MORIS
Macchine Oleodinamiche
Riduttori Impianti Speciali

Chapter 17

COMMISSIONING OF 15-650 l/min DISTRIBUTOR INCLUDING 2-SPEED H.L.

Moris Italia s.r.l.

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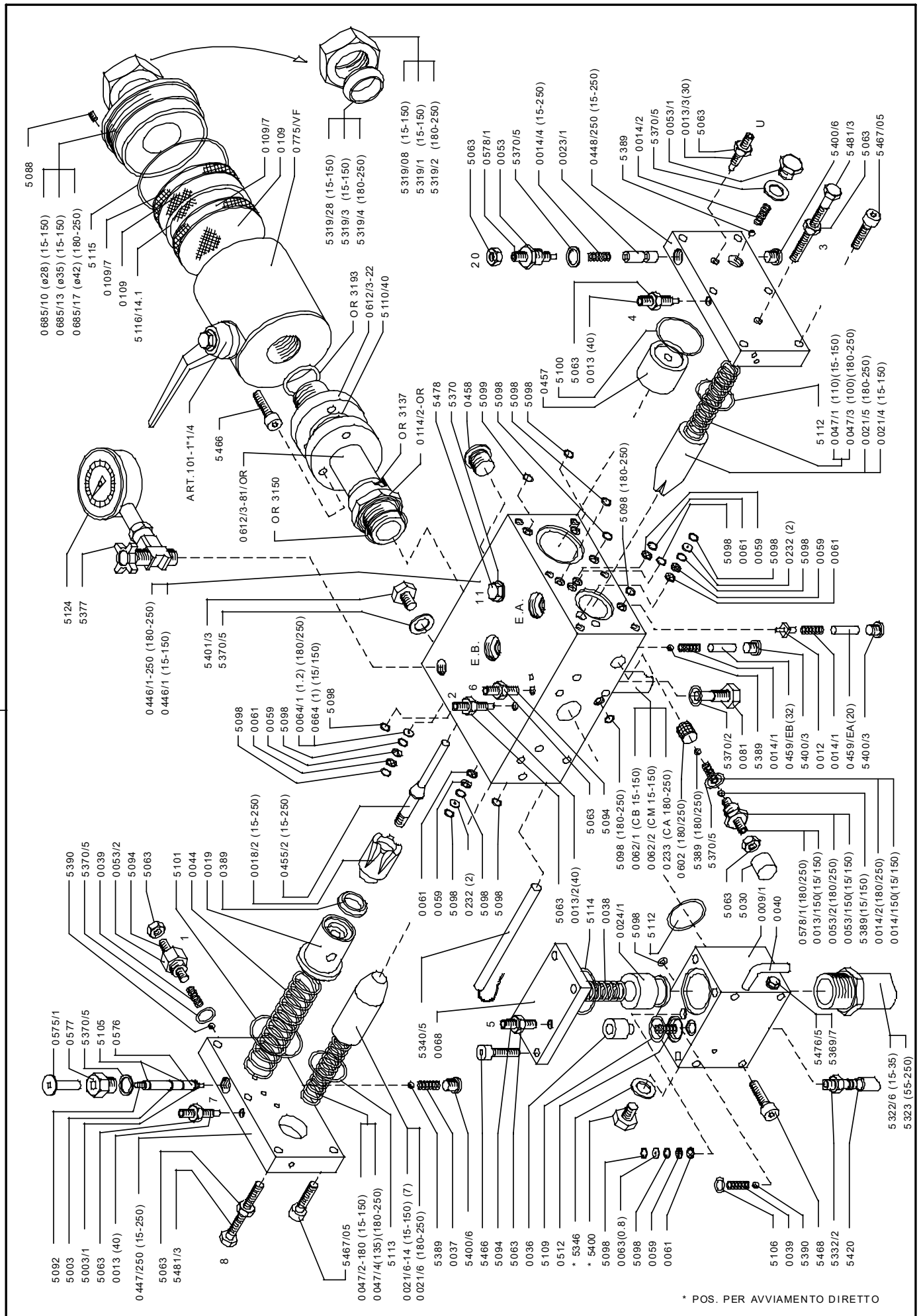
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Enclosed with this handbook and related production.



UT	DISTRIBUTORE OLEODINAMICO (15 / 250 L/MIN.)	DATA 12/03 N°DIS. 9500/1

9510/1-IT

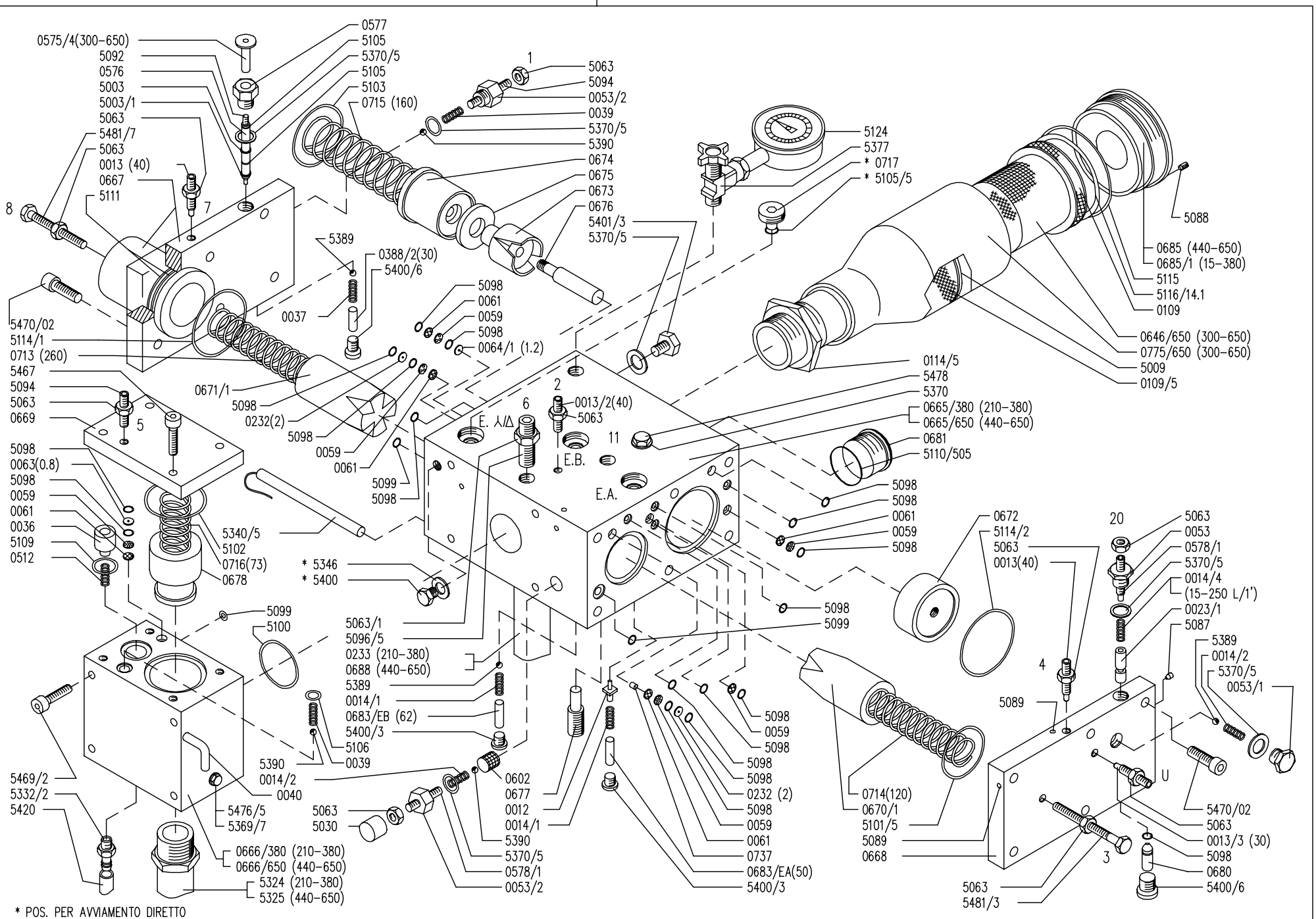
UT

DISTRIBUTORE OLEODINAMICO

(300/650 L/MIN.)

DATA 10-02

N°DIS. 9510/1



SOMMARIO

COMMON PROCEDURES 3

A. ELECTRICAL FUNCTION CHECK OF SOLENOID VALVES 3

B. MANUAL CHECK OF SOLENOID VALVE OPERATION 4

C. RESET THE PRESSURE 4

D. MEASURE ADJUSTMENT LENGTH 4

E. CONTACT TECHNICAL SUPPORT 4

ANOMALIES IN ASCENT 5

1. THE SYSTEM DOES NOT START IN ASCENT OR DOES NOT REACH THE NOMINAL SPEED. 5

2. THE SYSTEM STARTS SUDDENLY IN ASCENT 8

3. THE SYSTEM SLOWS DOWN ON THE FLOOR WITH A JOLT IN ASCENT. 8

DESCENT ANOMALIES 9

4. THE SYSTEM DOES NOT START IN DESCENT OR DOES NOT REACH THE NOMINAL SPEED. 9

5. THE SYSTEM VIBRATES AT LOW SPEED. 10

VARIOUS ANOMALIES 10

6. THE SYSTEM DOES NOT SLOW DOWN AT THE FLOOR 10

7. SYSTEM LOSES PRESSURE OR CATCHES BACK TO PLAN 11

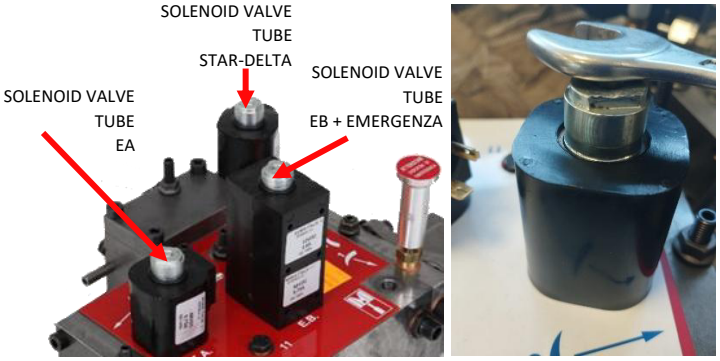
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COMMON PROCEDURES

A. ELECTRICAL FUNCTION CHECK OF SOLENOID VALVES

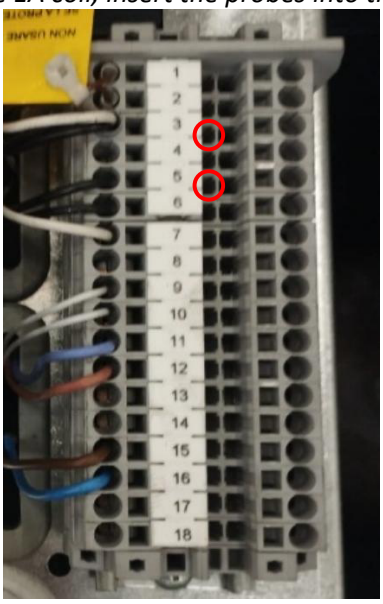
Check that the solenoid valve magnetizes during operation:

place a steel key on the solenoid valve coil while it is running. If the key is attracted magnetically, the solenoid valve is energized.



To verify proper power supply, measure the voltage with a tester.
Insert the tester probes into the terminal block, corresponding to the wires of the coil of interest.
During operation, the measured voltage should match the value indicated on the coil.

***Example**: To measure the voltage on the EA coil, insert the probes into the holes circled in the figure.*



Coil Cable Positions in the example:

3 → COMMON of EA – EB – EMERGENCY – (STAR-DELTA)

5 → POSITIVE EA

6 → POSITIVE EB

7 → POSITIVE EMERGENCY

8 → POSITIVE STAR-DELTA

**The photo is for example purposes and refers to a specific model.*

EA → activates at high speed both in ascent and descent.
EB → activates in descent."

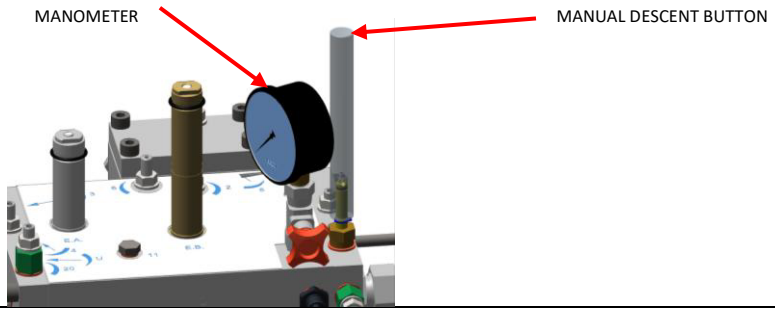
B. MANUAL CHECK OF SOLENOID VALVE OPERATION

Check (using a small screwdriver) that it is possible to press the manual button on the solenoid valve, and that when released, it returns to its initial position.



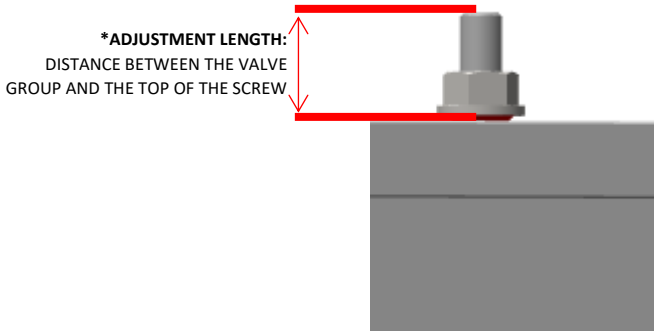
C. RESET THE PRESSURE

Close the gate valve and press the manual descent button until the pressure on the manometer reads 0.



D. MEASURE ADJUSTMENT LENGTH

Before making any adjustments, it is necessary to measure the adjustment length so it can be returned to the original setting.



At the end of this manual, there is a page where you can record the initial measurements of the screws and any adjustments made.

E. CONTACT TECHNICAL SUPPORT

Make sure you have the MORIS reference number available, printed on a sticker placed on the control unit. The number consists of six digits (or five if the system is very old). Having it on hand will make it easier to provide assistance.
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ANOMALIES IN ASCENT

1. THE SYSTEM DOES NOT START IN ASCENT OR DOES NOT REACH THE NOMINAL SPEED.

CHECKS

1- **Check the electrical operation of the solenoid valves EA and Star-Delta.**

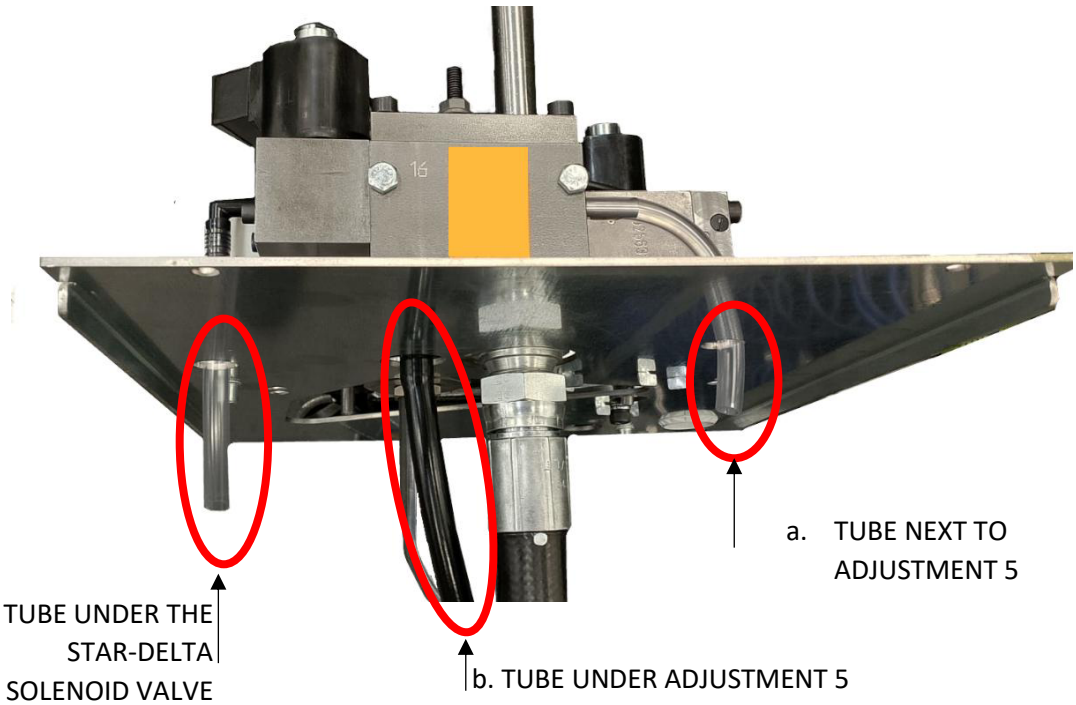
If the solenoid valves are working, proceed to step 2.

2- **Unscrew adjustment 7 by 1 turn and test the system.**

If the system does not start, return adjustment 7 to its initial setting and proceed to step 3.

3- **Check for leaks during the ascent phase from:**

a. Tube next to adjustment 5, follow repair **R.1**;
b. Tube under adjustment 5, follow repair **R.2**;
c. Tube under the Star-Delta solenoid valve (not always present), follow repair **R.3**.



If no oil is coming from these tubes, proceed to step 4.

4- **Piston 8 blocked, screw in adjustment 8 by 2 turns. If the system does not start or gets stuck again, follow repair procedure R.4.**

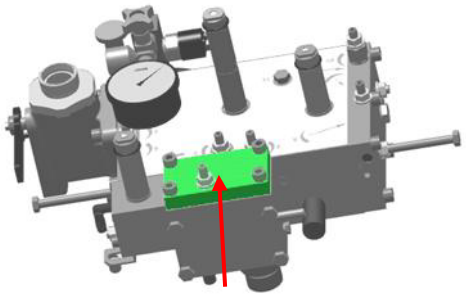
If the system does not start, contact MORIS Italia Technical Support.

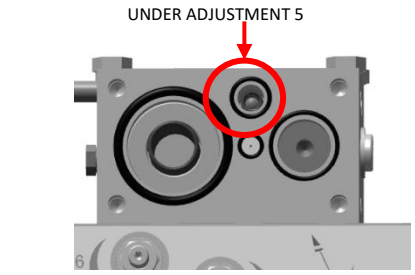
PROCEDURES

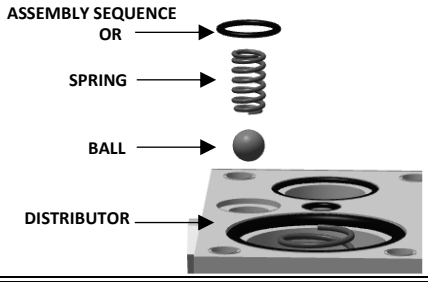
R.1

1) Close the gate valve;
2) Perform ascent and read the pressure on the manometer, it should be equal to PS (written on the MORIS label): 1.4 x maximum operating pressure:
– If lower, screw in adjustment 5 until the correct overpressure is achieved and test the system;
– If correct, proceed to the next step.

3) Disconnect the motor power supply (ensure that it cannot start accidentally);
4) Reset the pressure;
5) Remove the four screws from the adjustment plate 5, do not remove adjustment 5;
6) Remove the spring and ball under adjustment 5;
7) Clean the spring, ball, and seat;
8) Reassemble the parts in sequence:
BALL – SPRING (NARROW PART UP) – ORING;
9) Reassemble the plate with the screws;
10) Test the system.

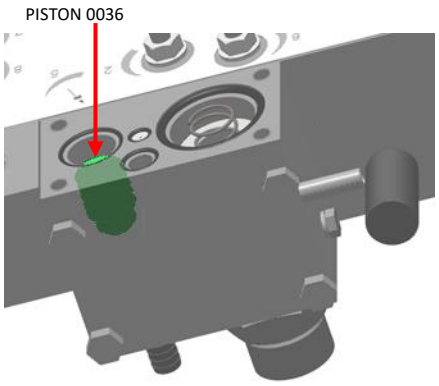






R.2

1) Close the gate valve;
2) Disconnect the motor power supply (ensure that it cannot start accidentally);
3) Reset the pressure;
4) Remove the four screws from the adjustment plate 5, do not remove adjustment 5;
5) Remove piston 0036 and clean it;
6) Ensure that piston 0036 moves correctly;
7) Reassemble the disassembled parts;
8) Test the system.



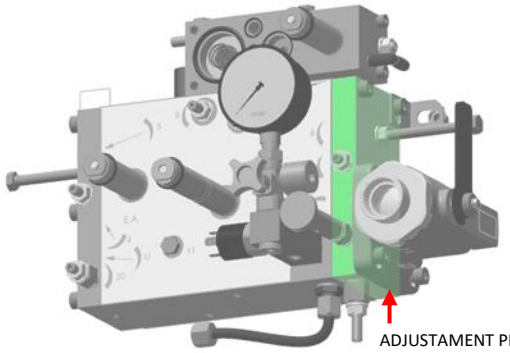
R.3

1) Check the operation of the Star-Delta solenoid valve (see page 3);
2) Check that the button on the solenoid valve works (if it does not move, proceed to step 3);
3) Close the valve;
4) Disconnect the motor power supply (ensure that it cannot start accidentally);
5) Reset the pressure;
6) Disassemble the solenoid valve and clean any internal dirt;
7) Reassemble the disassembled parts;
8) Test the system.

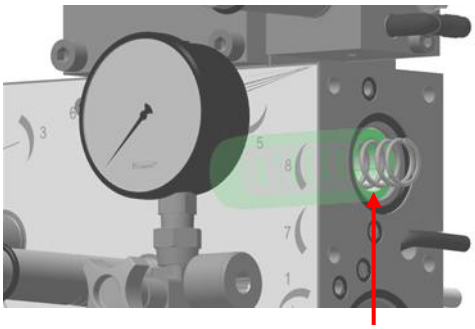
PROCEDURES

R.4

1) Close the valve;
2) Disconnect the motor power supply (ensure that it cannot start accidentally);
3) Reset the pressure;
4) Remove the adjustment plate 8 by unscrewing the 6 screws (4 on the gate valve), being careful with the parts inside;
5) Check that the movement of piston 0021 is not difficult. If it is blocked:
6) Reassemble the plate without the spring of adjustment 8
7) Power the motor;
8) Open the valve, give the ascent command for a few seconds to unblock the piston;
9) Repeat from instruction 1.
10) Clean any dirt;
11) Reassemble the parts and test the system.



ADJUSTAMENT PLATE 8



PISTON 0021

2. THE SYSTEM STARTS SUDDENLY IN ASCENT

CHECKS

1- **Screw in adjustment 7 by ½ turn, test the system.**

If the problem persists, return adjustment 7 to its original setting and proceed to step 2.

2- **Piston 0036 jammed or spring 0512 broken, follow repair procedure R.5.**

If the problem persists, proceed to step 3.

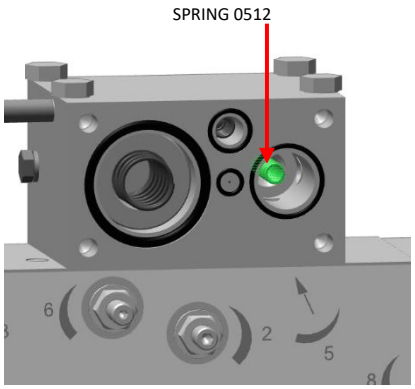
3- **Adjustment 8 not correctly calibrated, follow repair procedure R.6.**

If the problem persists, contact MORIS Italia Technical Support.

PROCEDURES

R.5

1) Close the gate valve;
2) Disconnect the motor power supply (ensure that the motor cannot start accidentally);
3) Reset the pressure;
4) Disassemble the adjustment plate 5 (see **R.1** page 6);
5) Check the movement of piston 0036 and clean it from any dirt (see **R.2** page 6);
6) Remove spring 0512 from its seat (under piston 0036), clean it, and ensure it is intact (it may be broken and twisted);
7) Reassemble spring 0512 (replace it if broken), piston 0036, and the plate;
8) Test the system.



R.6

1) Lower the system to the lowest level, with the cabin empty, and read and record the pressure on the manometer;
2) Close the gate valve;
3) Reset the pressure;
4) If the star-delta is present, remove the coil;
5) If the start is direct, unscrew adjustment 5 completely using an Allen wrench, without changing the position of the screw nut, and screw it back in by 3 turns;
6) Open the gate valve;
7) Perform ascent and with the motor running for a few seconds, read the pressure on the manometer (it should be 2 bar lower than the pressure recorded in the previous step);
8) If the pressure is incorrect:
   - Reset the pressure;
   - Adjust screw 8 (tighten to increase the pressure, loosen to decrease it);
   - Repeat from the previous step until the correct manometer pressure is achieved (it should be 2 bar lower than the pressure recorded in the first step);
9) Reconnect the star-delta solenoid valve and return screw 5 to its original setting;
10) Test the system.

3. THE SYSTEM SLOWS DOWN ON THE FLOOR WITH A JOLT IN ASCENT.

Screw in adjustment 3 by ½ turn at a time, up to a maximun of 1 turn

If the problem persists, return screw 3 to its original setting and contact MORIS Italia Technical Support.

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DESCENT ANOMALIES

4. THE SYSTEM DOES NOT START IN DESCENT OR DOES NOT REACH THE NOMINAL SPEED.

CHECKS

1- **Check the operation of the solenoid valves EA and EB.**

If the solenoid valves are working, proceed to step 2.

2- **Unscrew adjustment U by ½ turn, test the system.**

If the problem persists, return screw U to its original setting and proceed to step 3.

3- **Screw in adjustment 20 by 1 turn, test the system.**

If the problem persists, return screw 20 to its original setting and proceed to step 4.

4- **Unscrew adjustment 8 by 1 turn, check for improvements or follow repair R.6 on page 7.**

If the problem persists, proceed to step 5.

5- **Clean the filters, follow repair R.7.**

If the problem persists, contact MORIS Italia Technical Support.

PROCEDURES

R.7

1) Close the gate valve;
2) Disconnect the motor power supply (ensure that it cannot start accidentally);
3) Reset the pressure;
4) Unscrew the 4 screws on the gate valve to detach it from the distributor;
5) Remove the O-ring and take out the internal parts;
6) Clean the filters;
7) Reassemble the parts in the following order starting from the gate valve:

LARGE O-RING – METAL RING – COARSE FILTER – SMALL O-RING – FINE FILTER – COARSE FILTER (see the figure on the right);

8) Disassemble the adjustment plate 8 (see the figure) by unscrewing the 2 screws;
9) Underneath, there are two filters (circled), remove the O-ring and disassemble everything inside (2 O-rings, 1 perforated plate, 2 filter meshes);
10) Reassemble them as shown in the images :

FILTER 1

DISTRIBUTOR SIDE



FILTER 2

DISTRIBUTOR SIDE

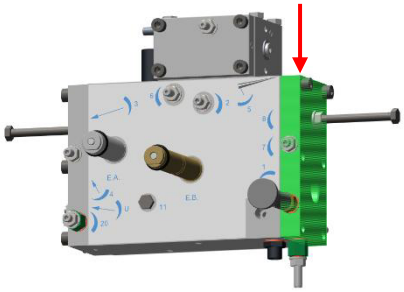


11) Reassemble the adjustment plate 8, ensuring that the O-rings remain in the correct position.
12) Reassemble the ball valve.
13) Test the system.

VALVE GATE INSTALLATION SEQUENCE



ADJUSTMENT PLATE 8

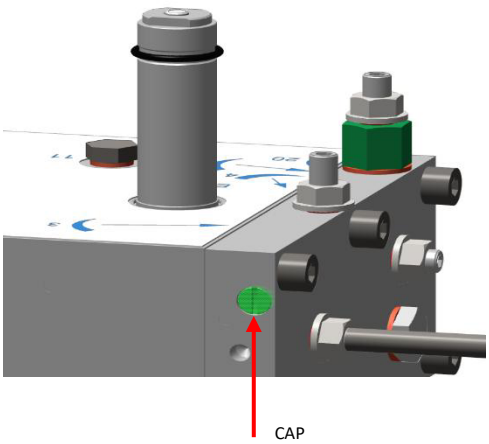


FILTER 1 FILTER 2



5.	THE SYSTEM VIBRATES AT LOW SPEED.
Unscrew adjustment 6 by 1 turn at a time, up to a maximum of 2 turns. Test the system, if the problem persists, check for friction on the guides. *If the problem persists, return adjustment 6 to its original setting and contact MORIS Italia Technical Support.*	

VARIOUS ANOMALIES

6.	THE SYSTEM DOES NOT SLOW DOWN AT THE FLOOR	
CHECKS	*1-* **With cold oil (below 15°C), the system may not slow down in the expected space. To avoid this issue, insert the oil heating resistance into the tank.** *If the oil temperature is above 15°C, proceed to point 2.*	
	2- **Check the proper functioning of the EA solenoid valve (it should not be energized during low-speed phase).** *If the EA solenoid valve works correctly, proceed to point 3.*	
	3- **Check that the positioning of the slowdown magnets on the guides is in accordance with what is indicated on the test sheet on the MORIS control unit (x2/xp1 – y2/yp0).** *If the magnets are correctly positioned, proceed to point 4.*	
	4- **Repeat the calibration of adjustment 4. Screw it in fully and unscrew 4 turns.** *If the problem persists, proceed to point 5.*	
	5- **Check the movement of the manual button of the EA solenoid valve.** *If the problem persists, proceed to point 6.*	
	6- **Remove the sleeve of the EA solenoid valve and clean the passage from any dirt.** *If the problem persists, proceed to point 7.*	
	7- **Problem in the passage of the plate 0448, follow repair R.8.** *If the problem persists, contact MORIS Italia Technical Support.*	
PROCEDURES	**R.8** 1) Move the cabin to the lowest floor; 2) Make sure the engine is off; 3) Close the gate; 4) Reset the pressure; 5) On the adjustment plate 3, with a screwdriver remove the green cap in the figure; 6) Place a rag in front of the hole; 7) Start the engine and run it for about 3 seconds to purge the passage; 8) Turn off the engine; 9) Replace the cap; 10) Test the system.	

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7. SYSTEM LOSES PRESSURE OR CATCHES BACK TO PLAN

CHECKS

With the system stationary on the floor, close the shutter and check the pressure on the manometer:

- **if the pressure remain costant, it must be found in the piston or in the piston itself;**
- **if the pressure lowered, there are leaks in the valve group, following the possible leaks and repairs.**

1. Leak from sealing plug:

- Bring the cab to the lowest floor, keep the system pressurised, cut off power to the engine (make sure that no accidental start of the engine can occur);
- Unscrew cap 11, if oil comes out follow repair **R.9.**

If the problem is not solved contact MORIS Technical Support.

2. **Leak from below the valve group**

Bring the cab to the lowest floor, keep the system pressurised, inspect for leaks under the distributor. If losses occur:

Leakage from solenoid valve EB

Press the manual button on the EB with a screwdriver.

Oil will come out from the EB's drain (see figure below);

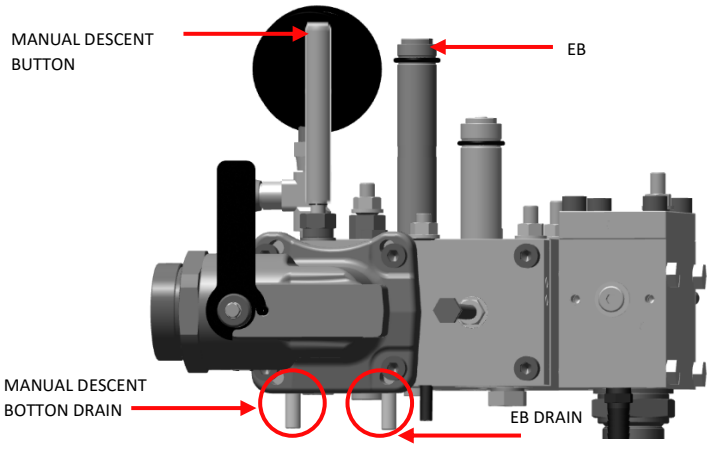
- If the leak, detected above, occurs from the same drain hole of the EB: press the manual button of the EB several times to purge the passage.
  If the leak persists, repair **R.10**.
- If the leak, identified above, does not occur from the discharge of the EB proceed with the verification of leaks by manual drop down button.

Loss from manual drop button

Press the manual drop button.

Oil will come out from the manual descent drain (see figure below).

- If the leak detected above occurs from the same drain hole as the manual descent: press the manual descent button several times to purge the passage.
- If the leak persists, follow repair R.11.



If the problem is not solved contact MORIS Technical Support.

11) **Hand pump non-return valve leak**

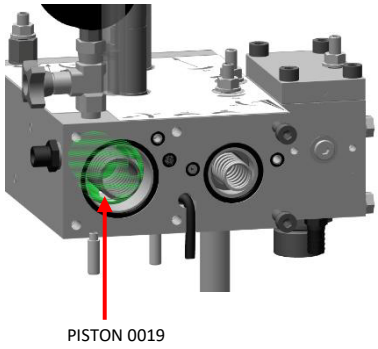
- Bring the cab to the lowest floor, keep the system pressurised, cut off power to the engine (make sure that no accidental start of the engine can occur);
- Disassemble the mini-flex connection with the hand pump (see image in **R.12** page 13).
- If leaks from the fitting occur, follow repair **R.12.**

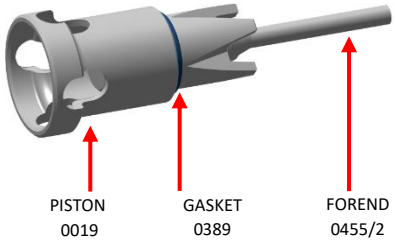
Se il problema non è risolto rivolgersi ad Assistenza tecnica MORIS Italia

PROCEDURES

R.9

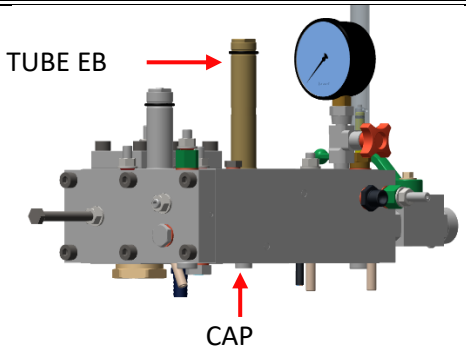
1) Close the gate;
2) Cut off power to the engine (make sure it cannot start accidentally);
3) Reset the pressure;
4) Disassemble the adjustment plate 8 as in R.8 p. 12, taking care to preserve the details inside
5) Remove the piston 0019, it is located at the shortest spring;
6) If the seal 0389 is damaged or dirty, replace the details:
   0019, 0389, 0455/2
7) Reposition the dowel and spring;
8) Reassemble the plate;
9) Test the system.

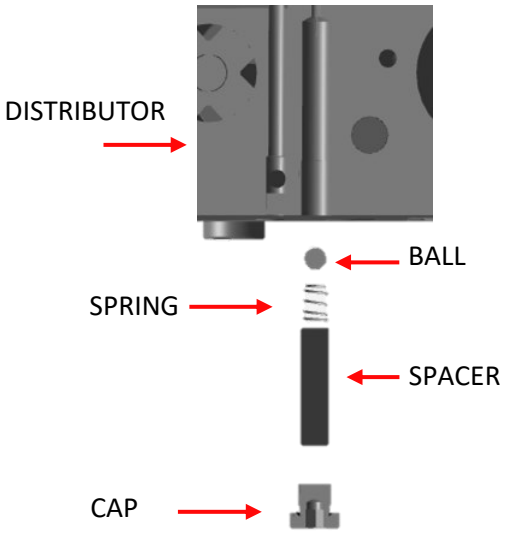




R.10

1) Close the gate;
2) Cut off power to the engine (make sure it cannot start accidentally);
3) Reset the pressure;
4) Disassemble the EB valve coil;
5) Unscrew the valve EB;
6) With a 5-inch Allen remove the cap located under the block at the EB valve and pull out the details inside;
   BE CAREFUL NOT TO DROP ANY OF THE DETAILS INTO THE TANK
7) Clean the parts and the seat of the ball;
8) If possible replace the ball;
9) Reassemble in the order shown in the figure (ball side narrow part);
10) Mount the EB valve and insert coil;
11) Test the system.





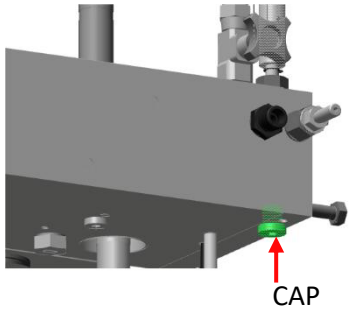
PROCEDURES

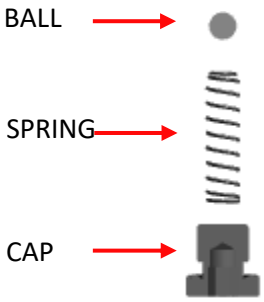
R.11

1) Close the gate;
2) Cut off power to the engine (make sure it cannot start accidentally);
3) Reset the pressure;
4) Unscrew the cap located below the valve assembly at the manual drop button with a 6-inch Allen;
5) Remove the spring and ball inside;

BE CAREFUL NOT TO DROP ANY OF THE DETAILS INTO THE TANK

6) Clean the parts and their seat from possible dirt;
7) If possible replace the ball;
8) Reassemble in the order shown in the picture (the ball side narrow part);
9) Mount the manual drop button;
10) Test the SYSTEM;

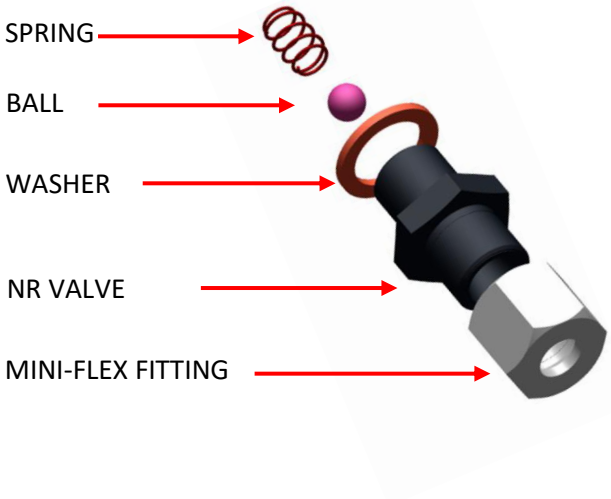




R.12

1) Close the valve.
2) Disconnect the motor power supply (ensure it cannot start accidentally).
3) Reset the pressure.
4) Remove the mini-flex tube from the non-return valve of the valve group.
5) Unscrew the non-return valve of the valve group.
6) Remove the spring and ball inside.
7) Clean the parts and seat from any dirt.
8) If possible, replace the ball.
9) Reassemble the parts as shown in the figure.
10) Test the system.





Below is a table to record the initial measurements of the adjustment screws and any modifications made.

It is useful to track the adjustments made in order to return the control unit to its initial test conditions, if needed later.

N° Adjustment	Date	Initial measurement	Modification made
5 example	12/12/2025 example	230 mm example	½ GIRO ORARIO example

MORIS Italia technical support is available for any inquiries.
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