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MDI_P1R44F-009 : Installer Manual

1. Informations

1.1 Release

			
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01	New manual		30/11/2022

Specifications

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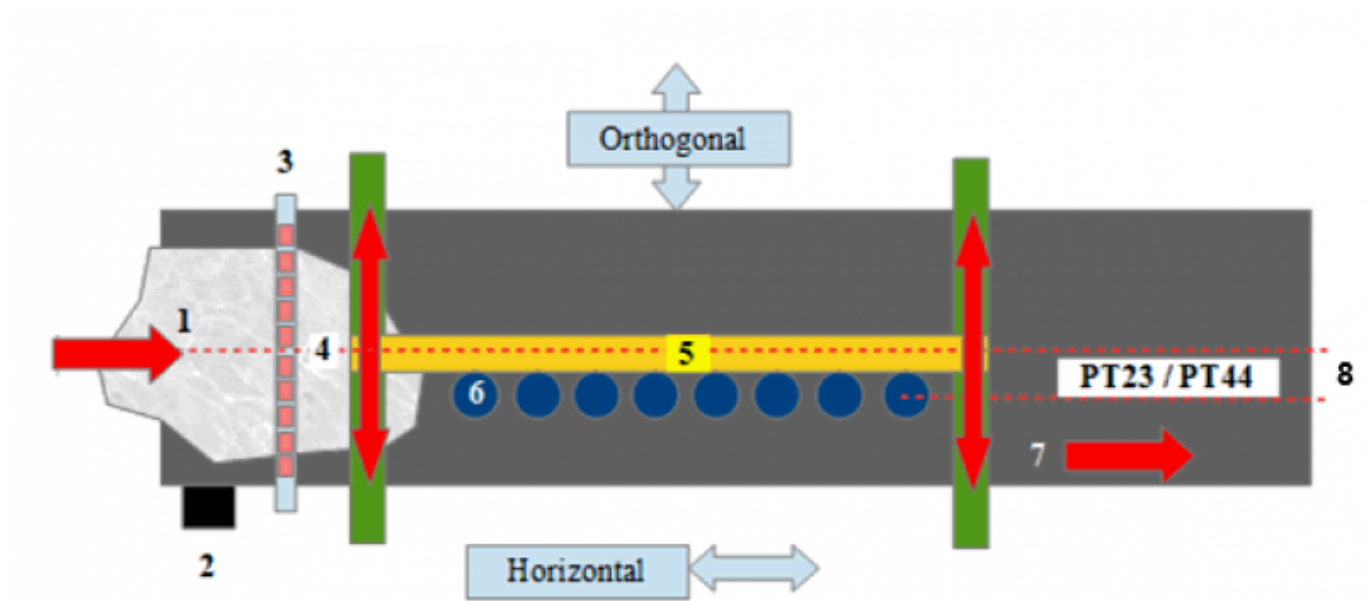
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2. Setup

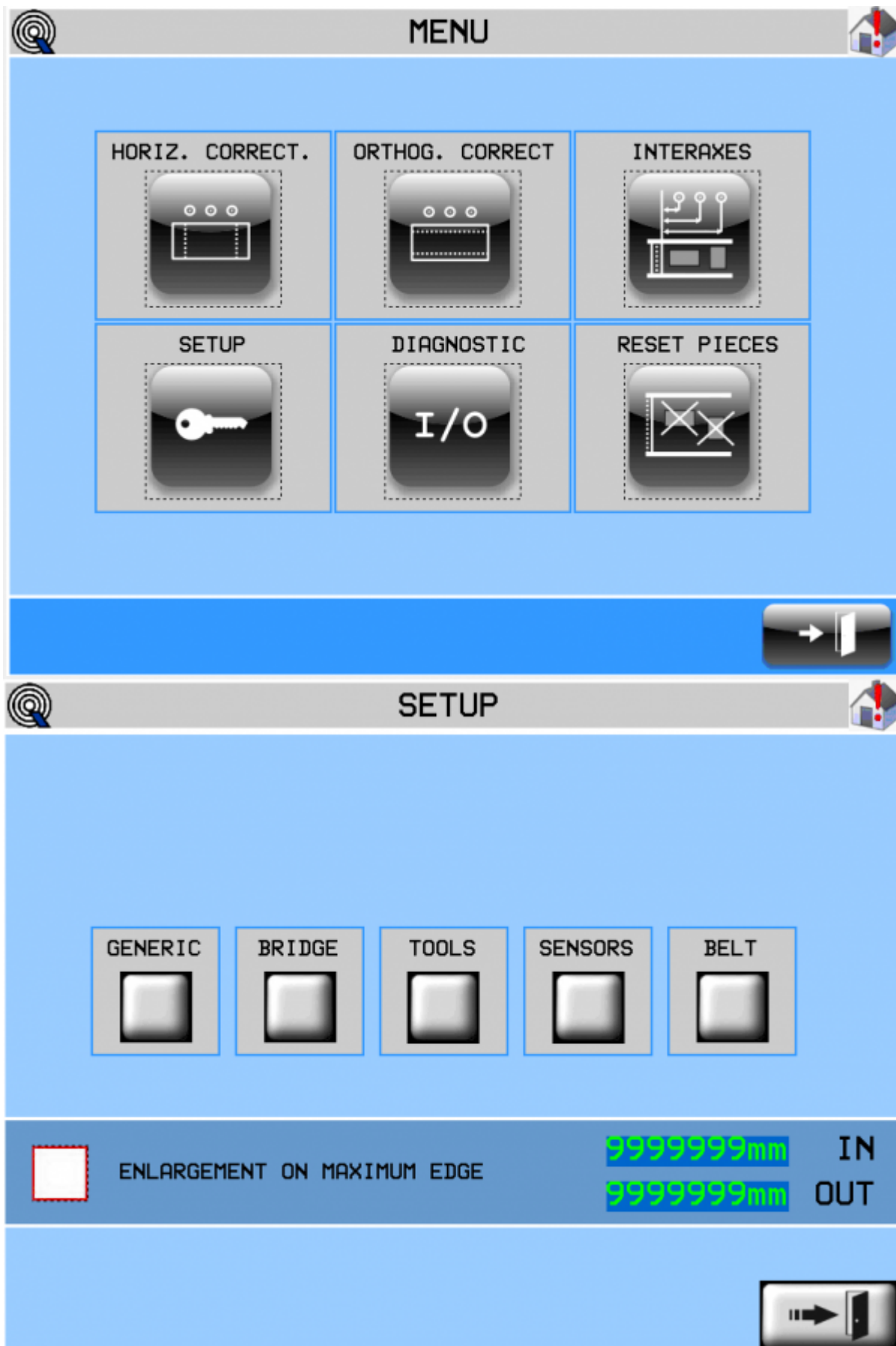
Machine view from above:



n:	Description:
1	Raw slab
2	Tape 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

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


2.2 Generic Setup



GENERIC



PG01: LANGUAGE	ENG	PG16: TIME PRE-START	999999 s
PG02:		PG17: LUBRIF. TIME ON	999999 s
PG03: DECIMAL POINT	99999	PG18: LUBRIF. TIME OFF	999999 s
PG04:		PG19: ENGINES TIME ON	999999 s
PG05: ORTHOGONAL STEP	9999999 mm	PG20: ENGINES TIME OFF	999999 s
PG06: HORIZONTAL STEP	9999999 mm	PG21: TIME ENGINE OFF	
PG07:		ON EXIT BELT	999999 s
PG10: SLAB IN	LF	PG25: HEADS OUTPUT	ON
PG11: AUTOAPPR. PONTE	ON	PG26: LINE OUTPUT	ON
PG12:		PG27: PULSE TIME	999999 s
PG13: OPERATOR SIDE	OFF		
PG14:		PG29:	
PG15: SELECTOR AUTO/MAN	ON	PG30: BRUSH EARLY	9999999 mm
GENERIC BELT SETUP PG08: LINE MEASURE 9999999 mm PG09: LINE PULSE 9999999 PG28: LINE DELAY 9999999 s PG36: MAX SET SPEED 99999 m/min PG37: MIN SET SPEED 99999 m/min		PG31: BRUSH DELAY	9999999 mm
		PG32: REFERENCE VEL	9999999 m/s
		PG33:	
		PG34: RAMP TYPE	LINEAR
		PG35: HEAD SEGMENTATION	4

99 : 99 : 99
99 / 99 / 9999


Parameter name	Unit of measure	Default	Range	Description
PG01 : LANGUAGE	-	ITA	1 ÷ 2	1: ITALIAN 2: ENGLISH
PG03 : DECIMAL POINT	-	1	0 ÷ 3	It is the position of the decimal point in the quotas display.
PG05 : ORTHOGONAL STEP	mm	50.0	-	Distance between the limit switches of the sensor bar. It acquires the shape of the slab.
PG06 : HORIZONTAL STEP	mm	50.0	-	Space set by encoder. It acquires the shape of the slab.
PG08 : 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.
PG09 : 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. <i>The ratio between measure and pulse is the resolution of the encoder and must have values between 1 and 0.000935.</i>
PG11 : 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.
PG13 : OPERATOR SIDE	-	FWD	0 ÷ 1	Indicates at the cycle stop event where the bridge must be positioned. FWD = on the maximum quota, BWD = on the minimum quota.
PG15 : AUTO / MAN SELECTOR	-	ON	0 ÷ 1	Enable manual / automatic selector.
PG16 : 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.
PG17 : LUBRIF. TIME ON	s	0.0	0 ÷ 9999.9	Lubrication output time ON.
PG18 : LUBRIF. TIME OFF	s	0.0	0 ÷ 9999.9	Lubrication output time OFF.
PG19 : ENGINES TIME ON	s	1,000	0 ÷ 99.999	Pause time between the activation of one motor and the next (in sequential activation).
PG20 : ENGINES TIME OFF	s	0.200	0 ÷ 99.999	Pause time between the deactivation of one motor and the next (in sequential deactivation).
PG21 : 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.

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

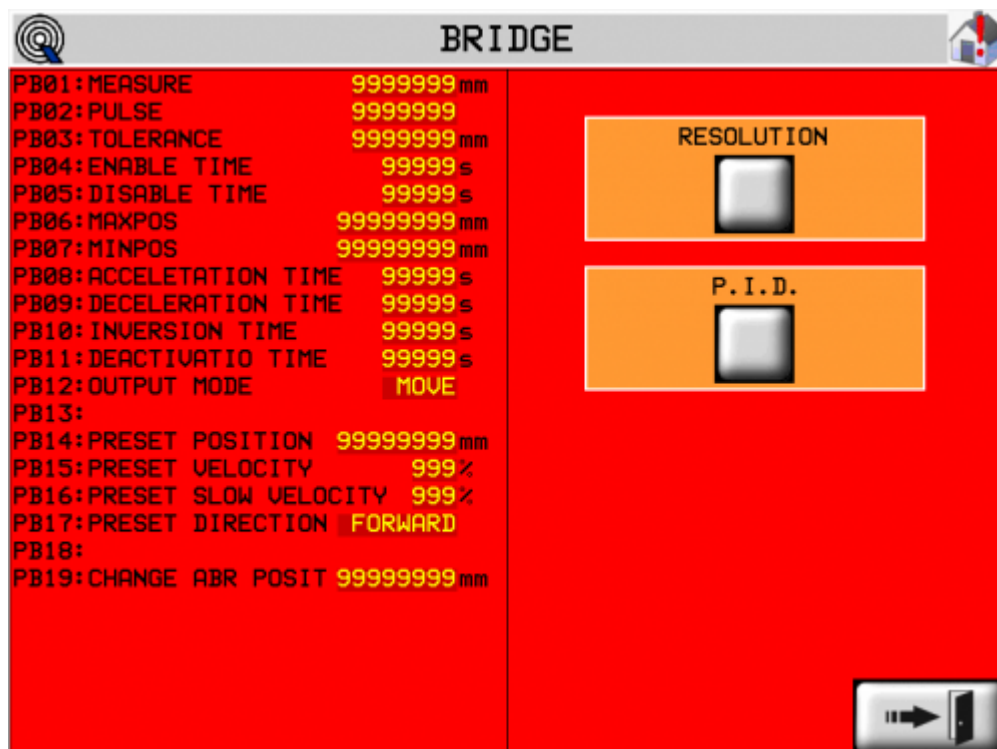
2.3 Setup Belt

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 tape 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 tape encoder to obtain the gap set in the measure parameter. The ratio between measure and pulse is the resolution of the encoder and must have values between 1 and 0.000935.


2.4 Setup Bridge






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 tape 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 tape encoder to obtain the gap set in the measure parameter. 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

MAX VELOCITY

99999999 mm/s

POSITION

= 0

99999999 mm

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. 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

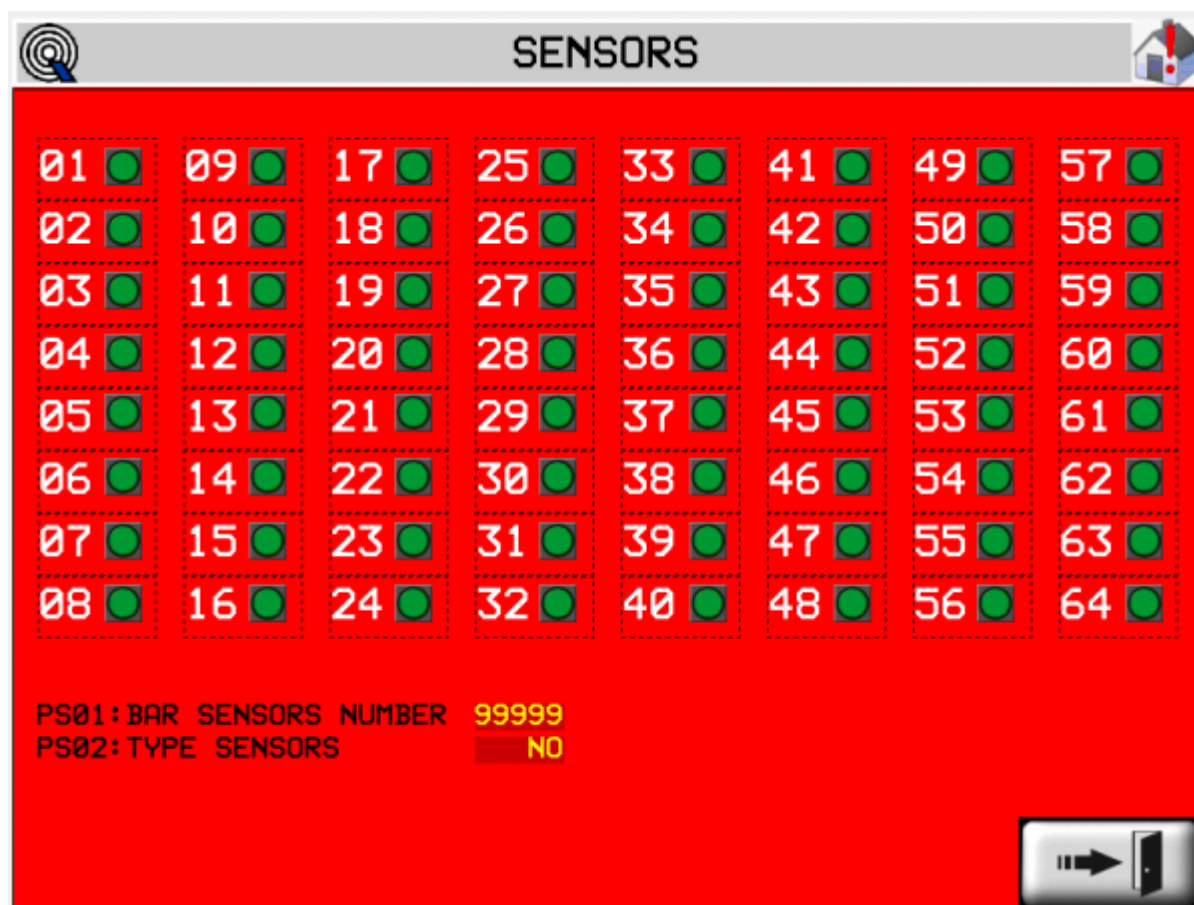

TOOLS


	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





Parameter name	Unit of measure	Default	Range	Description
PS01 : SENSORS NUMBER	-	32	8 ÷ 64	Number of sensors present on the acquisition bar.
PS02 : SENSORS TYPE	-	NO	NO ÷ NC	Slab Acquisition Input Logic. NO = Normally Open NC = 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 MIMAT</p>	<p>If the problem persists, fill in the “Assistance request form” on the page Contacts of the site www.qem.it. 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: 1. A description of the anomaly; 2. Part of the wiring diagram where the instrument is inserted 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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