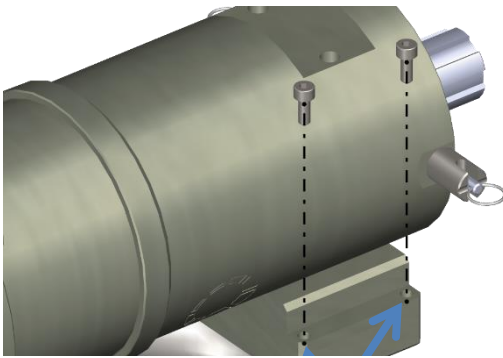


• REVOLUTION COUNTER PARAMETERS

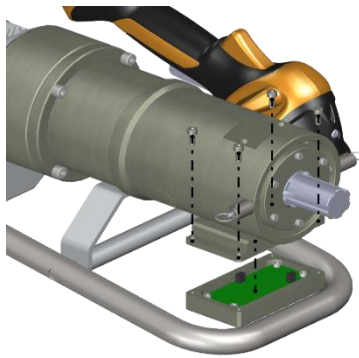
The revolution counter is set by default for a straight or right angle head standard output shaft (STD), without Banjo head.



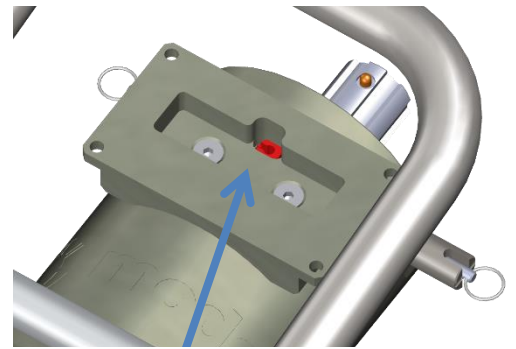
• CHANGING THE BATTERY



Moderately heat the 4 screws before unscrewing them – Be careful of the electronic components



Use a 3mm hexagonal key



Use an AA 3,6V Li-SOCL2 battery
Reposition the wires correctly before tightening the 4 screws
Fixed the screws with Loctite 243

9. Servicing and maintenance

Take the machine to a registered **modec** distributor for servicing every 500 hours or at least once a year.

Maintenance operation	Weekly	Yearly or as needed
Check and service the actuator by a registered modec distributor		
Grease the right-angled head (grease type ORAPI n° 606-CTDMEP2)		
Replace the Revolution counter battery *		
Check the torque limiter by a registered modec distributor		

*The revolution counter is optional

Maintenance is 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
Range	Parts	Task				
JA73	Condition of the tool and protective elements	Check	U			
JA73	Functioning of the triggers and Stop/ Start button	Check	U			
JA73	Functioning of the setting systems for the torque, power and direction inversion	Check	U			
JA73	Condition of the cables and/or leads	Check	U			
JA73	Motors cooling fins	Clean			U	
JA73	Clutch spring and runners	Check			M	

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.**
- Maintenance of the Portable Valve Actuators should be carried out by people who have been trained by **modec**.
- Our "After Sales Service" department are ready to help in this respect.
- Systematically take out the spark plug 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 waterproofing.**



10. Problem solving

Symptom	Probable causes	Checks & solutions	Repaired by
The actuator won't start or stops during use	Battery is off or discharged	Recharge the battery, plug in the power lead and switch on the battery switch. Recharge the battery if it has less than 10% charge remaining	User
	Battery is in standby mode	After a few minutes of idle time, the battery automatically goes in Standby mode. Switch it off and on again	User
	Electronic problem	Ask for a complete check and diagnosis	modec Distributor
	The tool has reached its temperature limit	Leave the tool to cool down for at least 15 minutes	User
	Problem with switch buttons or with electronics	Carry out an electronic diagnostic with a view to repair	modec Distributor

Portable Valve Actuators JA73

Display	Problem	Checks & solutions	Repaired by
	Motor card temperature >85°C	Power limited Leave the Actuator to cool down for at least 15 minutes	User
	Motor card temperature >95°C	Power limited Leave the Actuator to cool down for at least 25 minutes	
	Motor card temperature >100°C	Motor security activate	modec Distributor
	Excessive battery temperature	Leave the battery to cool down for at least 15 minutes	User
	Excessive battery temperature	Leave the battery to cool down for at least 25 minutes	User
	Excessive battery temperature	Motor security activate	modec Distributor

Revolution counter (optional)

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 modec distributor	Change the screen	modec 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 modec Distributor
		Captor and/or the card is out of order	Check with a registered modec distributor	Change the electronic card	modec Distributor

11. 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 that 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 that 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.

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.

INTELLECTUAL PROPERTY

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

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.

APPLICABLE LAW

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

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.

OTHER CONDITIONS

Those of the Federation of Mechanical Industrialists of France.