P1DWB

Programming and User Manual

Manual code No.:
D296WB00GC

MARPOSS

MANUFACTURER	MARPOSS S.p.A.
ADDRESS	Via Saliceto, 13 - Bentivoglio (BO) Italy - www.marposs.com
TYPE OF EQUIPMENT - MODEL	P1DWB Firmware V 2.0
FUNCTION	Measurement system for grinding machines
MANUAL CODE	D296WB00GC
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ORIGINAL LANGUAGE	Italian

MARPOSS S.p.A. is not obliged to notify customers of any subsequent changes to the product.
The descriptions in this manual in no way authorise tampering by unauthorised personnel.
The guarantee covering the equipment shall be void if any evidence of tampering is found.

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This product conforms to the following directives:
- 2014/30/EU EMC directive
- 2011/65/EU RoHS & 2015/863/EU RoHS III

This product conforms to the following UK regulations:
- SI 2016/1091 The Electromagnetic Compatibility Regulations 2016
- SI 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The applicable standards are:
- EN 61326-1 (EMC)
- EN 61010 - 1 (SAFETY)
- EN IEC 63000: RoHS

About the directive "**ROHS**" regulating the presence of certain hazardous substances in electrical and electronic equipment: http://www.marposs.com/compliance_detail.php/eng/rohs

For information about possible use in Marposs products of materials coming from conflict areas, refer to:
http://www.marposs.com/compliance_detail.php/eng/conflict_minerals

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INFORMATION FOR USERS

Pursuant to the Standard IEC 62202 (corresponding to the Italian Standard CEI EN 62262-classification CEI 70-4) “Degree of protection against mechanical impacts”.
The equipment has an energy protection level equivalent to 1 J, corresponding to a rating of IK06 (ref. IEC 62262). The energy level was verified in accordance with the test defined in the Standard EN 61010-1: 2010 paragraph 8.2.2 (impact test). If the glass is broken, use the appropriate safety gloves when handling the object and contact customer service in order to replace the equipmen

INFORMATION FOR USERS

concerning the terms of the National Legislation enforcing the Directive UK SI 2013/3113 and 2012/19/EU on waste electrical and electronic equipment (WEEE).

The crossed out wheelie bin symbol that appears on the product or its packaging indicates that the product must be disposed of separately from other waste materials at the end of its working life.
The manufacture shall be responsible for organizing and handling separate collection of the equipment described in this manual at the end of its working life. Users who wish to dispose of the equipment must contact the manufacture and follow the procedures implemented by the latter for the separate collection of the equipment at the end of its working life.
Sorting the equipment to be disposed of into its component materials before recycling, treatment and environmentally compatible disposal helps to prevent potentially harmful effects on health and the environment and favours re-use and/or recycling of these materials.
Illegal disposal of the product by the user is punishable by the application of fines or other penalties as defined by the applicable regulation.

CONTENTS

1. GENERAL DESCRIPTION OF THE DEVICE

The P1DWB operator panel includes an LCD touchscreen display (resolution 272 x 480 pixels - dimensions 4.3") that can be used to program and view the measurements.

HOME MENU DESCRIPTION

Alarm condition. This icon indicates whether there are any active alarms or warnings.

This icon indicates the operating mode and the number of the set that is currently in use.

Press this soft key to return to the Home Page

Press this soft key to return to the previous page.

This bar displays the page title.

This bar displays the name of the current user.

Press this soft key to access the Views Menu

Press this soft key to access the Prog Menu

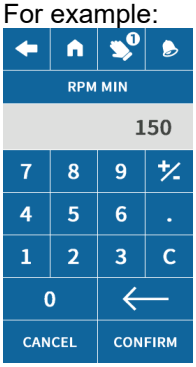
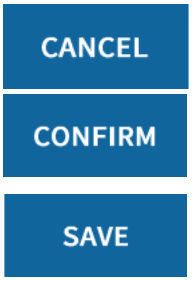
Press this soft key to access the Settings Menu

P1DWB Contactless (CG) and (Retraction) version programming specifications

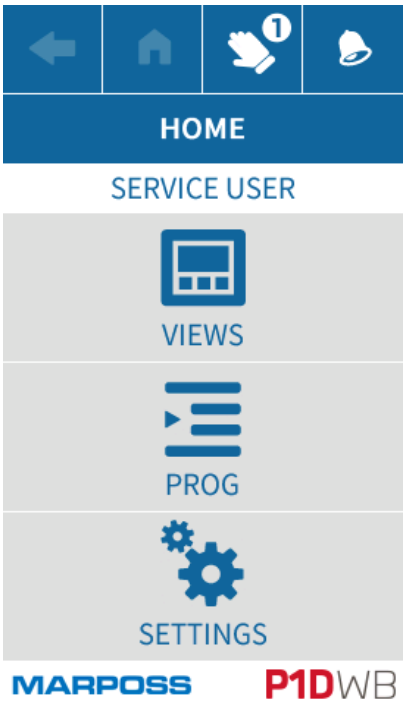
PROGRAMMING AND DISPLAY DATA	P1DWB_R	P1DWB_CG
Password	3 Levels: 1.End User 2.OEM 3.Service	3 Levels: 1.End User 2.OEM 3.Service
Sets	1 single cycle	8 cycles
Unit of Measurement	Microns; mm/s	Microns; mm/s
Language	Italian - English - French - German - Spanish - Russian - Simplified Chinese - Japanese	Italian - English - French - German - Spanish - Russian - Simplified Chinese - Japanese
Software Release	1.8	1.8
Types of balancing heads	FT contacts ST contacts	FT c/less sH ST c/less sH FT c/less sH + Gap ST c/less sH + Gap
Home Position	NO	YES (static cycle)
TX/RX group type	Not applicable	E78/E82 MiniCT
Voltage regulation	NO	Yes, with different values: E82/E78 between 12.2 V and 15.0 V with motors stationary. MINICT optimal value between 23 V and 26 V.
Pulses per rotation	1	2 for E78/E82 1 for MiniCT
RPM sensor	yes	yes
RPM limits	Min. RPM = 60 Max. RPM = 99999 manual value enabled in the event of faulty sensor	Min. RPM = 60 Max. RPM = 99999 manual value enabled in the event of faulty sensor
WB motor types	Escap / Faulhaber1724 Faulhaber1016 / Faulhaber1516 / Faulhaber 1024	Escap / Faulhaber1724 Faulhaber1016 / Faulhaber1516 / Faulhaber 1024
Motor tests	yes	yes
Motor speeds	 Low  Medium Low  Medium High  High  Automatic	 Low  Medium Low  Medium High  High  Automatic

1.1 Panel general icons

The menu pages include the following icons:

	If a page contains more data than it is possible to display on a single page, it will also include arrow icons that can be used scroll up and down in order view all the available data.
	This icon, which appears at the end of a parameter string, indicates that a multiple choice window will be opened.
	This icon, which appears at the end of a parameter string, indicates that an additional programming page will be opened.
	This icon, which appears at the end of a parameter string, indicates whether it is enabled or disabled.
	This icon, which appears at the end of a parameter string, indicates that it is possible to open a virtual numerical keypad in order to modify the value. For example: 
	These check boxes may be used to select a parameter from two or more different data items.
	After modifying data, the page may also display some of the following soft keys, which are used to save/confirm the modifications, or exit without saving.

1.2 Alarms and Warnings Menu



This icon indicates whether there are any active alarms or warnings.


Blue = no alarms

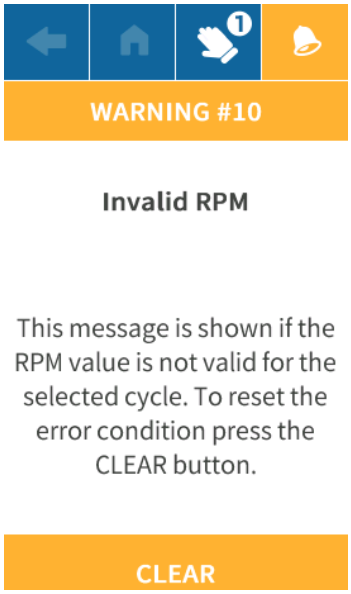

Yellow = Warning


Red = Alarm

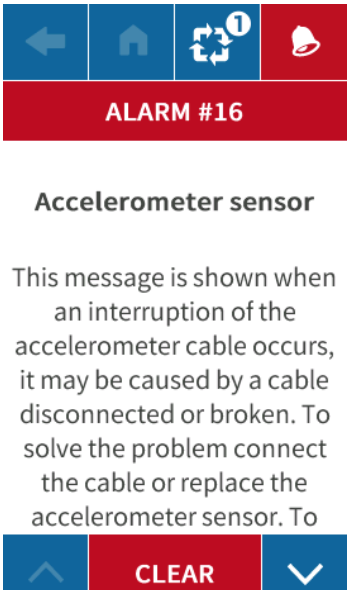
Consult the Alarms and Warnings chapter for a complete list of warnings and alarms.

If any warnings and/or alarms are active, press the soft key to view them and carry out the clearing procedure.

SAMPLE WARNING:



SAMPLE ALARM:

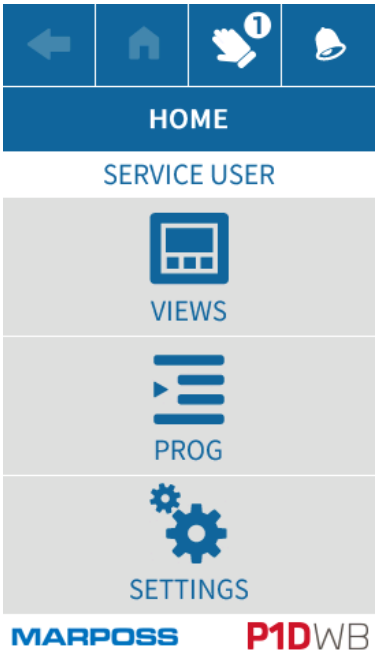


The page indicates the alarm or warning number, the title and message indicating the reason for the alarm, and how to correct it.


If necessary, use the arrows to scroll through the entire message.

Use the CLEAR button to reset the alarm or warning.

1.3 Operating mode selection page



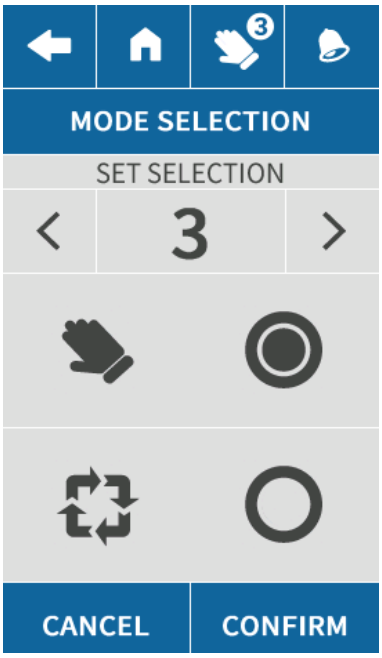
This icon indicates the operating mode and the number of the set that is currently in use.


Manual operating mode


Automatic operating mode

The number at the top indicates the currently selected set number.

Press the operating mode soft key to access the set selection page.



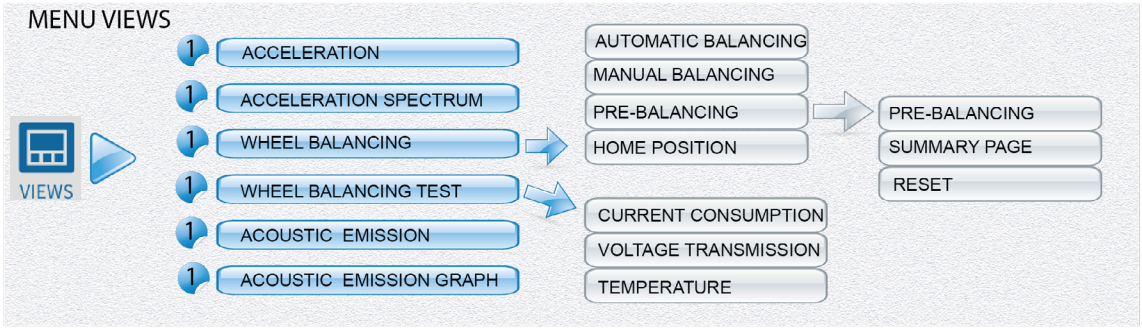
In this section it is possible to select the set by using the arrows to scroll back and forth through the available options.

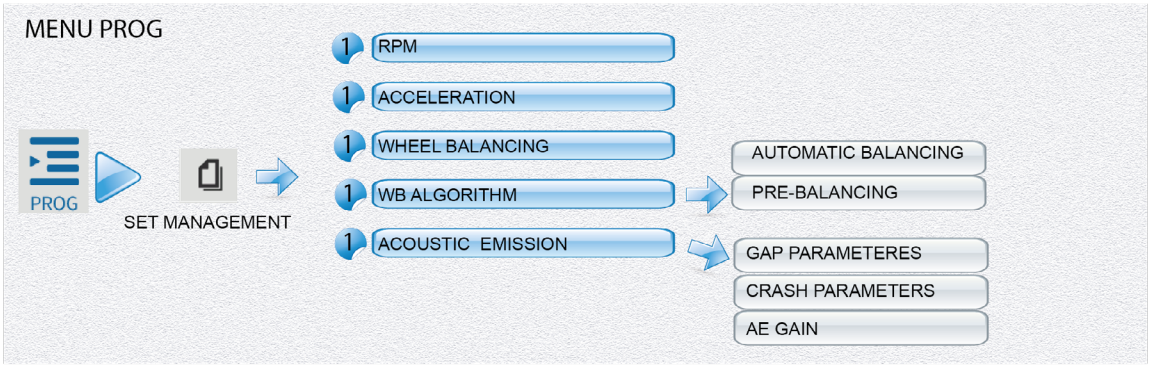
CONFIRM	Press CONFIRM to save the modifications and leave the page
CANCEL	Press CANCEL to leave the page without saving the modifications.

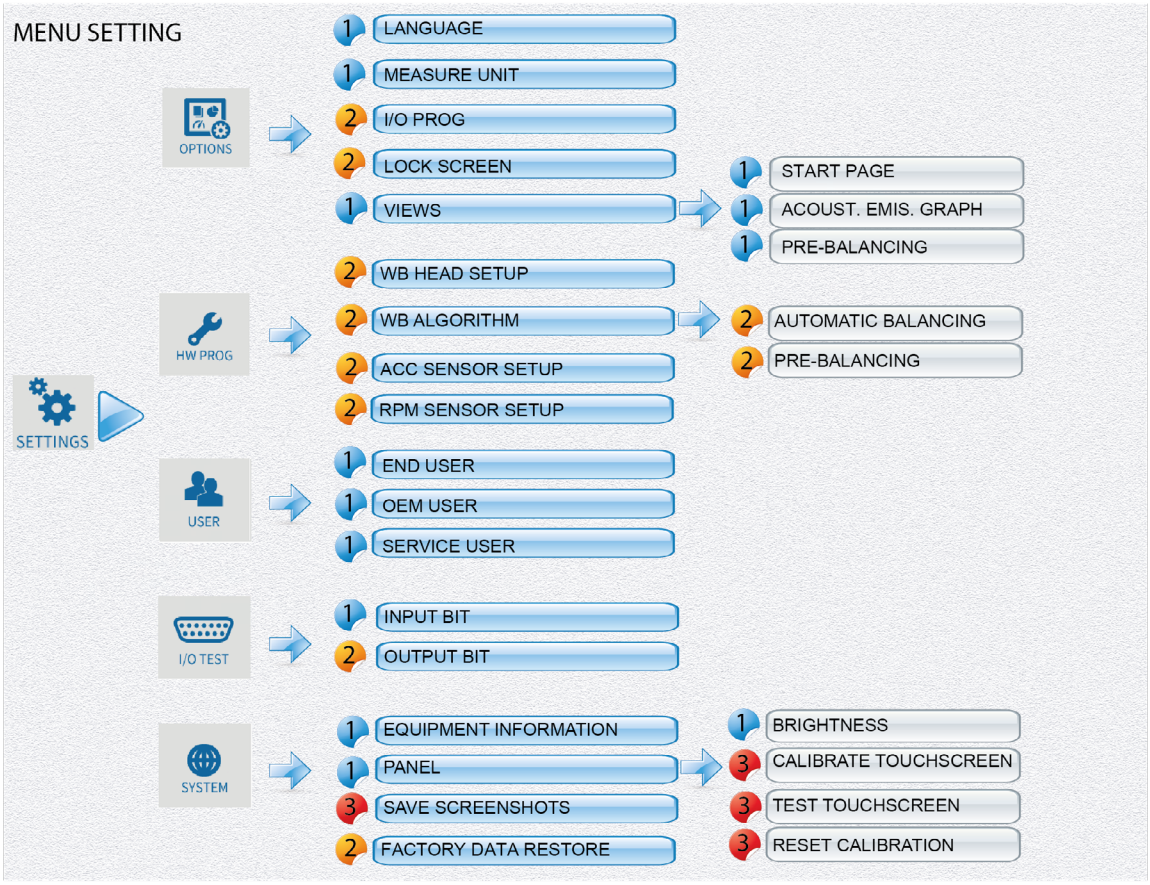
1.4 Panel menu flow chart

P1DWB Contactless version

1 LEVEL 1: END USER
2 LEVEL 2: OEM
3 LEVEL 1: SERVICE

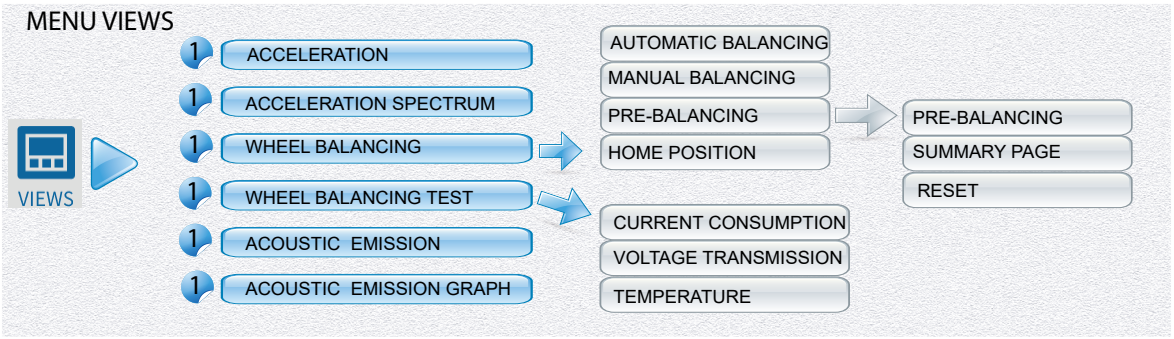


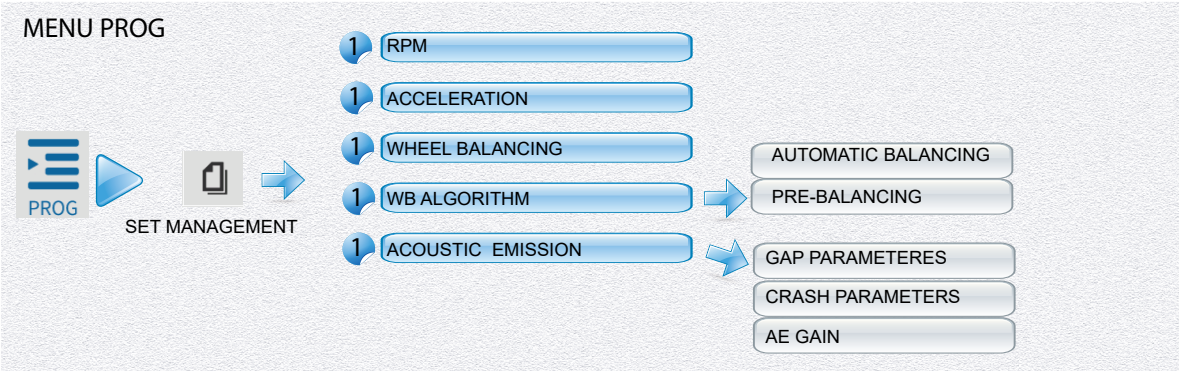


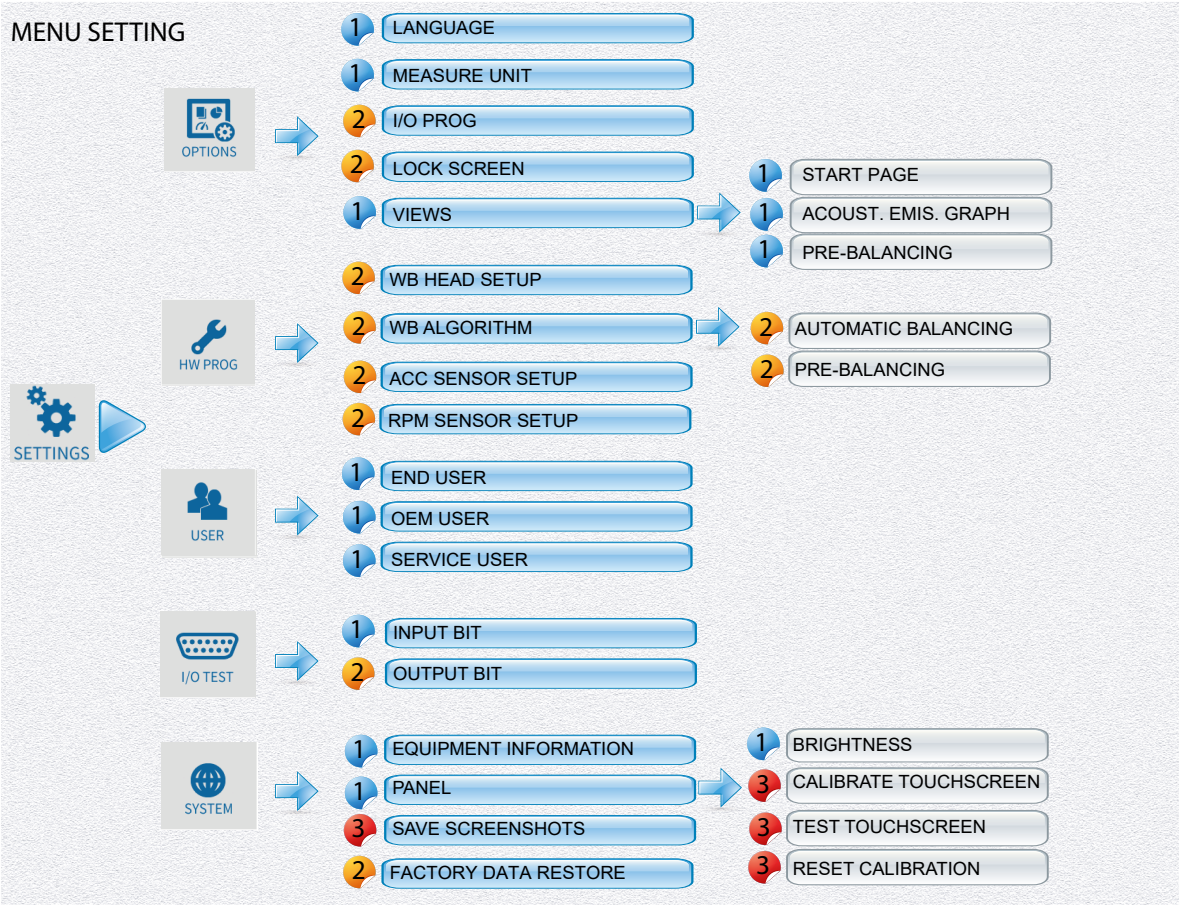


P1DWB Retraction version

1 LEVEL 1: END USER
2 LEVEL 2: OEM
3 LEVEL 1: SERVICE







2. SETTINGS MENU

The SETTINGS Menu includes all the sub-menus used to programme and set-up the device

OPTIONS MENU

- LANGUAGE
- MEASURE UNIT
- I/O PROG
- LOCK SCREEN
- VIEWS
- ETHERNET ADAPTER

VIEWS → START PAGE; ACOUSTIC EMISSION GRAPH (*); PRE-BALANCING (*)

HARDWARE PROGRAMMING MENU

- WB HEAD SET-UP
- WB ALGORITHM
- ACC SENSOR SET-UP
- RPM SENSOR SET-UP

WB ALGORITHM → AUTOMATIC BALANCING; PRE-BALANCING (*)

USER MENU

- END USER
- OEM
- SERVICE USER

I/O TEST MENU

- INPUT BIT
- OUTPUT BIT

SYSTEM MENU

- EQUIPMENT INFORMATION
- PANEL
- SAVE SCREEN SHOT
- FACTORY DATA RESTORE

PANEL → BRIGHTNESS; CALIBRATE TOUCH SCREEN; TEST TOUCH SCREEN; RESET CALIBRATION

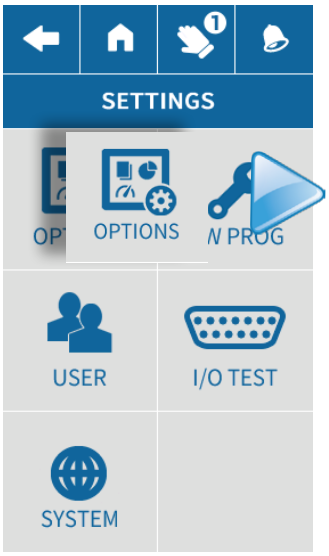
*N.B.
This function is active for the Contactless version only

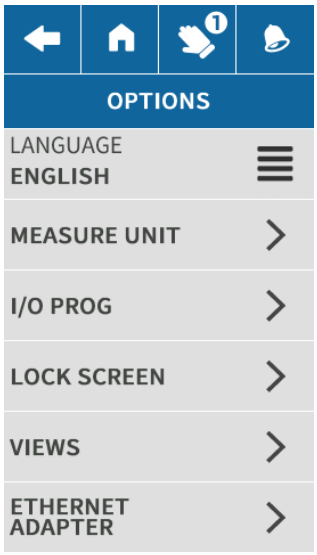
2.1 Options Menu

Programming in manual mode only

View only in automatic mode

Access level 1 (End User)





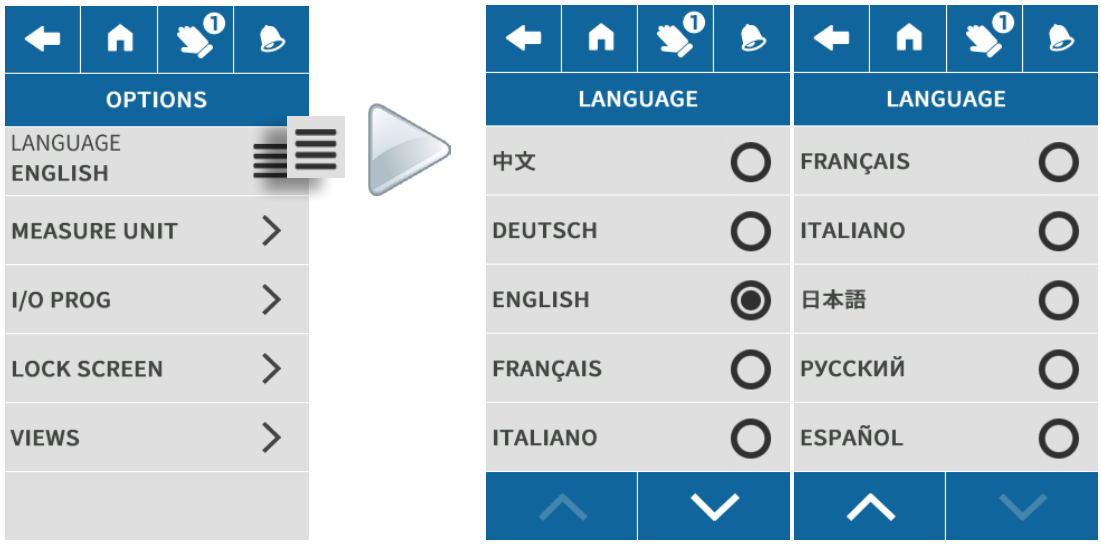
The options menu can be used for the following settings:

- LANGUAGE
- UNIT OF MEASUREMENT
- I/O PROGRAMMING
- LOCK SCREEN
- VIEWS
- ETHERNET ADAPTER

2.1.1 Select language

Access level 1 (End User)

Use this page to select the panel display language from the available options.

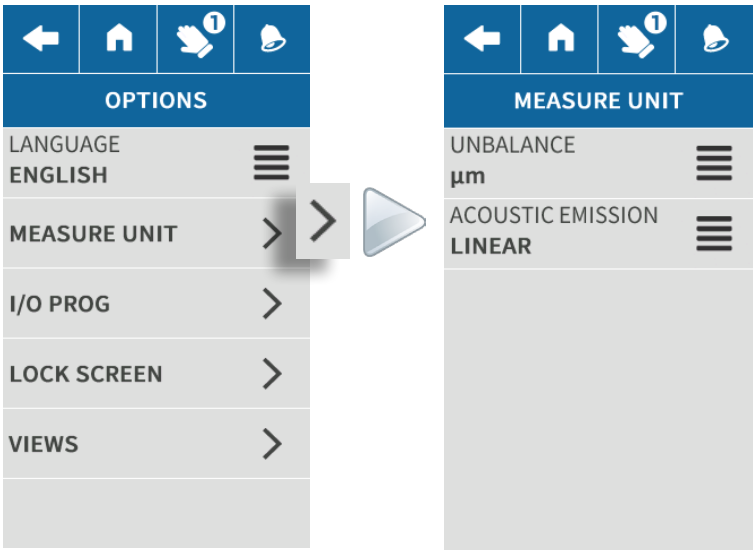


BACK MENU SETTING

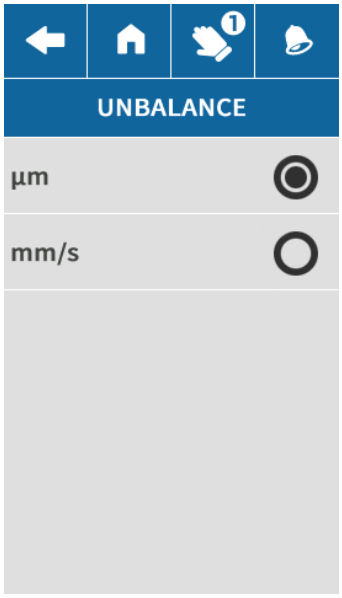
2.1.2 Select unit of measurement

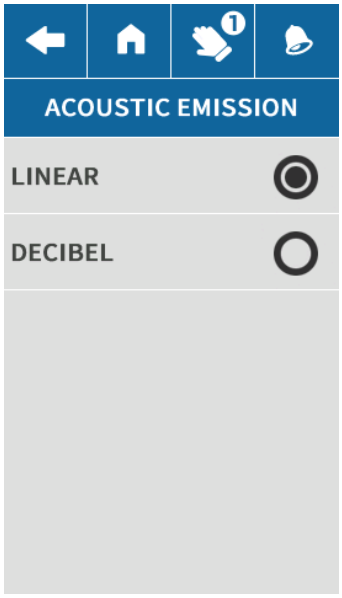
Access level 1 (End User)

Use this page to select the unit of measurement for the acoustic and balancing measurements.



In the case BALANCING it is possible to select µm o mm/s, whereas ACOUSTIC may be set to Linear or Decibel.



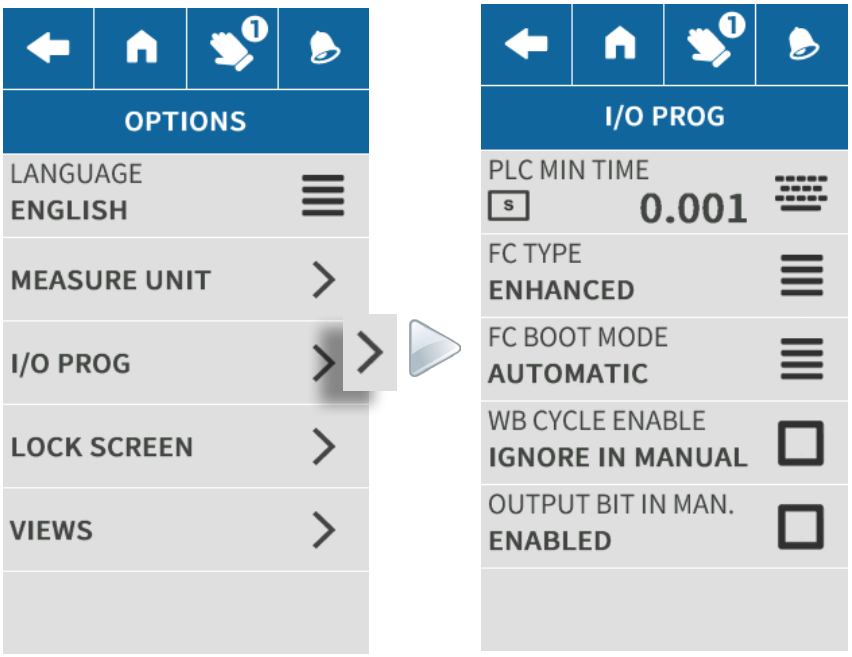


The select Acoustic Emission measurement unit page is present only if the balancer is equipped with an acoustic sensor.

BACK MENU SETTING

2.1.3 I/O programming page

Access level 2 (OEM)



PLC MIN TIME
Defines the minimum activation time for each output bit, with respect to the threshold check, expressed in seconds. (range 0.0001 to.999s)

FC TYPE
Defines the type of Flow Control to be used.
• ENHANCED mode
• LEGACY mode for compatibility with E78 and E82 electronic units.

FC BOOT MODE
May be used to select AUTOMATIC or MANUAL mode when switching on the electronic unit.

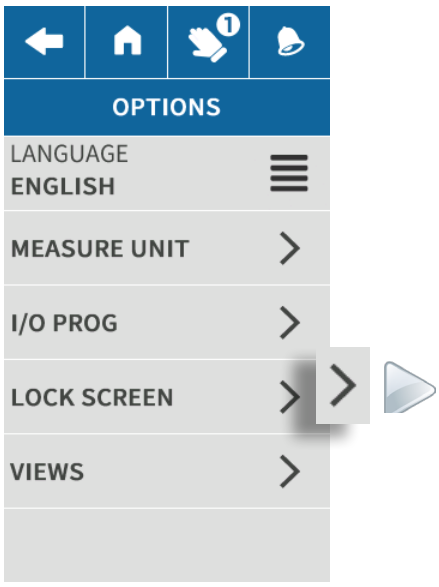
WB CYCLE ENABLE
This option enables the operator to perform the balancing head movements (Manual balancing, Automatic balancing, and home cycle), even in the absence of the WB cycle enable signal.

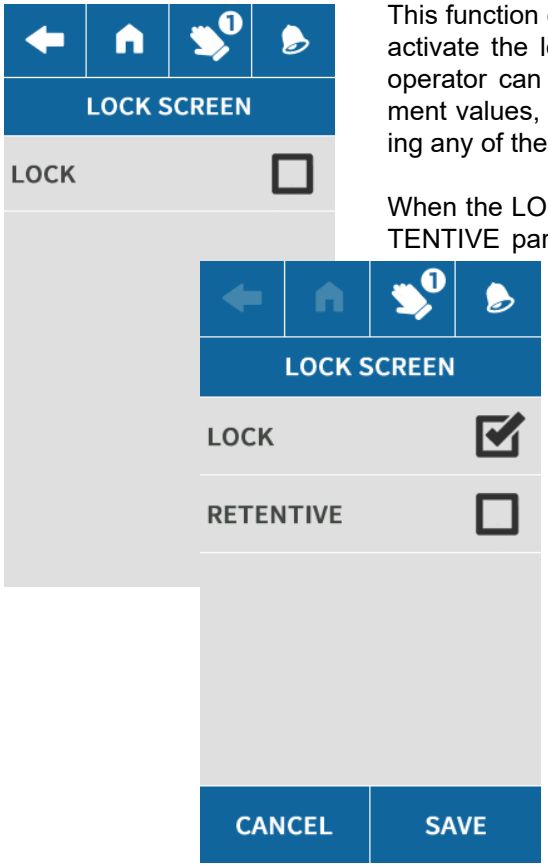
OUTPUT BIT IN MAN.
This option permits the operator enable the outputs in manual mode too (for the pre-balancing function)

BACK MENU SETTING

2.1.4 Lock screen

Access level 2 (OEM)

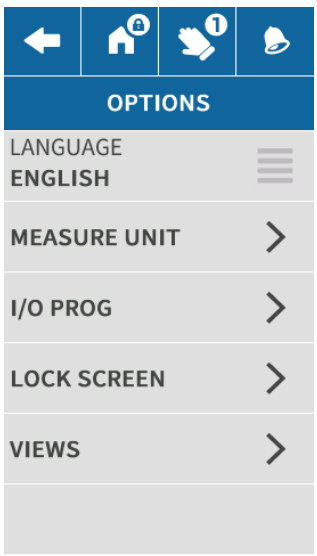




This function can be used to activate or deactivate the lock screen; when active, the operator can view the data and measurement values, but is prevented from modifying any of the parameters.

When the LOCK function is active, the RETENTIVE parameter also appears. If enabled, the lock screen can be maintained even after restarting the panel.

To enable/disable the LOCK function it is necessary to enter the OEM password.



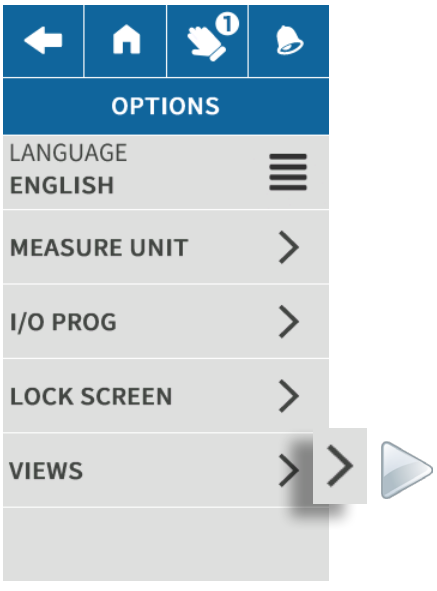
When the LOCK SCREEN function is active, a padlock symbol will be present in the HOME icon.

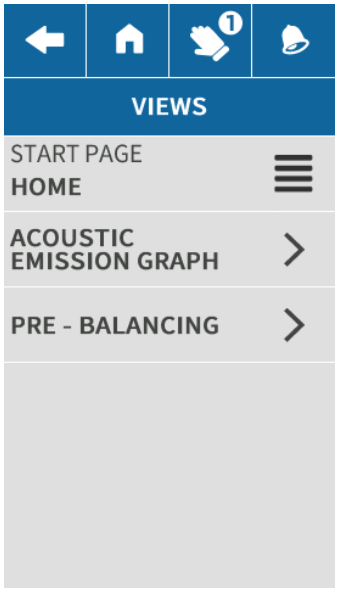
As can be seen from the adjacent example, it is not possible to modify the parameters

BACK MENU SETTING

2.1.5 Views

1 Access level 1 (End User)



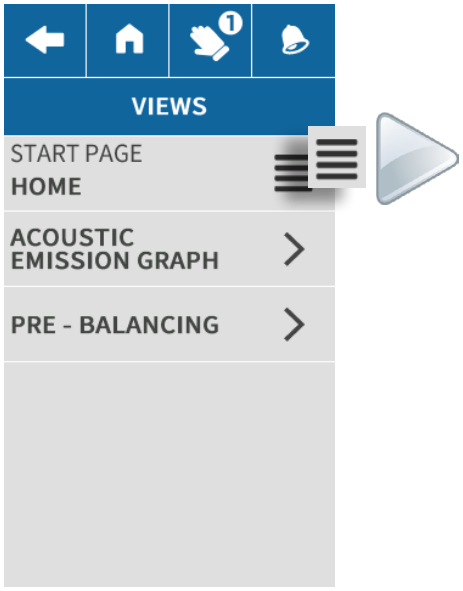


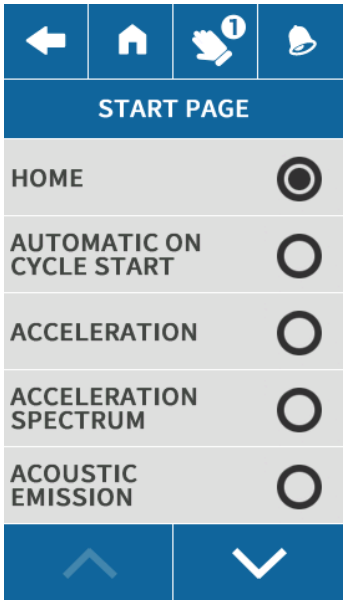
Press the VIEWS key to access a sub-page where it is possible to program:

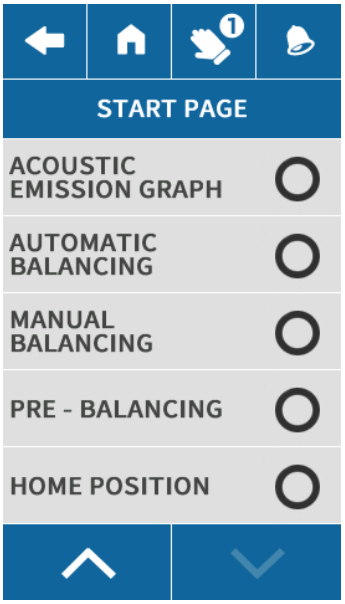
- SELECT START PAGE
- ACOUSTIC GRAPH
- PRE-BALANCING

VIEW MENU - SELECT START PAGE

Use this page to select the page that is displayed when the device is switched on from the list of available options.



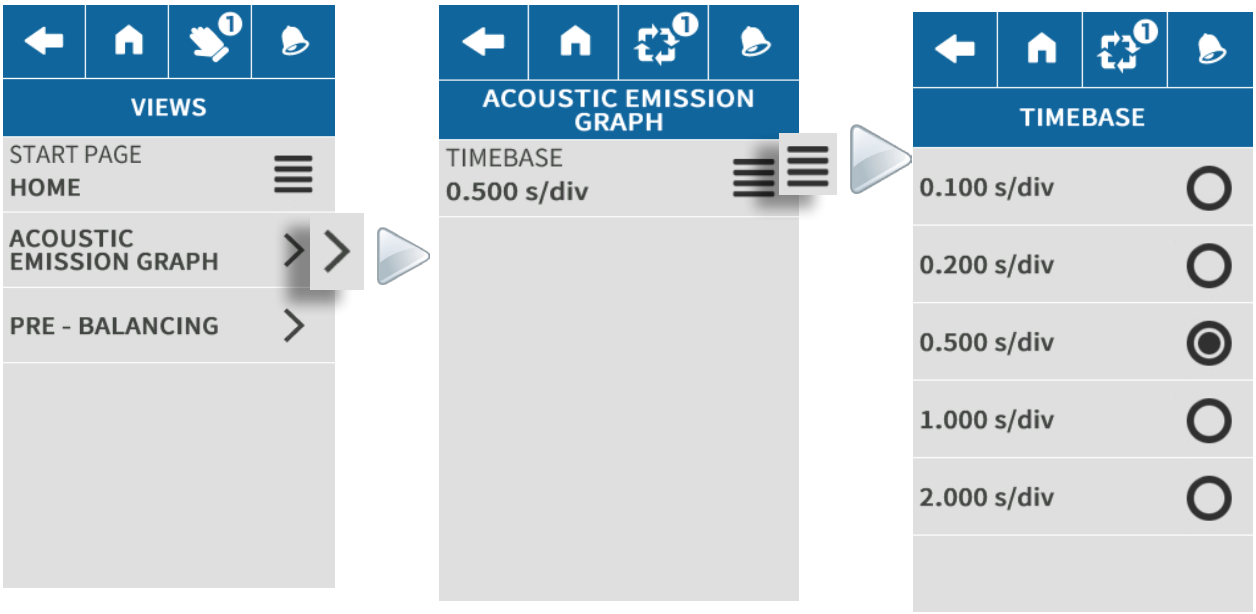




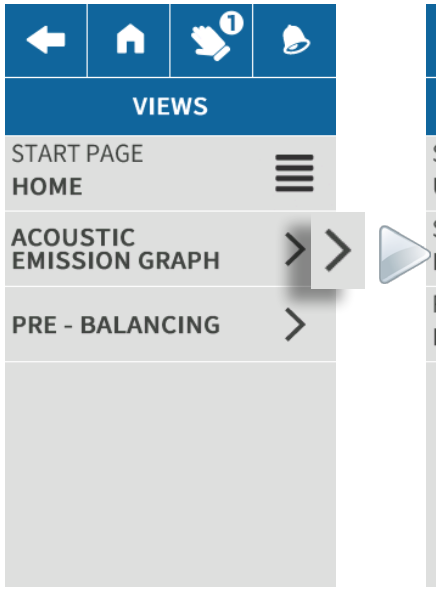
BACK MENU SETTING

VIEW MENU - ACOUSTIC EMISSION GRAPH

This page may be used to select the time base of the acoustic signal oscilloscope display



VIEW MENU - PRE-BALANCING



This page may be used to:

SCALE ZERO POSITION
Set the position of the goniometer scale zero high or to the right.

START3
Disable the re-balancing function (Start 3) below the threshold value L1.

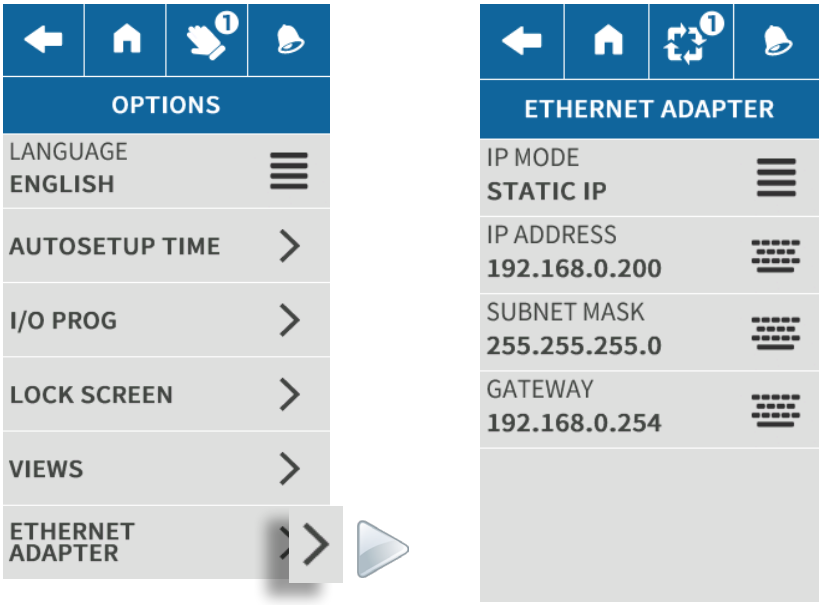
REBAL
Disable the re-balancing function (REBAL) below the threshold value L2.

BACK MENU SETTING

2.1.6 Ethernet Adapter

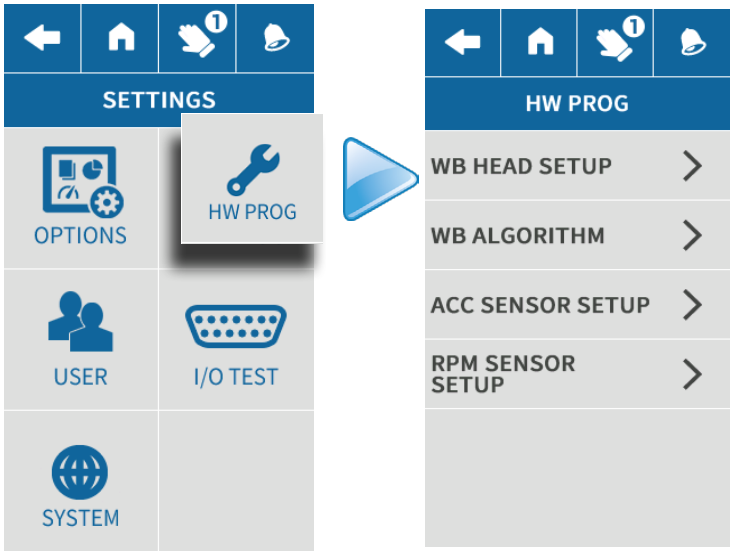
Access level 1 (End User)

This page contains the Ethernet programming data for the P1DWB Tool connection.



2.2 HW Prog Menu

Access level 2 (OEM)



BALANCER SETTINGS

Enables access to the balancing heads programming menu.

WB ALGORITHM

This menu may be used to program the balancing algorithm parameters.

ACC SENSOR SETTINGS

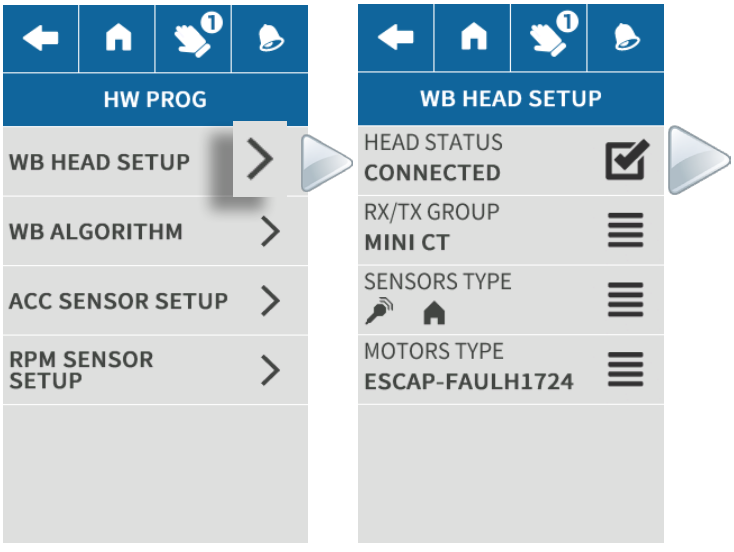
May be used to access the ACC sensor alarm programming menu.

ACC SENSOR SETTINGS

May be used to access the RPM sensor alarm programming menu.

2.2.1 Balancer Settings “WB Head Set-UP” menu

Access level 2 (OEM)



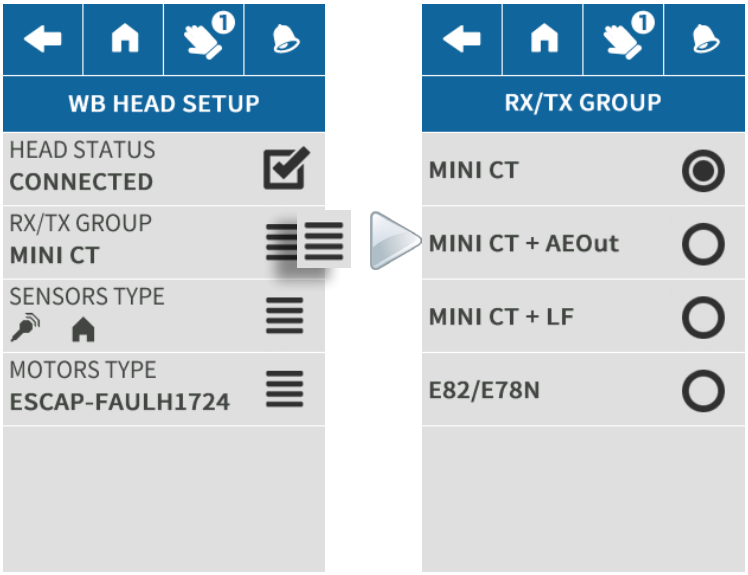
HEAD STATUS
Indicates the presence of the balancing head connection

 head connection NOT enabled
This function is used only in the case of manual pre-balancing, where the balancing head is not present.

 head connection enabled

BACK MENU SETTING

RX/TX UNIT

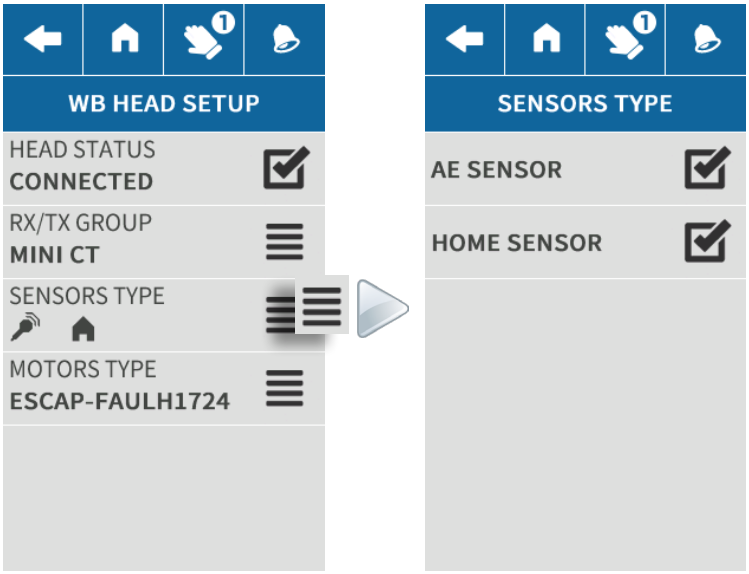


This option is visible only for the Contactless version.

Use this function to select the receiver/transmitter group connected to the P1DWB.

"E82/E78N" is displayed only if the I/O are programmed in LEGACY on the I/O programming page.

SENSORS



This option is visible only for the Contactless version.

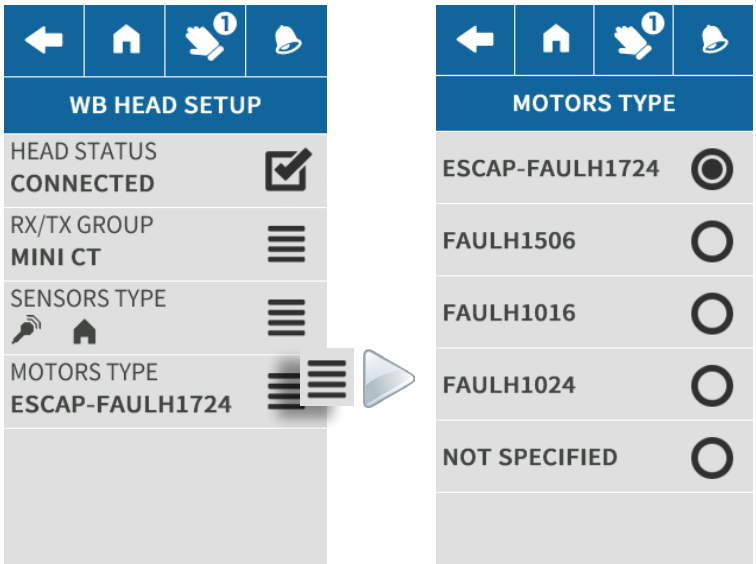
Use this function to select the type of sensor integrated into the balancing head.

Acoustic sensor

Home sensor

NONE No sensor present

MOTORS

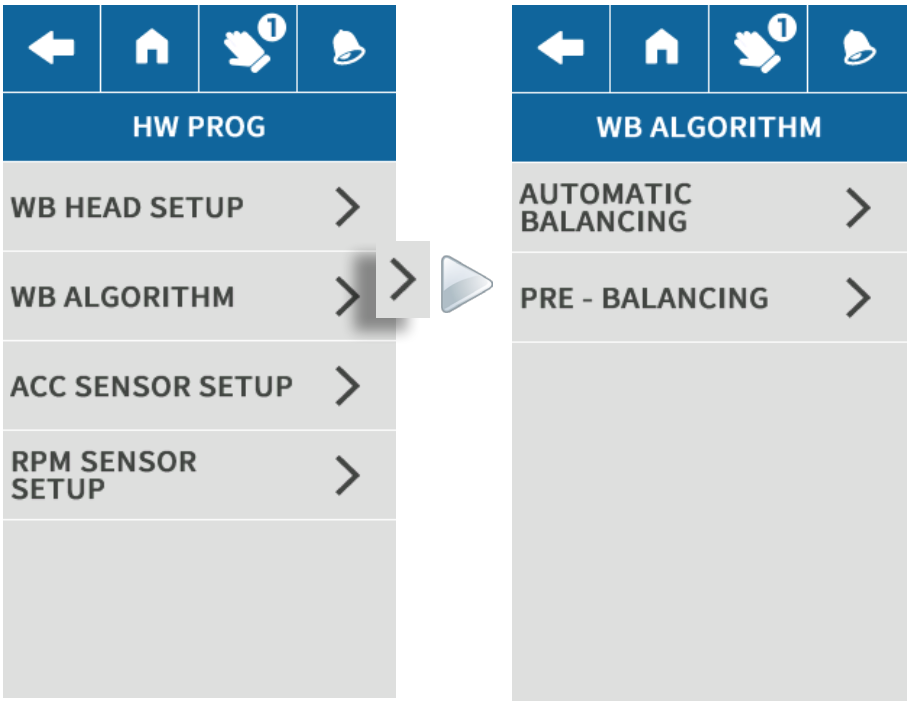


Select the type of motor used on the balancing head.
Set this value according to the type of head in use.

BACK MENU SETTING

2.2.2 WB Algorithm menu

Access level 2 (OEM)

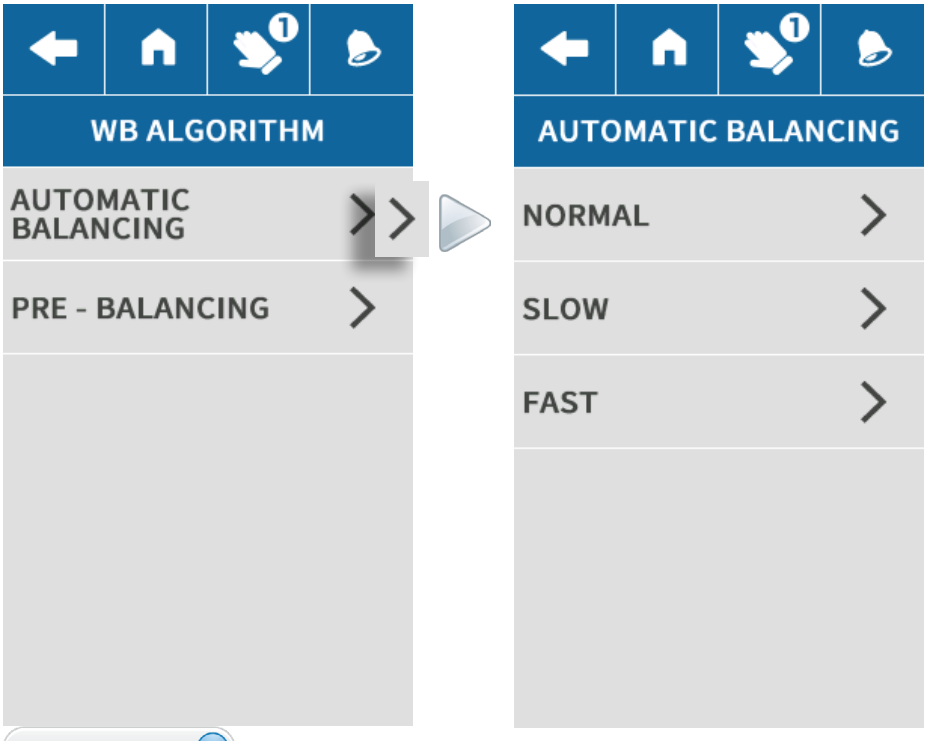


Press the WB ALGORITHM key to access a sub-page where it is possible to program:

- AUTOMATIC BALANCING
- PRE-BALANCING

WB ALGORITHM MENU - AUTOMATIC BALANCING

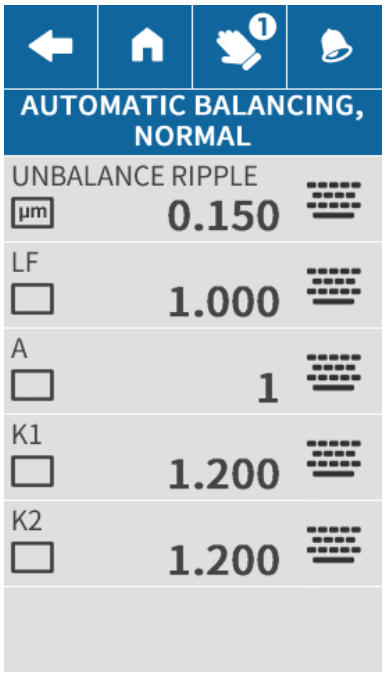
This menu can be used to access the parameter programming windows for the various types of balancing algorithms: NORMAL, SLOW, FAST.



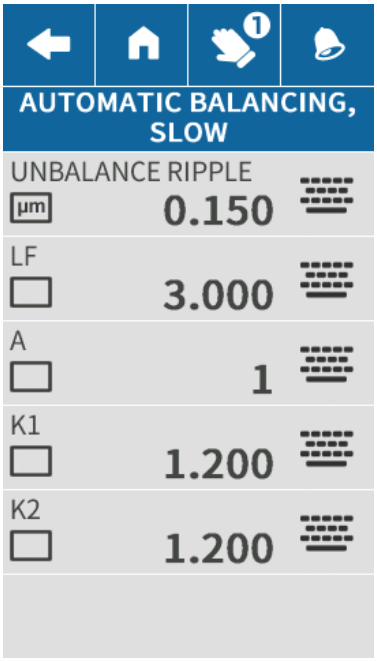
BACK MENU SETTING

ALGORITHM TYPE

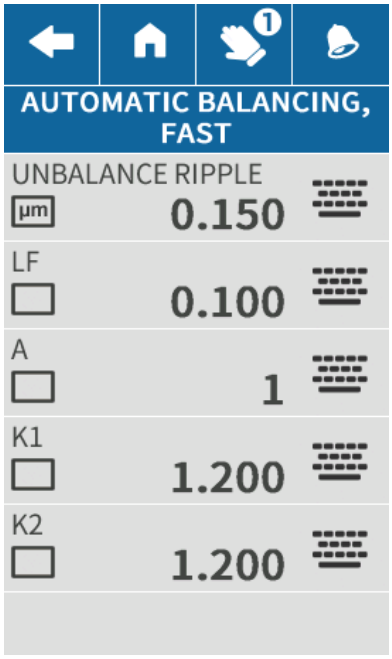
NORMAL



SLOW



FAST



The following types of balancing algorithm are available, corresponding to parameters pre-defined based on the type of grinder.

Normal Normal balancing: recommended for “normal” grinding machines
Slow Slow balancing: recommended for “elastic” grinding machines
Fast Fast (aggressive) balancing: recommended for “rigid” grinding machines

UNBALANCE RIPPLE: The entity of the ripple must determined and entered in this parameter in order to optimise the balancing algorithm for the application.

LF – A – K1 –K2 these are the balancing algorithm parameter values, and may only be modified by Marposs personnel.

NOTE
The parameters on this page may be visible and/or programmable, depending on the access level of the current user:

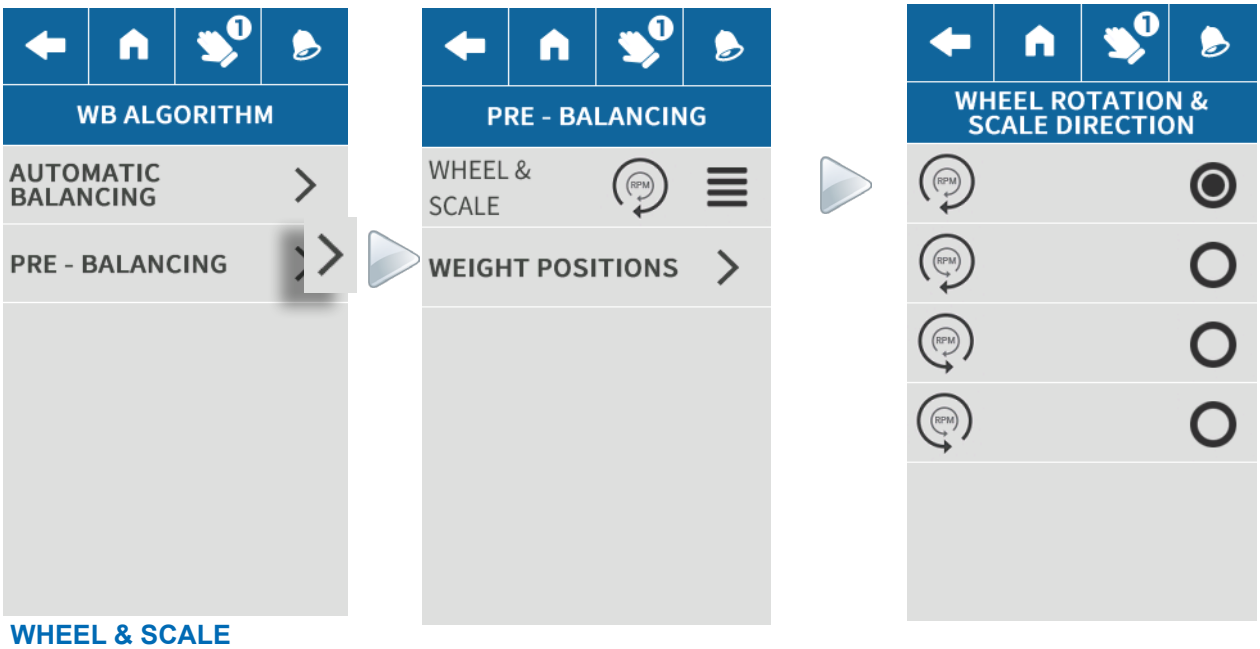
1 LEVEL 1 the user may view UNBALANCE RIPPLE but not modify it;

2 LEVEL 2 the user may view and modify UNBALANCE RIPPLE, but may only view the LF parameter;

3 LEVEL 3 the user may view and modify all the parameters.

BACK MENU SETTING

WB ALGORITHM MENU - PRE-BALANCING



WHEEL & SCALE

Select the wheel rotation (RPM)/ Scale direction (°)

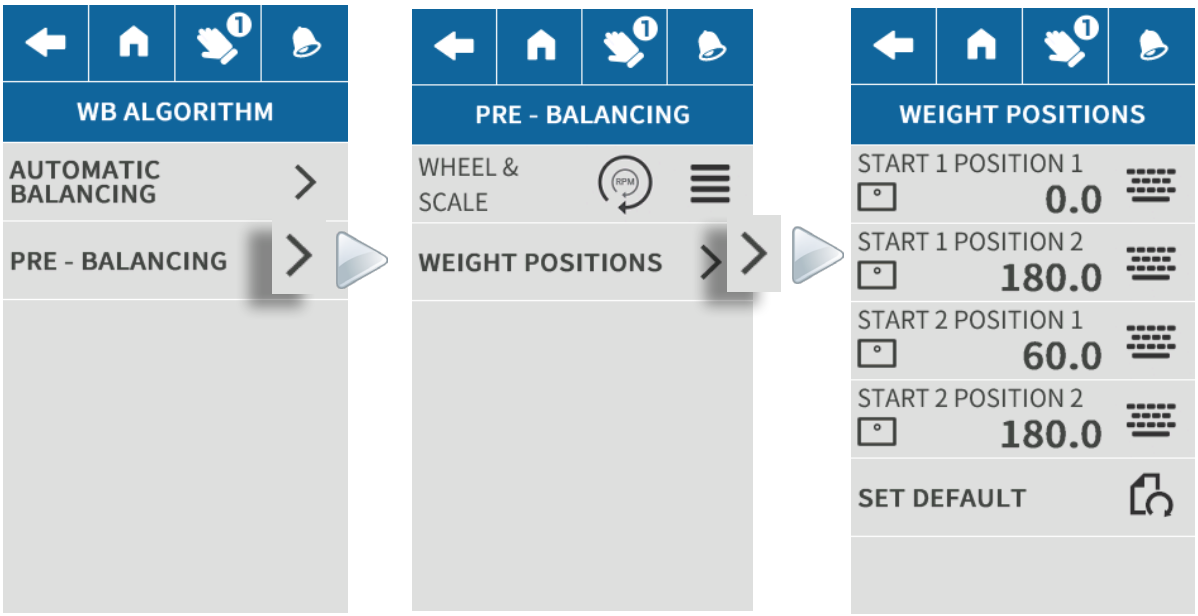
Wheel rotation (RPM)/ Scale direction (°)
"Angle evaluation direction" corresponds to:
• a graduated scale on the grinding wheel support flange, which is used to set the balancing weight angular positions in the case of the manual "fixed weights/variable angles" pre-balancing procedure

Possible combinations:

	Wheel rotation → clockwise Scale direction → clockwise
	Wheel rotation → counter-clockwise Scale direction → clockwise
	Wheel rotation → clockwise Scale direction → counter-clockwise
	Wheel rotation → counter-clockwise Scale direction → counter-clockwise

BACK MENU SETTING

WB ALGORITHM MENU - WEIGHT POSITIONS

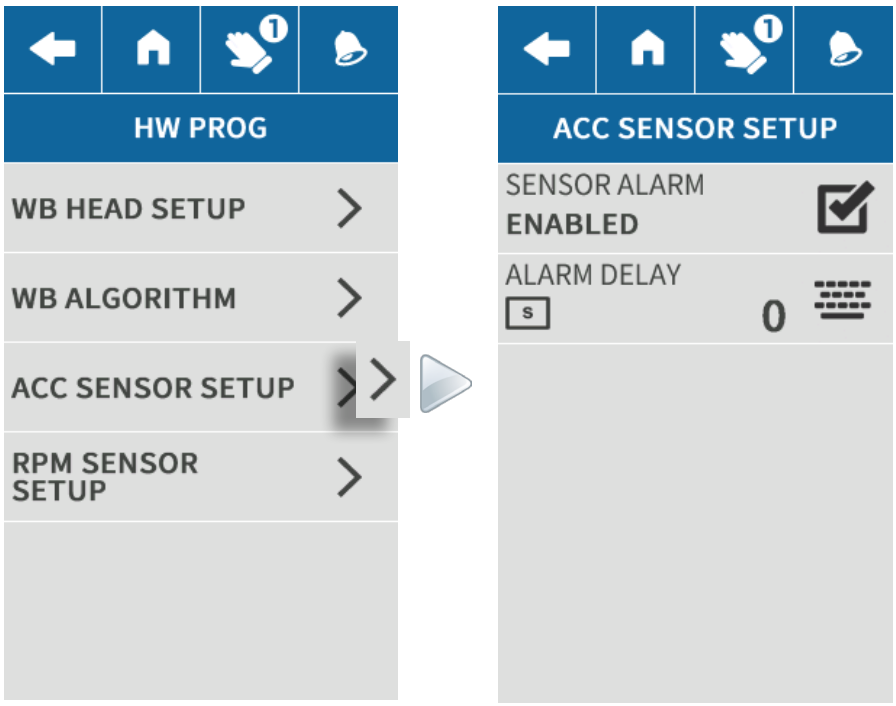


This page may be used to define the position of the weights during the first two steps of the pre-balancing procedure, which will be used to program the new Sets.

SET DEFAULT
press this key to restore the default values

2.2.3 Acceleration sensor

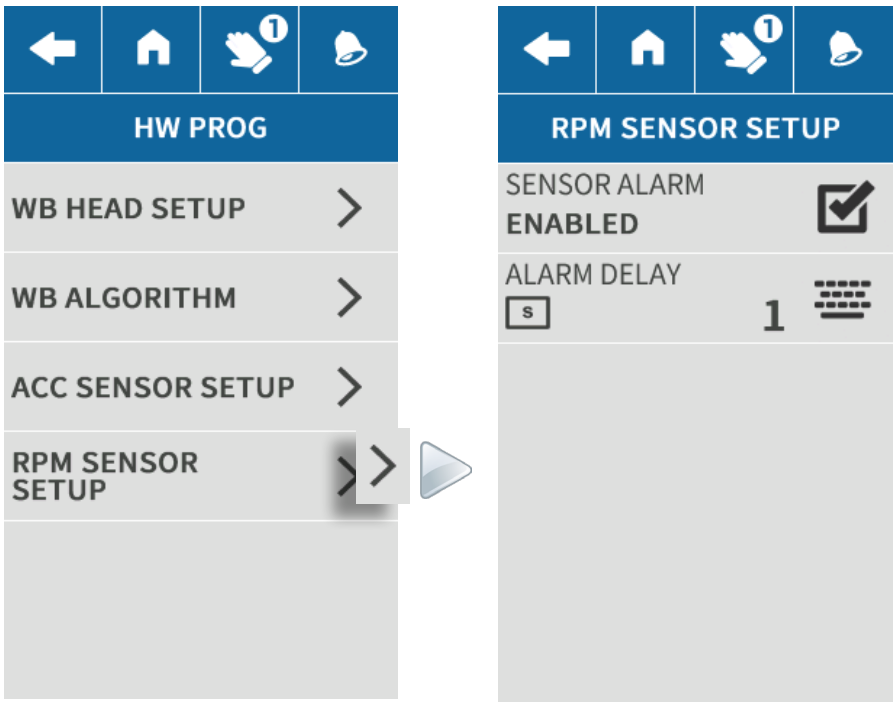
2 Access level 2 (OEM)



SENSOR ALARM use this parameter to disable the alarm when the accelerometer is disconnected. Even if the alarm is enabled, it may be silenced for the time interval defined in **ALARM DELAY**.

2.2.4 RPM sensor

2 Access level 2 (OEM)



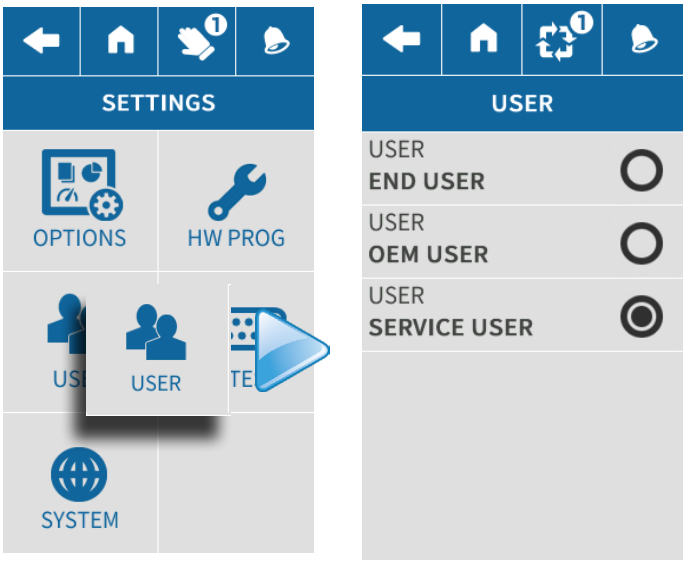
SENSOR ALARM use this parameter to disable the alarm when the RPM Sensor is disconnected. Even if the alarm is enabled, it may be silenced for the time interval defined in **ALARM DELAY**.

BACK MENU SETTING

2.3 User Menu

Use this page to set up the user level.

1 Access level 1 (End User)



Depending on the user currently logged in, the P1DWB equipment offers various operative levels. These range from simply viewing the data and measurement processes, through programming Sets, to modifying the configuration of the associated electronic unit.
Since not all users can, or should, use the same options, there are three different P1DWB user levels:

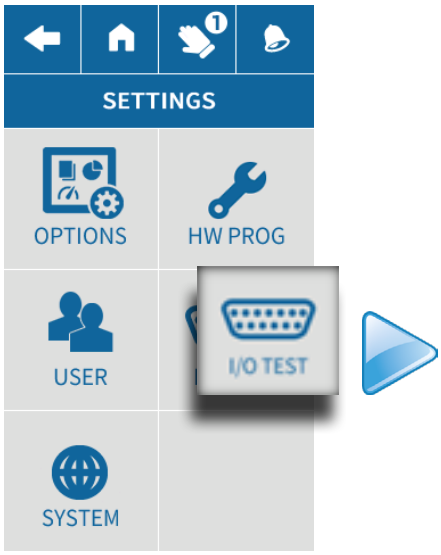
- **END USER (E)** level users can view the measurements and sensor monitoring, in automatic mode. During measurements the user can also make corrections to the processing cycle. In addition, he/she can view the data programmed for the electronic unit. The END USER can also perform certain Set-up operations. Default condition.
- **OEM (O)** level users can programme, modify or cancel sets. These users can access the permitted Set-up and Prog operations. For this reason, this user level is intended primarily for the machine manufacturer and its service personnel and it is password protected.
- Lastly, **SERVICE (S)** level users can modify configuration data, and programme, modify or delete sets, provided the hardware present permits it. Such users have access to all the Set-up and Prog operations. For this reason this user level is intended primarily for Marposs personnel and is password protected.

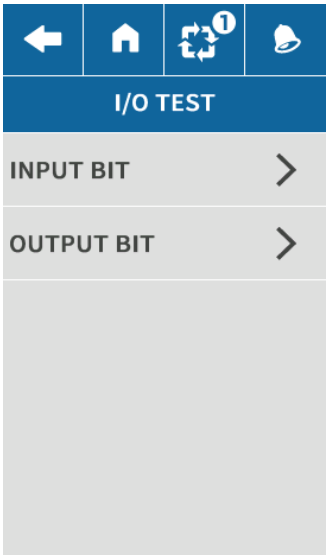
The Panel Flow Chart indicates which pages and functions are accessible to the various user levels.

BACK MENU SETTING

2.4 I/O Test menu

1 Access level 1 (End User)



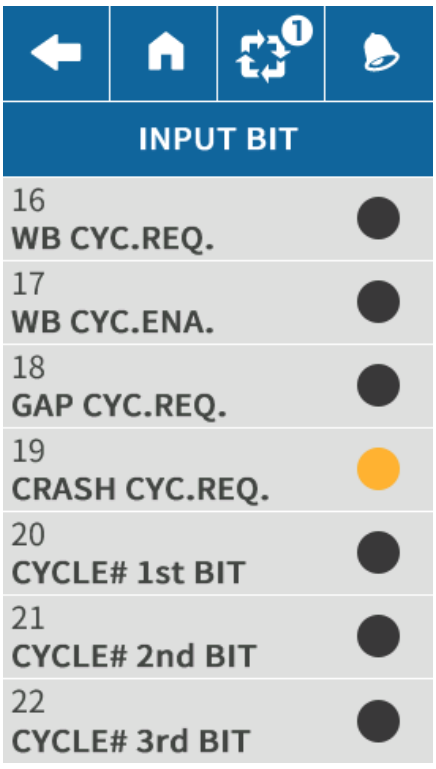


The I/O tests can be performed in Manual and Automatic mode:

Manual mode:
View the state of the Inputs.
View and/or modify the state of the Outputs

Automatic mode:
Viewing of Inputs and Outputs state

INPUT BIT



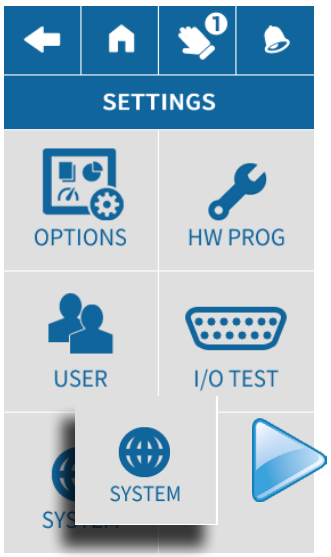
OUTPUT BIT

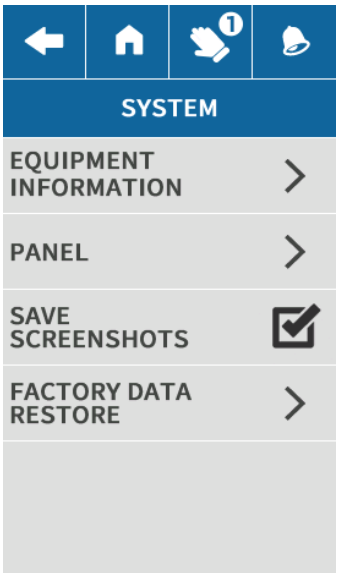
NOTE
To modify the parameters on the OUTPUT BIT page, access level 2 is required 2

BACK MENU SETTING

2.5 System Menu

Access level 1 (End User)





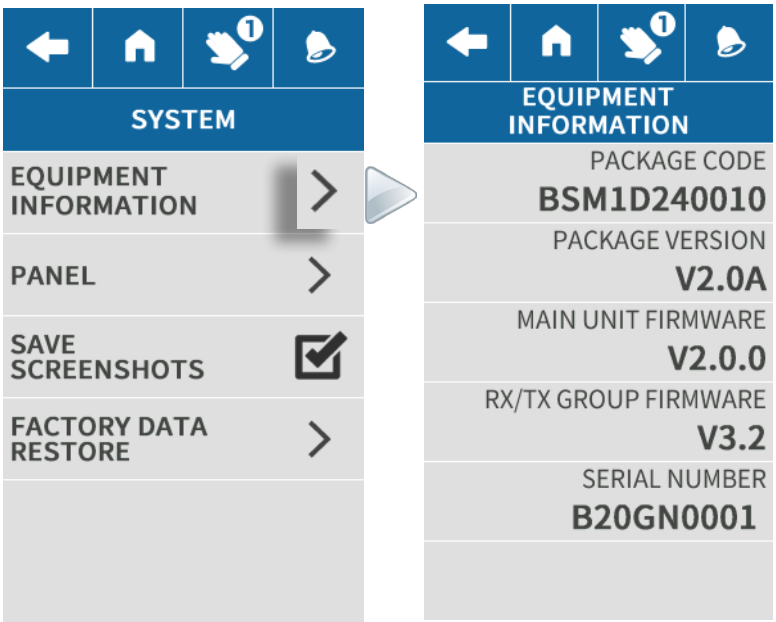
It is possible to access and program the following functions from this menu:

- EQUIPMENT INFORMATION
- PANEL
- SAVE SCREEN SHOTS
- RESTORE FACTORY DATA

2.5.1 Equipment Information

Access level 1 (End User)

This page may be used to display the firmware versions of the various components of the application.



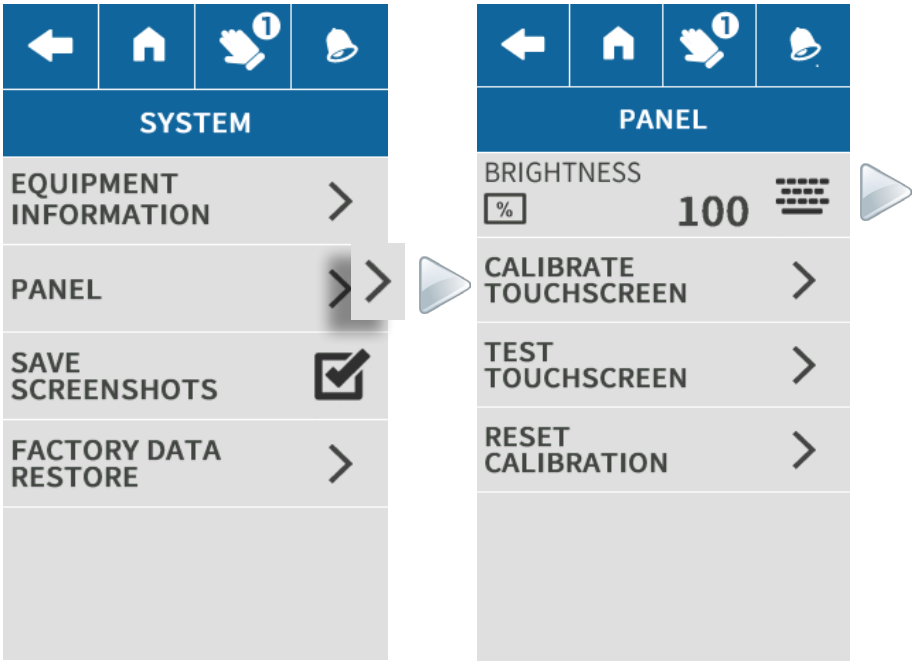
The “TX/TX GROUP FIRMWARE” parameter is visible only if a MINICT head is connected and if at least one balancing head motor movement has already been commanded.

BACK MENU SETTING

2.5.2 Panel

Access level 1 (End User)

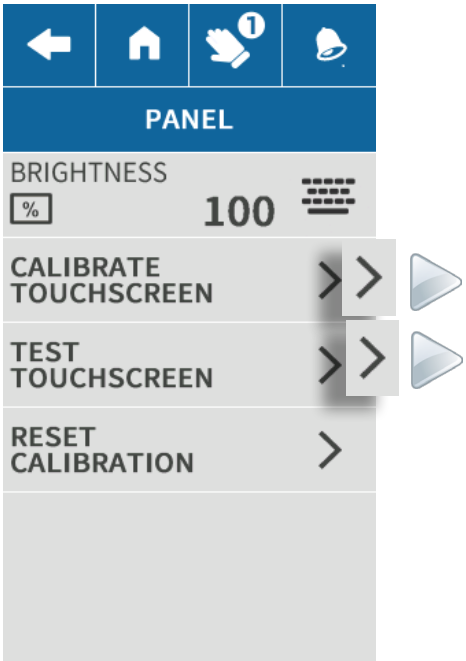
It is possible to access the functions used to regulate the P1DWB panel from this menu.



BRIGHTNESS
Press the keyboard to regulate the panel brightness, entering the desired brightness value manually.

PANEL - TOUCH SCREEN CALIBRATION AND TEST

Access level 3 (Service)

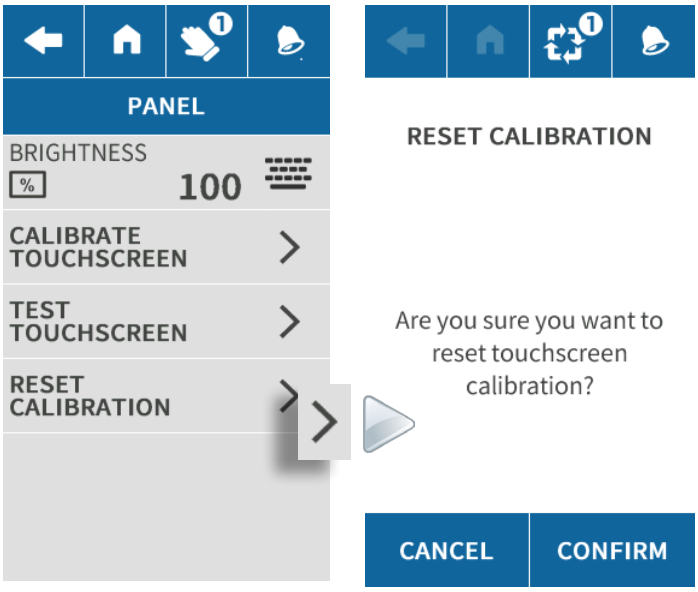


CALIBRATING THE TOUCH SCREEN
TEST TOUCH SCREEN
Access this function in order to calibrate and test the touch screen. In order to carry out these tests, follow the instructions provided on the test and calibration pages.

BACK MENU SETTING

PANEL - TOUCH SCREEN CALIBRATION AND TEST

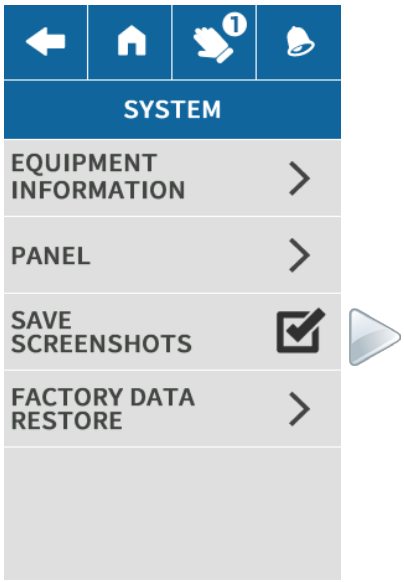
Access level 3 (Service)



This function may be used to reset the panel calibration settings and restore the original factory settings.

2.5.3 Save Screen Shots

Access level 3 (Service)

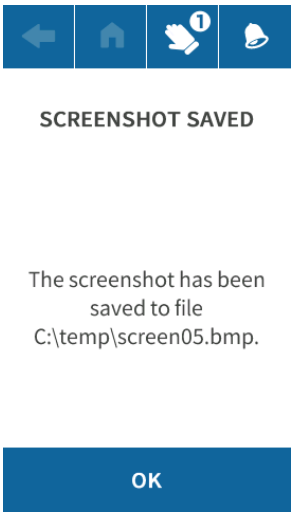


Manual and Automatic. [Service]

Use this function to save screen shots.


Function disabled


Function enabled



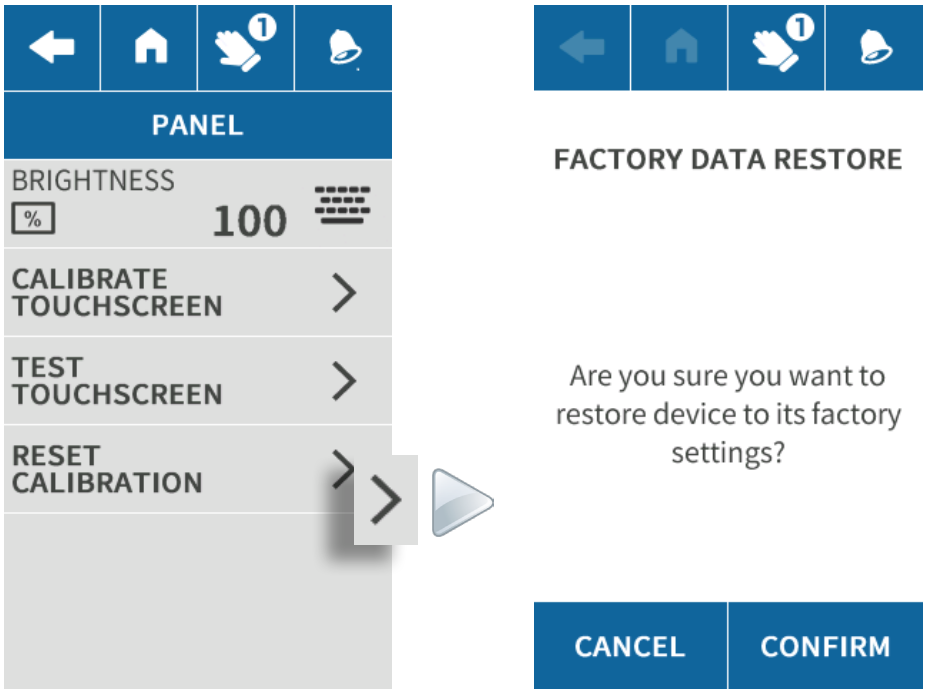
If this function is enabled, it is possible to capture any image by pressing any part of the panel simultaneously with two fingers. When an image has been captured, the adjacent message is displayed.

It is possible to save up to 10 images (if more than 10 images are saved, the previous ones are overwritten).

The images may be downloaded using the P1DWB tool.
This function may only be accessed by Marposs technicians.

2.5.4 Restore Factory Data

Access level 2 (OEM)



This function may be used to reset the device and restore the original factory settings.

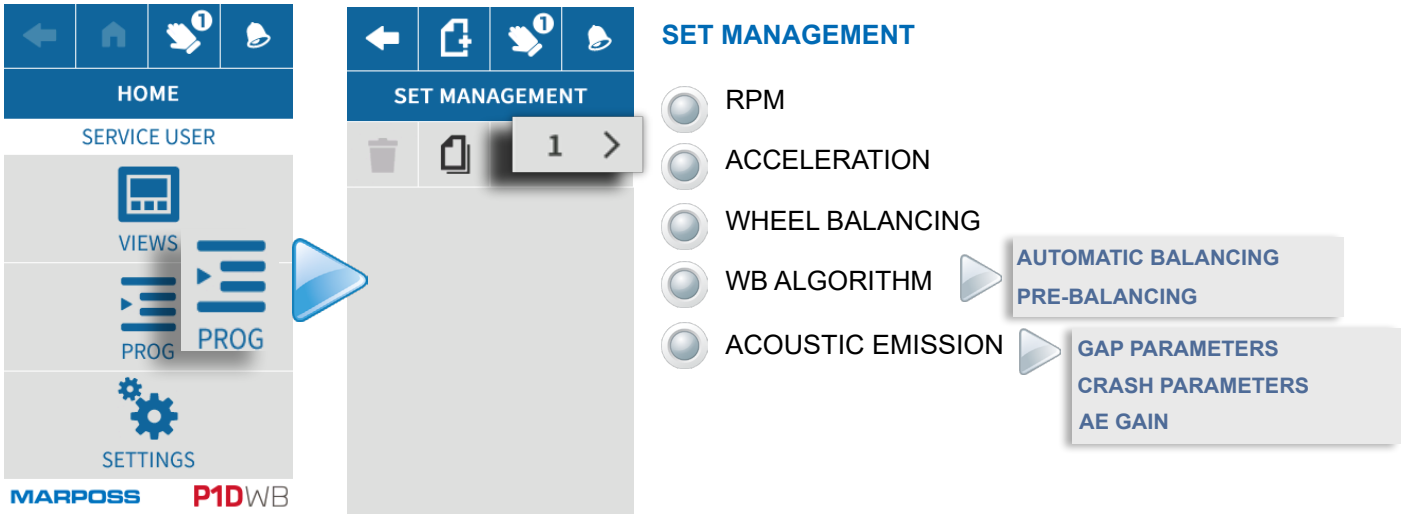
BACK MENU SETTING

3. *PROG MENU*

Programming in manual mode only

View only in automatic mode

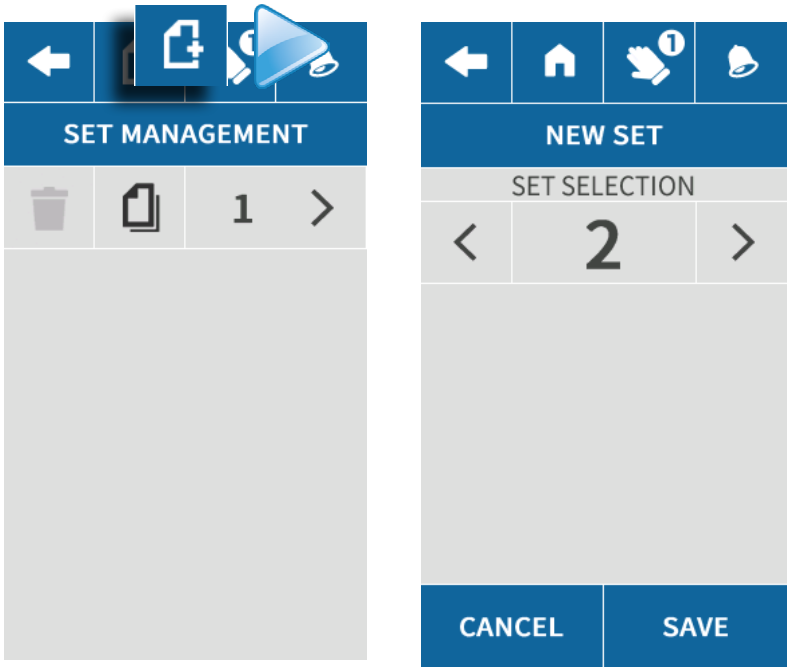
Access level 1 (End User)



The working data may be associated with up to 8 sets in the vase of the **P1DWB Contactless version** whereas, in the case of the **P1DWB Retraction version**, only one set is available, this means that, in the latter case, the system proceeds directly to the SET programming page described in the following paragraph.

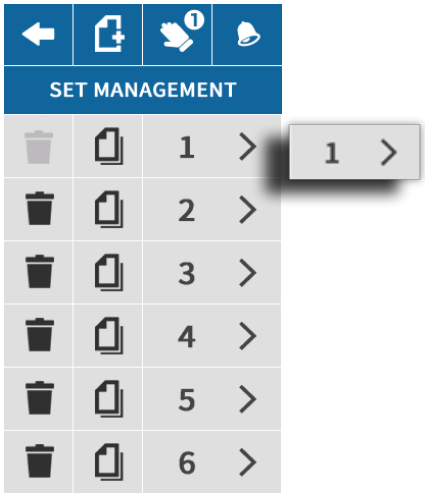
SET PROGRAMMING - CREATING A NEW SET

The start page lists all the sets that have already been set-up and saved; to create a new one, press:



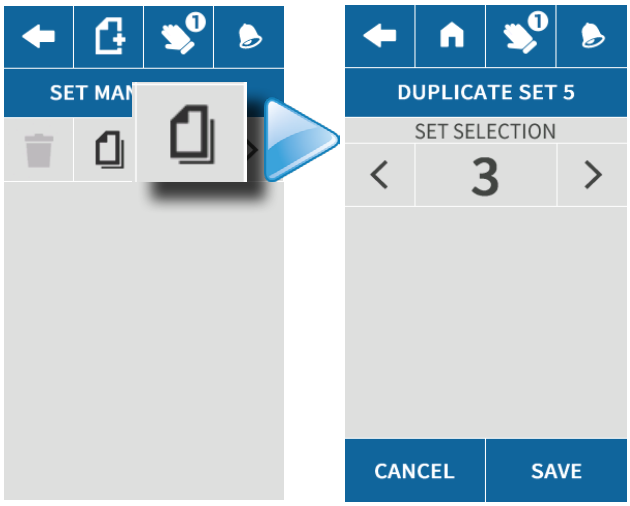
Use the arrows to select the desired set number (from 1 to 8).
Press SAVE to save the new set, or CANCEL to exit without saving.

SET PROGRAMMING - ACCESSING PROGRAMMING



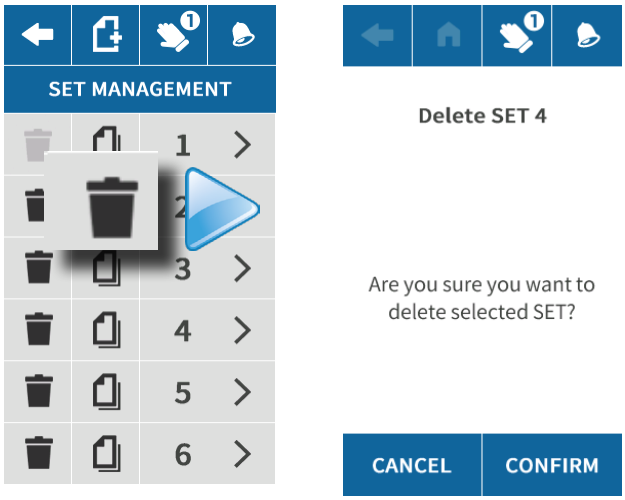
Once they have been created, the sets must be programmed.
To program a new set, or modify an existing one, press the arrow corresponding to the desired set.

SET PROGRAMMING - COPYING A SET



It is possible to copy an existing set:
- select the set to be copied
- press the “Copy" button.
- Select the number of the set that it is to be copied to
- Press “Save” to save.

SET PROGRAMMING - DELETING A SET

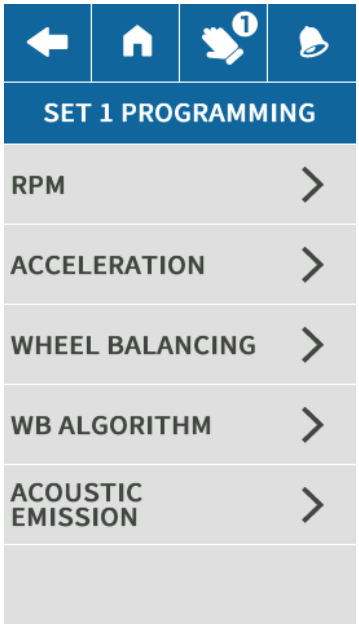


To delete a set
- Press the “Delete” key
- A message appears requesting the operator to confirm the action
- Press “Confirm” to confirm, or “Cancel” to cancel the action

BACK MENU PROG

3.1 SET Programming menu

1 Access level 1 (End User)

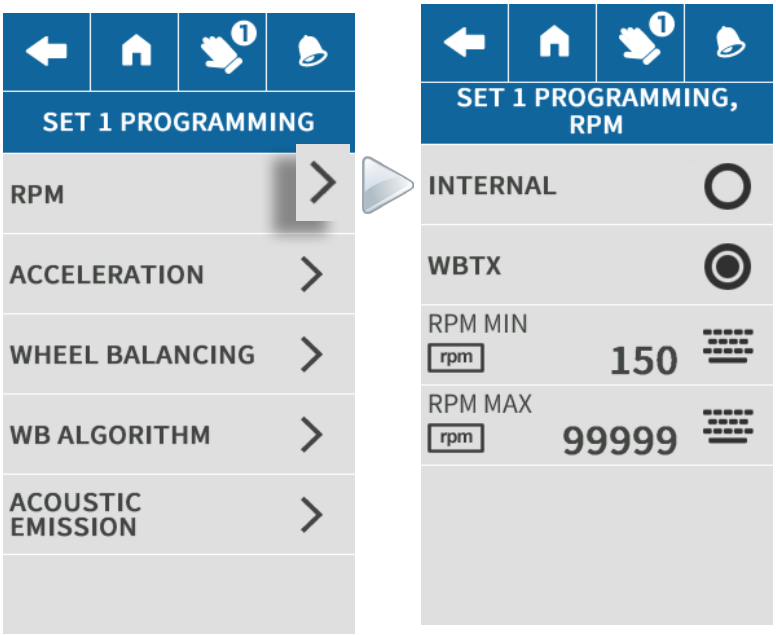


Set Programming Menu:

- RPM MENU
- ACCELERATION MENU
- BALANCING MENU
- WB ALGORITHM MENU
- ACOUSTIC EMISSION MENU

3.1.1 RPM Programming

1 Access level 1 (End User)



Selecting the source of the RPM signal:

INTERNAL

- Function disabled
- Function enabled: the programmed RPM is used

WBTX

- Function disabled
- Function enabled: the signal from the RPM sensor inside the balancing head or from the externally mounted RPM sensor is used.

Programming the RPM thresholds

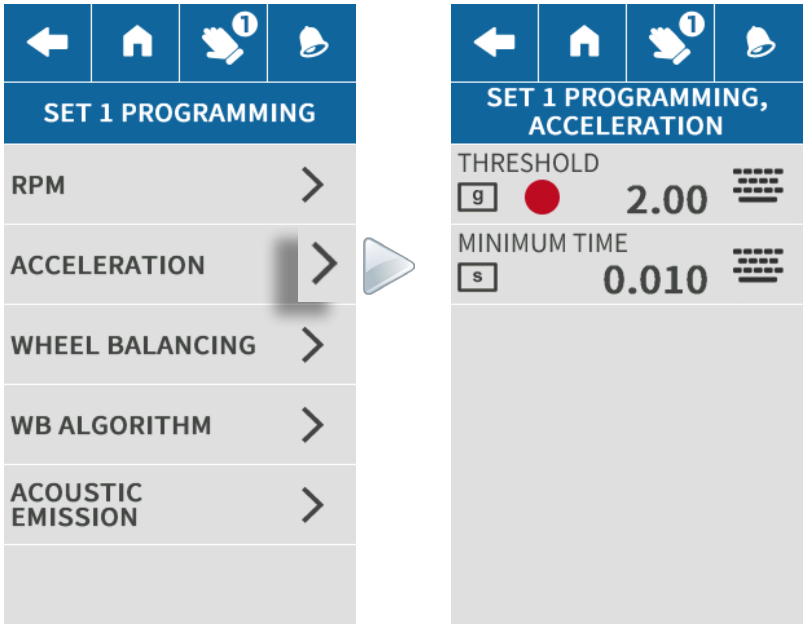
RPM MIN: use this parameter to set-up the minimum RPM threshold [Range 60 to 99999 RPM]

RPM MAX: use this parameter to set-up the maximum RPM threshold [Range 60 to 99999 RPM]

BACK MENU PROG

3.1.2 Acceleration programming

Access level 1 (End User)



Acceleration is a signal directly coming from the vibration sensor (accelerometer) and allows improving the system reaction in case of alarm conditions (excessive vibration).

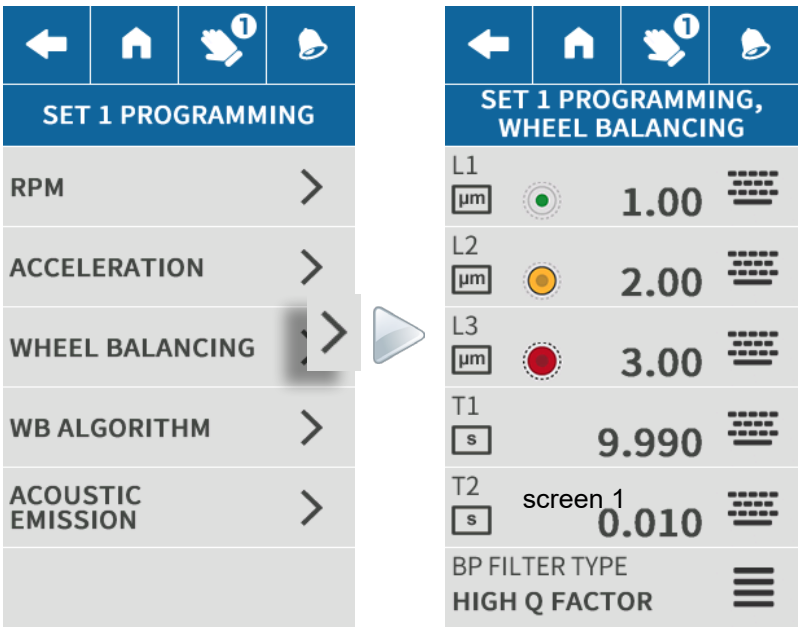
THRESHOLD
Acceleration threshold: once this acceleration value is exceed, the High Acceleration signal is activated.
[Range 0.00g and 4.00g]

MINIMUM TIME
The length of time the acceleration value must remain higher than the acceleration “THRESHOLD” limit in order to activate the High Acceleration signal output.
[Range 0 to 9.999 s]

BACK MENU PROG

3.1.3 Balancing programming

1 Access level 1 (End User)



The grinding wheel vibration tolerance limit value may be programmed as amplitude of the oscillation (unit of measurement "microns or "inches") or speed (unit of measurement "mm/sec"), depending on the mode defined during the application configuration phase.

You can set three grinding wheel vibration tolerance thresholds: L1, L2 or L3

Limit L1

When the value is below the limit L1 the grinding wheel vibration value is considered OPTIMUM,

Limit L2

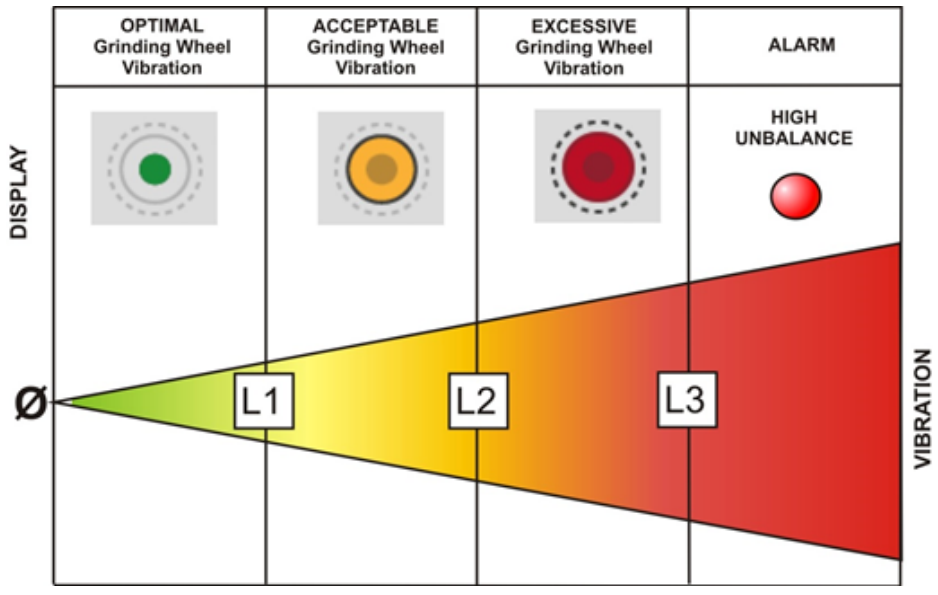
If the value is between L1 and L2 the grinding wheel vibration is considered ACCEPTABLE,

Limit L3

If the value is between L2 and L3 the grinding wheel vibration is considered EXCESSIVE.

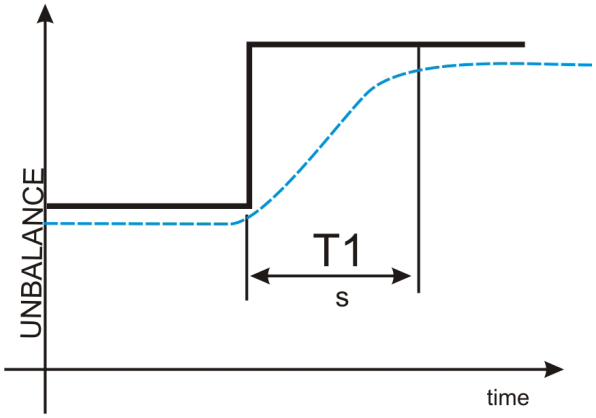
In this case it is necessary to carry out a balancing cycle in order to bring the values back within the acceptable limits (<L1 Optimum, <L2 Acceptable)
Values that exceed the limit L3 represent a malfunction, and A potentially hazardous condition, which is indicated by the High Unblance output signal on the I/O.

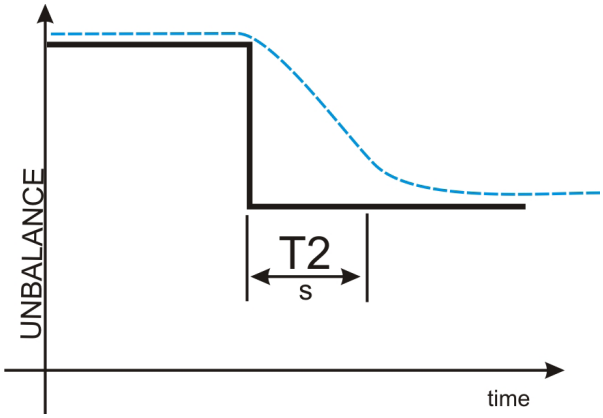
The set values must comply with the following condition:
Limit L1 < Limit L2 < Limit L3 (between 0 and 50 µm or 0 and 50mm/sec):



BACK MENU PROG

The asymmetrical filter on the vibration signal is used to adequately stabilise the vibration value shown on the display.
The vibration value is filtered in all operating modes, but is never active during the balancing procedure (movement of balancing weights).



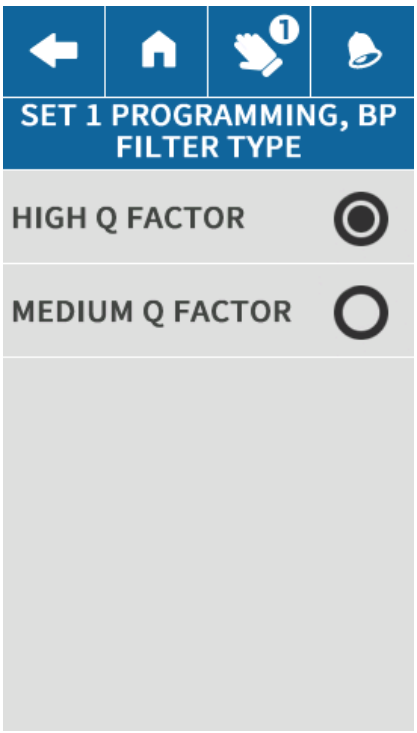


T1 - Rise time: The programmed value represents the filter response time to a sudden increase in vibration.
You can set a value between 0.01 s and 10.00 s with a resolution of 0.001 s. The default value is T1 = 9.990 seconds.

T2 - Fall time: The programmed value represents the filter response time to a sudden decrease in vibration.
You can set a value between 0.01 s and 10.00 s with a resolution of 0.001 s. The default value is T1 = 0.010 seconds.

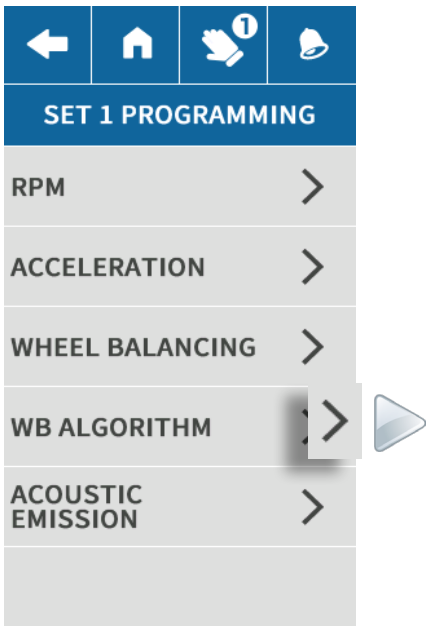
BP FILTER TYPE

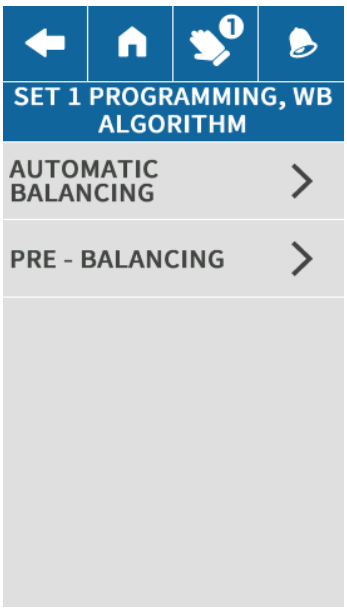
(Band pass filter type)
This parameter may be used to vary the selectivity of the band pass filter used to filter the vibration component corresponding to the grinding wheel speed.
A high Q Factor will result in maximum selectivity, and is recommended for most applications.
A medium Q Factor will render the filter less selective and may be advantageous in the case of applications where the grinding wheel rotates slowly, provided there are no interference components in the vicinity of the grinding wheel rpm frequency.



3.1.4 Programming the Balancing Algorithm

1 Access level 1 (End User)

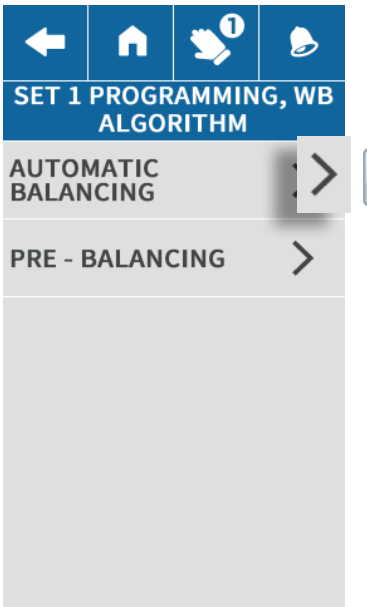


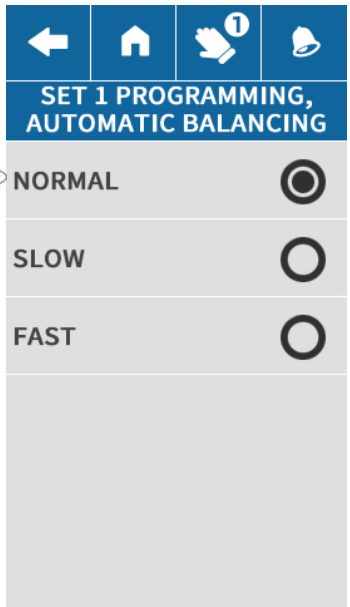


Algorithm Programming menu

ALGORITHM PROGRAMMING - AUTOMATIC BALANCING

1 Access level 1 (End User)





The following types of balancing algorithm are available, corresponding to parameters that have pre-defined based on the type of grinder.

The available options are as follows:

NORMAL
Normal balancing: recommended for "normal" grinding machines (default condition).

SLOW
Slow balancing: recommended for “elastic” grinding machines.

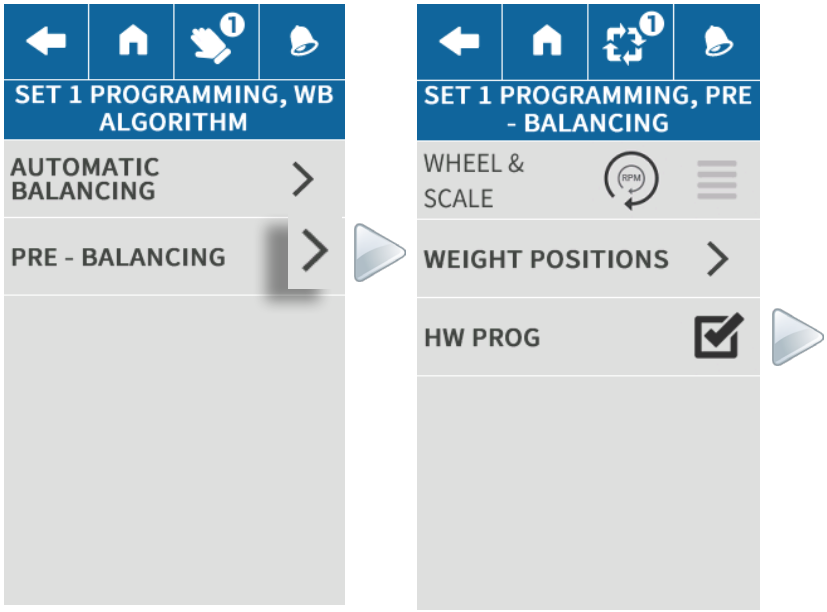
FAST
Fast (aggressive) balancing: recommended for “rigid” grinding machines.

BACK MENU PROG

ALGORITHM PROGRAMMING - PRE-BALANCING

1 Access level 1 (End User)

This option is visible only for the Contactless version.



HW PROG.

☑ if this function is enabled, the data on the WHEEL & SCALE and WEIGHT POSITION pages are derived from the programming carried out in: SETTING/ HW PROG/ WB ALGORITHM/PRE BALANCING, which means that they cannot be modified when programming the SET.

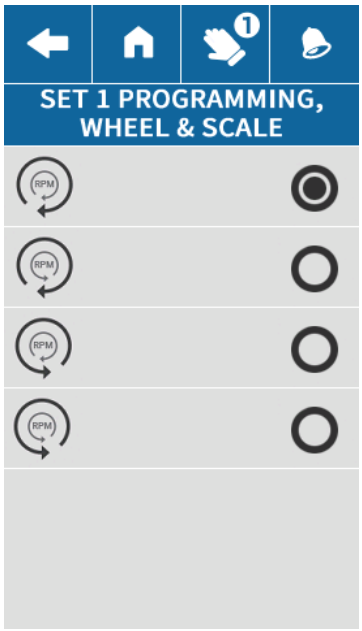
☐ If the function is disabled, it is possible to program WHEEL & SCALE and WEIGHT POSITION manually for the selected SET.

BACK MENU PROG

WHEEL & SCALE

If HW PROG is disabled, it is possible to program this parameter in the set.
Wheel rotation (RPM)/ Scale direction (°)

"Angle evaluation direction" corresponds to:
• a graduated scale on the grinding wheel support flange, which is used to set the balancing weight angular positions in the case of the manual "fixed weights/variable angles" pre-balancing procedure



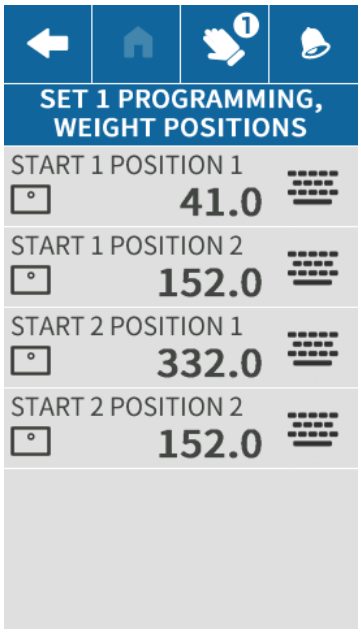
Possible combinations:

Wheel rotation → counter-clockwise
Scale direction → clockwise

Wheel rotation → clockwise
Scale direction → clockwise

Wheel rotation → clockwise
Scale direction → counter-clockwise

Wheel rotation → counter-clockwise
Scale direction → counter-clockwise



WEIGHT POSITIONS

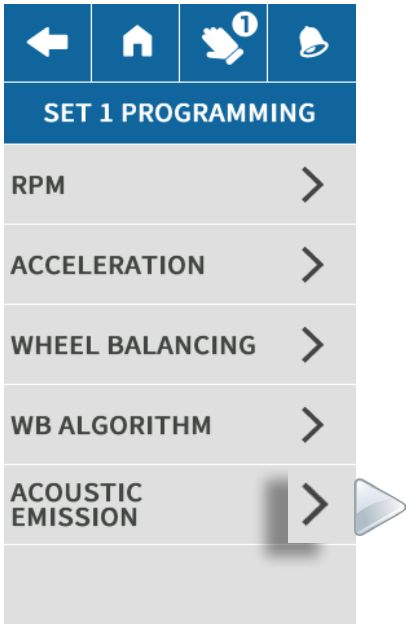
Indicates the positions of the weights during the first two steps of the manual pre-balancing procedure.

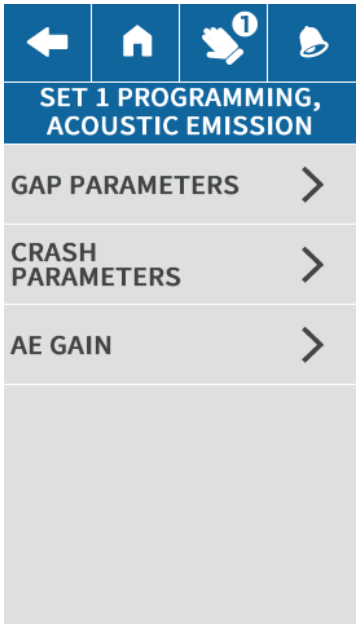
If HW PROG is disabled, it is possible to program step 1 of the manual pre-balancing procedure, indicating the positions of the weights (for example, if they are already mounted in these positions on the grinding wheel flange).
The positions of the weights with respect to the second step are calculated automatically by the P1DWB, by moving just one of the weights.

3.1.5 Acoustic Emission

Access level 1 (End User)

This option is visible only for the Contactless version.





Acoustic Emission programming menu:

It is possible to program the GAP and Crash checks on this page. The electronic unit uses an AE (ACOUSTIC EMISSION) sensor to detect the ultrasound energy generated by the contact between the grinding wheel and the work piece.

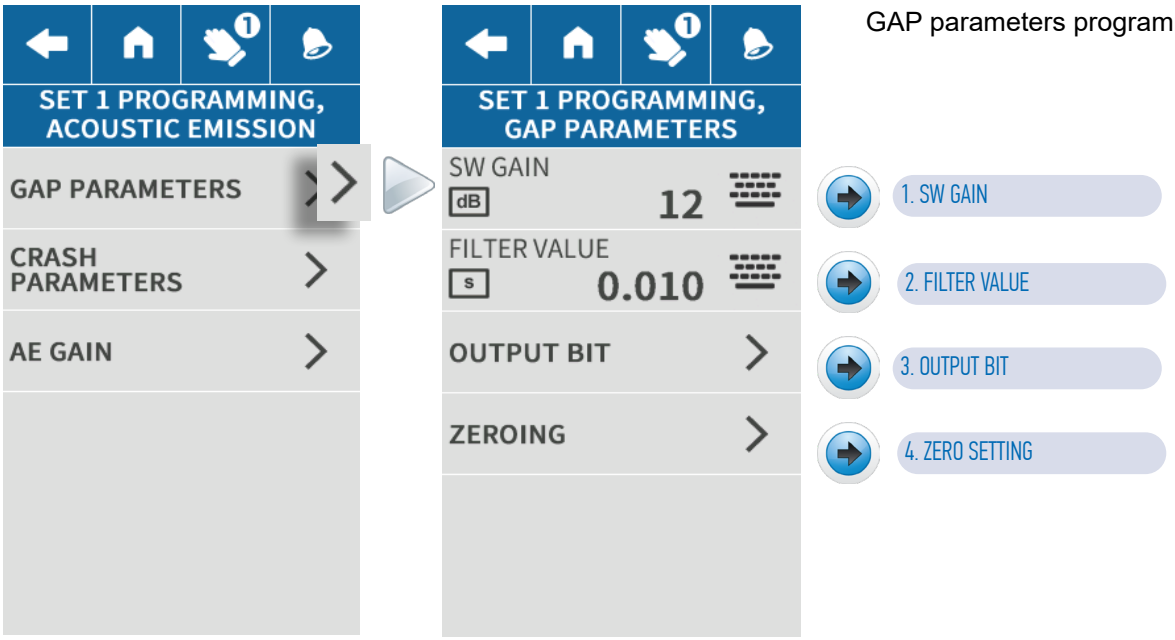
GAP Check:
The GAP check is used principally to carry out the contact check between the grinding wheel/work piece or grinding wheel/dressing wheel. A noise threshold is defined, which enables the system to detect the contact between the grinding wheel and the work piece, or the grinding wheel and the dressing wheel.
It may also be used for other purposes, for instance, by using a pre-defined noise threshold it is possible to determine the position of the grinding wheel with respect to a known reference.

CRASH Check
Definition of a correct noise threshold allows detection of accidental grinding wheel collisions.

BACK MENU PROG

3.1.5.1 Acoustic Emission - GAP Parameters

1 Access level 1 (End User)



GAP parameters programming page

1) GAP PARAMETERS - SOFTWARE GAIN

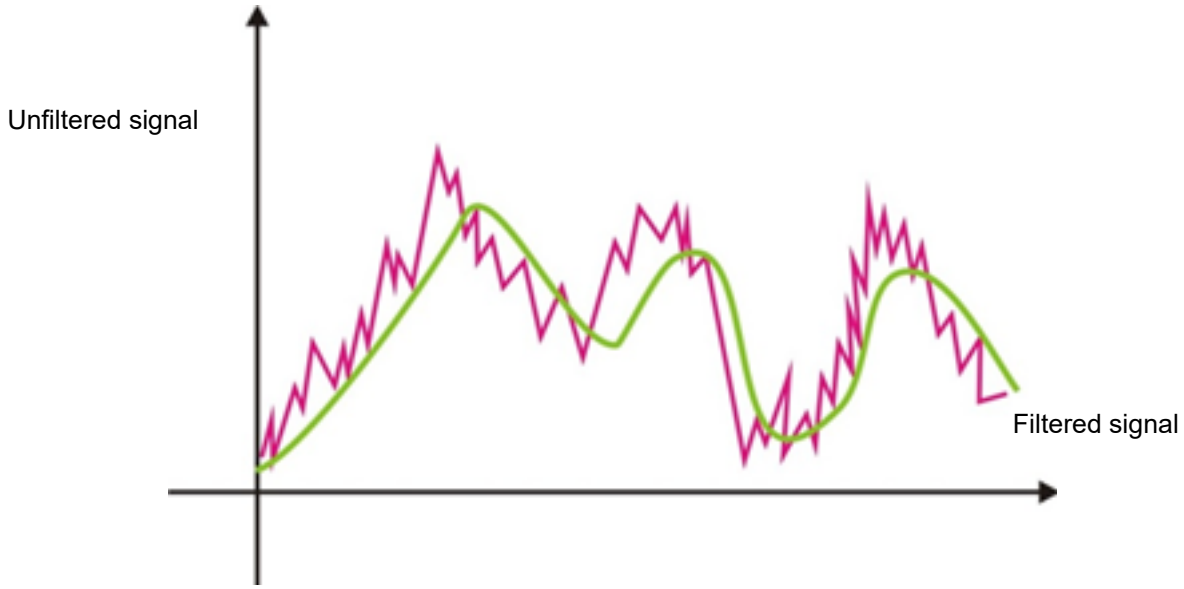
This parameter may be used to amplify the acoustic signal based on the value programmed in the **SW GAIN** parameter. (min 0 max 20 dB)

BACK MENU PROG

2) GAP PARAMETERS - FILTER VALUE

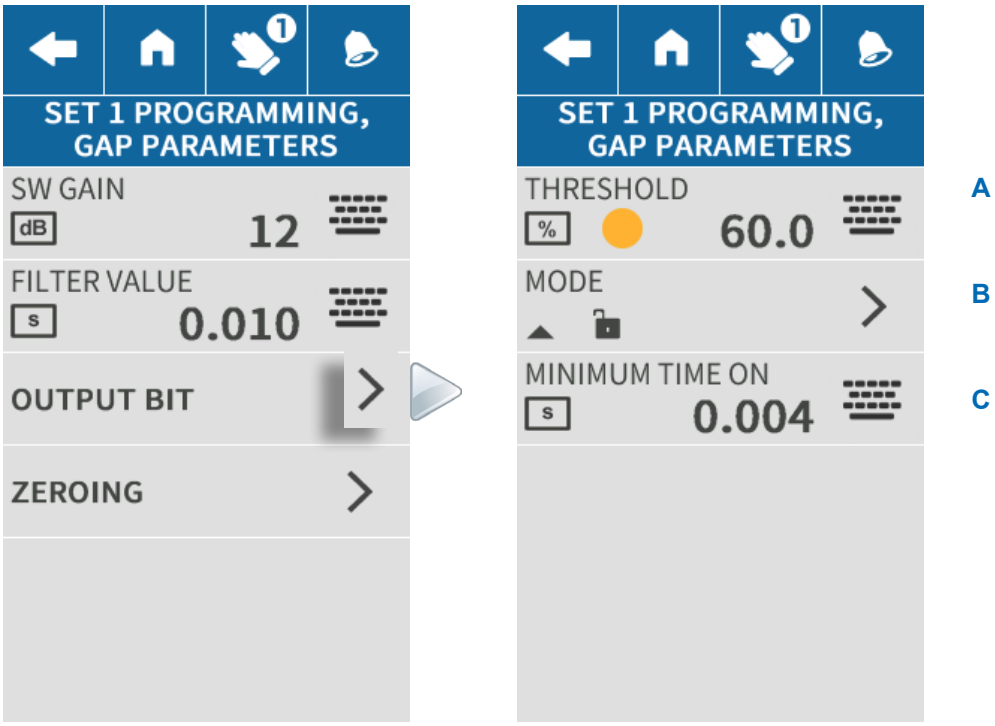
GAP Noise filtering

Value of the filter on the GAP background noise. The advantage of this filter is that it can be used to clean the signal by eliminating any ripple, although, naturally, this delays the point at which the GAP command is triggered.



Programmable range for F: between 0.000 and 0.060 seconds

3) GAP PARAMETERS - OUTPUT BIT

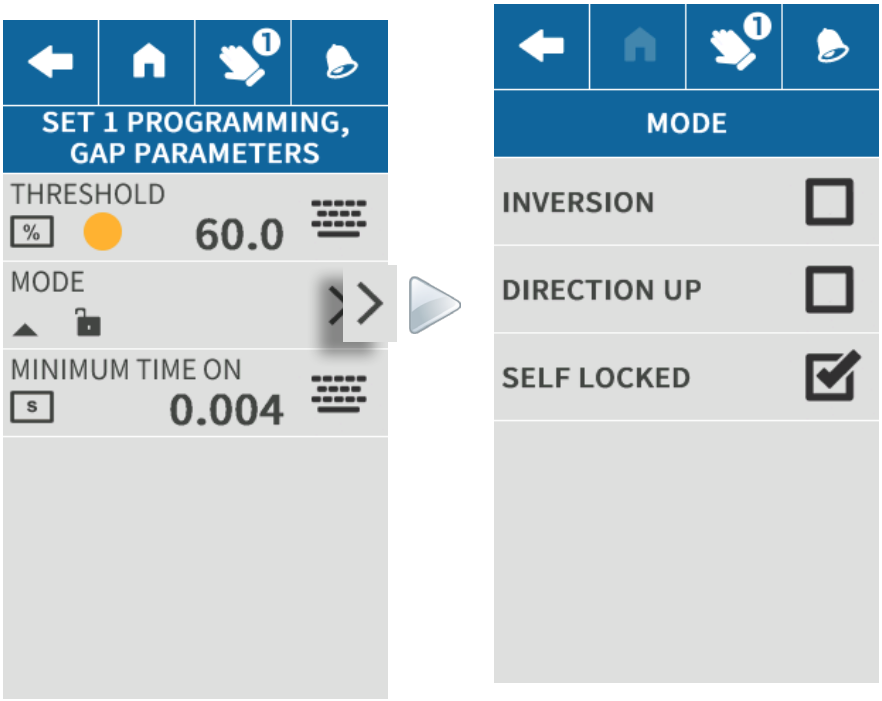


BACK MENU PROG

A) THRESHOLD

Use this parameter to set-up the trigger threshold for the GAP command used to determine the contact between the grinding wheel and work piece, or grinding wheel and dressing wheel.

B) MODE



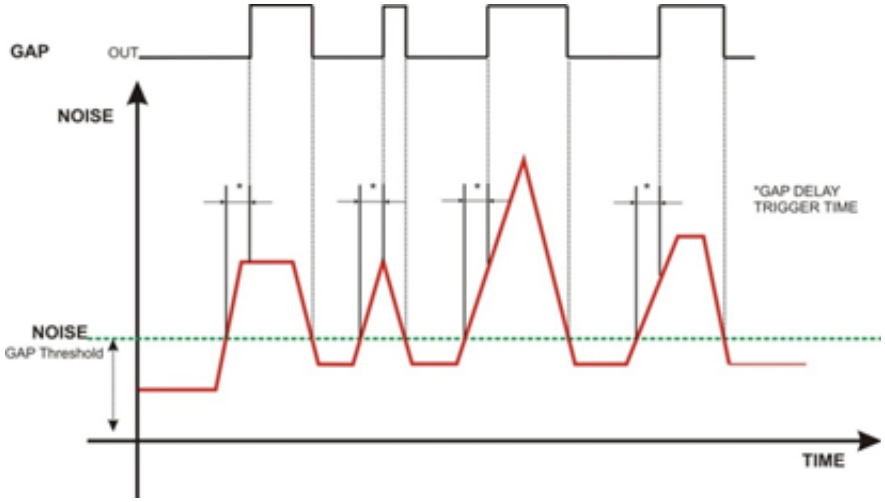
Use this section to define some behaviour for the GAP function

	INVERSION If activated, this function inverts the state of the output signal with respect to the control logic condition.
	DIRECTION UP If this function is activated, the Gap output command is triggered when the noise level exceeds the threshold S1.
	If the function is disabled, the Gap output command is triggered when the noise level drops below the threshold S1.
	SELF LOCKED
	GAP signal self locked: as soon as the machine control starts the cycle, the GAP signal is reset. When contact between the grinding wheel and the part or the abrasive dressing wheel is detected, the machine is supplied with the signal, which remains set until the next cycle start. This mode is recommended for the end of air gap check.
	GAP signal not self locked: as soon as the machine control starts the cycle, the GAP signal is reset. The signal supplied to the machine remains while there is contact detected between the grinding wheel and the part or the abrasive dressing wheel. As soon as contact ends, the GAP signal is switched off again. This mode is recommended for the dressing control.

BACK MENU PROG

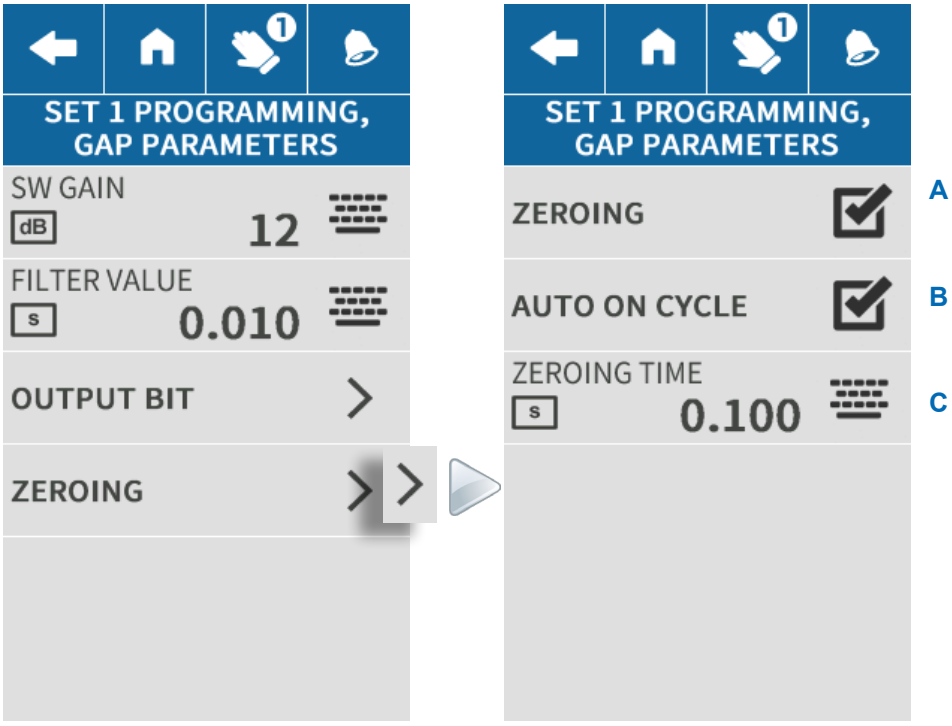
C) MINIMUM DURATION

This parameter may be used to define the minimum length of time that the GAP condition must be present before the corresponding command (activate GAP output) is triggered; this means that the Gap command will not be triggered until the noise level has exceeded the pre-set threshold value for a period greater than that set-up during this phase. In this way it is possible to filter out any impulse noise that might generate false GAP events, although this function will also delay the point at which the command is triggered.
Example of non self-locking GAP, active high:



BACK MENU PROG

4) GAP PARAMETERS - ZEROING



A) ZEROING ENABLED

The GAP channel may be processed in Absolute or Differential mode. If the “Zeroing enabled” function is enabled, differential mode is active.

B) AUTO ON CYCLE

If this parameter is enabled, the zeroing procedure is performed automatically at the start of each GAP cycle. Otherwise, the signal is reset by the quantity determined by the manual zeroing procedure at the start of each cycle.

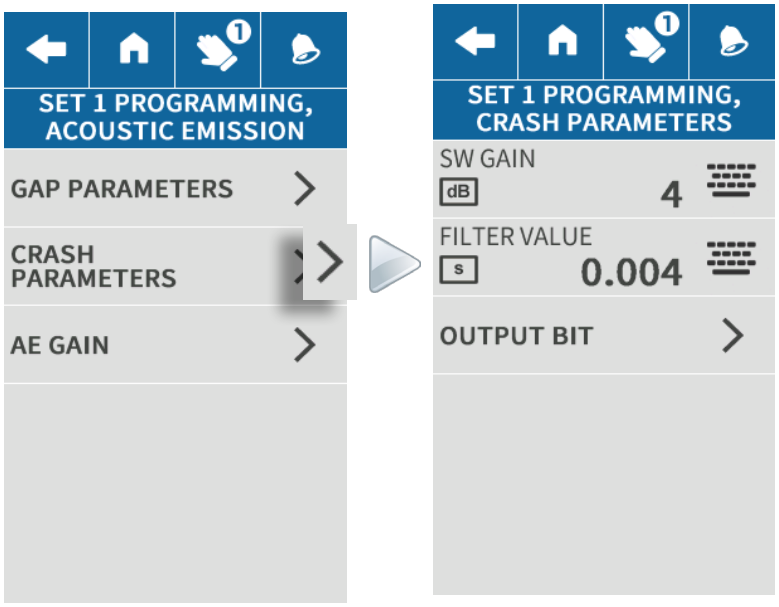
C) ZEROING TIME

This parameter defines how long the P1DWB acquires the background noise of the acoustic signal for.

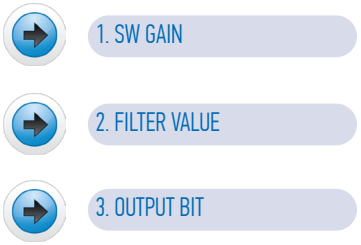
BACK MENU PROG

3.1.5.2 Acoustic Emission - CRASH Parameters

Access level 1 (End User)



CRASH parameters programming page:

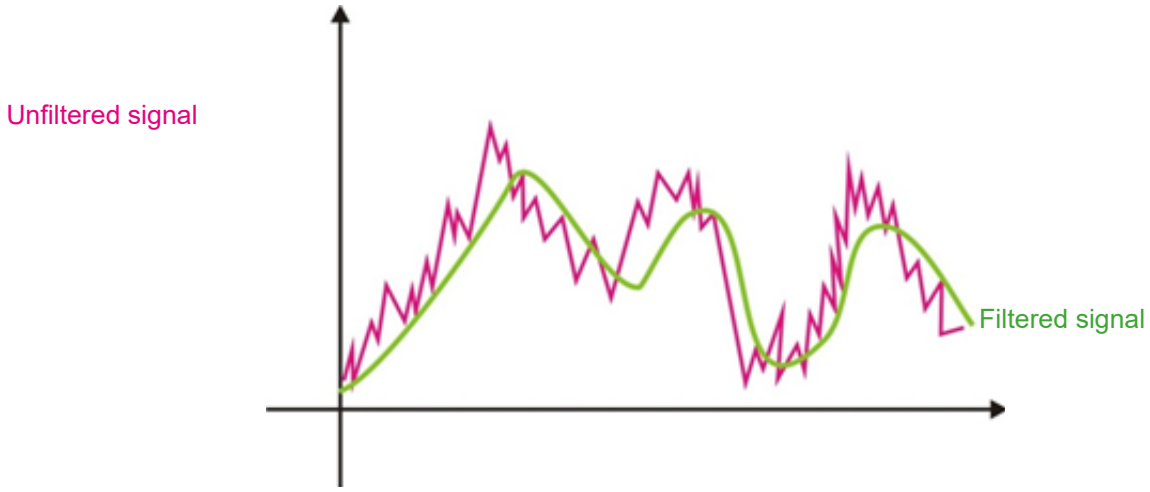


1) CRASH PARAMETERS - SOFTWARE GAIN

This parameter may be used to amplify the acoustic signal based on the value programmed in the **SW GAIN** parameter. (min 0 max 20 dB)

2) CRASH PARAMETERS - CRASH NOISE FILTERING

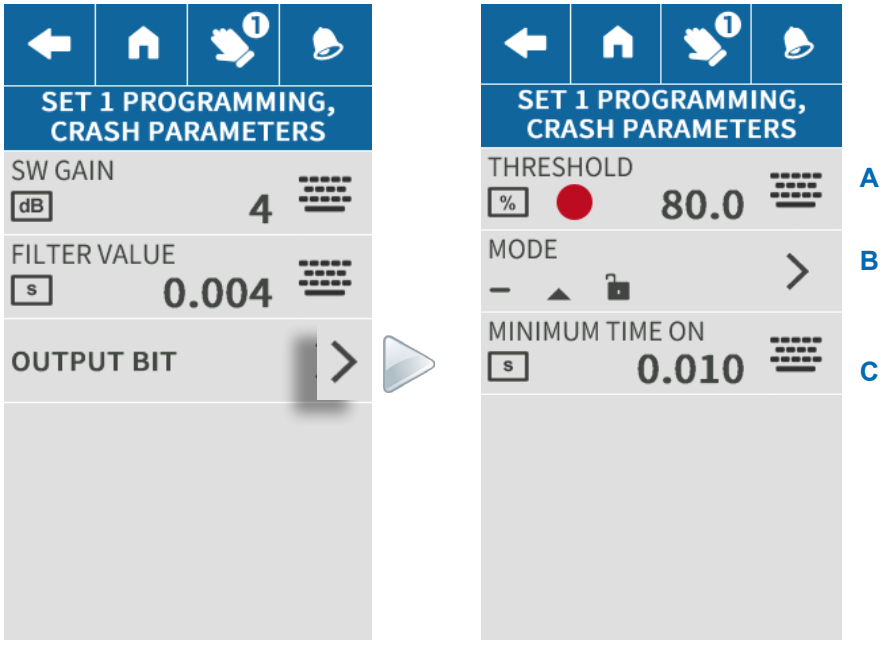
Value of the filter on the CRASH background noise. The advantage of this filter is that it can be used to clean the signal by eliminating any ripple, although, naturally, this delays the point at which the CRASH command is triggered.



Programmable range for F: between 0.000 and 0.060 seconds

BACK MENU PROG

3) CRASH PARAMETERS - OUTPUT BIT



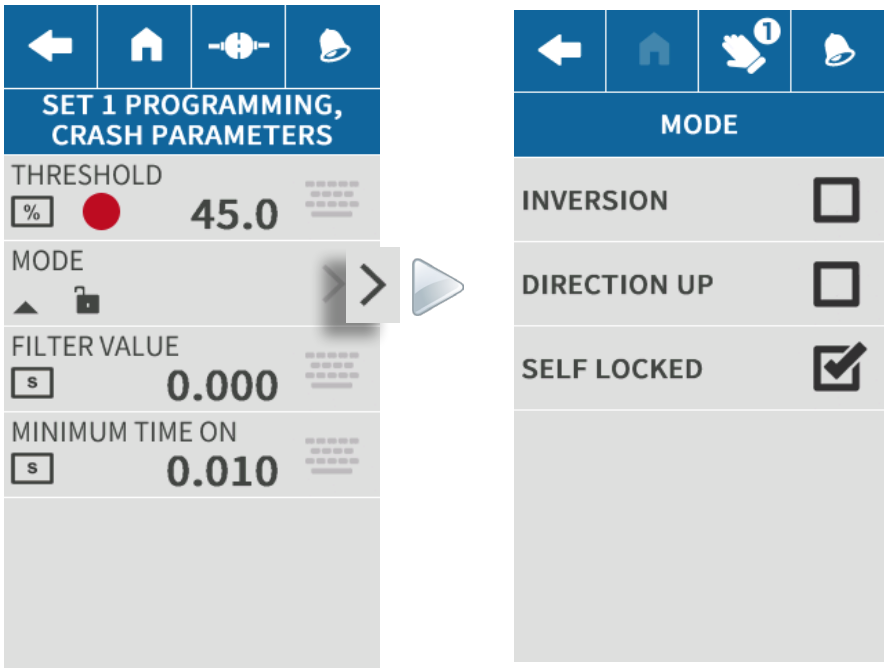
A) CRASH COMMAND THRESHOLD

This parameter is used to set the Crash command trigger threshold. The value set is always an absolute value.

Setting range: from 0 to 99.9 expressed as a linear value (default) or in decibels.

B) MODE

Use this section to define a series of aspects of the CRASH function



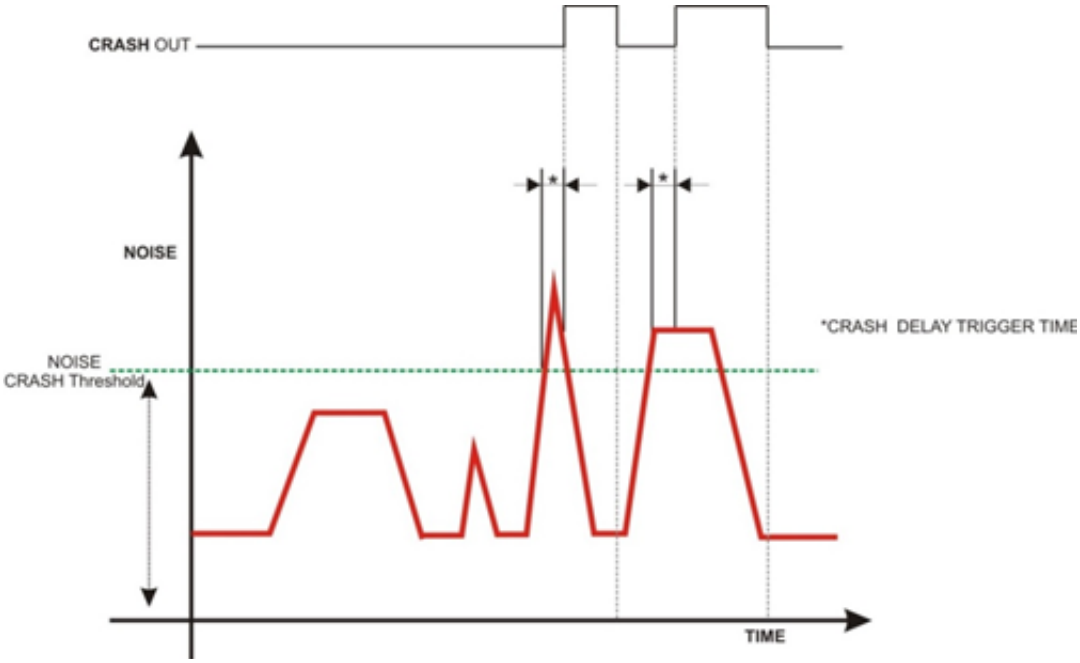
	INVERSION If activated, this function inverts the state of the output signal with respect to the control logic condition.
	DIRECTION UP If this function is activated, the Crash output command is triggered when the noise level exceeds the programmed threshold.
	If the function is disabled, the Crash output command is triggered when the noise level drops below the programmed threshold.
	SELF LOCKED
	Self-locked control. Once supplied the Crash output check is reset only at the successive Crash check enabling.
	NON self-locked control. The Crash output control is reset when the noise level drops below the trigger threshold.

BACK MENU PROG

C) MINIMUM DURATION

This parameter may be used to define the minimum length of time that the CRASH condition must be present before the corresponding command (activate CRASH output) is triggered; this means that the Crash command will not be triggered until the noise level has exceeded the pre-set threshold value for a period greater than that set-up during this phase. In this way it is possible to filter out any impulse noise that might generate false Crash events, although this function will also delay the point at which the command is triggered.

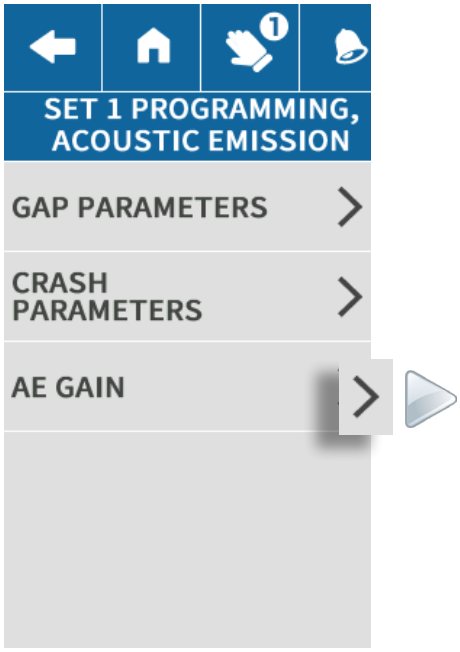
Example of non self-locking CRASH, active high:



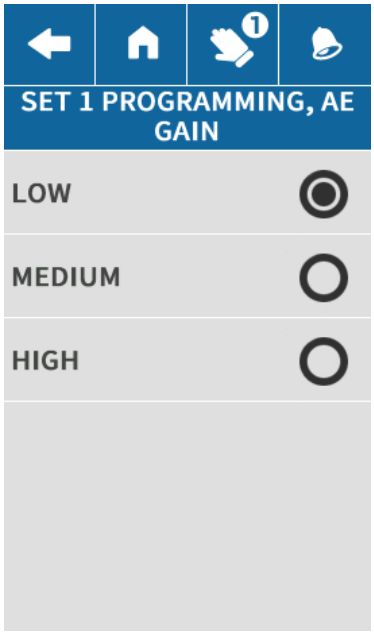
Setting range between 0 and 9.999 seconds (resolution 0.001 seconds).

3.1.5.3 Acoustic Emission - AE GAIN

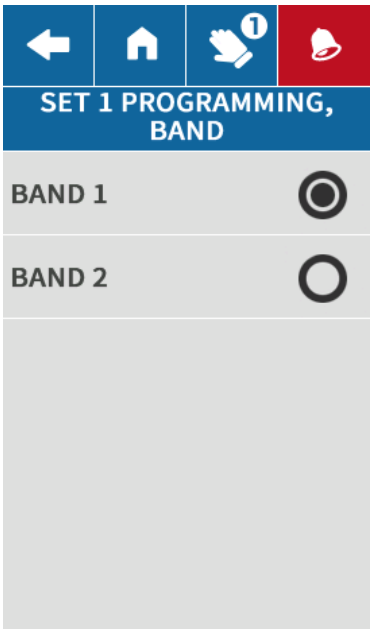
Access level 1 (End User)



1) MiniCT heads page



2) Page for E78N/E82



1) If the unit is equipped with MiniCT measurement heads, the select gain value window is opened

- Low
- Medium
- High

Increasing the gain value increases the sensitivity of the acoustic application, provided the background noise permits it.
Gain = amplification factor applied to the noise measurement acquisition.

2) If the unit is equipped with E78N/E82 measurement heads, the select Frequency Band window is opened

Hardware filtering within the rotor of the signal acquired at high frequency.

- Band 1: between 50 and 100 kHz
- Band 2: between 100 and 200 KHz

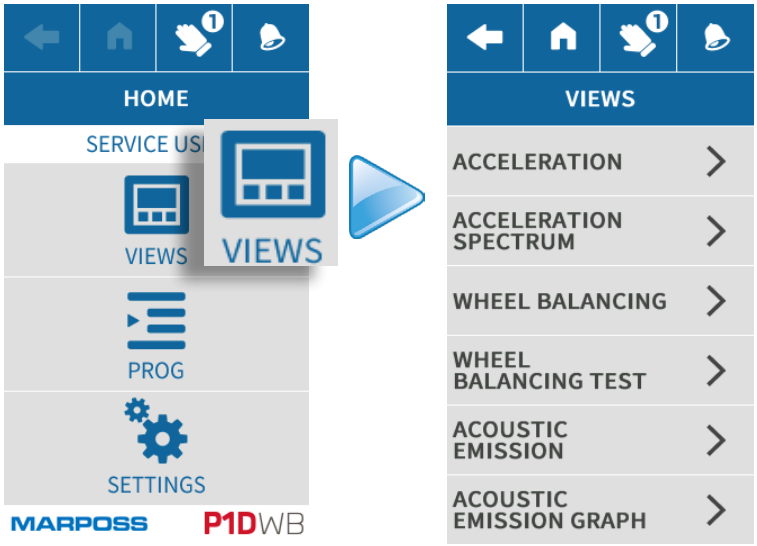
BACK MENU PROG

4. *VIEWS MENU*

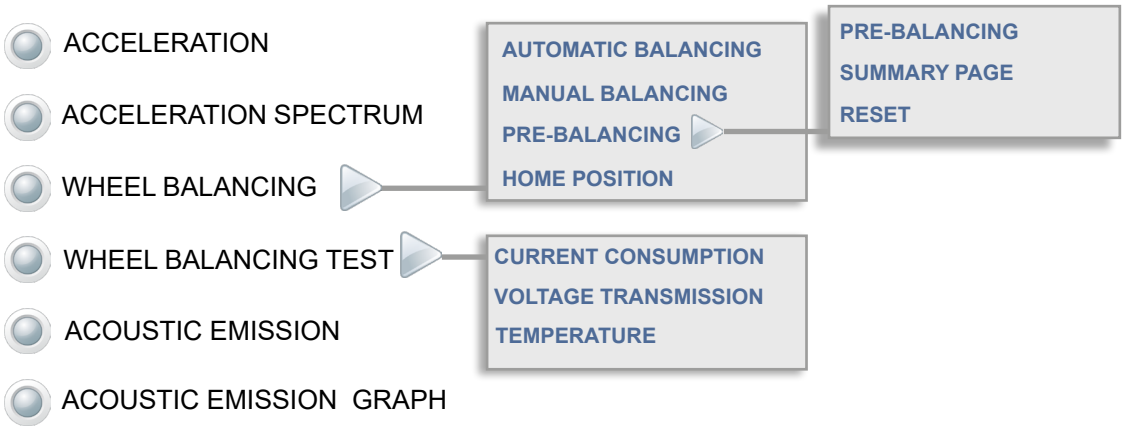
Programming in manual mode only

View only in automatic mode

Access level 1 (End User)



VIEWS MENU



This menu can be used to access the various balancing and acoustic measurement display pages.

NOTE
The display pages described in the following paragraphs include various LEDs that indicate when the thresholds set-up during the vibration programming phase have been exceeded.

Green LED = optimum balancing

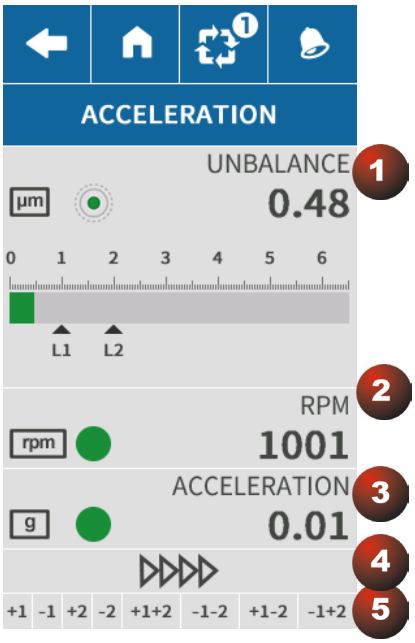
Yellow LED = acceptable balancing

Red LED = excessive vibration

4.1 Acceleration menu

Access level 1 (End User)

The acceleration value is a signal that directly comes from the vibration sensor (accelerometer).



1) UNBALANCE
Vibration measurement displayed as a numerical value and a bar-graph.

2) RPM
Grinding wheel rotation speed.

3) ACCELERATION
acceleration value display (g)

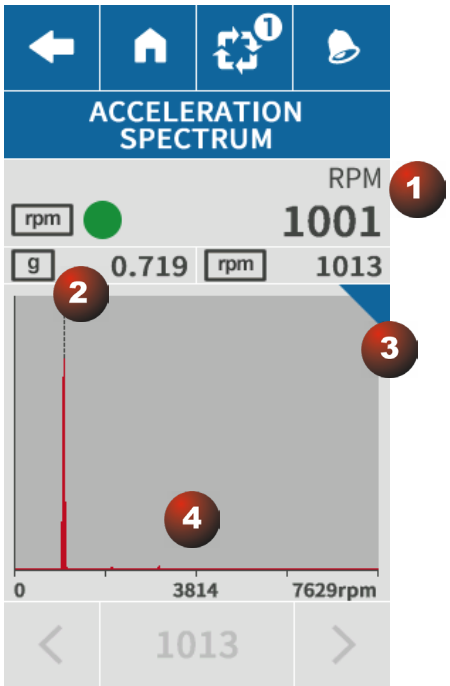
4) Motor speeds display

5) Balancing weights movement display

4.2 Acceleration Spectrum menu

Access level 1 (End User)

The procedure for frequency spectral analysis makes it possible to gauge the unbalance due to frequencies different from the wheel rotation ones (noise frequencies).



1) RPM
Grinding wheel rotation speed.

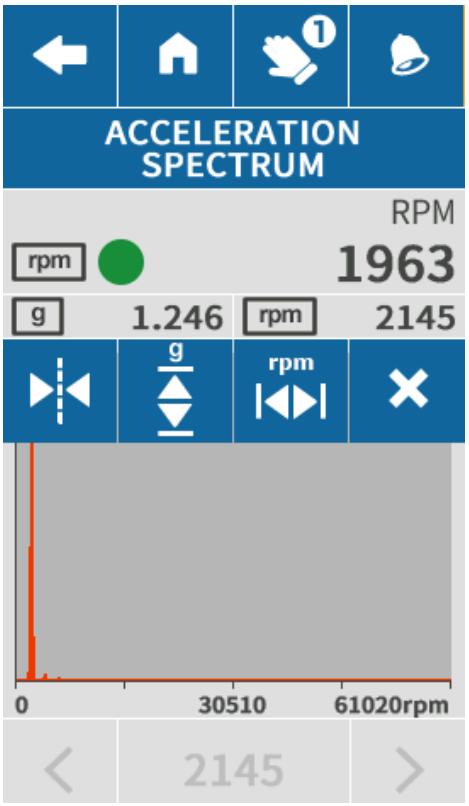
2) acceleration value display (g)

3) Key for opening the options window

4) Spectrum display

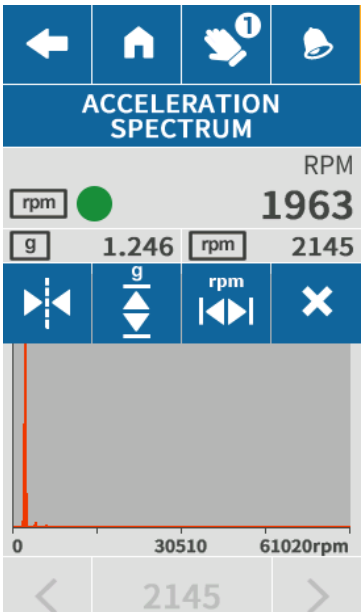
BACK MENU VIEWS

Options window

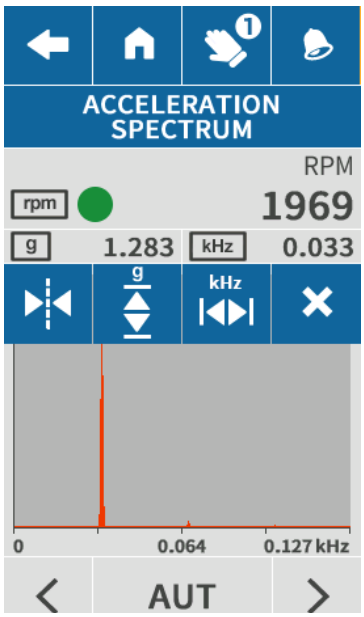


	Vertical slider
	Vertical scale
	Horizontal scale
	Close options window

Vertical slider that may be either automatic or manual:



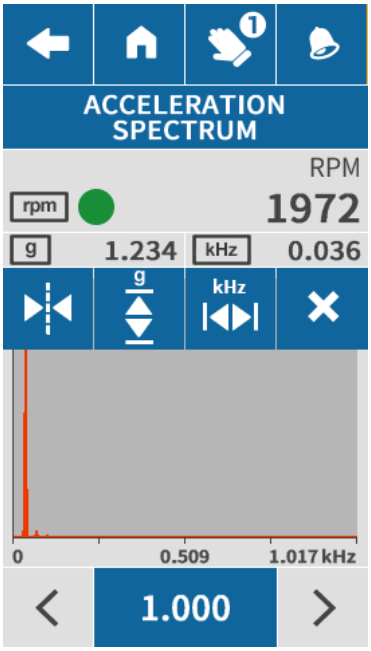
AUTOMATIC indicates the current maximum value on the graph



MANUAL: the user positions the slider by means of a selector located under the graph, which is enabled only once the options window has been closed.

BACK MENU VIEWS

Automatic/manual vertical scale

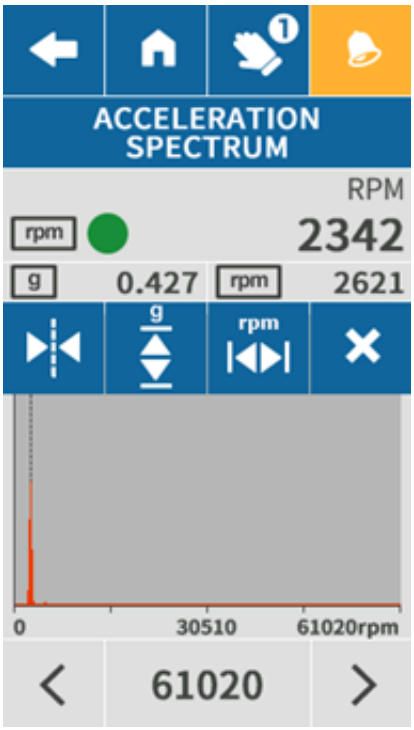


AUTOMATIC: the y-axis is rescaled automatically so that it always covers the available area.

MANUAL: the graph is displayed with a maximum value that the user sets up by entering a value using the selector located under the graph. It is possible to define a value directly by clicking on this button and opening the numerical keypad.

Horizontal scale kHz/rpm

Press once to change the X axis scale from kHz to rpm, once the desired scale has been selected. The selector under the graph may be used to select between the various full scale values.

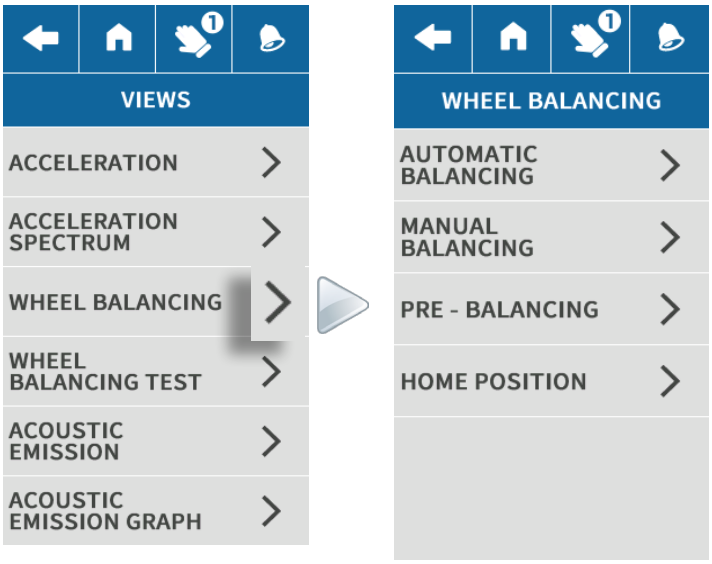


BACK MENU VIEWS

4.3 Wheel Balancing menu

Programming and Display in manual mode only

Access level 1 (End User)



This menu may be used to access the balancing display pages:

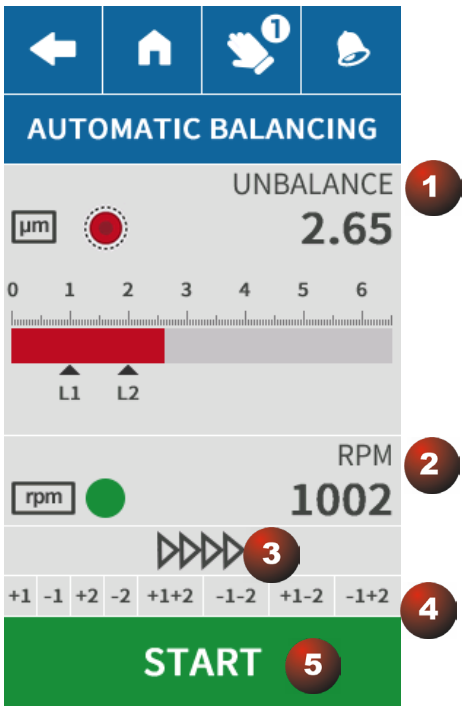
- AUTOMATIC BALANCING
- MANUAL BALANCING
- PRE-BALANCING
- HOME POSITION

BACK MENU VIEWS

4.3.1 Automatic Balancing Display page

Automatic wheel balancing cycle with manual or automatic start cycle control (function possible only when the proper logic enabling signal is present).

Access level 1 (End User)

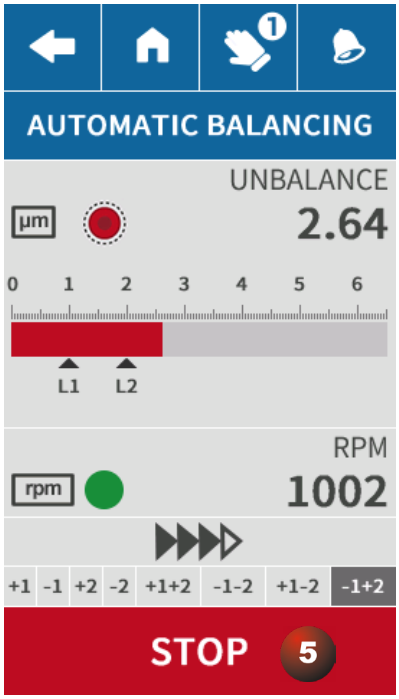


1) UNBALANCE
Measured vibration value
L1 and L2 indicate the pre-set threshold values

2) RPM
Grinding wheel rotation speed.

3) Motor speeds display

▶▷▷▷	Lowest speed
▶▶▷▷	
▶▶▶▷	
▶▶▶▶	Highest speed



4) Balancing weights movement display When initiating the cycle with the START command, the type of movement in use is indicated.

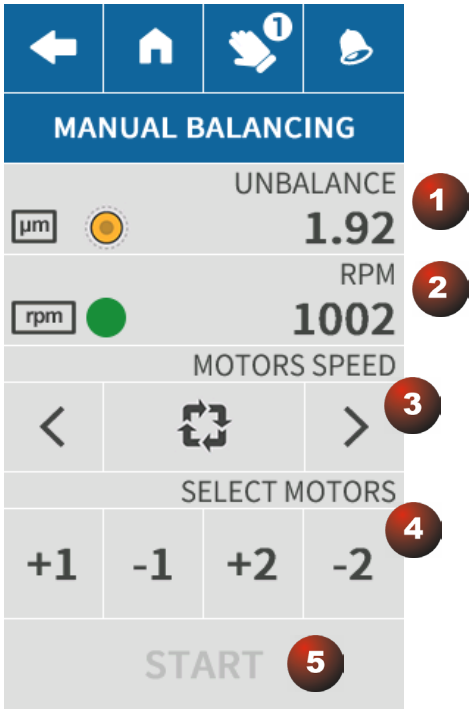
5) START /STOP
Automatic balancing cycle start and stop

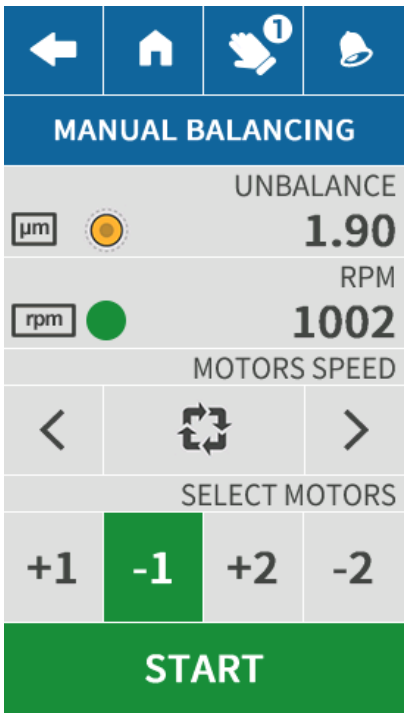
BACK MENU VIEWS

4.3.2 Manual Balancing Display page

Wheel balancing with manual control of the motors that actuate the balancing heads weights.

1 Access level 1 (End User)





1) UNBALANCE
Measured vibration value

2) RPM
Grinding wheel rotation speed.

3) MOTOR SPEED
Speed regulated automatically by the P1DWB, alternatively, it is possible to set-up the desired speed for the selected motor using the lateral arrows.

▶▷▷▷	Lowest speed
▶▶▷▷	
▶▶▶▷	
▶▶▶▶	Highest speed

4) SELECT MOTORS
These soft keys are used to operate the motors used to move the balancing head weights manually:

+1	Weight 1 forward motor
-1	Weight 1 back motor
+2	Weight 2 forward motor
-2	Weight 2 back motor

5) START /STOP
When the operator presses the weights movement button, it enables the START button, which is used to start the manoeuvre.

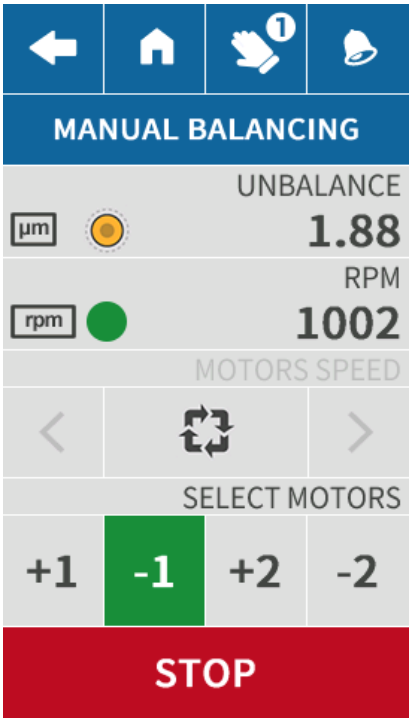
The weights may also be moved simultaneously, and in opposing directions.

BACK MENU VIEWS

Manual balancing cycle start and stop

PROCEDURE:

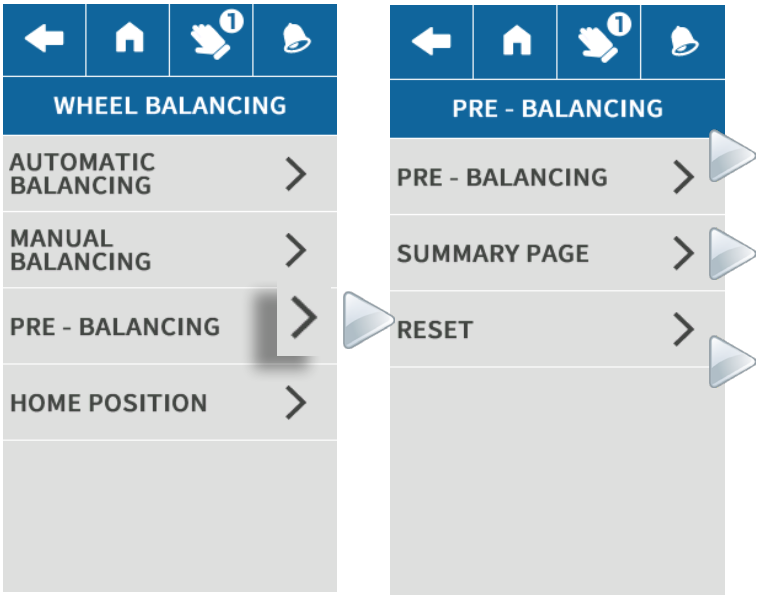
- Select the speed for the balancing weight movement motors **(3)**
- Wheel rotating at the work speed
- Use the appropriate soft keys **(4)** to control the movement of the motors relevant to the masses movement to the desired direction, bringing the vibration value **(1)** within the desired limit.



4.3.3 Pre-Balancing page

Access level 1 (End User)

This function is active only in the case of MINICT Balancing Heads, or with external RPM sensors, starting from P1DWB SW version 1.4.



Access the Pre-Balancing procedure page.

PRE-BALANCING

Access the menu used to display the data acquired during the Pre-Balancing phase

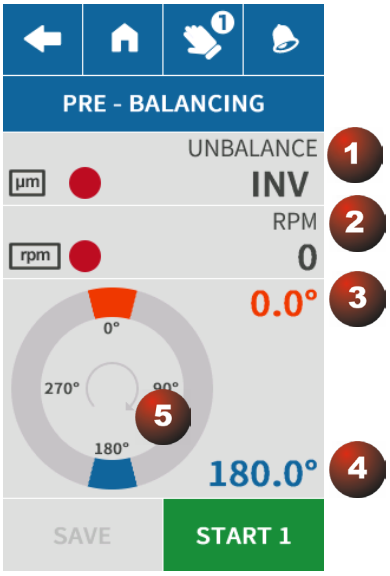
SUMMARY PAGE

Cancel all the Pre-Balancing data

RESET

BALANCING - PRE-BALANCING PROCEDURE

This procedure involves balancing the grinding wheel by positioning two identical weights on the grinding wheel flange.
Balancing is achieved through a series of measurement steps, as illustrated on the following pages.



The page consists of the following parameters:

1) UNBALANCE
Measured vibration value

2) RPM
Grinding wheel rotation speed.

3) Indicates the angular position of weight 1

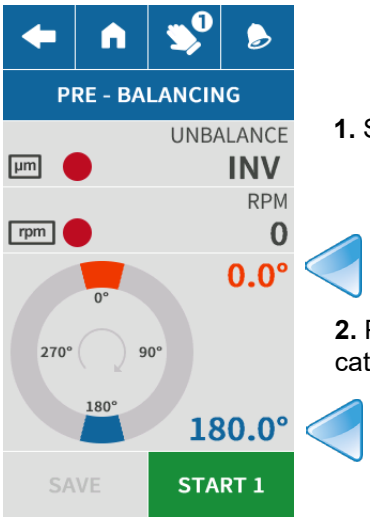
4) Indicates the angular position of weight 2

5) Graphic display indicating the angular positions of the weights

BACK MENU VIEWS

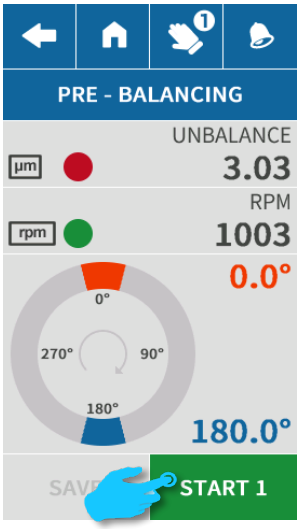
PRE-BALANCING PROCEDURE

a) Move the balancer, if present, to the Home Position
b) Perform the pre-balancing steps:

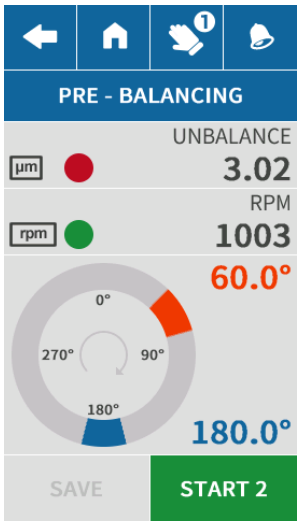


1. Stop the grinding wheel rotation

2. Position the balancing weights at 0° and 180°, as indicated

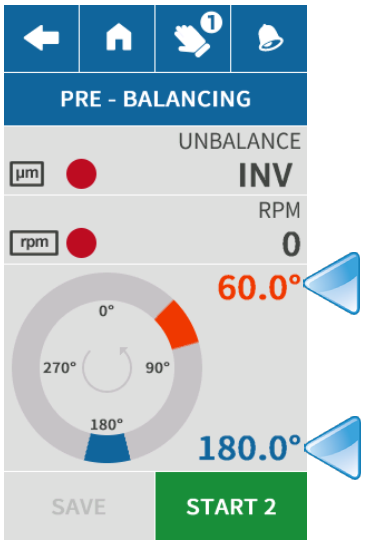


3. Set the grinding wheel in motion, wait until the vibration value stabilises, then press START 1



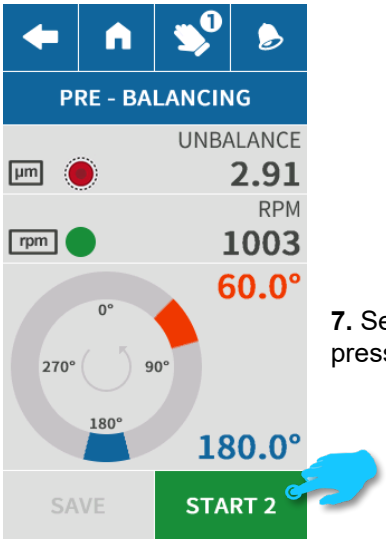
4. The first result is displayed and the graphic display indicating the position of the weights is updated.

5. Stop the grinding wheel rotation

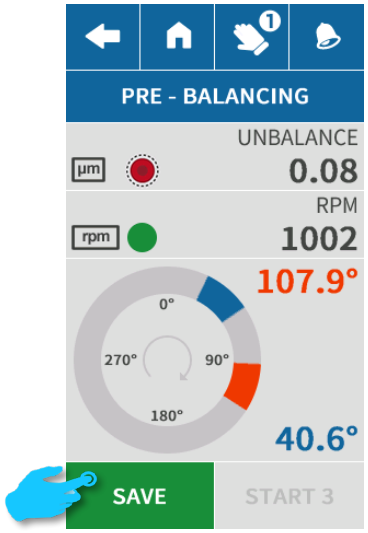


6. Position the balancing weights at 60° and 180°, (as requested).

BACK MENU VIEWS



7. Set the grinding wheel in motion, wait until the vibration value stabilises, then press START 2



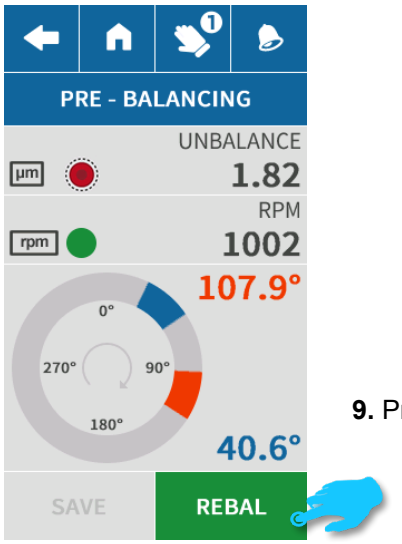
8a. If the value of the imbalance is less than the programmed value of L1, it is possible to conclude the pre-balancing procedure by pressing the SAVE key.

8b. If the target value L1 is not reached, on the other hand, it is possible to fine-tune the position of the balancing weights, by pressing the START3 key, until the target is reached. The START3 key is enabled only if the target value L1 is not reached.
To terminate the procedure, press the SAVE key.

BACK MENU VIEWS

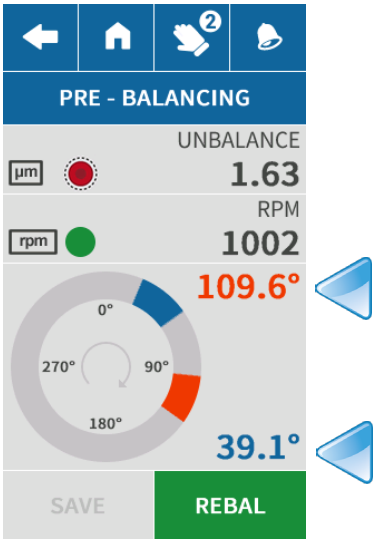
REBAL

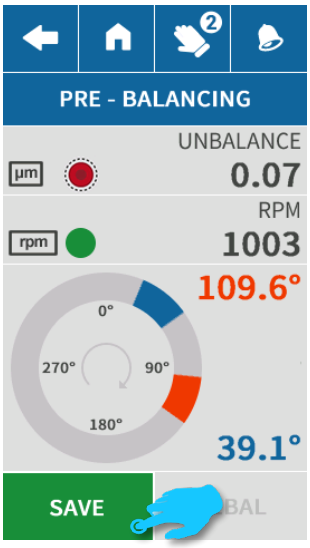
Once the imbalance in the machine has increased so that it exceeds the threshold L2 again, it is possible to rebalance the wheel starting from the last saved positions of the weights, or reduce the imbalance in a single attempt by pressing the REBAL (RE-BALANCING) key.



9. Press REBAL

10. Stop the wheel and position the weights as requested, then restart the wheel.



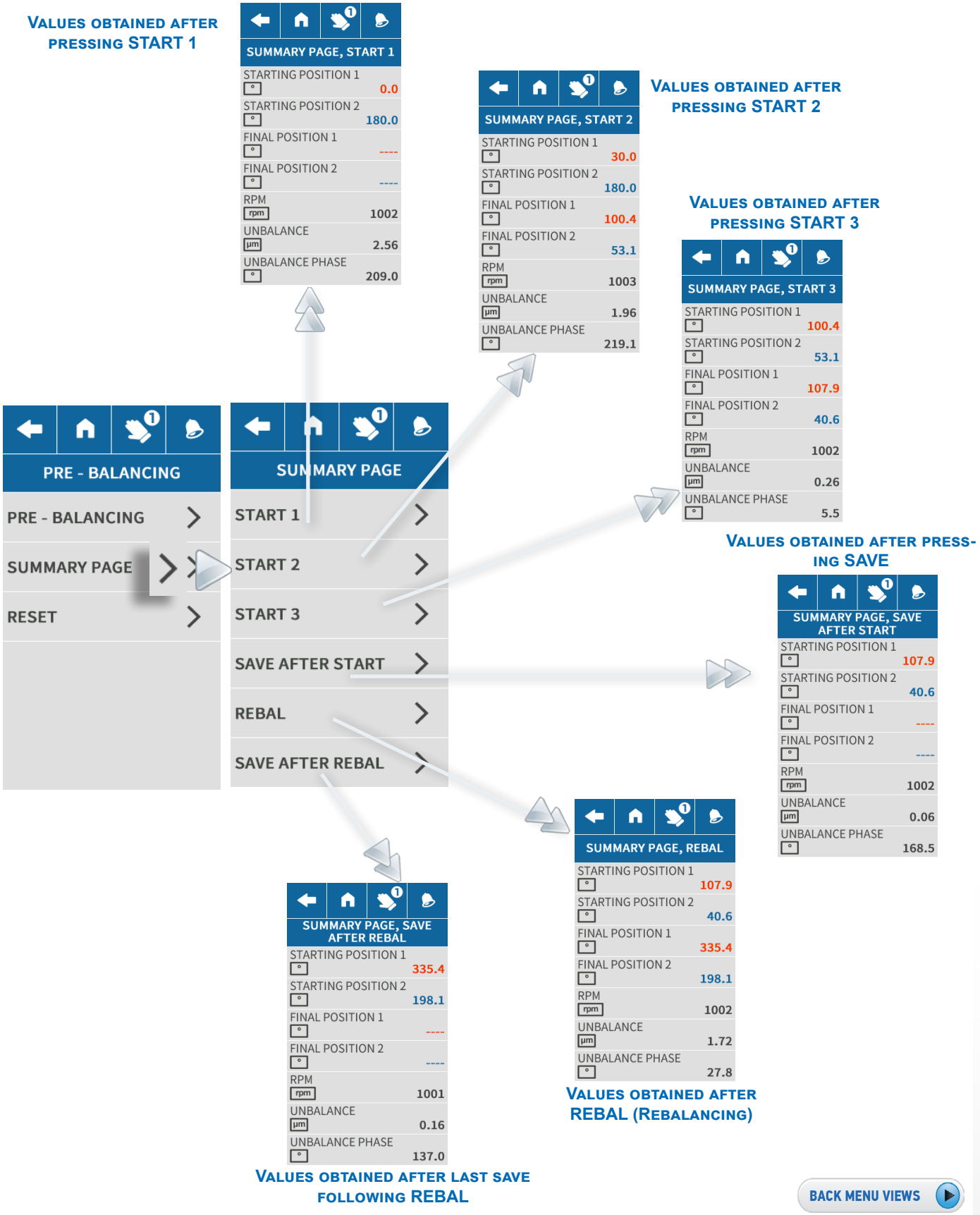


11. Press the Save key to complete the procedure.

BACK MENU VIEWS

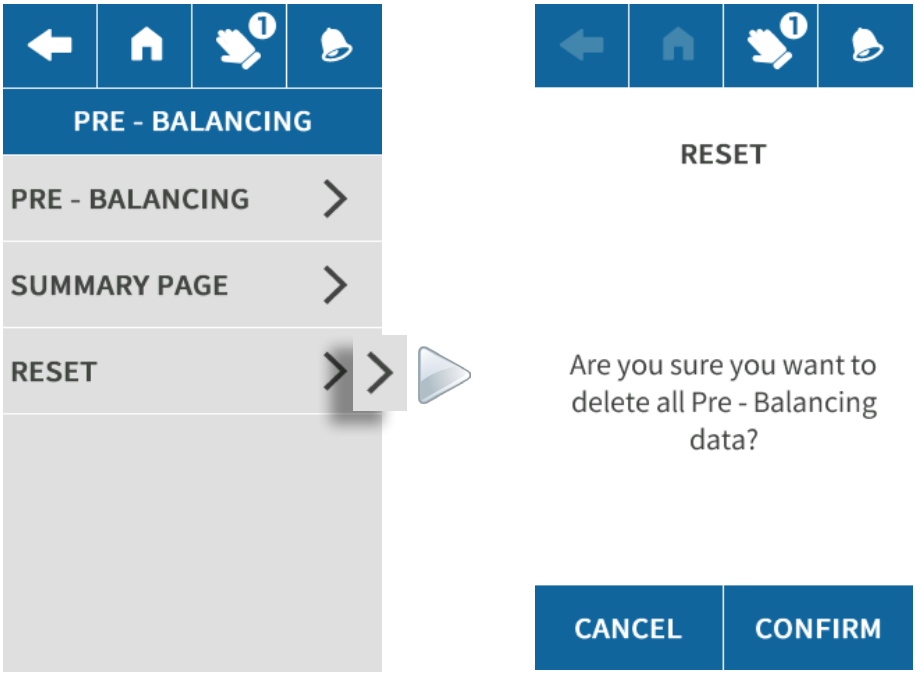
BALANCING - SUMMARY PAGE

By accessing the Summary page it is possible to display and consult the various intermediate results obtained during the Manual Pre-Balancing procedure described above.



BALANCING - RESET

Access the Pre-Balancing Menu and press the RESET key to cancel all the data acquired and set-up during the pre-balancing procedure.
Press the RESET key to open a confirmation page and press CONFIRM to reset all the data, or CANCEL to cancel the RESET operation.



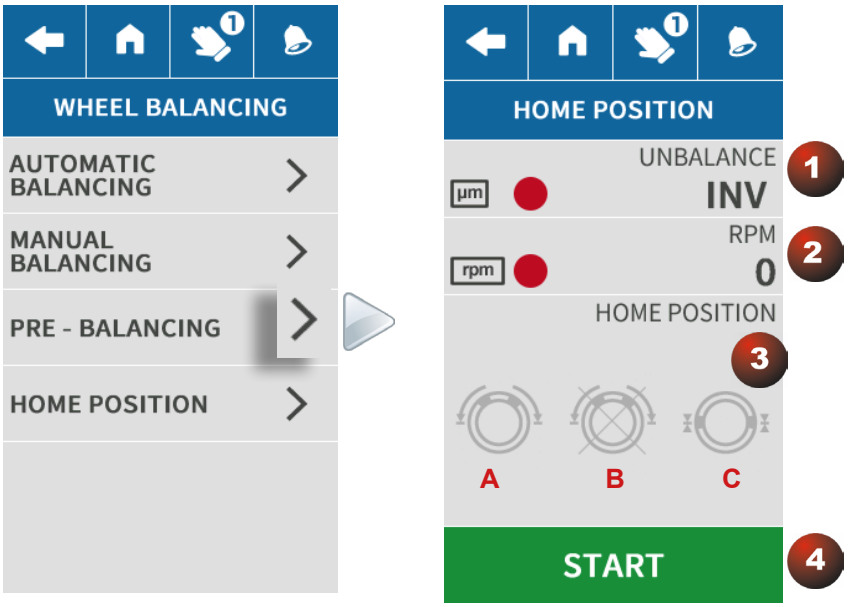
BACK MENU VIEWS

4.3.4 HOME Position page

The balancing head is in the Home position (or neutral position) when the heads are in counterposing positions. The purpose of this function is to eliminate the unbalancing contribution introduced by the balancing head itself.

Once the Home cycle is complete, the residual vibration is mainly attributable to the imbalance in the machine rotating components (grinding wheel, spindle, etc.)

WARNING
The grinding wheel must be stationary when performing the Home cycle



1) UNBALANCE
Measured vibration value

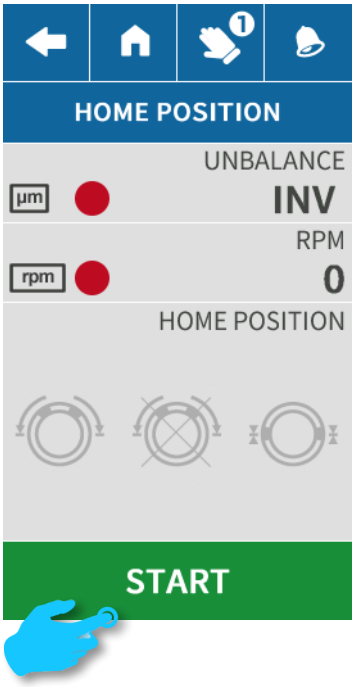
2) RPM
Grinding wheel rotation speed.

3) HOME POSITION
Home cycle process indicators
a) When active it indicates that the Home position search is in progress
b) When active it indicates that the search has been interrupted and that the Home position was not reached.
c) When active it indicates that the Home position has been reached
(See the following pages for description of the procedure)

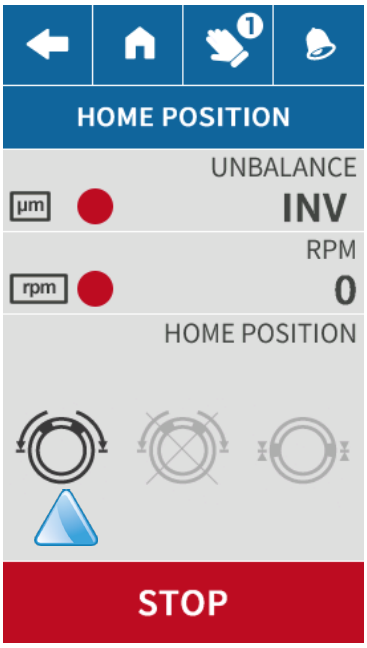
4) START/STOP
Press START to initiate the Home position search
In order to complete the procedure before the weights reach the neutral position, press STOP

BACK MENU VIEWS

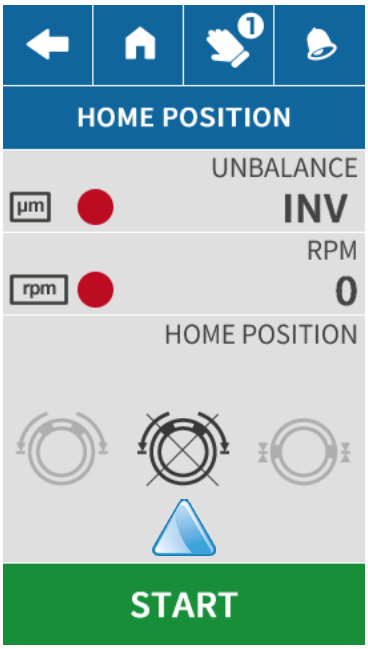
PROCEDURE



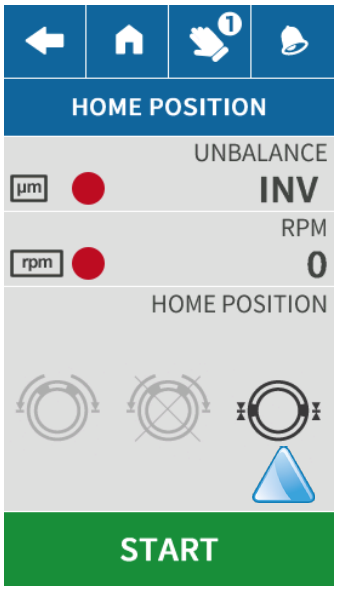
1 Press START to initiate the Home cycle



2 The icon that indicates that the Home position search is in progress is activated



3. If the search is interrupted by pressing the **STOP** button, or it is not possible to reach the Home position, the following icon is activated.



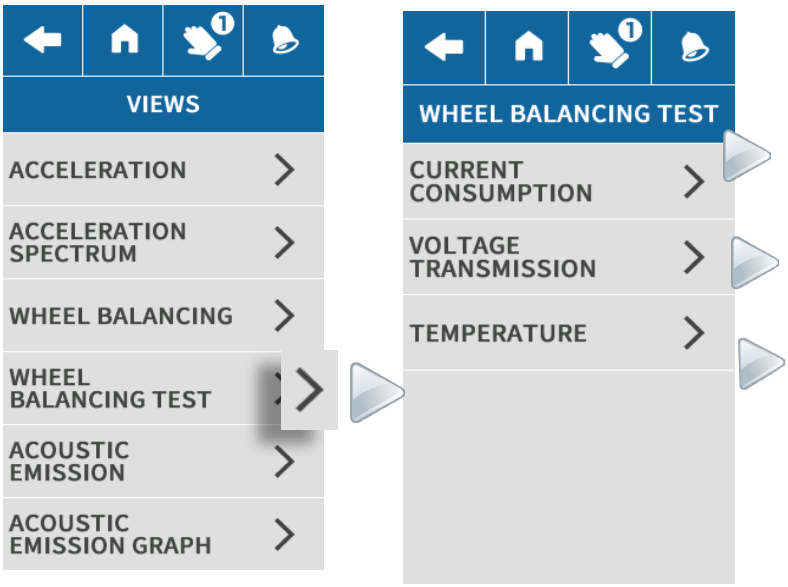
4 If the Home position is reached correctly, the following icon is activated.

BACK MENU VIEWS

4.4 Balancing Test page

Programming and Display in manual mode only

Access level 1 (End User)



Current Consumption
Access this page to monitor the current consumption

CURRENTS DRAWN

Voltage Transmission
Access this page to monitor the voltage value between the receiver and transmitter

TRANSMISSION VOLTAGE

Temperature
Access this page to monitor the temperature between the receiver and transmitter

TEMPERATURE

BACK MENU VIEWS

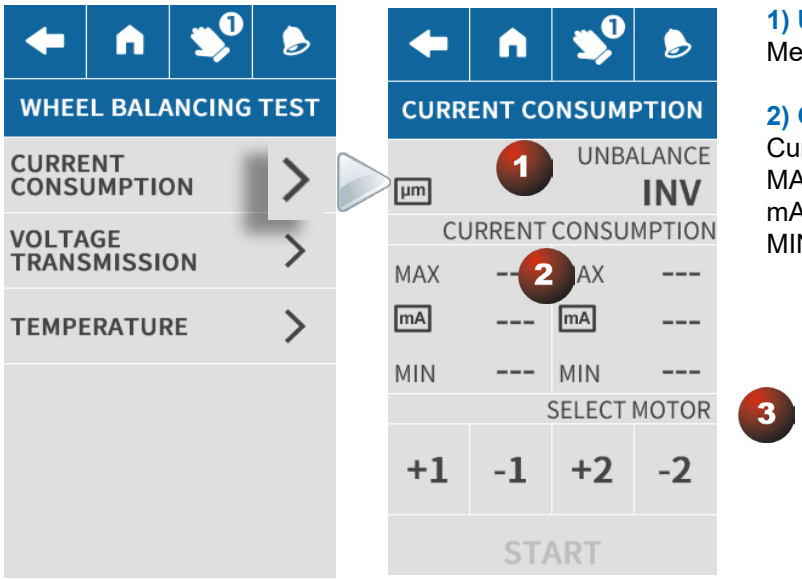
4.4.1 Current drawn

1 Access level 1 (End User)

This function allows viewing the instant value, maximum and minimum, of current absorbed by the motors that actuate the balancing weights, while moving to the selected direction.
The current input value is expressed in mA.

NOTE
This check may be carried out while the grinding wheel is stationary or rotating. If the wheel is rotating, take care not to exceed the vibration limits.

During the motors movement the following appears:



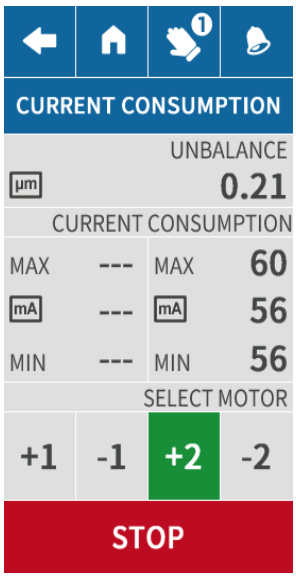
1) UNBALANCE
Measured vibration value

2) CURRENT CONSUMPTION
Current consumed by the weight 1 and 2 motors.
MAX= Maximum current consumption value
mA= Instantaneous current consumption value
MIN= Minimum current consumption value

3) SELECT MOTORS

Use +1 , -1 , +2 and -2 to control the movement of the motors relevant to the movement of the masses to the desired direction.

+1	Weight 1 forward motor
-1	Weight 1 back motor
+2	Weight 2 forward motor
-2	Weight 2 back motor



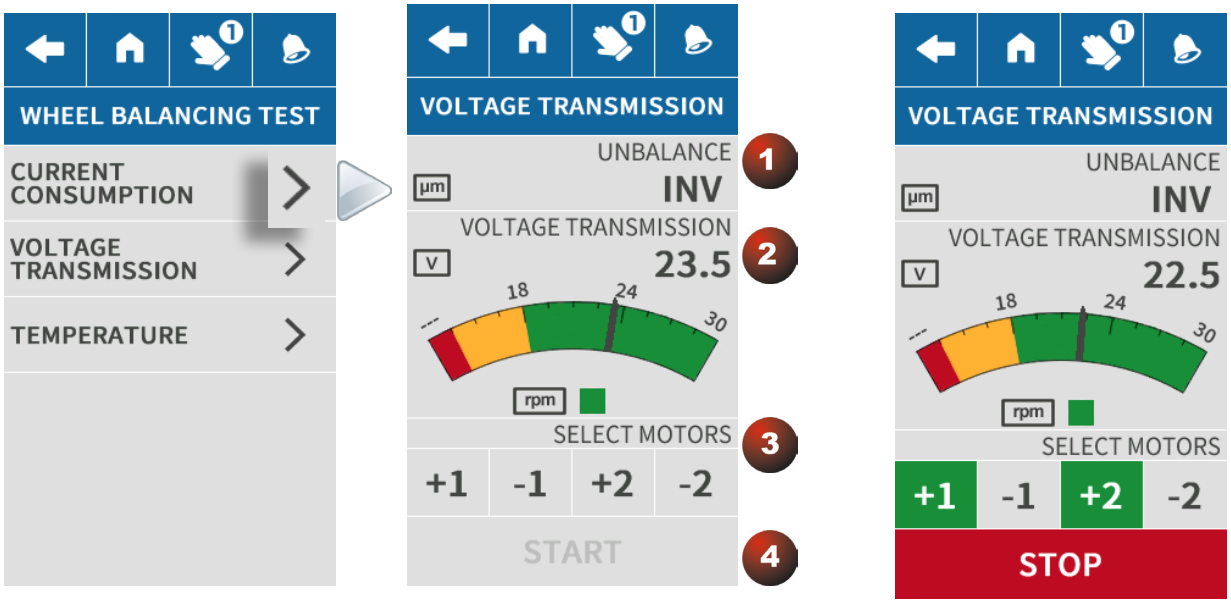
When the operator presses the weights movement button, it enables the START button, which is used to start the manoeuvre.
It is possible to control just one movement at a time.

BACK MENU VIEWS

4.4.2 Transmission Voltage

1 Access level 1 (End User)

This page displays the value of the voltage between transmitter and receiver (receiver supply voltage) while the motors are stationary and running.



1) UNBALANCE
Measured vibration value

2) VOLTAGE TRANSMISSION
Value of the voltage between transmitter and receiver.
The working voltage between the transmitter and receiver varies depending on the type of transmitter/receiver unit and the distance between the two.
Transmitter/receiver unit type MINI CT: The voltage must be greater than 20 V at full load (with both motors running) and less than 27 V when both motors are stationary. The optimal working voltage for MINICT is between 23 V and 26 V, therefore we recommend regulating the distance to obtain an optimal voltage value (where possible).

3)RPM
On this page a virtual LED warns when the RPM sensor is aligned with the slot on the rotary portion of the balancing head. This LED can be used to verify the efficiency of the RPM sensor (LED on/off).

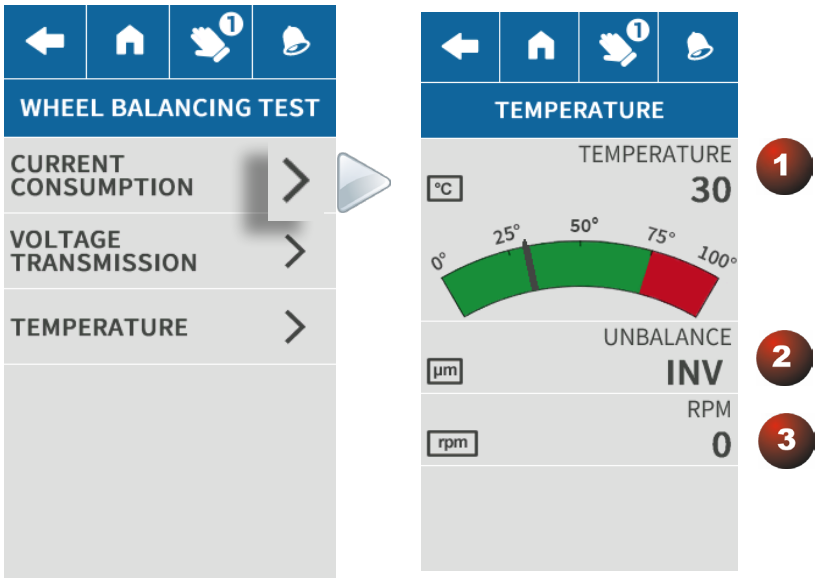
4) SELECT MOTORS
This page displays the value of the voltage between transmitter and receiver while the weights are moving (both the motors of the balancing head are moving).
The aim of this check is verifying whether there are irregular voltage drops during the maximum absorption of the remote actuator.

+1	Weight 1 motor forward	+2	Weight 2 motor forward
-1	Weight 1 motor back	-2	Weight 2 motor back

BACK MENU VIEWS

4.4.3 Temperature

THIS PAGE IS DISPLAYED ONLY IF A MINICT HEAD IS CONNECTED.



1) TEMPERATURE
Indicates the temperature measurement (#°C) in the rotor.

NOTE
The internal temperature of the rotor is usually 5-10°C higher than the temperature of the spindle that it is fitted on

2) UNBALANCE
Measured vibration value

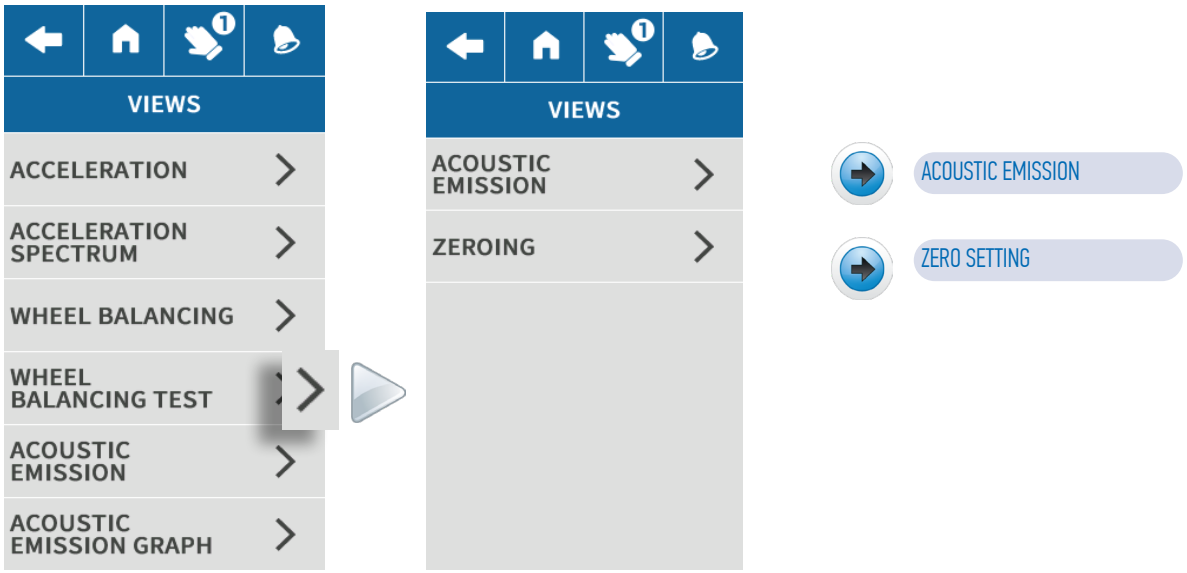
3) RPM
Grinding wheel rotation speed.

NOTE
If the temperature is too high an alarm message (78°C) is displayed.
The temperature value is not displayed if below 22°C.

BACK MENU VIEWS

4.5 Acoustic Emission menu

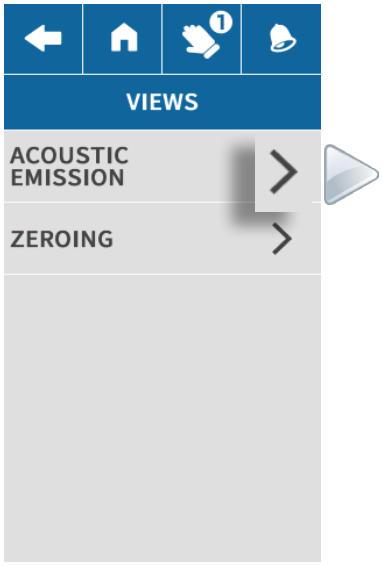
1 Access level 1 (End User)

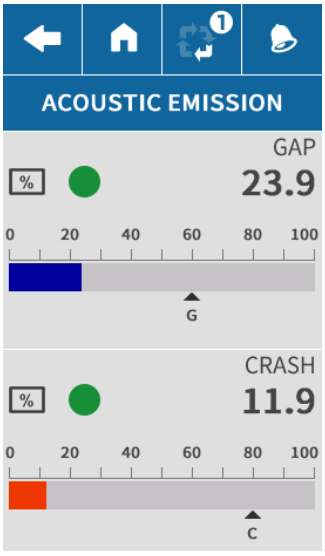


4.5.1 Acoustic Emission page

1 Access level 1 (End User)

This displays the Gap check and Crash check noise values.
The values are displayed numerically and on a bargraph.





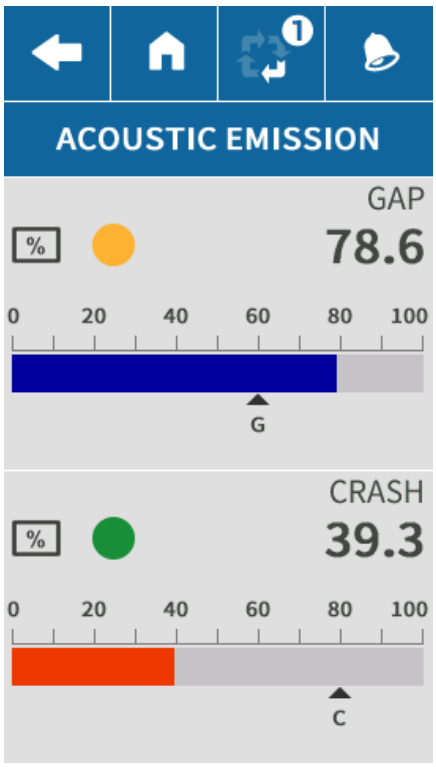
Gap check noise value

G= GAP command trigger threshold

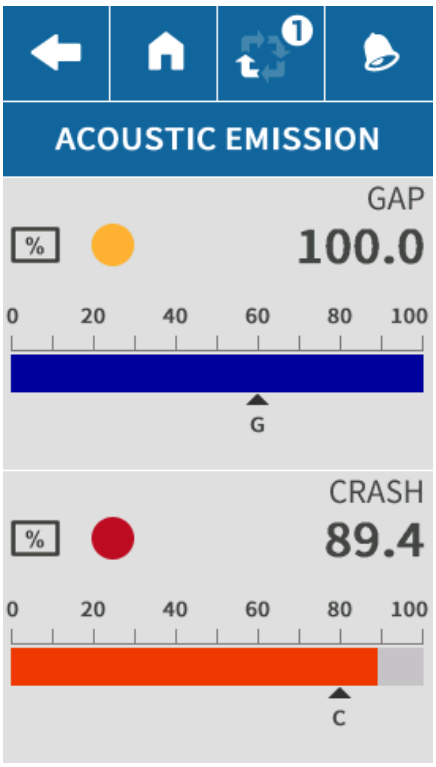
Crash check noise value

C= CRASH command trigger threshold

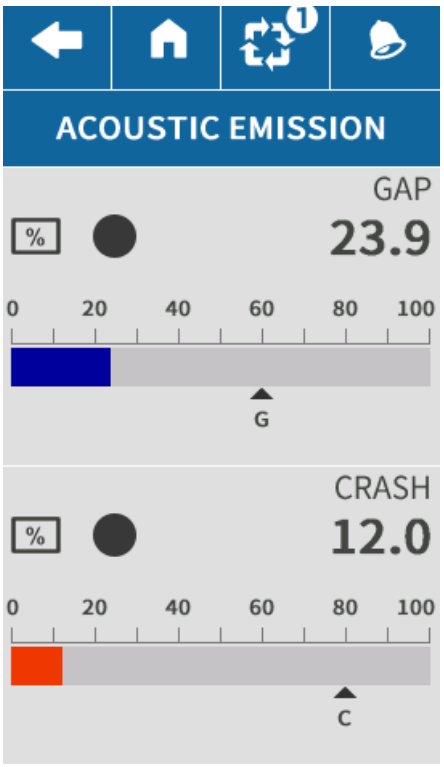
Examples:



Gap threshold exceeded
Crash threshold not exceeded



Gap triggered
Crash triggered

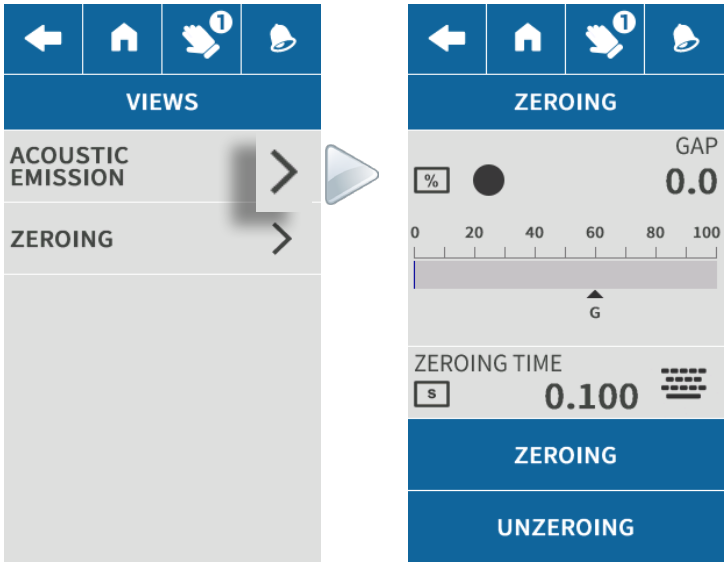


Gap out of cycle
Crash out of cycle

BACK MENU VIEWS

4.5.2 Zeroing page

This function is displayed only when measuring the GAP and when inc. type programming is used.



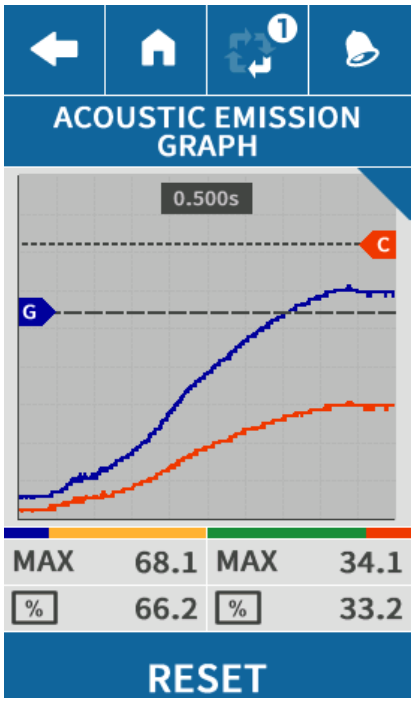
ZEROING
This function is used to zero the GAP measurement.

UNZEROING
If the previous zero setting was concluded successfully, this button is activated, permitting the operator to undo the zero setting that has just been concluded.

4.6 Acoustic Emission Graph menu

This page is used to display the Gap and Crash function oscilloscope

Access level 1 (End User)



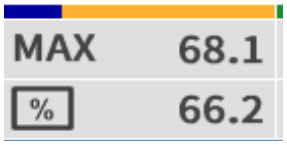
Click on this triangle to open the options window.

Crash signal threshold

Gap signal threshold

Noise level measurement value (the Crash is displayed in red, while the GAP signal is displayed in blue)

The colours on the bar function as a status LED.

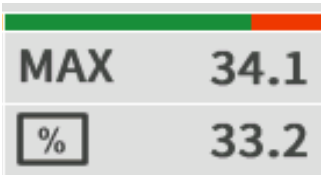


Maximum Gap measurement value

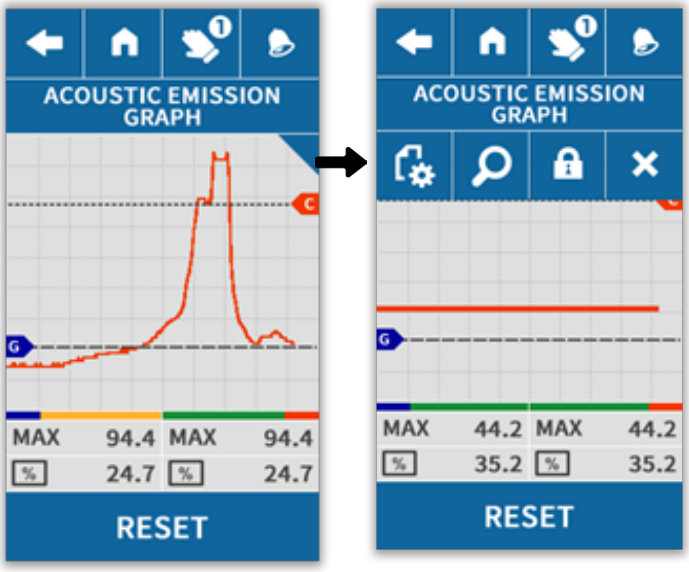
Gap current measurement value

Maximum Crash measurement value

Crash current measurement value

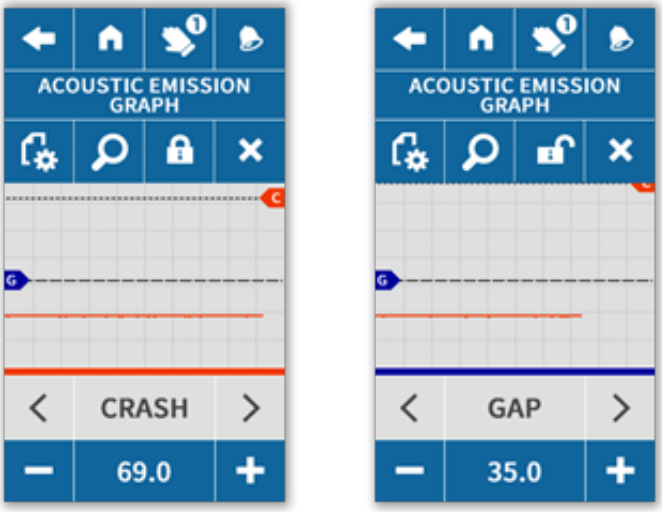


BACK MENU VIEWS



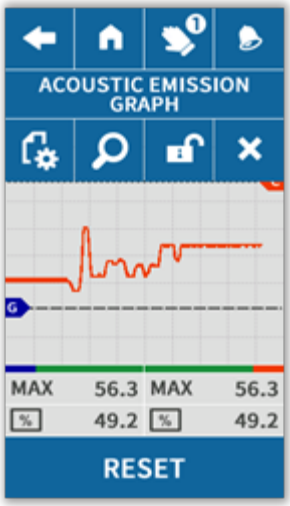
OPTIONS WINDOW

Press this button to reprogram the GAP and CRASH threshold values.



Use the arrow buttons to select Gap or CRASH and the + and - buttons to modify the value of the threshold.
The modifications in the threshold value are displayed in real time on the graph.

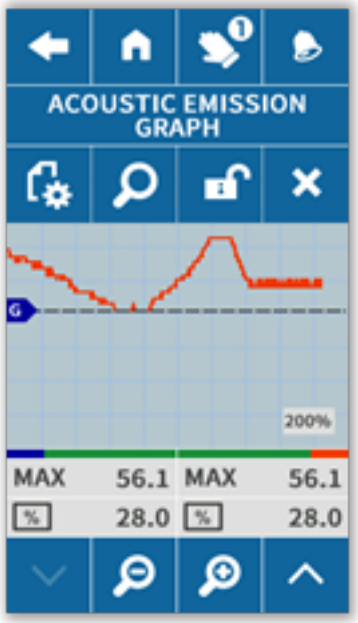
Press this button to freeze the screen and block the trace. When the block is active the padlock is displayed in the position, as shown in the example.

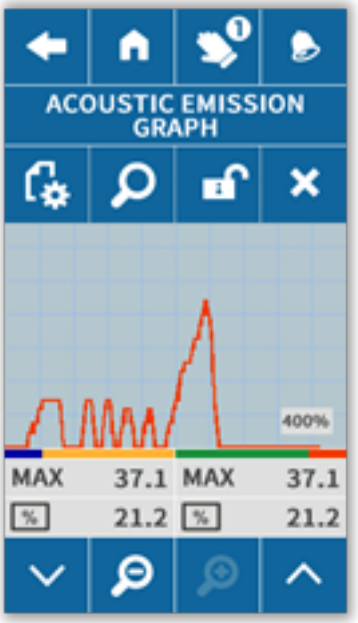


To release it, press the button again.

BACK MENU VIEWS

Press this button to zoom the trace.





	decreases the zoom %
	increases the zoom %
	this two buttons may be used to scroll up and down the page when the zoom function is enabled.

BACK MENU VIEWS

5. ALARMS AND WARNINGS

5.1 List of Warnings

NUM	NAME	DESCRIPTION
1	I/O supply check	This message appears when the I/O card is not connected or there is no external power supply. Check the I/O card and external power supply connections If this does not solve the problem, there is a hardware problem in the I/O module, call Marposs service. To reset the error condition press the CANCEL button.
2	Low transfer level	This message appears when the voltage between stator and rotor is becoming too low. Check that the stator and rotor are properly interfaced and make sure that the transmitting and receiving surfaces are clean. To reset the error condition press the CANCEL button.
3	Voltage not ok	This message appears when the voltage between stator and rotor is too low to drive the balancing head motors. Check that the transmitter and receiver are properly interfaced and make sure that the transmitting and receiving surfaces are clean. If the problem persists, it means that the problem is located inside the transmitter and/or receiver and it is necessary to request the assistance of authorized personnel. To reset the error condition press the CANCEL button.
4	RPM not constant	This message appears if the wheel rotation speed is not stable during a balancing cycle (in AUTOMATIC or MANUAL operating modes). The acceptable variation range is of +/- 4% of the value detected at the beginning of the balancing cycle To reset the error condition press the CANCEL button.
5	High vibration	This message is displayed in AUTOMATIC or MANUAL mode in the event that the imbalance detected by the sensor exceeds the value set-up for L3. Check the wheel and its operating conditions. If the alarm condition persists, check whether the value defined for the threshold L3 is genuinely critical for the wheel and, if so, check the state of all the moving parts. To reset the error condition press the CANCEL button.
6	Flow Control Cycle	This message appears when a GAP/CRASH cycle is requested while a balancing cycle is in progress. To reset the error condition press the CANCEL button.
7	Bad selection	This message is appears when the PLC selects a cycle number that has not been programmed. To reset the error condition press the CANCEL button.
8	Flow Control Cycle	This message is appears when the PLC selects a cycle number that has not been programmed. To reset the error condition press the CANCEL button.
9	Wheel stopped	This message appears when a balancing cycle has started but the grinding wheel remains stationary The wheel must be rotating in order to perform a balancing cycle: check the machine logic. To reset the error condition press the CANCEL button.
10	Invalid RPM	This message appears when the RPM value is not valid for the selected cycle (Wheel stopped value different to the programmed RPM Min/RPM Max limits).
11	Insufficient balancing masses	This message appears when weights used for balancing are not correct. Recalculate and use different weights. To reset the error condition press the CANCEL button.

12	Motor type not supported	This message appears when the programmed motor type programmed is not supported by the connected RX/TX Unit. To reset the error condition press the CANCEL button.
13	Maximum cycle time	This message appears in AUTOMATIC or MANUAL mode when a balancing cycle has not been completed within the maximum allowed time (210 seconds). If the cycle was performed in AUTOMATIC mode, select MANUAL mode and press the CANCEL button to reset the error condition. Check the system operating conditions and make sure that there are no external vibrations that could affect the system.

5.2 List of Alarms

NUM	NAME	DESCRIPTION
14	Elaboration board error	This message indicates that there is a communication problem with the elaboration board. This alarm may be ignored during the firmware reprogramming session. Press the CANCEL button to reset the error condition
15	RPM sensor	This message appears when incorrect frequencies are detected on the signal from the RPM sensor. Possible causes of the alarm are: 1) RPM sensor connected incorrectly 2) RPM sensor not positioned correctly 3) RPM sensor malfunction 4) RPM sensor power supply incorrect The possible solutions are: 1) Check the RPM sensor connection 6 2) Check the position of the RPM sensor (distance between sensor and reference) 3) Replace the transmitter, in the case of contactless transmission, or the distributor, in the case of applications with retraction. 4) Replace the P1DWB electronic unit. To reset the error condition press the CANCEL button.
16	Vibration Sensor	This message is displayed in the event of an interruption in the accelerometer cable, which may be caused by a disconnected or damaged cable. To resolve the problem, reconnect the cable or replace the accelerometer sensor. To reset the error condition press the CANCEL button.
17	Home Position Sensor Alarm	The Home Position sensor is missing or faulty To reset the error condition press the CANCEL button.
18	Faulty data link	This message appears when the data transmission between the rotor and stator is defective. Check that the stator and rotor are properly interfaced and make sure that the transmitting and receiving surfaces are clean. If the problem persists, it means that the problem is located inside the stator and/or rotor and it is necessary to request the assistance of authorized personnel. To reset the error condition press the CANCEL button.
19	Remote actuator power failure	This message appears when the power supply voltage to the rotor is too low. To reset the error condition press the CANCEL button.
20	Remote Actuator Temperature failure	This message appears when the temperature of the rotor is critical. The possible solutions are: 1) Check the electrical conditions of the rotor. 2) Check the mechanical conditions. To reset the error condition press the CANCEL button.

21	Remote Actuator Noise Channel failure	This message appears when a problem occurs during the communication between P1DWB and Balancing head, relating to the acoustic noise contact. To reset the error condition press the CANCEL button.
22	Faulty Motors	This message appears when the remote actuator (rotor) motors drive switches are faulty. In this case it is necessary to request the assistance of authorized personnel To reset the error condition press the CANCEL button.
23	Motor not link	This message indicates that there is an interruption on the motor power supply line. Check the cables and connectors. If the error condition persists, it means that the problem is located inside the balancing head and it is necessary to request the assistance of authorized personnel. To reset the error condition press the CANCEL button.
24	Motor power limit	This message appears when the load on balancing head weight motors is close to the maximum limit. Switch to TEST mode and power the balancing head weights in the various directions for a few seconds. If the error persists, it means that the problem is located inside the balancing head and it is necessary to request the assistance of authorized personnel. To reset the error condition press the CANCEL button.
25	Wrong data	This message appears when the programmed values are not consistent with the relevant values for the balancing system. To reset the error condition press the CANCEL button and correct the data.
26	Power failure	This message appears in the event of a problem with the elaboration board power supply. To reset the error condition press the CANCEL button.
27	Faulty output	This message indicates the presence of a short circuit between at least one of the output terminals and the external earth. Check the connections to the machine. If the alarm condition persists, it means that the problem is located in the electronic control unit and it is necessary to request the assistance of authorized personnel. To reset the error condition press the CANCEL button.
28	NOT USED	
29	RPM function failure	Indicates that the P1DWB is unable to manage the RPM signal
31	Balancing function failure	Communication between P1DWB and Balancing head relating to the balancing function not activated.
32	Acoustic Emission function failure	Communication between P1DWB and Balancing head relating to the acoustic emission measurement not activated.
33	NOT USED	
34	Imbalance value invalid	This message is displayed when an invalid imbalance measurement value is detected. To reset the error condition press the CANCEL button.
35	Balancing algorithm failed	This message is displayed when it is not possible to calculate the position of the weights. To reset the error condition press the CANCEL button.
36	Cycle request pending	This message is displayed when the request has not been executed because a cycle request that could affect the processing state is pending. Check whether a Cycle request from the I/O logic is pending. To reset the error condition press the CANCEL button.
37	Wheel not stationary	This message is displayed in the grinding wheel was not stopped between one balancing cycle and the next. To proceed with the subsequent balancing cycle it is necessary to stop the grinding wheel, move the weights to the new position, and then restart the wheel. To reset the error condition press the CANCEL button.

End of Documents

P1DWB