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## Sommario

|                                          |    |
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# MDI\_P1R44F-009 : Installer Manual

## 1. Informations

### 1.1 Release

|  |                                                                                                                                                                                       |      |            |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|
| <b>Document:</b>                                                                  | <b>mdi_p1r44f-009</b>                                                                                                                                                                 |      |            |
| <b>Description:</b>                                                               | Installation manual p1r44f-009                                                                                                                                                        |      |            |
| <b>Editor:</b>                                                                    | Andrea Zarantonello                                                                                                                                                                   |      |            |
| <b>Approver:</b>                                                                  | Giuliano Tognon                                                                                                                                                                       |      |            |
| <b>Link:</b>                                                                      | <a href="http://www.qem.eu/doku/doku.php/strumenti/qmoveplus/c1r44/p1r44f-001/mdi_p1r44f-009">http://www.qem.eu/doku/doku.php/strumenti/qmoveplus/c1r44/p1r44f-001/mdi_p1r44f-009</a> |      |            |
| <b>Language:</b>                                                                  | English                                                                                                                                                                               |      |            |
| Release documento                                                                 | Description                                                                                                                                                                           | Note | Data       |
| 01                                                                                | New manual                                                                                                                                                                            |      | 30/11/2022 |

## Specifications

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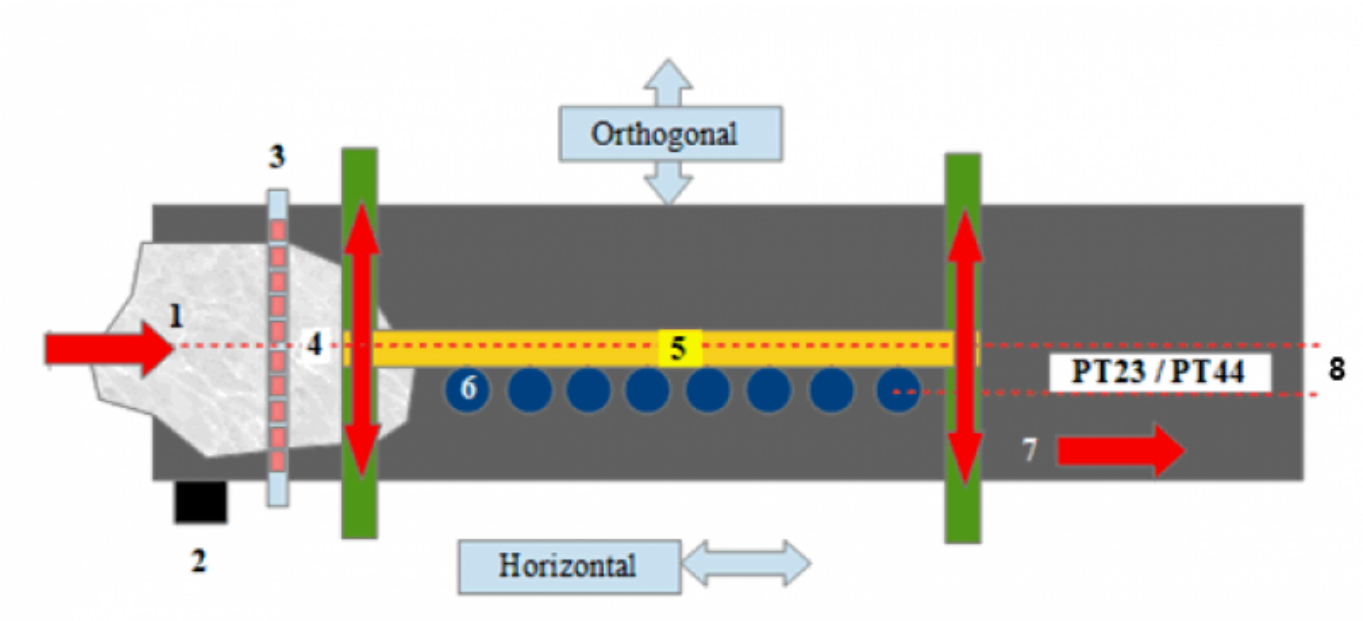
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2. Setup

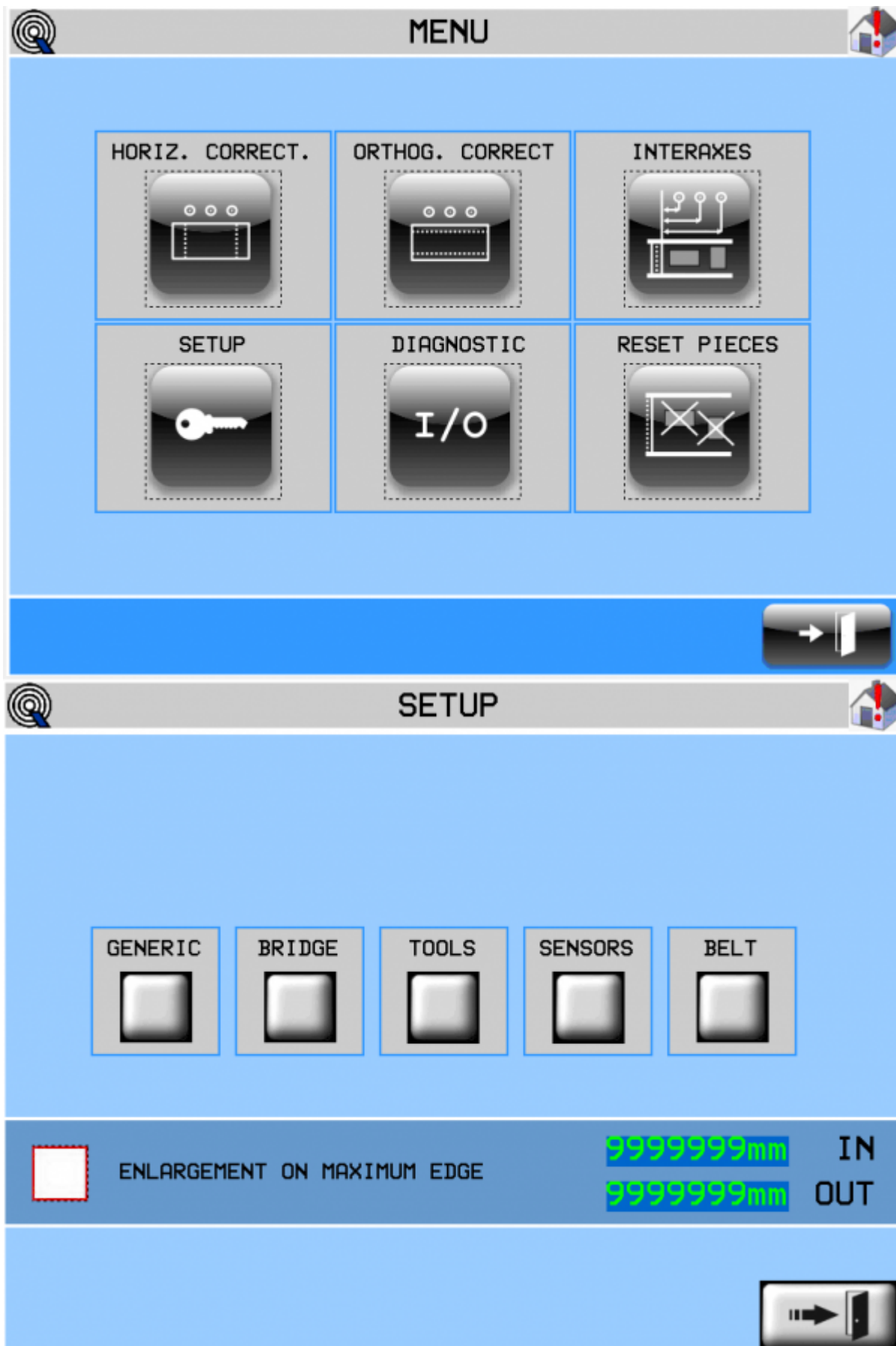
Machine view from above:



| n: | Description:                                             |
|----|----------------------------------------------------------|
| 1  | Raw slab                                                 |
| 2  | Belt Encoder                                             |
| 3  | Limit sensor bar                                         |
| 4  | Center of the sensors / centre of the bridge axis travel |
| 5  | Bridge                                                   |
| 6  | Polishing heads                                          |
| 7  | Belt direction                                           |
| 8  | Orthogonal Offset                                        |

## 2.1 Setup access

Access to setup can be done from the MENU page, by entering the password **035**.

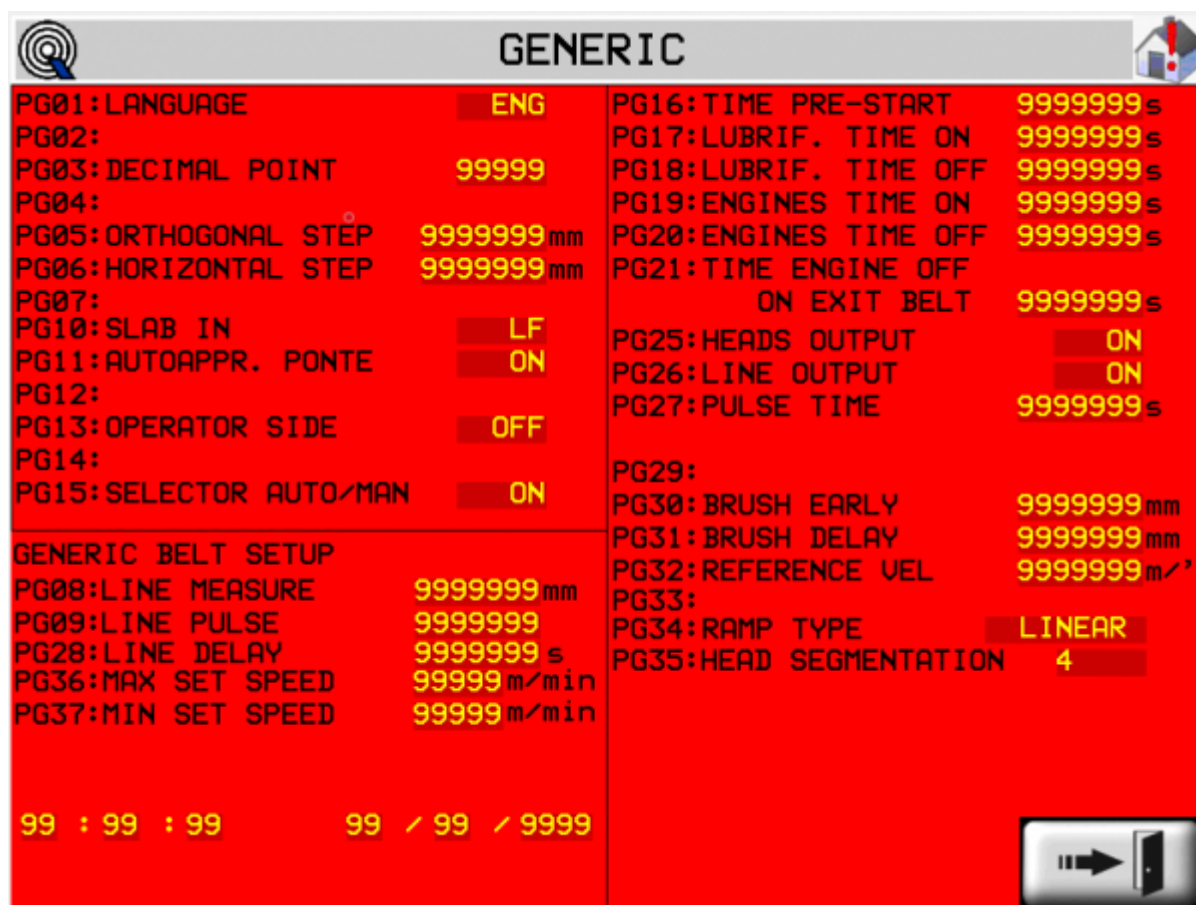


## 2.1.1 SETUP Introduction

Parameter list divided into

|                                                                                                      |                                                                                                                                           |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GENERIC</b><br>  | generic parameters                                                                                                                        |
| <b>BRIDGE</b><br>   | parameters associated with the bridge                                                                                                     |
| <b>TOOLS</b><br>    | parameters associated with heads                                                                                                          |
| <b>SENSORS</b><br> | parameters associated with the sensor bar                                                                                                 |
| <b>BELT</b><br>   | parameters associated with the conveyor belt                                                                                              |
| <b>ENLARGEMENT ON MAXIMUM EDGES:</b>                                                                 | allows you to polish the horizontal edges better.<br>This parameter is useful when you're working with fairly straight edges (not jagged) |

## 2.2 Generic Setup



**GENERIC**

PG01: LANGUAGE **ENG**

PG02: **99999**

PG03: DECIMAL POINT **99999**

PG04: **999999** mm

PG05: ORTHOGONAL STEP **999999** mm

PG06: HORIZONTAL STEP **999999** mm

PG07: **LF**

PG10: SLAB IN **ON**

PG11: AUTOAPPR. PONTE **ON**

PG12: **OFF**

PG13: OPERATOR SIDE **OFF**

PG14: **ON**

PG15: SELECTOR AUTO/MAN **ON**

PG16: TIME PRE-START **999999** s

PG17: LUBRIF. TIME ON **999999** s

PG18: LUBRIF. TIME OFF **999999** s

PG19: ENGINES TIME ON **999999** s

PG20: ENGINES TIME OFF **999999** s

PG21: TIME ENGINE OFF ON EXIT BELT **999999** s

PG25: HEADS OUTPUT **ON**

PG26: LINE OUTPUT **ON**

PG27: PULSE TIME **999999** s

PG29: **999999** mm

PG30: BRUSH EARLY **999999** mm

PG31: BRUSH DELAY **999999** mm

PG32: REFERENCE VEL **999999** m/s

PG33: **LINEAR**

PG34: RAMP TYPE **4**

PG35: HEAD SEGMENTATION **4**

GENERIC BELT SETUP

PG08: LINE MEASURE **999999** mm

PG09: LINE PULSE **999999**

PG28: LINE DELAY **999999** s

PG36: MAX SET SPEED **99999** m/min

PG37: MIN SET SPEED **99999** m/min

99 : 99 : 99      99 / 99 / 9999

| Parameter name                             | Unit of measure | Default | Range      | Description                                                                                                                                                                                                                                                     |
|--------------------------------------------|-----------------|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PG01</b> : LANGUAGE                     | -               | ITA     | 1 ÷ 2      | <b>1</b> : ITALIAN<br><b>2</b> : ENGLISH                                                                                                                                                                                                                        |
| <b>PG03</b> : DECIMAL POINT                | -               | 1       | 0 ÷ 3      | It is the position of the decimal point in the quotas display.                                                                                                                                                                                                  |
| <b>PG05</b> : ORTHOGONAL STEP              | mm              | 50.0    | -          | Distance between the limit switches of the sensor bar. It acquires the shape of the slab.                                                                                                                                                                       |
| <b>PG06</b> : HORIZONTAL STEP              | mm              | 50.0    | -          | Space set by encoder. It acquires the shape of the slab.                                                                                                                                                                                                        |
| <b>PG08</b> : LINE MEASURE                 | mm              | 1       | 0 ÷ 999999 | Indicates the space, in units of measurement, covered by the conveyor belt to obtain the encoder pulses set on the <i>pulse</i> parameter.                                                                                                                      |
| <b>PG09</b> : LINE PULSE                   | -               | 1       | 0 ÷ 999999 | Indicates the pulses multiplied by 4 provided by the conveyor belt encoder to obtain the space set in the <i>measure</i> parameter.<br><i>The ratio between measure and pulse is the resolution of the encoder and must have values between 1 and 0.000935.</i> |
| <b>PG11</b> : SELF-LEARNING. BRIDGE        | -               | OFF     | 0 ÷ 1      | Enables the self-learning option of the minimum and maximum height of the slab to optimize the swiveling of the bridge.                                                                                                                                         |
| <b>PG13</b> : OPERATOR SIDE                | -               | FWD     | 0 ÷ 1      | Indicates at the cycle stop event where the bridge must be positioned.<br>FWD = on the maximum quota, BWD = on the minimum quota.                                                                                                                               |
| <b>PG15</b> : AUTO / MAN SELECTOR          | -               | ON      | 0 ÷ 1      | Enable manual / automatic selector.                                                                                                                                                                                                                             |
| <b>PG16</b> : PRESTART TIME                | s               | 3.0     | 0 ÷ 9999.9 | Time between the start command and the actual starting of the machine (the warning signal is active during this time). If it's less than the motor activation time, the greater time of the two is applied.                                                     |
| <b>PG17</b> : LUBRIF. TIME ON              | s               | 0.0     | 0 ÷ 9999.9 | Lubrication output time ON.                                                                                                                                                                                                                                     |
| <b>PG18</b> : LUBRIF. TIME OFF             | s               | 0.0     | 0 ÷ 9999.9 | Lubrication output time OFF.                                                                                                                                                                                                                                    |
| <b>PG19</b> : ENGINES TIME ON              | s               | 1,000   | 0 ÷ 99.999 | Pause time between the activation of one motor and the next (in sequential activation).                                                                                                                                                                         |
| <b>PG20</b> : ENGINES TIME OFF             | s               | 0.200   | 0 ÷ 99.999 | Pause time between the deactivation of one motor and the next (in sequential deactivation).                                                                                                                                                                     |
| <b>PG21</b> : TIME ENGINE OFF ON EXIT BELT | s               | 0.000   | 0 ÷ 99.999 | Waiting time to start the sequential deactivation of the motors, starting when there are no more pieces on the belt.                                                                                                                                            |

| <b>Parameter name</b>           | <b>Unit of measure</b> | <b>Default</b> | <b>Range</b>     | <b>Description</b>                                                                                                                                                                                     |
|---------------------------------|------------------------|----------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PG25</b> : HEAD OUTPUT       | -                      | CONST          | CONST ÷ PULSE    | Operating mode of the head activation output.<br>CONST = the output remains active for the entire time the head is used,<br>PULSE = the output remains active for a set time (PG27).                   |
| <b>PG26</b> : LINE OUTPUT       | -                      | CONST          | CONST ÷ PULSE    | Operating mode of the conveyor belt activation output.<br>CONST = the output remains active for the entire time the conveyor belt is used,<br>PULSE = the output remains active for a set time (PG27). |
| <b>PG27</b> : PULSE TIME        | s                      | 0.000          | 0 ÷ 99.999       | Activation time of the head and conveyor belt outputs if they are enabled as impulsive.                                                                                                                |
| <b>PG28</b> : LINE DELAY        | s                      | 0.000          | 0 ÷ 99.999       | Conveyor belt activation delay time after the bridge has started.                                                                                                                                      |
| <b>PG30</b> : BRUSH EARLY       | mm                     | 0.0            | -9999.9 ÷ 9999.9 | Advance space for brush descent.                                                                                                                                                                       |
| <b>PG31</b> : BRUSH DELAY       | mm                     | 0.0            | -9999.9 ÷ 9999.9 | Delay space for brush ascent.                                                                                                                                                                          |
| <b>PG32</b> : REFERENCE VEL     | m / '                  | 0.0            | 0 ÷ 9999.9       | Reference speed for the use of the advances and delays of the brush.<br>If set to 0, no speed proportion is made but the set quotas are used.                                                          |
| <b>PG34</b> : RAMP TYPE         | -                      | 1              | 0 ÷ 1            | Type of ramp.<br>0 = linear ramp.<br>1 = S ramp                                                                                                                                                        |
| <b>PG35</b> : HEAD SEGMENTATION | -                      | 4              | 4 - 6            | Segmentation of the head machining area                                                                                                                                                                |
| <b>PG36</b> : MAX SET SPEED     | m/min                  | 50             | 0 ÷ 99.999       | Maximum belt settable speed                                                                                                                                                                            |
| <b>PG37</b> : MIN SET SPEED     | m/min                  | 0.0            | 0 ÷ 99.999       | Minimum belt settable speed                                                                                                                                                                            |

## 2.3 Setup Belt

### Belt axis resolution

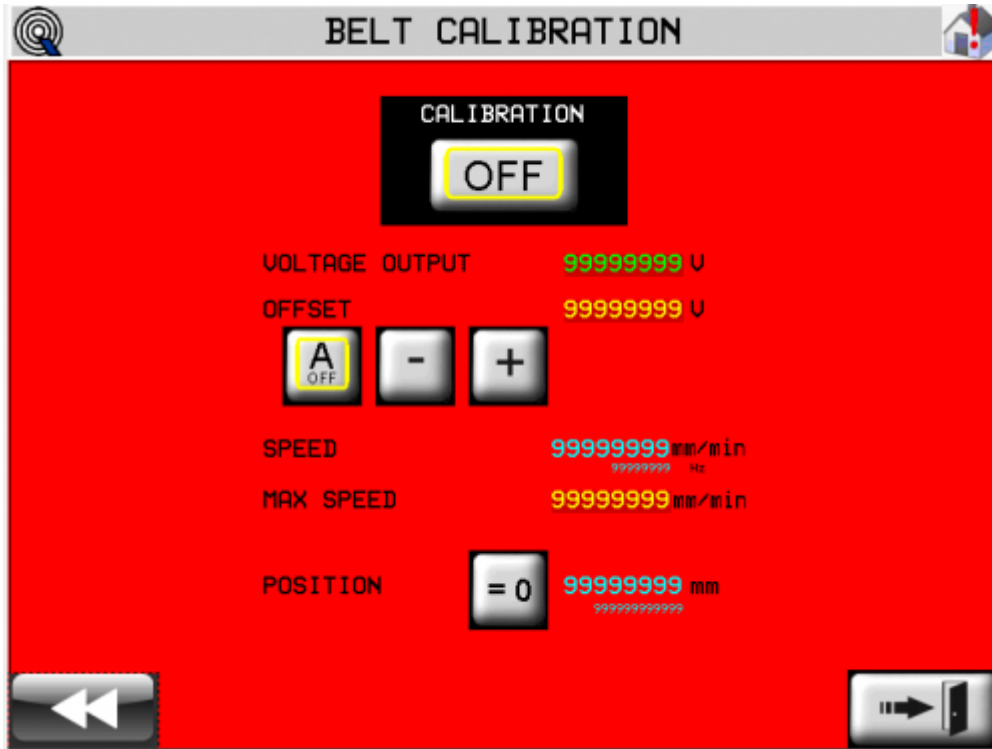


| Parameter name | Unit of measure | Default | Range       | Description                                                                                                                                                                                                                            |
|----------------|-----------------|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MEASURE        | mm              | 0.1     | 0 ÷ 99999.9 | Indicates the space, in units of measure, covered by the belt to obtain the encoder pulses set on the <i>pulse</i> parameter.                                                                                                          |
| PULSE          | -               | 1       | 0 ÷ 999999  | Indicates the pulses multiplied by 4 provided by the belt encoder to obtain the gap set in the measure parameter.<br>The ratio between measure and pulse is the resolution of the encoder and must have values between 1 and 0.000935. |



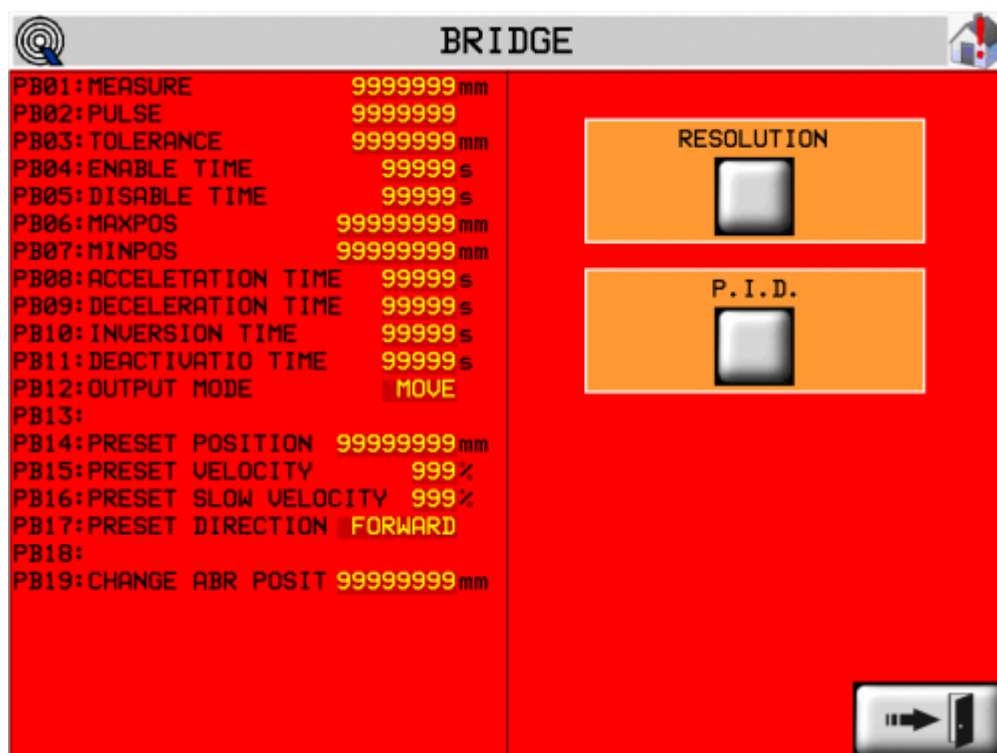
Press  to go to Belt setup page.

### Belt calibration



| Parameter name | Unit of measurement | Default | Range              | Description                                           |
|----------------|---------------------|---------|--------------------|-------------------------------------------------------|
| VOLTAGE OUTPUT | V                   | 0.0     | 0 ÷ 10.0           | Control voltage Inverter/Driver                       |
| OFFSET         | V                   | 0.0000  | -99.9999 ÷ 99.9999 | Voltage value to obtain from the analog output 0 Volt |
| SPEED          | mm/'                | -       | -                  | Speed of the belt                                     |
| MAX SPEED      | mm/'                | 5000    | 0 ÷ 9999999        | Speed of the belt with the 10 Volt command            |
| POSITION       | mm                  | -       | -                  | Belt position                                         |

## 2.4 Setup Bridge



**BRIDGE**

PB01: MEASURE 9999999 mm  
 PB02: PULSE 9999999  
 PB03: TOLERANCE 9999999 mm  
 PB04: ENABLE TIME 99999 s  
 PB05: DISABLE TIME 99999 s  
 PB06: MAXPOS 99999999 mm  
 PB07: MINPOS 99999999 mm  
 PB08: ACCELERATION TIME 99999 s  
 PB09: DECELERATION TIME 99999 s  
 PB10: INVERSION TIME 99999 s  
 PB11: DEACTIVATION TIME 99999 s  
 PB12: OUTPUT MODE MOVE  
 PB13:  
 PB14: PRESET POSITION 99999999 mm  
 PB15: PRESET VELOCITY 999 %  
 PB16: PRESET SLOW VELOCITY 999 %  
 PB17: PRESET DIRECTION FORWARD  
 PB18:  
 PB19: CHANGE ABR POSIT 99999999 mm

**RESOLUTION**

**P. I. D.**

Navigation buttons: Left arrow, Right arrow, Home icon.

| Parameter name                     | Unit of measurement | Default  | Range              | Description                                                                                                                                                                                                                                                                                                       |
|------------------------------------|---------------------|----------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PB01</b> : MEASURE              | mm                  | 0.1      | 0 ÷ 99999.9        | Indicates the space, in units of measure, covered by the bridge to obtain the encoder pulses set on the <i>pulse</i> parameter.                                                                                                                                                                                   |
| <b>PB02</b> : PULSE                | -                   | 1        | 0 ÷ 999999         | Indicates the pulses multiplied by 4 supplied by the encoder of the bridge to obtain the space set in the parameter <i>measure</i> .<br>The ratio between measure and pulse is the resolution of the encoder and must have values between 1 and 0.000935.                                                         |
| <b>PB03</b> : TOLERANCE            | mm                  | 5.0      | 0 ÷ 99999.9        | It defines a count range around the positioning quotas.<br>If the positioning ends within this range, it is correct.                                                                                                                                                                                              |
| <b>PB04</b> : ENABLE TIME          | s                   | 0.200    | 0.000 ÷ 9.999      | Bridge movement activation advance.                                                                                                                                                                                                                                                                               |
| <b>PB05</b> : DISABLE TIME         | s                   | 0.200    | 0.000 ÷ 9.999      | Bridge movement deactivation delay.                                                                                                                                                                                                                                                                               |
| <b>PB06</b> : MAXIMUM QUOTA        | mm                  | 99999.9  | -99999.9 ÷ 99999.9 | Maximum quota reachable from the bridge.                                                                                                                                                                                                                                                                          |
| <b>PB07</b> : MINIMUM QUOTA        | mm                  | -99999.9 | -99999.9 ÷ 99999.9 | Minimum quota reachable from the bridge.                                                                                                                                                                                                                                                                          |
| <b>PB08</b> : ACCELERATION TIME    | s                   | 1.00     | 0.00 ÷ 9.99        | It is the time required to go from 0 speed to maximum speed.                                                                                                                                                                                                                                                      |
| <b>PB09</b> : DECELERATION TIME    | s                   | 1.00     | 0.00 ÷ 9.99        | It is the time required to go from maximum speed to 0 speed.                                                                                                                                                                                                                                                      |
| <b>PB10</b> : INVERSION TIME       | s                   | 0.50     | 0.00 ÷ 9.99        | It is used to avoid mechanical stress due to rapid reversals of the movement direction                                                                                                                                                                                                                            |
| <b>PB11</b> : DEACTIVATION TIME    | s                   | 0        | 0 ÷ 99999          | Rest time of the bridge after which the enabling output of the axis is deactivated.                                                                                                                                                                                                                               |
| <b>PB12</b> : OUTPUT MODE          | -                   | STILL    | MOVE, STILL        | Axis enable output operating mode.<br><b>MOVE</b> : The output activates before the movement of the axis and deactivates when it has finished, according to the times set on parameters PB04 and PB05.<br><b>STILL</b> : The output activates before movement and deactivates when the state passes to emergency. |
| <b>PB14</b> : PRESET POSITION      | mm                  | 0.0      | -99999.9 ÷ 99999.9 | Quota loaded on the count when the axis activates and then releases the Homing sensor.                                                                                                                                                                                                                            |
| <b>PB15</b> : PRESET VELOCITY      | %                   | 5        | 1 ÷ 100            | It is the homing sensor search speed.                                                                                                                                                                                                                                                                             |
| <b>PB16</b> : PRESET SLOW VELOCITY | %                   | 2        | 1 ÷ 100            | It is the speed for the release of the homing sensor.                                                                                                                                                                                                                                                             |
| <b>PB17</b> : PRESET DIRECTION     | -                   | BACKWARD | FORWARD, BACKWARD  | Direction to search for the homing sensor.                                                                                                                                                                                                                                                                        |
| <b>PB19</b> : CHANGE ABR POSITION  | mm                  | 0.0      | -99999.9 ÷ 99999.9 | Bridge positioning value when it is requested to interrupt the cycle to change the abrasive.                                                                                                                                                                                                                      |

## 2.4.1 Calibrations

The calibration pages are divided into:

|                                                                                   |                                                                                                           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  |                                                                                                           |
|  | <p>axis calibration procedure for adjusting the feedback and for setting the offset and maximum speed</p> |

### Bridge axis resolution



| Parameter name | Unit of measure | Default | Range       | Description                                                                                                                                                                                                                              |
|----------------|-----------------|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MEASURE        | mm              | 0.1     | 0 ÷ 99999.9 | Indicates the space, in units of measure, covered by the bridge to obtain the encoder pulses set on the <i>pulse</i> parameter.                                                                                                          |
| PULSE          | -               | 1       | 0 ÷ 999999  | Indicates the pulses multiplied by 4 provided by the bridge encoder to obtain the gap set in the measure parameter.<br>The ratio between measure and pulse is the resolution of the encoder and must have values between 1 and 0.000935. |

## Bridge calibration

BRIDGE TUNING

**CALIBRATION**  

OFF

VOLTAGE OUTPUT
99999999 V

OFFSET
99999999 V

A  
OFF

-

+

VELOCITY
99999999 mm/s  
99999999 Hz

MAX VELOCITY
99999999 mm/s

POSITION

= 0

99999999 mm  
999999999999

**POSITIONER**  

STOP

DELTA
99999999 mm

SET VELOCITY
99999999 mm/s

ACC. TIME
99999999 s

DEC. TIME
99999999 s

FEEDFORWARD
99999999 %

PROP. GAIN
99999999

INTEGRAL TIME
99999999 s

MAX FOLL. ERROR
99999999 mm

FOLLOW ERROR

999999999999 mm

FEEDFORWARD REGISTRY 999999999999  
PROPORTIONAL REGISTRY 999999999999  
INTEGRAL REGISTRY 999999999999

➡

| Parameter name   | Unit of measurement | Default | Range              | Description                                                                                                                                                                                            |
|------------------|---------------------|---------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VOLTAGE OUTPUT   | V                   | 0.0     | -10.0 ÷ 10.0       | Control voltage Inverter/Driver                                                                                                                                                                        |
| OFFSET           | V                   | 0.0000  | -99.9999 ÷ 99.9999 | Voltage value to obtain from the analog output 0 Volt                                                                                                                                                  |
| VELOCITY         | mm/'                | -       | -                  | Speed of the bridge                                                                                                                                                                                    |
| MAX VELOCITY     | mm/'                | 5000    | 0 ÷ 9999999        | Speed of the bridge with the 10 Volt command                                                                                                                                                           |
| POSITION         | mm                  | -       | -                  | Bridge position                                                                                                                                                                                        |
| DELTA            | mm                  | 0.0     | -                  | Bridge swing space                                                                                                                                                                                     |
| SET VELOCITY     | mm/'                | 0       | -                  | Speed of the bridge                                                                                                                                                                                    |
| ACC TIME         | s                   | 0.00    | -                  | Acceleration time                                                                                                                                                                                      |
| DEC TIME         | s                   | 0.00    | -                  | Deceleration time                                                                                                                                                                                      |
| FEEDFORWARD      | %                   | 100.0   | 0.0 ÷ 200.0        | It is the percentage coefficient which, multiplied by the speed, generates the feed-forward part of the regulation output.                                                                             |
| PROP. GAINS      | -                   | 0.000   | 0.000 ÷ 9.999      | It is the coefficient which, multiplied by the following error, generates the proportional part of the regulation output.                                                                              |
| INTEGRAL TIME    | s                   | 0.000   | 0.000 ÷ 9.999      | It is the time that produces the integration coefficient of the following error.<br>The integration of this error multiplied by this coefficient generates the integral part of the regulation output. |
| MAX FOLLOW ERROR | mm                  | 99.9    | 0.0 ÷ 99999.9      | Defines the maximum acceptable deviation between the theoretical position and the real position of the axis, beyond which an alarm is generated                                                        |
| FOLLOW ERROR     | mm                  | -       | -                  | It is the instantaneous value of the following error.                                                                                                                                                  |

## 2.5 Setup Tools


TOOLS


|    | DIAMETER         | ORTHOGONAL OFFSET | TIME TO PARTIAL LIFT |
|----|------------------|-------------------|----------------------|
| 1  | PT01: 9999999 mm | PT23: 9999999 mm  | PT45: 9999999 s      |
| 2  | PT02: 9999999 mm | PT24: 9999999 mm  | PT46: 9999999 s      |
| 3  | PT03: 9999999 mm | PT25: 9999999 mm  | PT47: 9999999 s      |
| 4  | PT04: 9999999 mm | PT26: 9999999 mm  | PT48: 9999999 s      |
| 5  | PT05: 9999999 mm | PT27: 9999999 mm  | PT49: 9999999 s      |
| 6  | PT06: 9999999 mm | PT28: 9999999 mm  | PT50: 9999999 s      |
| 7  | PT07: 9999999 mm | PT29: 9999999 mm  | PT51: 9999999 s      |
| 8  | PT08: 9999999 mm | PT30: 9999999 mm  | PT52: 9999999 s      |
| 9  | PT09: 9999999 mm | PT31: 9999999 mm  | PT53: 9999999 s      |
| 10 | PT10: 9999999 mm | PT32: 9999999 mm  | PT54: 9999999 s      |
| 11 | PT11: 9999999 mm | PT33: 9999999 mm  | PT55: 9999999 s      |
| 12 | PT12: 9999999 mm | PT34: 9999999 mm  | PT56: 9999999 s      |
| 13 | PT13: 9999999 mm | PT35: 9999999 mm  | PT57: 9999999 s      |
| 14 | PT14: 9999999 mm | PT36: 9999999 mm  | PT58: 9999999 s      |
| 15 | PT15: 9999999 mm | PT37: 9999999 mm  | PT59: 9999999 s      |
| 16 | PT16: 9999999 mm | PT38: 9999999 mm  | PT60: 9999999 s      |
| 17 | PT17: 9999999 mm | PT39: 9999999 mm  | PT61: 9999999 s      |
| 18 | PT18: 9999999 mm | PT40: 9999999 mm  | PT62: 9999999 s      |
| 19 | PT19: 9999999 mm | PT41: 9999999 mm  | PT63: 9999999 s      |
| 20 | PT20: 9999999 mm | PT42: 9999999 mm  | PT64: 9999999 s      |
| 21 | PT21: 9999999 mm | PT43: 9999999 mm  | PT65: 9999999 s      |
| 22 | PT22: 9999999 mm | PT44: 9999999 mm  | PT66: 9999999 s      |

PT68: LIFT DELAY
9999999 s


| Parameter name                     | Unit of measurement | Default | Range       | Description                                                                |
|------------------------------------|---------------------|---------|-------------|----------------------------------------------------------------------------|
| PT01 / PT22 : DIAMETER             | mm                  | 0.0     | 0 ÷ 99999.9 | Head diameter.                                                             |
| PT23 / PT44 : ORTHOGONAL OFFSET    | mm                  | 0.0     | 0 ÷ 99999.9 | It is the distance between the working head and the midline of the bridge. |
| PT45 / PT66 : TIME TO PARTIAL LIFT | s                   | 0.500   | 0 ÷ 999.999 | It is the activation time of the output for the partial ascent.            |
| PT68 : LIFT DELAY                  | s                   | 0.000   | 0 ÷ 999.999 | Delay for the total ascent of the heads.                                   |

## 2.6 Setup Sensors

SENSORS

|    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|
| 01 | 09 | 17 | 25 | 33 | 41 | 49 | 57 |
| 02 | 10 | 18 | 26 | 34 | 42 | 50 | 58 |
| 03 | 11 | 19 | 27 | 35 | 43 | 51 | 59 |
| 04 | 12 | 20 | 28 | 36 | 44 | 52 | 60 |
| 05 | 13 | 21 | 29 | 37 | 45 | 53 | 61 |
| 06 | 14 | 22 | 30 | 38 | 46 | 54 | 62 |
| 07 | 15 | 23 | 31 | 39 | 47 | 55 | 63 |
| 08 | 16 | 24 | 32 | 40 | 48 | 56 | 64 |

PS01: BAR SENSORS NUMBER 99999

PS02: TYPE SENSORS NO

| Parameter name               | Unit of measure | Default | Range   | Description                                                                               |
|------------------------------|-----------------|---------|---------|-------------------------------------------------------------------------------------------|
| <b>PS01</b> : SENSORS NUMBER | -               | 32      | 8 ÷ 64  | Number of sensors present on the acquisition bar.                                         |
| <b>PS02</b> : SENSORS TYPE   | -               | NO      | NO ÷ NC | Slab Acquisition Input Logic.<br><b>NO</b> = Normally Open<br><b>NC</b> = Normally Closed |

### 3. Support

#### Request for assistance

In order to be able to provide you a quick service, at the minimum cost, we need your help.

|                                                                                   |                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                                                                                                                                     |
| <p>Follow all the instructions provided in the manual <a href="#">MIMAT</a></p>   | <p>If the problem persists, fill in the "Assistance request form" on the page <a href="#">Contacts</a> of the site <a href="http://www.qem.it">www.qem.it</a>.<br/>Our technicians will obtain essential elements for understanding your problem.</p> |

#### Repair

In order to provide you with an efficient service, please read and follow the instructions here [reported](#)

#### Shipping

It is recommended to pack the instrument with materials that can absorb any falls.

|                                                                                     |                                                                                                                                                                                                  |                                                                                                                                                               |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                                                                                |                                                                           |
| <p>Use the original packaging: it must protect the instrument during transport.</p> | <p>Attach:<br/>1. A description of the anomaly;<br/>2. Part of the wiring diagram where the instrument is inserted<br/>3. Programming the instrument ( set up, work quotas, parameters ...).</p> | <p>A thorough description of the problem will allow us to quickly identify and resolve your problem. Careful packaging will avoid further inconveniences.</p> |

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