

# SR - SR X (05 - 05X - 10 - 10X - 30 - 30X) ACTUATORS ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

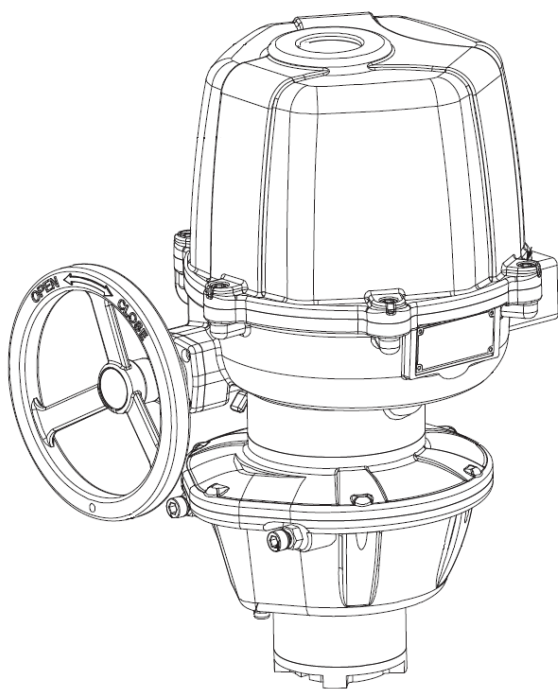


Version SR

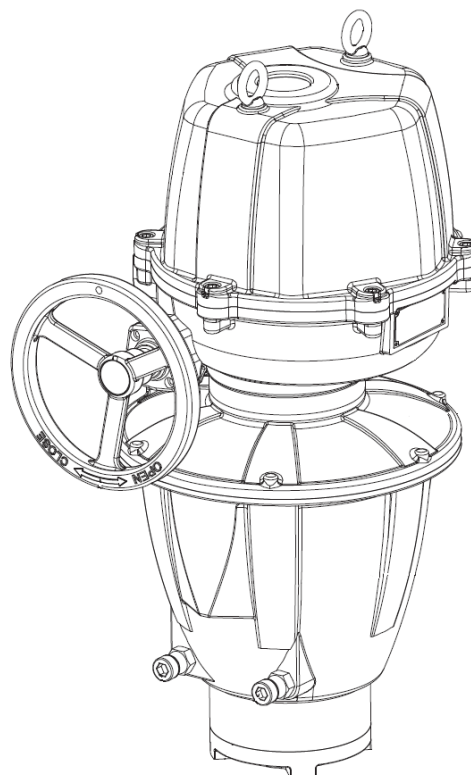
SR / SR-X



Version SR-X



SR / SR-X (05-05X-10-10X)



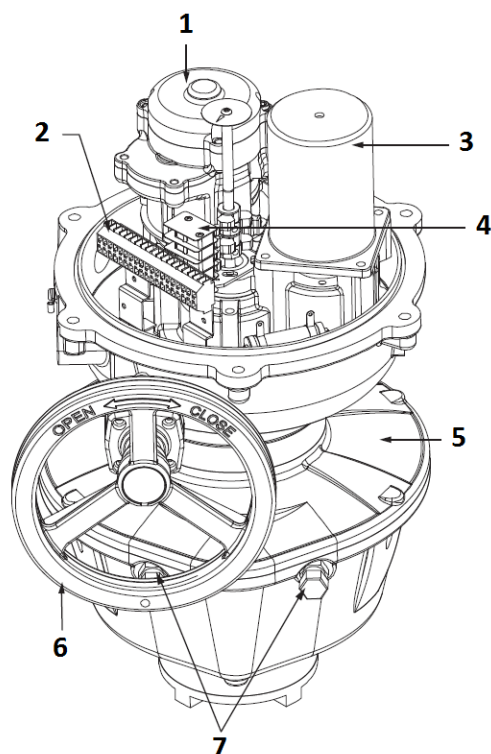
SR / SR-X (30-30X)

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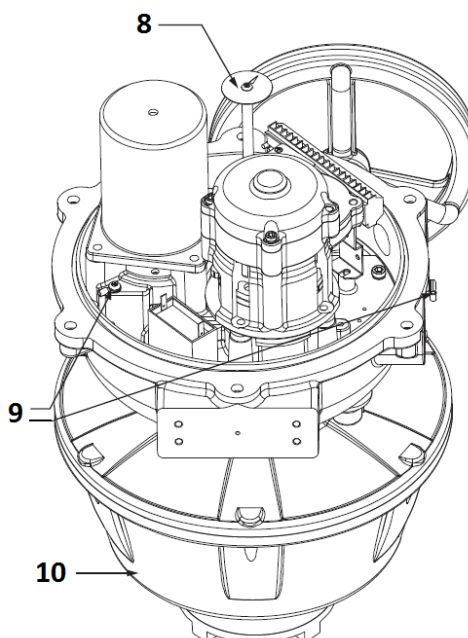
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|                                                                                     |                                                                                                                                                                                                                                                                                  |  | Ref.  | IME23080 ENG |
|                                                                                     |                                                                                                                                                                                                                                                                                  |  | Rev.  | 02           |
|                                                                                     |                                                                                                                                                                                                                                                                                  |  | Date  | 10/2023      |

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## ASSEMBLY AND MAINTAINANCE INSTRUCTIONS



|    |                    |
|----|--------------------|
| 1  | Controller         |
| 2  | Terminal box       |
| 3  | Motor              |
| 4  | Limit switch       |
| 5  | Cover              |
| 6  | Wheel              |
| 7  | Stops              |
| 8  | Position indicator |
| 9  | Earthing           |
| 10 | Spring box         |



### **1. DESCRIPTION**

- 1.1 Electric actuator for motorising 1/4 turn valves with 90° turning.
- 1.2 The full features of this device are given in sheet FT23080.
- 1.3 Before operating this device, read carefully the present instructions.

### **2. GUARANTEE**

- 2.1 Before any contact with our services, identify the type of actuator.
- 2.2 SECTORIEL actuators have a 12-month guarantee from the delivery date. The parts recognized as defective by an assessment at our facility will be replaced at our expenses.  
Complaints generated by incorrect use or a modification of the actuator cannot be taken into account.

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|                                                                                     |                                                                                                                                                                                                                                                                                  | Ref.  | IME23080 ENG |
|                                                                                     |                                                                                                                                                                                                                                                                                  | Rev.  | 02           |
|                                                                                     |                                                                                                                                                                                                                                                                                  | Date  | 10/2023      |

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## ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

### 3. VERIFICATIONS AND ACCEPTANCE

#### 3.1 At acceptance, check that:

- the packaging is in good condition;
- the actuator is as ordered;
- the equipment is not damaged.

#### 3.2 It is recommended to install the actuator as soon as accepted and not to leave it unused.

If the equipment has to be stored, it has to be in a dry place protected from weather..

### 4. PRECAUTIONS FOR OPERATION

4.1 Before installing, make sure that the installation is completely depressurized and brought to ambient temperature.

4.2 In a zone classified as explosive, install only model SR-X.

4.3 The protection class of the actuator is IP67 for indoors or outdoors installation.

Do not install this actuator in a marine environment and do not immerse it.

4.4 The actuator must not be electrically powered during the installation and maintenance of the valve on the pipework, and of the actuator on the valve.

4.5 Before proceeding to the electrical connection, check the supply voltage of the actuator.

4.6 Do not mount the actuator in series or in parallel with other electrical motors. If need be, use relays.

4.7 Do not mount the actuator on valves with higher torque than the nominal torque of the actuator.

4.8 **Under normal operation: These motors have to be electrically controlled for opening or closing.**

**Spring driven return only takes places in case of power supply cut-off.**



### 5. INSTALLATION AND OPERATION

5.1 Install the actuator on the valve (already done for units assembled in our workshops)

5.2 Perform the wiring as shown on the diagram below.

5.3 Adjust the switch stops (already done for units assembled in our workshops).

5.4 View the valve's movement using the indicator light on the cover.

5.5 To manual actuate the SR/SR-X actuator, push the lever opposite the wheel.

Return the handle to its initial position to maintain the safety function of the servomotor.

5.6 **SR-X actuator:** the electrical connection has to be made through the ATEX-approved cable gland (CG) CGM20x1.5 Which corresponds to the same operation zones as SR-X.

SR-X has 2 connections M20x1.5. If only one ATEX cable gland is used, the 2nd connection must have an ATEX-approved plug corresponding to the same operation zones as SR-X.

CG and ATEX plug are not provided as standard. Option upon ordering.

#### 5.7 Installation:

| Model      | A (mm) |
|------------|--------|
| SR05-SR05X | 155    |
| SR10-SR10X | 212.5  |
| SR30-SR30X | 265.5  |

**Mandatory slinging of the assembly**

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|  |                                                                                                                                                                                                                                                                                  | Ref.  | IME23080 ENG |
|  |                                                                                                                                                                                                                                                                                  | Rev.  | 02           |
|  |                                                                                                                                                                                                                                                                                  | Date  | 10/2023      |

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## ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

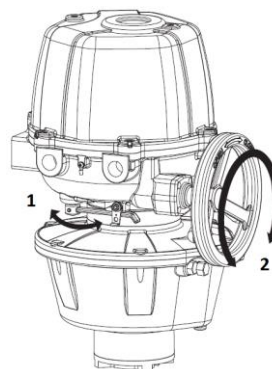
### 6. MANUAL INTERVENTION

**CAUTION** : Before any manual intervention, cut off the power supply, otherwise the SR actuator provided with an electromagnetic clutch, can be damaged.

**6.1** Turn the lever (Ref. mark: 1) clockwise, lever upright position.

Once this operation performed, you can manually actuate the actuator by turning the wheel (Ref. mark: 2).

**6.2** When the lever is not in the upright position, turn the wheel by half-turn and pull the lever in the opposite direction.



- Turn the wheel (Ref. mark: 2) clockwise for closing.

- Turn the wheel (Ref. mark: 2) anti-clockwise for opening.

**6.3** Once the manual operations completed, you return the lever (Ref. mark: 1) to the automatic position.

**6.4** If you cannot return the lever (Ref. mark: 1) to the upright position as described above, a blockage could be the problem.

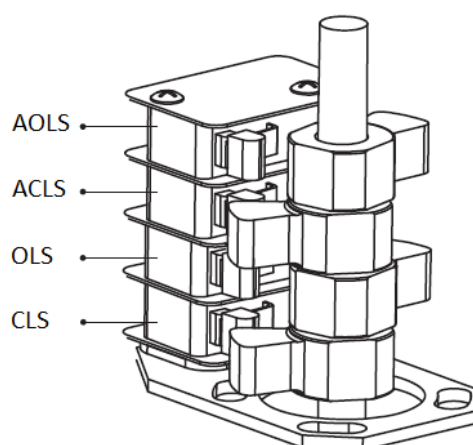
### 7. SWITCH SETTING

**7.1** The cams are attached to the drive stem.

**7.2** Clockwise rotation = valve closing. The micro-switch closes the actuator.

**7.3** Anti-clockwise rotation = valve opening. The micro-switch stops the actuator.

|              |                              |
|--------------|------------------------------|
| <b>AOLS:</b> | Auxiliary opening dry switch |
| <b>ACLS:</b> | Auxiliary closing dry switch |
| <b>OLS:</b>  | Limit switch                 |
| <b>CLS:</b>  | Closing limit switch         |



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|       |              |
|-------|--------------|
| Pages | 4/9          |
| Ref.  | IME23080 ENG |
| Rev.  | 02           |
| Date  | 10/2023      |

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## ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

### 8. STOP ADJUSTMENT

The return spring of the actuator becomes active in case of emergency stop (a power cut, e.g.)

In this case, spring stops have to be adjusted, using stop screws.

The SR actuator is protected when the stops are properly adjusted

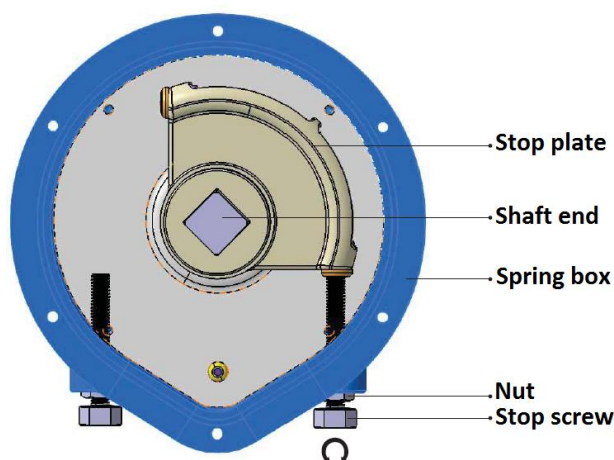
(carry out the adjustment of stops (screws) before adjusting the limit switches).

**8.1** Manually place the actuator in the closed position after attaching it on top of the valve.

**8.2** If the stops are incorrectly adjusted, the valve will not be in the fully closed position. In this case,

Adjust the stops to reach the fully closed position. Tighten the stops screws once the adjustment performed

**NOTE:** Do not touch the adjustment already performed at the facility.



**8.3** Adjust the stops in the same way as the stops in the closed position.

**CAUTION :** When the limit switch reaches the stop, the actuator works normally. Return to the initial position when the actuator goes into fault.

The actuator works properly if the cams switch the limit switches before the stop plate reaches the screw. If the actuator does not work properly, adjust the stop screws again.

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|                                                                                     |                                                                                                                                                                                                                                                                                  | Ref.  | IME23080 ENG |
|                                                                                     |                                                                                                                                                                                                                                                                                  | Rev.  | 02           |
|                                                                                     |                                                                                                                                                                                                                                                                                  | Date  | 10/2023      |

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## ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

### 9. CONNECTION

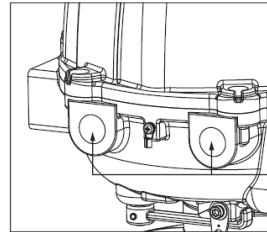
The two inlet cables of the SR actuator are connected using an M20 x 1.5 connection.

9.1 The unused cable inlets must be plugged.

**CAUTION!**



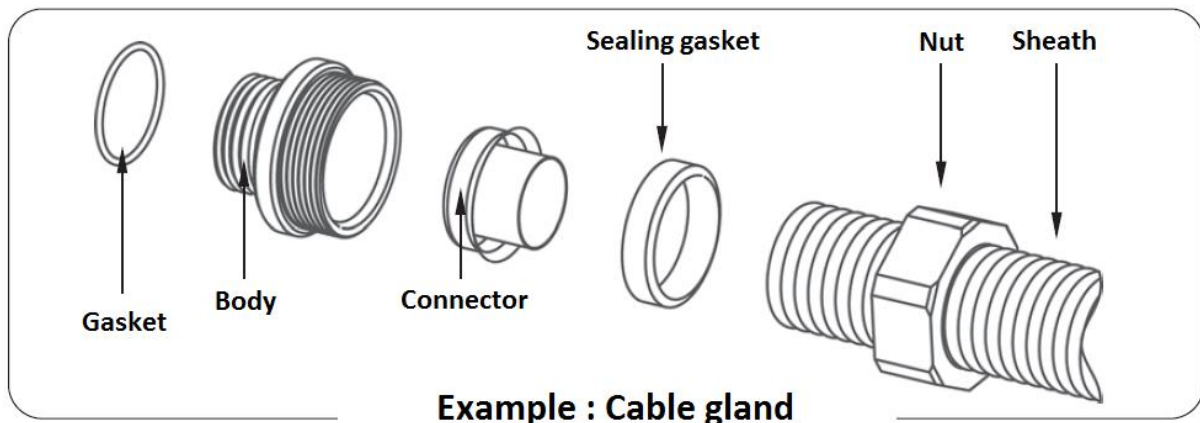
In ATEX zones, you must use approved cable glands. See § 5.6.



Input cable

9.2 Standard cable glands and version for shielded cable can be used.

It is recommended to fit a glued (resin) sealing gasket on the actuator's connections once the wiring is completed. This is to prevent humidity and water from penetrating inside.



9.3 **CAUTION:** The cable glands used in explosive zones must be certified according to the **Ex d IIB or d IIC** standard.



Used the suitable components to prevent any damage to the SR actuator.  
We are not responsible for the incorrect installation of the SR actuator.

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|  |                                                                                                                                                                                                                                                                                  | Ref.  | IME23080 ENG |
|  |                                                                                                                                                                                                                                                                                  | Rev.  | 02           |
|  |                                                                                                                                                                                                                                                                                  | Date  | 10/2023      |

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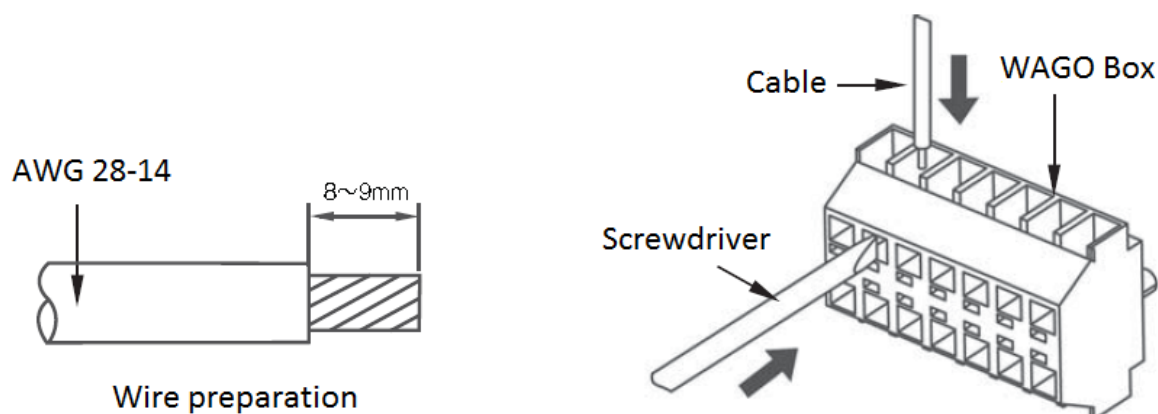
### 10. ELECTRICAL WIRING

**10.1** Separate the cover from the actuator's body. Unscrew the four bolts.

**10.2** Before any electrical connection, check that the electrical diagram provided corresponds to the rating plate.

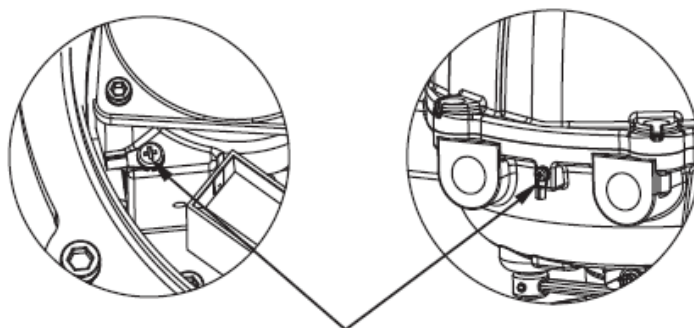
**10.3** Check that the mains voltage corresponds to the voltage mentioned on the rating plate.

**10.4** The SR actuator series has a WAGO terminal box which is easy to wire and is protected against vibrations.  
Use an AWG 28-4 standard cable.



**10.5** Insert a screwdriver as shown above, press and insert the wire.

**10.6** Check that the actuator's earthing is compliant indoors (body) and outdoors (body).  
Use a wire of identical cross-section  $4.5 \sim 5 \text{ mm}^2$  for earthing the SR actuator.



Interior and exterior  
Grounding

**10.7** Each actuator has to be actuated by their own individual relays to prevent the voltage from coming back and possible damage to other actuators.

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|                                                                                     |                                                                                                                                                                                                                                                                                  |  | Ref.  | IME23080 ENG |
|                                                                                     |                                                                                                                                                                                                                                                                                  |  | Rev.  | 02           |
|                                                                                     |                                                                                                                                                                                                                                                                                  |  | Date  | 10/2023      |

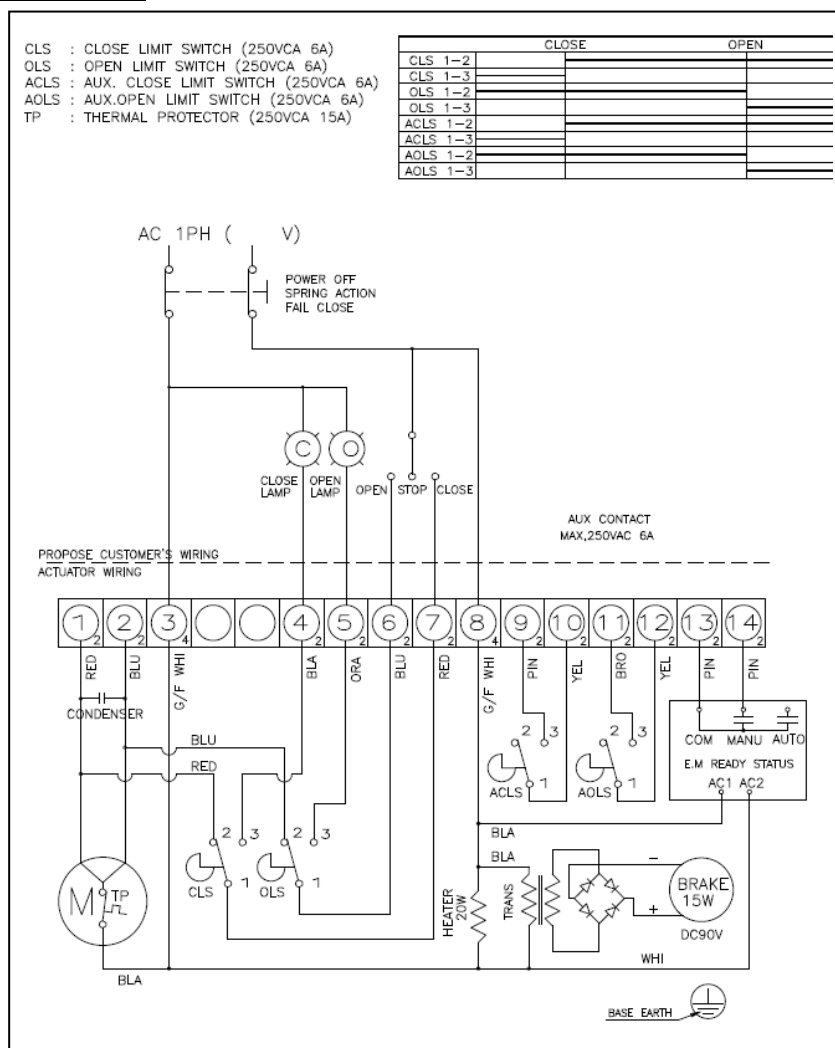
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## ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

### 11. WIRING DIAGRAM

Wiring for 230 V 50Hz voltage

|    |                                      |
|----|--------------------------------------|
| 1  | Do not use                           |
| 2  | Do not use                           |
| 3  | Common                               |
| 4  | Closing indicator light (suggestion) |
| 5  | Opening indicator light (suggestion) |
| 6  | Opening command                      |
| 7  | Closing command                      |
| 8  | Magnetic brake power                 |
| 9  | Closing auxiliary                    |
| 10 | Closing auxiliary                    |
| 11 | Opening auxiliary                    |
| 12 | Opening auxiliary                    |
| 13 | Do not use                           |
| 14 | Do not use                           |



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|       |              |
|-------|--------------|
| Pages | 8/9          |
| Ref.  | IME23080 ENG |
| Rev.  | 02           |
| Date  | 10/2023      |

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## ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

### 12. FAULT DIAGNOSTIC

If the actuator does not work properly, check all mechanisms, and look for alignment problems and electrical problems. (See table below)

| PROBLEM                                                                           |                                                     | CAUSE                                                          | SOLUTIONS                                                                |
|-----------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------|
| The manual control does not engage                                                |                                                     | Blocked worm drive and stop mechanism                          | Turn the wheel again from left to right                                  |
| In manual mode, the actuator does complete its open or closed cycle               |                                                     | Gear box problem or broken rings                               | Disassemble the actuator and replace the gear boxes, damaged stop screw. |
| Normal operation, remote control                                                  | The actuator does complete its open or closed cycle | Fault on the limit switch or on the stop mechanism             | Reset of the limit switch or on the stop mechanism                       |
|                                                                                   | The actuator does not work under remote control     | Power cut                                                      | Power cut diagnostic                                                     |
|                                                                                   |                                                     | Disconnected wires or cut-off circuit                          | Replace the faulty wires                                                 |
|                                                                                   |                                                     | Damaged motor or condenser                                     | Replace the motor or the condenser                                       |
|                                                                                   |                                                     | Too high motor temperature                                     | Motor cycle stop                                                         |
|                                                                                   |                                                     | Wiring problem                                                 | Check the electrical diagram and the cable connection                    |
|                                                                                   |                                                     | Blocked gear boxes                                             | Unblock the gear boxes                                                   |
| When the actuator continues to turn even after the cams engage the limit switches |                                                     | Fault on the limit switch<br>Disconnection or cut-off circuit. | Replace the limit switch. Reconnect the cut circuit                      |
|                                                                                   |                                                     | Phase inversion                                                |                                                                          |

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|                                                                                     |                                                                                                                                                                                                                                             | Ref.  | IME23080 ENG |
|                                                                                     |                                                                                                                                                                                                                                             | Rev.  | 02           |
|                                                                                     |                                                                                                                                                                                                                                             | Date  | 10/2023      |