

# USER MANUAL

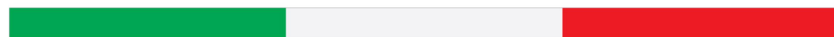


# AutoGauge

**Machine type AG M315M307**

Software Version 2.3.0.0 \*

# A+AUTOMATION



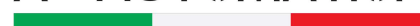
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(\*)The company reserves the right to modify at any time to view the data and version of the machine without prior notice to the customer





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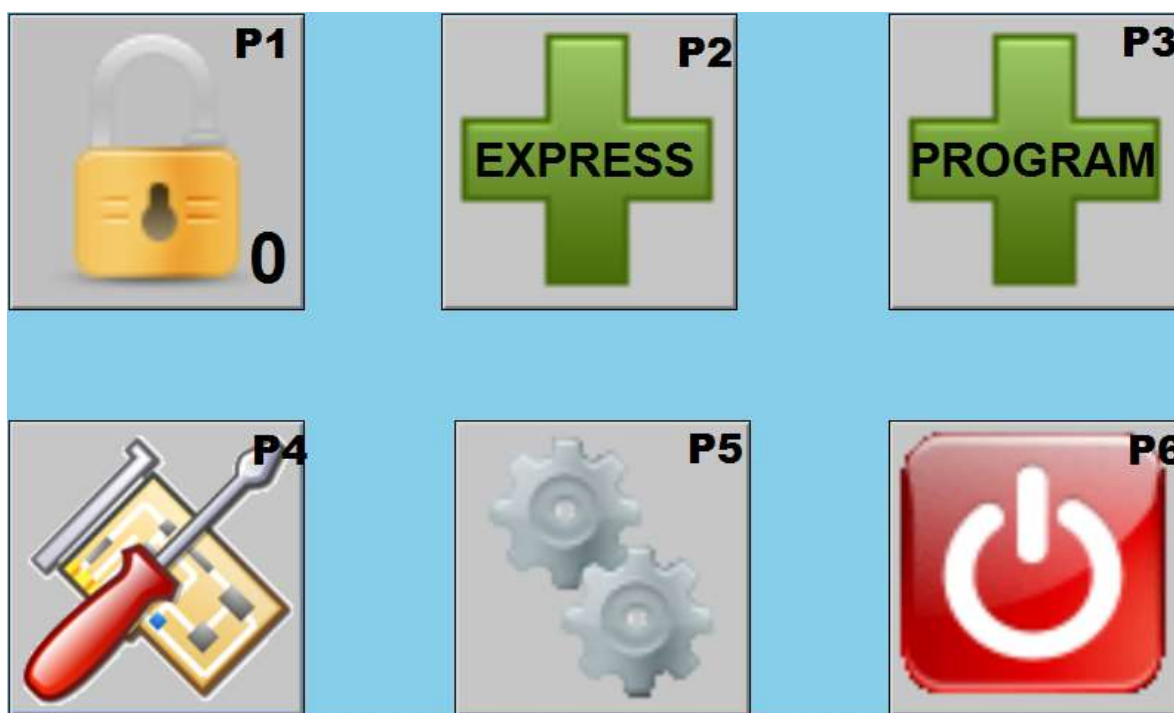
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## 1 Introduction

This manual is for quick use of the Auto Gauge.

For more information please contact service using email [service@a-plusautomation.com](mailto:service@a-plusautomation.com) or call +39 0543 481142

## 2 Main Menu – HOME PAGE



**P1:** is used to call the keyboard panel to insert the password to unlock the operation mode as user, service and settings. When you power-on the AutoGauge (AG) the normal user is enabled (you can see “0” label on bottom of this button). This is the user mode, for cutting and normal operations. For the other modes, respectively “service mode” with “10”, and “setting mode” with “5”, please contact **[service@a-plusautomation.com](mailto:service@a-plusautomation.com)** for more instruction.

**P2 EXPRESS:** used to call the Express working mode function. The Express mode is used to cut the pieces that you want as you like with no pre-programming instruction. Express is a free cut mode with some pre-set dimension.

**P3 PROGRAM:** used to call the Program working mode function. The Program Working mode is used with pre-assigned measures and quantities, according

the moulding length and pieces. It is also used to cut a defined quantity of frames with pre-assigned moulding sequence. For example you can cut in A<>B, 2A<>2B and nA<>nB mode. See the right chapter for more information on how to use this working mode.

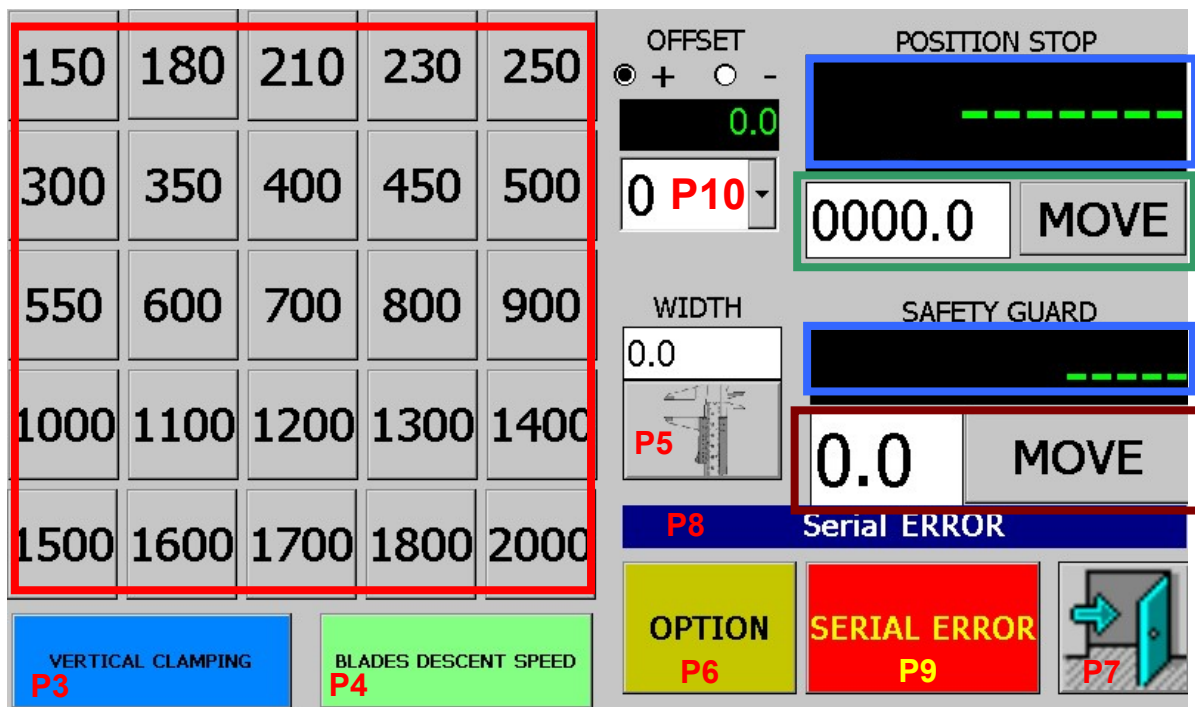
**P4 PARAMETERS:** used to enter parameter lists. Only available in service and parameters mode. Not visible in normal user mode. not necessary during the normal user working mode

**P5 SETUP:** used to call the Setup page where you can access to several setup functions of the machine, not necessary during the normal user working mode

**P6 EXIT:** used to quit the program. Not necessary during the normal user working mode

### 3 Express – EXPRESS PAGE

Welcome to the Auto Gauge Express mode. Here below the main page of the EXPRESS mode where you can find all the command and settings.



**RED SQUARE:** are pre-set fast move. When you press them the machine move straight to the position indicated on the button label; there are 25 pre-set positions

NOTE: in this picture the pre-set button label are according to the button position sequence number. You can modify as you want the position and change the button label. In the following chapter you will find how to change the button number.

**BLUE SQUARE:** indicates the actual position of the AG and of the protection.

**GREEN SQUARE:** is a custom move, you can, as you want, clicking on the numbers, set your personal position desired it in that moment and move direct to it with the move button.

**BROWN SQUARE** if a custom move, to set your personal position for the protection.

**P3 VERTICAL CLAMPING:** this section open a window to select one or more vertical clamp to hold the moulding during the cutting (see Select Vertical Clamping)

**P4 CUTTING SPEED:** this section open a window to change the down moving speed for the blades (see Change Cutting Speed)

**P5 WIDTH MEASURE:** this section allow the user to read the moulding width, or set it manually just clicking on the numbers and edit the value. This function moves the AG and adjust the cut to the right position according to the moulding width.

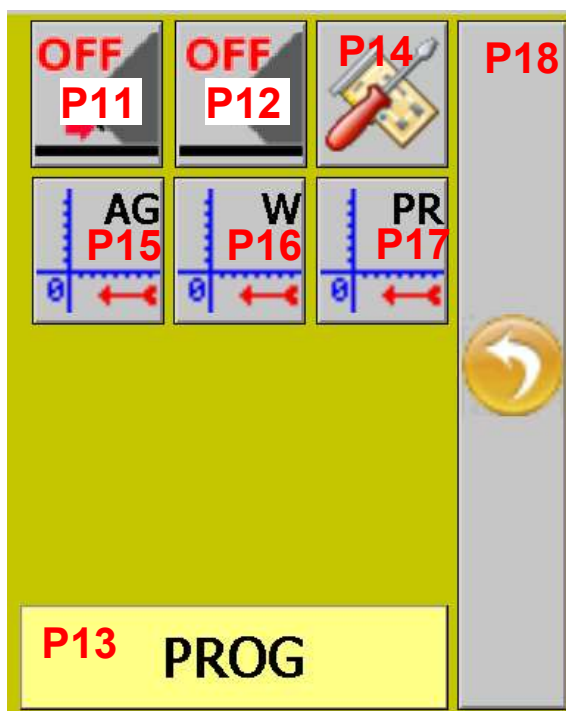
**P10 ADJUSTMENT MEASURE:** this section allow the user to set the adjustment value, according to the combo-box pre-configured value. The value can be positive or negative according to the user needs. The green digits on the right side of the adjustment section combo-box, indicate the actual value set.

**P7 EXIT BUTTON:** return to the previous page, the HOME PAGE

**P8 STATE INDICATOR:** shows the actual AG status (motor on, emergency, alarms, etc..)

**P9 ALARM INDICATOR:** shows the actual AG alarm status (serial error, homing needs, etc...)

**P6 OPTIONS:** this button recall the options sub menu functions. See the below figures



**P11 HIT MOVE BACK:** this button enable or disable the backward movement of the AG arm when the switch has been hit during the movement. This is a safety feature.

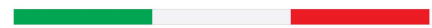
**P12 AUTO MOVE BACK:** this button enable or disable the move back of the AG arm after the cut. The arm moves back after the switch has been released. This feature aim the user to remove piece after cut.

NOTE: when this feature is enable, it works only under certain piece measure. This threshold value is set in the parameters section

**P13 PRE-SET PROGRAMMING:** by pressing this button you can edit the 25 pre-set express buttons shown above in the red square. Changing the button value, also the button label will change according to your set. Pressing this button also the foreground colour of the 25 buttons change from grey to the yellow colour, and the P13 button change his label from “prog” to “save”. After all your change push again the button P13 (that will shows the “save” label), and this will store all modifications to the panel; the button will return to the “prog” label.

**P14 PARAMETERS SETTINGS:** this button recalls the parameters menu functions.

**P15 AG HOMING:** this button recalls the Auto Gauge homing sequence.



**WARNING:** during this sequence please keep free the arm and take away any obstacle for the movement.

**P16 WIDTH HOMING:** this button recalls the Width Measure homing sequence. Remember that the Width measurer needs air supply to do the homing and work.

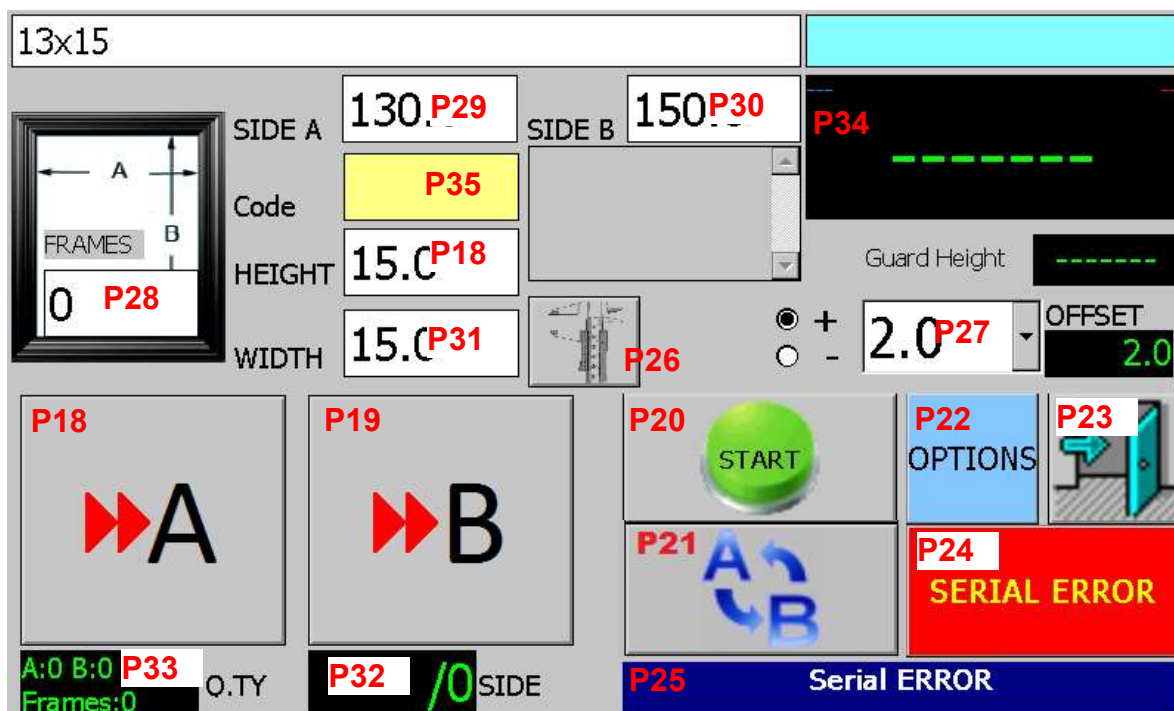
**P17 PROTECTION HOMING:** this button recalls the Protection homing sequence.

**P18 EXIT:** this button closes the option sub menu.



## 4 Program – PROGRAM PAGE

Welcome to the AutoGauge Program mode. Here below the main page of the PROGRAM mode where you can find all the commands and settings.



**P28 FRAMES:** this field indicates the number of frames that we want to cut in our program. This value can be set by user just click on it or can be read from the programs list.

**P29 Side A length:** this field number indicates the length of side A of the frame (inch or mm according to your parameters settings).

**P30 Side B length:** this field number indicates the length of side B of the frame (inch or mm according to your parameters settings).

**P31 WIDTH:** this field number indicates the moulding WIDTH. This value can be read in automatic with the function button P5 or set by edit just clicking on it or read from the programs list. (inch or mm according to your parameters settings).

**P26 WIDTH MEASURE:** this section allows the user to read the moulding width. This function moves the AG and adjust the cut to the right position keeping in consideration the width moulding measure.

**P27 ADJUSTMENT MEASURE:** this section allow the user to set the adjustment value, according to the combo-box pre-configured value. The value can be positive or negative according to the user needs. The greens digits on the right side of the adjustment section combo-box, indicate the actual value set (inch or mm according to your parameters settings).

**P34 ACTUAL AG POSITION:** indicate the arm's actual position. The three red dots, indicate the position correction of the AG in that position (inch or mm according to your parameters settings).

**P35 Chop Code:** insert the chop code by searching on a list of chops

**P21 START BUTTON:** this button enables the production and enable the machine to move.

*WARNING: remember to push this button every time you go in the page and after all the setting has been modified according to your programs.*

*The Homing of AG and Width must to be done before this function is called (pushed green button) if homing is needed*

**P23 SEQUENCE BUTTON:** this button switches the machine between the 3 sequences allowed:

**A<>B :** this sequence cut A and B alternatively obtain a frame count after 4 total cut. This will move the arm between A & B until reach the total frames count inserted.

**2A<>2B :** this sequence cut 2A and 2B alternatively obtain a frame count. The AG will move the arm between A & B until reach the total frames count inserted.

**nA<>nB :** this sequence cut all the A first and all the B later, according to the FRAMES count inserted in the machine. The AG will stay on A and move to B after the A quantity is done.

*NOTE: P33 and P32 display the quantity of cut piecest and the actual size of cutting, to keep informed the user in real time*

**P25 STATE INDICATOR:** return the actual AG status ( motor on, emergency, alarms, etc..)

**P24 ALARM INDICATOR:** return the actual AG alarm status (serial error, homing needs, etc...)

**P22 OPTIONS:** this button recalls the options sub menu functions. See the below figures.

This option menu regards all the settings for the programming mode.



**P35 PROGRAM SCROLL UP:** this button scrolls up the programs list stored in the panel and recalls all the parameters and load it to the AG.

**P35 PROGRAM SCROLL DOWN:** this button scrolls down the programs list stored in the panel and recalls all the parameters and load it to the AG.

**P37 LOAD:** load the programs list file from the panel or from an external storage device.

**P37 SAVE:** saves the programs list file into the panel or to an external storage device.

**P39 ADD PROGRAM:** this button inserts a row in the program list parameters: the function will add all the data edited in the page, like A and B measure, WIDTH measure, program name and also the offset and frame quantity.

**P40 RESET:** resets the actual AG status and reset all the parameters to the programs loaded.

**P41 AUTO /MAN:** this button switches the operating mode from manual to auto.

**Auto** works in automatic mode, the arm move automatic every cut from position A to B according to the production sequence selected with button P21

**manual:** works with manual moving with frame section by P19 e P18

**P42 CLEAR:** clears the actual AG status and reset all the data to the default parameters.

**P44 HIT MOVE BACK:** this button enables or disables the move back of the AG arm when the switch has been hit during the moving. This is a safety feature.

**P43 AUTO MOVE BACK:** this button enables or disables the move back of the AG arm after the cut. The arm moves back after the switch has been released. This feature aim the user to remove piece after cut.

*NOTE: when this feature is enable, it works only under certain piece measure. This threshold value is set in the parameters section*

**P42 CLEAR:** clears the actual AG status and reset all the data to the default parameters.

**P45 AG HOMING:** this button recalls the Auto Gauge homing sequence.

*WARNING: during this sequence please keep free the arm and take away any obstacle for the movement.*

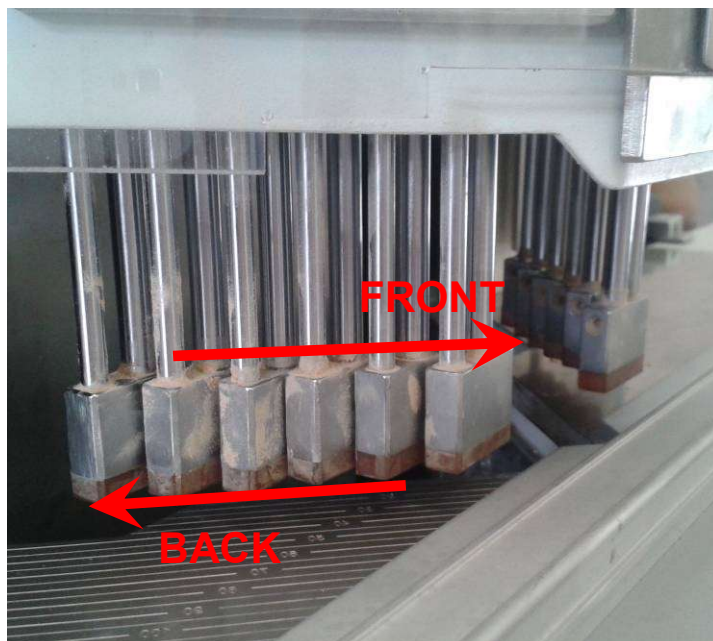
**P46 WIDTH HOMING:** this button recalls the Width Measure homing sequence. Remember to have been enabled the pneumatic air system.

*WARNING: during this sequence please keep free the arm and take away any obstacle for the movement.*

**P47 PARAMETERS SETTINGS:** this button recalls the parameters menu functions.

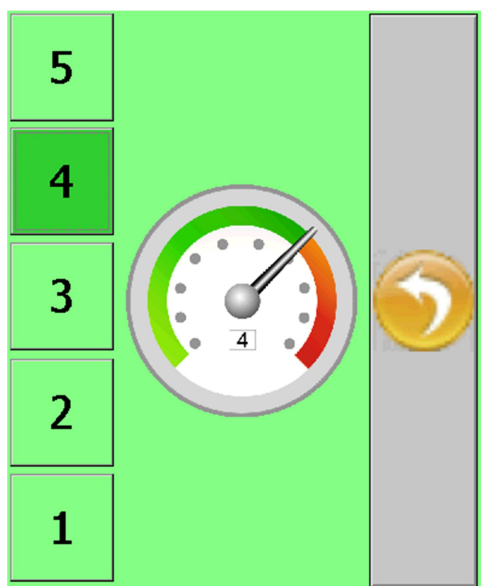
**P48 CLOSE:** this button closes the option sub menu.

## 5 Change Vertical Clamping



It possible to choose a free combination for the six vertical clamps.  
The green button means enabled the active specific vertical clamp.  
The front clamp is the most near to the fixed guide to the operator

## 6 Changing Moving Down Speed



To change the moving down speed for the blade click on one button.  
The button 1 is the slowest speed, the button 5 is the fastest speed.

## 7 Parameters View

ID	Val	Unit	Descr
2	90	%	Working Speed <b>P72</b>
3	25	%	Low Speed
4	300.0	mm	Under this measure execute fre
5	1000	msec	Waiting after free moving
6	70.0	mm	Pieces Difference for every time
7	70.0	mm	back move of the free moving

Parameters List: 2-Auto gauge **P71**

**P75** UTILITY

**P73** SEND

**P74** EDIT

BACK

This window shows the parameters list group by the machine part.

P71: opens a list of parts to change the viewing of the parameters

P72: List of the parameters, sorted by ID

P73: this button send the value of the parameter to the electronic board

P74: this button enable the edit value of the selected parameter

P75: this button open the windows to upload and send parameters list

### 7.1 Edit Parameter

Working Speed

Value: 90 %

Typ: 90

Min: 50

Max: 100

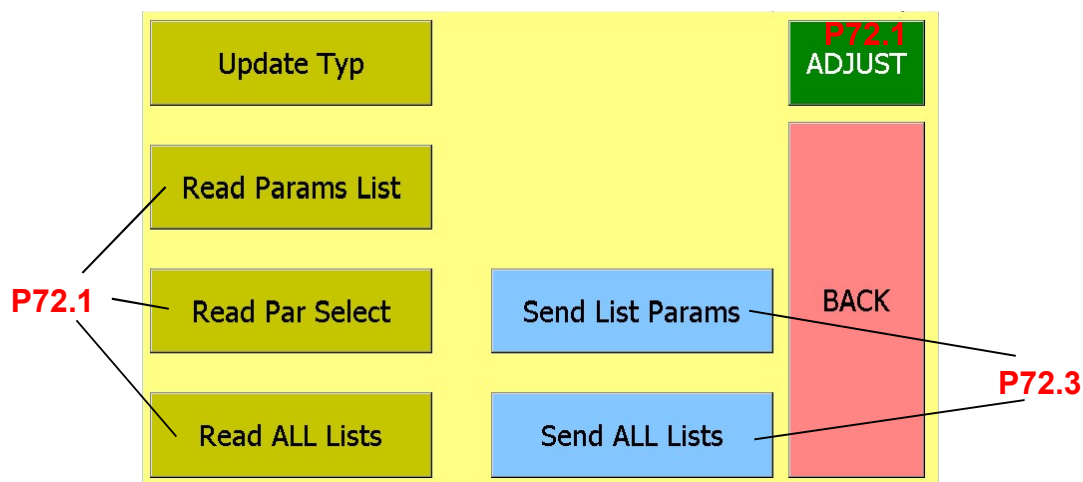
SAVE Undo

To change the value of a parameter touch the white box it will open a virtual keyboard to type the new value. The value must be in the range of value between minimum and maximum as shown for every parameters.

Button SAVE confirm the new value

Button UNDO annul the operation

## 7.2 Parameter Utility



P72.1: Open the window for adjustment of positioning for auto gauge (see 11.2)

P72.2: Other button read single parameter from electronic board, or read the list, or read all the parameter.

P72.3: Other button write parameters list to the electronic board, or write all the parameters.



## 8 Maintenance

From the main screen click on the button P5 to change the view.



**P81:** Open the manual section for the maintenance and the test part of the machine

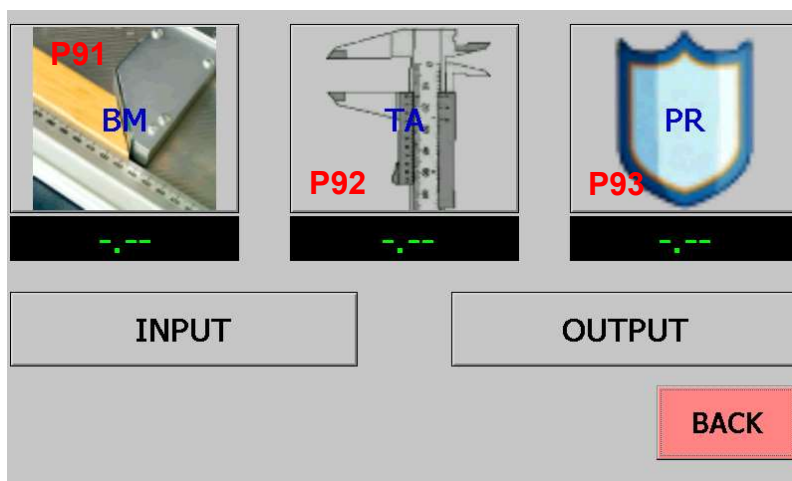
**P82:** Open the log of the last 100 alarms

**P83:** Open the setting of the machine

**P84:** show the actual software version for the display and firmware boards

**P85:** come back to main screen

## 9 Manual



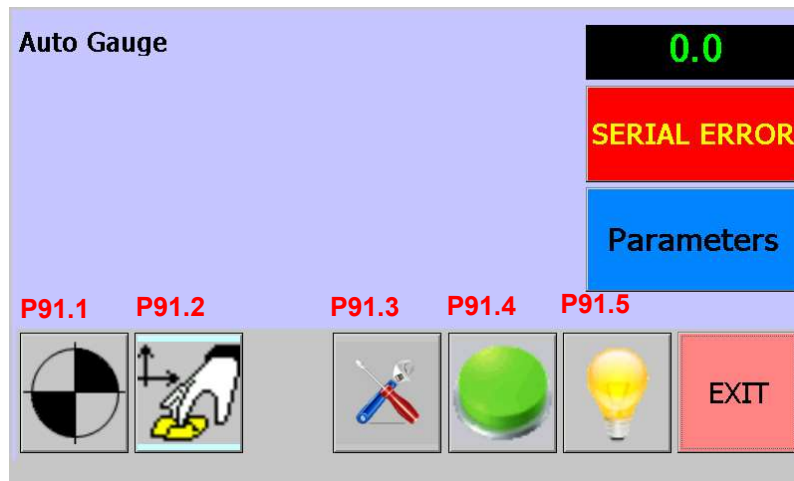
**P91** setup Autogauge

**P92** setup width measurer

**P93** setup protection



## 9.1 Setup Autogauge



P91.1 move the AG to a homing position

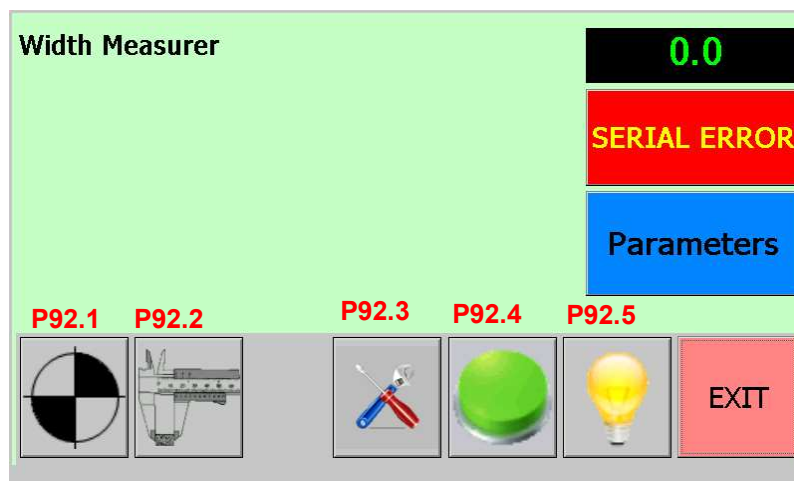
P91.2 free move for AG by JOG

P91.3 edit parameters to setup the AG

P91.4 test input

P91.5 test output

## 9.2 Setup Width Measurer



P92.1 move the width measure to homing sequence

P92.2 free move for AG by JOG

P92.3 move out the width measure to check and measure an object

P92.4 test input

P92.5 test output

## 10 Options

Settings	
Language	EN-ENGLISH
Unit	0-Millimeters
<input type="checkbox"/>	Enable Width measures
<input type="checkbox"/>	Enable Protection
<div>Options Advanced</div> <div>BACK</div>	

Here can be changed the language from English, Italian and the metric (millimetres and inch)

## 11 Operation to be done after installation

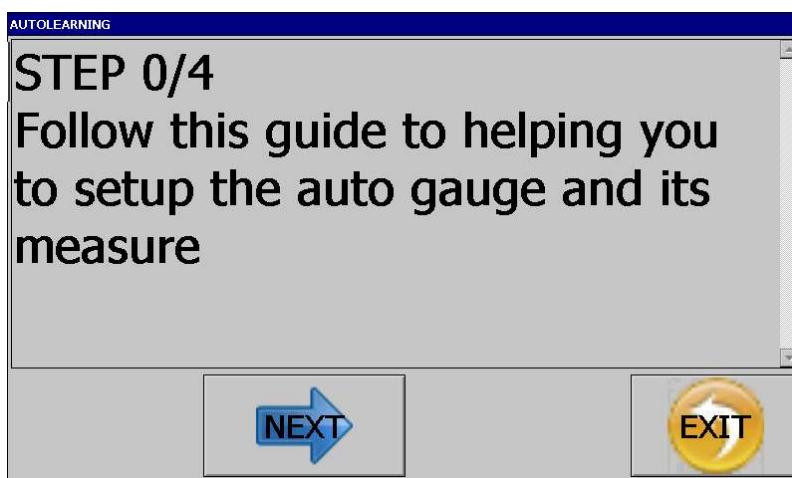
### 11.1 Setup AG

From main screen unlock to level 5

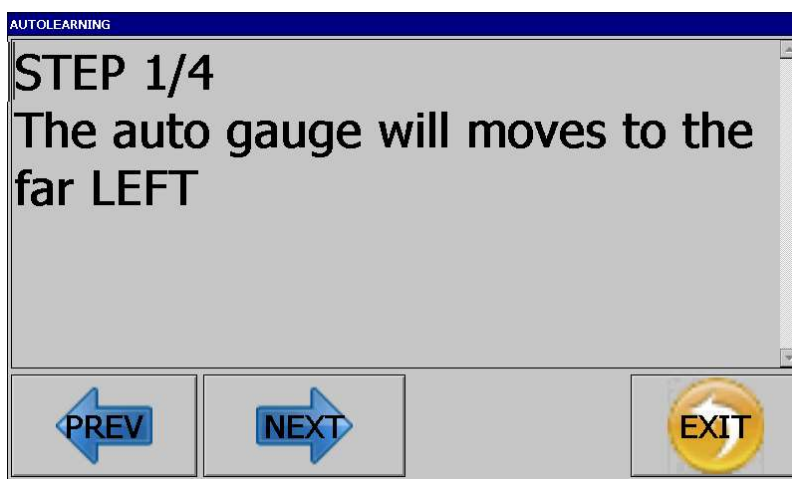
Press Maintenance Button (P5)

Press Button (P81)

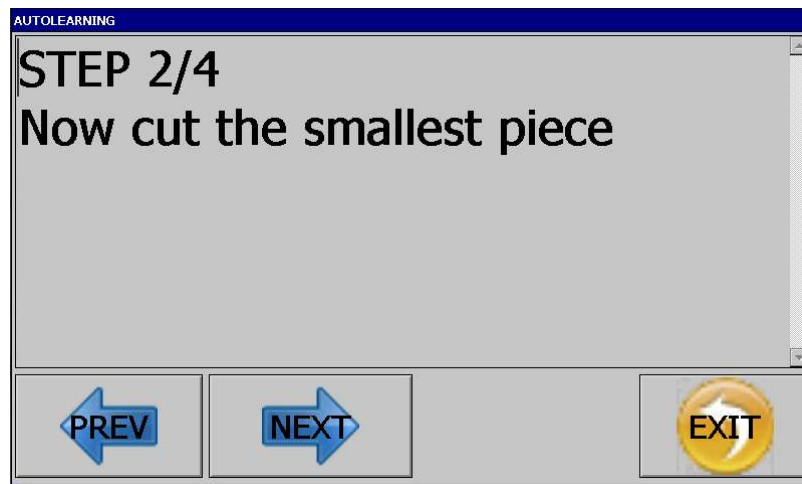
Press button to setup some parameters (P91.1)



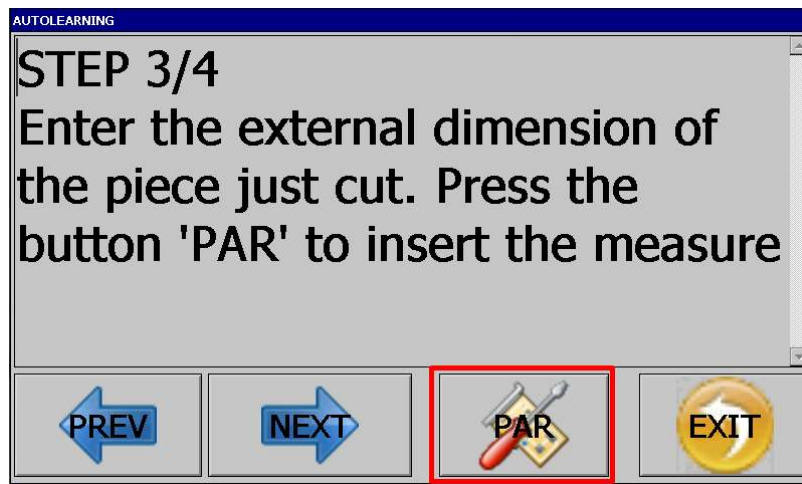
Follow the message and press NEXT to move to the next step



The arm will moves to the left side of the machine to the shortest position

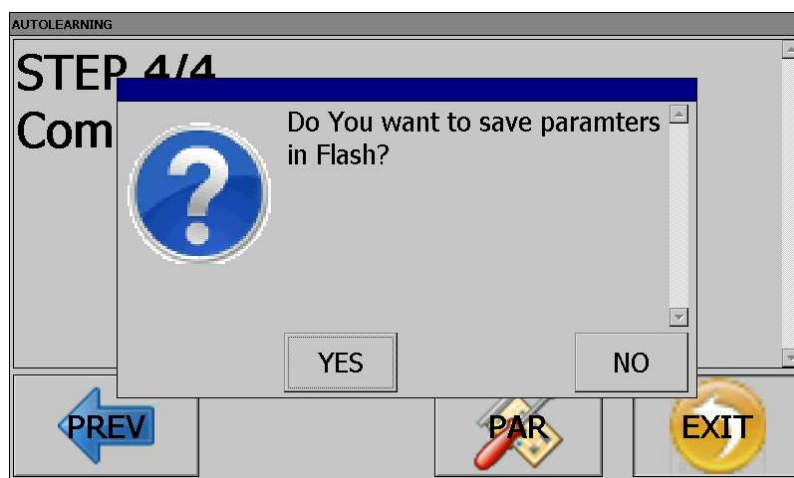


Cut one piece and measure the external dimension



Enter the value of the external length in the white box then press SAVE  
(be sure that the unit is mm or inches and not imp. If you see imp press undo and NEXT. Then press PAR in the next window)

Press YES to save this parameter in the flash memory of the machine.



## 11.2 Adjustment Dimensions

It possible to insert a list of positions and relative adjustment to make the positioning more accurate.

To do this go to Parameter section (See page 4) and press Utility button P75

Parameters List

2-Auto gauge

P75  
UTILITY

SEND

EDIT

BACK

ID	Val	Unit	Descr
2	90	%	Working Speed
3	25	%	Low Speed
4	300.0	mm	Under this measure execute fre
5	1000	msec	Waiting after free moving
6	70.0	mm	Pieces Difference for every time
7	70.0	mm	back move of the free moving

Press Adjustment button P72.1

Update Typ		<b>P72.1</b> ADJUST
Read Params List		BACK
Read Par Select	Send List Params	
Read ALL Lists	Send ALL Lists	

Adjustment List	Adjustment Data		
<b>ID</b>	<b>POS</b>	<b>ADJ</b>	
			UP
			DOWN
			CLEAR
REMOVE			
ESCI			

Select Adjustment Data to manage adjustments

Adjustment List	Adjustment Data	
Position	500	<b>P11.1</b>
External Dim Piece Cutted	501	<b>P11.3</b>
Adjustment	-1.0	
		MOVE <b>P11.2</b>
		DIFF <b>P11.4</b>
		SPEED
		VERT CLAMP
<b>P11.5</b> ADD		EDIT
ESCI		

To insert a new adjustment position:

- Insert a position (P11.1)
- Press button “MOVE”, so that the AG moves to the position (P11.2)
- Cut a piece and measure the external dimension, insert the value in to the box (P11.3)
- Press button “DIFF” to calculate the difference between wanted dimension and real dimension (P11.4)
- Press button “ADD” to insert info in the list (P11.5)
- In order to obtain a precise calibration, replicate the procedure as many times as possible.

NOTE: the best way is to start with bigger dimension and every time moves to shorter dimension