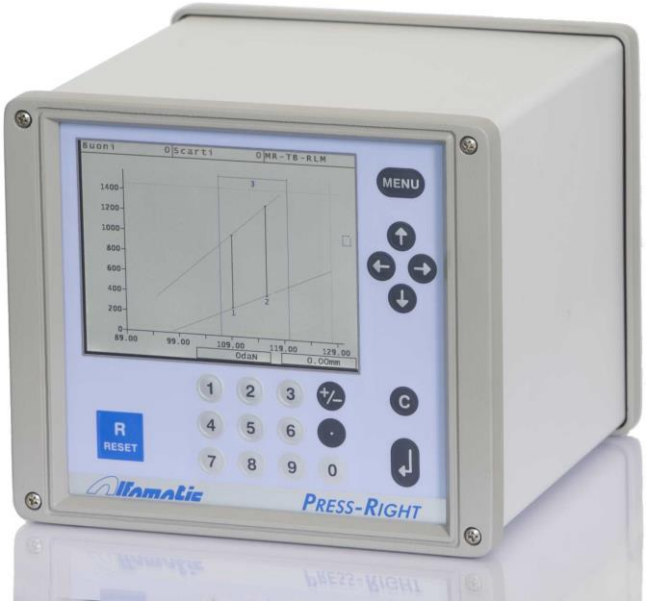
USER MANUAL

PRESS-RIGHT
FOR ELECTRIC PRESS

- User manual



1 General information

Press-Right is a monitor and measuring device that is connected to a press and monitors the quality of productive processes.
Being interfaced with a displacement transducer and a load cell, it continuously monitors its positions and instantaneous force.

1.1 Notes on control theory

During sample production, the data regarding cylinder position and the force exerted by it are entered; the following graph may be created: position-force representing production.
If several runs are performed on similar pieces, their position-force curves will also be similar. On the other hand, if one of the manufactured pieces is different from the sample, its curve will be different from the sample. It is clear that monitoring the curve may affect the quality of manufacturing.

1.2 Pressing cycle

Each pressing cycle can be divided into different moments:

1. Approach
2. Contact
3. Work
4. Pre-arrest
5. Wait
6. Return

During the approach, the cylinder advances to the **End approach position**.
Once the approach is finished, the cylinder advances at the **Contact speed** until it comes into contact with the piece.
During the work the cylinder advances at the **Working speed** until the stop value is reached. When the stop value is reached, the cylinder is stopped and a timer is started for the set time with **Waiting before return**. After the time has elapsed, the return of the cylinder is commanded with the **Return speed**.

1.2.1 Approach

During the approach, the cylinder advances to the **End approach position**. The approach takes place with the **Approach speed**. During the approach, the measured force must be less than the **Collision force alarm** configuration value.
If you do not want to carry out the approach, you must set the end of approach position to zero.

1.2.2 Contact

Once the approach is finished, the cylinder advances at the **Contact speed** until it comes into contact with the piece. Contact with the workpiece is detected when the measured force exceeds the **Force for contact detection** control limit. If you do not want to perform the controlled support on the piece, you must set the **Contact speed** to zero.

1.2.3 Work

The work can be performed in two ways depending on whether the pre-stop is used or not. The work without pre-stop is performed when the **Pre-stop position** is equal to zero.

Work without pre-stop

During work without pre-stop the cylinder advances at the **Working speed** until the stop value is reached. Once the stop value has been reached, the cylinder is stopped.

Work with pre-stop

During work with pre-stop the cylinder advances at the working speed until the **Pre-stop position** is reached. Once the Pre-stop value has been exceeded, the cylinder advances up to the stop value, correcting the speed according to the distance from the stop value. The greater the distance from the stop value the greater the speed of movement. If the stop value is less than the actual value the speed will be negative and the cylinder will retract to maintain the programmed stop value. The maximum speed during pre-stop can be set with the **Pre-stop speed** parameter.

1.2.4 Waiting before return

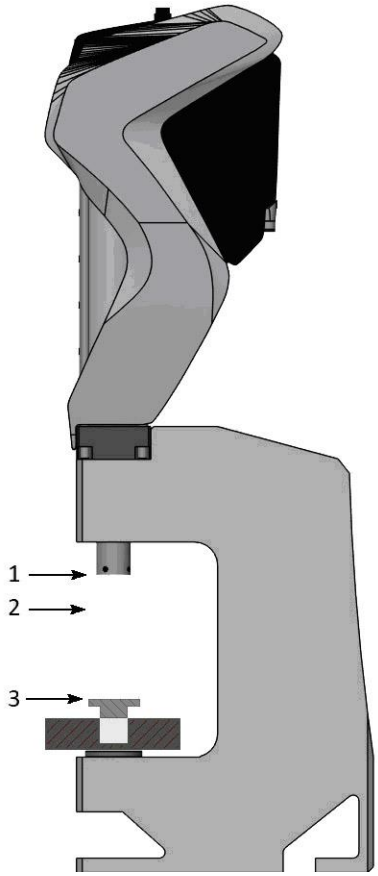
When the stop value is reached, a timer is started for the set time with **Waiting before return**. After the time has elapsed, the cylinder return is commanded. Of course, the **Waiting before return** can be set to zero.

1.2.5 Return

After the set wait, the cylinder returns to the **Rest position** with the **Return speed**.

1.3 Absolute and relative positions

The positions referred to the cylinder zero point are referred to as absolute positions. The positions referred to the contact point on the manufactured piece are referred to as relative positions. *Press-Right* may set both the absolute and the relative positions. In order to measure the contact point on the manufactured piece, *Press-Right* use the force transducer: when the force measured exceeds the **Force for contact detection** value, the relative zero point is set. This “zero point” is called *conctact position*. The *conctact position* may be monitored by using two limits, a minimum and a maximum value (Chapter 0).



① **Cylinder absolute zero point**
② **Return position (rest position)**
③ **Relative zero point (contact position)**

Figure 1

The accuracy of the *conctact position* measured with the load cell may not be increased. It depends on the cylinder speed and, in particular, on the type of piece to be manufactured. During the shrink-fitting operations, the two pieces show chamfered edges; as a result, the *conctact position* varies also based on the chamfer and the force used to position a piece into the other.

1.4 Control of position-force curve

Press-Right enjoys different functions. The curve monitoring is performed by a tolerance range (chapter 6) and its limits (chapter 0). The limits are the following: minimum and maximum force, minimum and maximum position; they can be set or excluded and they monitor the maximum value obtained during the production. If the position reached does not exceed the minimum position and/or exceeds the maximum position, the piece is rejected. At the same time, if the maximum force reached does not exceed the minimum force and/or does exceed the maximum force, the piece is rejected.

From a theoretical point of view there is an ideal curve that may be obtained by manufacturing perfect pieces (in practice a sample curve may be obtained by carefully manufacturing selected pieces). Any geometric tolerance or difference in materials result in a curve that is different from the ideal curve. In practice, there is a tolerance range around the sample curve such that, if the curve obtained from the current process does not

stay inside such range, the piece is classified as scrap. The piece is good only if the analysis of the minimum/maximum limits and the tolerance range have a positive result. *Press-Right* also monitors the cylinder return at the end of the production process. Such return may result from the exertion of a specific force (stop force) or at a specific position (final position). It is possible to set both force and position stop values at the same time; in this case the first value to be entered will govern the cylinder return. By changing the value of the configuration, it is also possible to command the cylinder return when the curve is off the tolerance range. It is always possible to have the unit return by pressing the key on the 

keypad (stopping the operation).

2 Installation of *Press-Right*

For the installation of the device on the machine, please refer to the specific manual.

3 Getting started

This chapter provides information on how to set up basic operations and using the *Press-Right* device.
To better describe the operations, run practical tests.

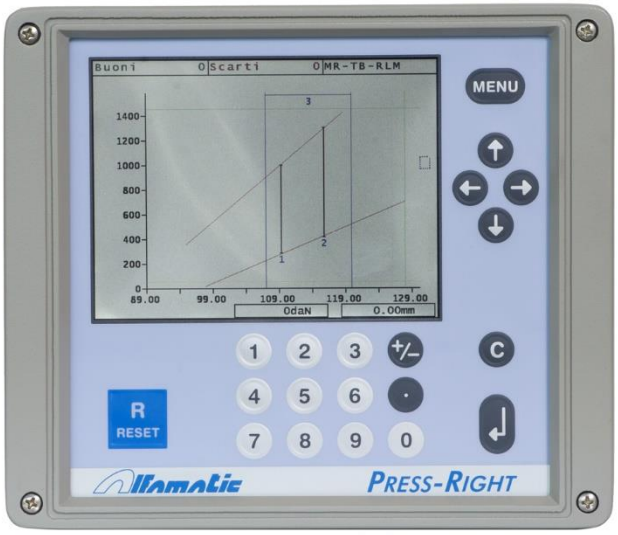


Figure 2

To turn the device on use the key on the rear side. When it is pressed, after a few seconds, the display turns on and the graph appears.

3.1 The keyboard of *Press-Right*

If you press the menu key, the items that make up the main menu are displayed. To select a menu item, it is possible to move with the arrow keys and press enter  or you can directly touch the item itself.

The button  cancels the operations and allows you to return to the main screen.

3.2 First approach

To become familiar with the press it is possible to perform a series of manual movements.
To do this, proceed as follows:

- press the menu key
- press the item TOOLS
- press the item MANUAL CYLINDER MOVEMENT
- press the ENABLE BUTTONS item

With the keys  the cylinder can be moved.

> **Note**: out of the nominal stroke of the cylinder, manual movement is performed at minimum speed.

3.3 Create a job

The set of cylinder movement and curve control parameters will be called job.

To create a job:

- press the menu key
- press the **Jobs management** item
- press the **Create a new job** item.
- Enter the name that identifies the job (example TEST 1) and press the enter key.

3.4 Set the movement

Note: in the rest of this manual, when it is indicated, for example, to select the command **Jobs management > Create a new job**, you intend to press the menu key then press the item Jobs management and finally press the item **Create a new job**.

Once the work has been created, it is necessary to define how the cylinder should move. The motion profile parameters can be found in **Edit job > Movement management**.

Before proceeding, check that there is at least 50 mm of free cylinder stroke.
Enter the following values:

Final position =50 mm
End approach position = 40 mm
Working speed = 2 mm/s
Approach speed = 20 mm/s
Return speed = 50 mm/s

By pressing the start command of the machine, if the cylinder is further forward than the rest position, the cylinder will return to the rest position, on the contrary, if it is already in the rest position or further back, the complete programmed cycle will be carried out. Then it will advance to the quota of 40 mm at a speed equal to 20 mm/s, from the height of 40 mm at the share of 50 mm it will advance with a speed of 2 mm/s. Reached the quota of 50 mm, the return to the rest position will be started with a speed of 50 mm/s.

3.5 Set the view

The central part of the display is occupied by the position-force graph. The full-scale values can be changed using the commands in the **Edit job > Graph setup** menu.

3.6 The main menu

Note: Some menu items are not visible if not necessary.

The main menu is the first displayed by pressing the menu key.

The item of the main menu **Job management** allows the choice of the job to be performed, the creation of a new job or the deletion of the job in use.

The **Edit job** and **Job property** item allows the modification of all the parameters of the job in use. See chapter4.

The **Edit phase** item is visible when the job is divided into several phases. It allows the modification of all the parameters of the displayed phase.

The **Show measured values** item displays the values measured during the last cycle.

The **Tools** allows the modification of the instrument configuration and the possibility to move the cylinder manually.

The item **Piece counter** is used to reset the counter of processed pieces.

The item **Part number** allows you to enter the identification number of the piece being processed.

3.6.1 The special functions of keys in the main menu

On the main screen, the key 

displays the cursor to measure the force at a certain point on the curve. To move the cursor, use the arrow keys  .

If menus are not displayed, press the 

key to display the main menu together with the windows showing the special key functions.

4 The JOB

The Press-Right stores all the settings (parameters, band and counters) relating to the various jobs in an internal memory. Each group of settings is called “Job”. Each job has its own name.
In the main menu there is the item **Jobs management**. Through this menu it is possible to choose a job among those present, create a new one, or delete the job in use.

4.1 Create a new job

To create a new job, use the **Jobs management > Create a new job** command and give it a name. As a name you can use the number of the design, the name of the customer or whatever you prefer to be able to easily identify it.

When you create a new job, you are asked if you want to make a copy of the job currently in use. If you choose to copy the current job, the parameters of the current job will be duplicated and will remain unchanged. In the other case the new one will be empty.

After creating the job, you can set the parameters, options and the range.

4.2 Selecting a job

In the **Job management** menu, there is the **Change job** command. When this command is selected, the list of available jobs is displayed. The date and time the job was last modified is shown next to the name.
If the list is very long, you can press the numeric keys to jump from one point to another in the list.

4.3 Change the name of the job

To change the name of a job, you must first select it. Once you have selected the job you want to rename, you can use the **Job management > Edit job > Name of job** command.

4.4 Copy a job

To copy a job, select the job to be copied as shown in paragraph 4.2. Once the job to be copied is selected, create a new job by using the **Jobs management > Create a new job** command and answer YES to the copy question.

4.5 Delete a job

In the **Jobs management** menu, the **Delete job** command is displayed. This command allows to delete the current job permanently.

4.6 Edit a job

The **Job management > Edit job** menu allows to change all the parameters entered for the job.
In the jobs, **parameters set to zero will be ignored by the device**.

4.7 Job counters

Each job has a piece counter. To access the counter options, select the **Job management > Edit job > Scheduling** menu.
In this menu it is possible to reset the counter of the pieces or choose a maximum number of other pieces to block the instrument.

4.8 Managing the automatic selection of jobs as an external user

When the automatic job selection is activated, the Press-Right prepares the selectable jobs. These jobs are initially empty. To make an empty job usable, access the Job management> Change job menu and press enter on the desired job, at this point it will be possible to choose the name of the job.

4.9 The graph

In the **EDIT JOB** menu, the **SET GRAPH** item is available, allowing for the editing of the graph axes. Note that it is not possible to edit these values and fully or partly hide the range.
As shown in both figures, it is possible to select the following values:

GRAPH ORIGIN
: It is the original value of the horizontal axis of the dimensions, this parameter allows you to hide all the uninteresting run, such as the approach run. If relative dimensions are used, the origin should normally be set equal to zero.

SCALE POSITION
: The full scale of the dimensions indicates the maximum travel that is displayed in the graph.

END SCALE FORCE
: The full scale of the forces indicates the maximum force that is displayed in the graph.

4.9.1 How to set the graph

After the execution of a part, the measured values can be displayed. From these it is possible to obtain the values of the axes of the graph.
As the origin of the graph, enter a value slightly lower than the measured start elevation.
As full scale of the dimensions, enter a value higher than the measured quota reached.
As the full scale of the forces choose the value greater than the measured force reached.

4.10 Rejected options and management

In addition to the generic options, there are options for waste management, options for additional test signals, options for machines with multiple force transducers and options for equipment control. All these options are accessible from the menu CONFIGURE OPERATION.

4.11 Phases management

It is possible to associate several processing steps to a single job. They can be considered as “sub-works” that contribute to the completion of a more complex process (for example the insertion of a bearing and a gear on the same shaft).

To use more phases, it is necessary to enable the execution of the phases in the menu Job properties> PHASES MANAGEMENT> enable phases.

With the keys  it is possible to display the desired phase and modify its parameters with the MODIFY PHASE menu.

The phases will be carried out automatically in sequence. If you want to perform one individually out of sequence, select the PHASE TO EXECUTE menu.

A phase can be repeated several times.

4.12 Channel management

Up to six force transducers can be connected to the Press-Right to control as many displacement-force curves. While each force transducer detects the force of a channel, the position transducer is only one in common to all channels. It is possible to exclude one or more channels from the control thanks to the CONFIGURE OPERATION> CHANNEL SELECTION menu.

Below the graph is displayed the strength of only one channel at a time, using the number keys from 1 a 6, when the menus are not displayed, it is possible to view the current strength of each individual channel.

To view the curve of some channels it is necessary to press the menu key to display the main menu and a numeric key between 1 and 6..

4.13 Self-verification

The self-check function is used to periodically check the operation of the machine by making sample pieces deliberately prepared out of tolerance.

This function can be activated from the TOOLS > CONFIGURE > VISIBLE OPTIONS menu.

The execution of the sample pieces can be carried out every time the instrument is turned on, every time the job is changed, every time the job is changed, at pre-established times, any number of pieces.

For each single job it is possible to exclude the self-check function.

4.14 Managing additional controls

In addition to the curve control, it is possible to connect up to three additional sensors to determine if the part is good or bad. In practice, the outcome of the processing can be conditioned by the logical state of three inputs. This logical state can be checked at various instants of processing.

For additional control number 1, the Press-Right can also activate an output before performing the control and, after a predetermined time, read the input status.

The TOOLS> CONFIGURE> SIGNAL OPTIONS menu allows the configuration of the inputs and the assignment of a descriptive name.

In the CONFIGURE operation> ADDITIONAL SENSORS menu it is possible to establish when and how to carry out the additional checks.

4.14.1 Additional control options

The additional control options are as follows:

It does not measure

The additional check is not performed.

Measure at the start

The additional check is carried out when the instrument receives the START command.

Measure at stop

The additional check is carried out when the tool wants to command the stop and the piece is good.

Measure at a height

The additional check is carried out at a fixed altitude.

Use as an enable

The signal is checked at the beginning of the work to enable or disable the cycle.

5 Parameters

Note: in general, the parameters set equal to zero will be ignored by the instrument.

5.1 Motion management

Once a new job has been created, the movement of the cylinder must be defined.
The motion profile parameters are as follows and can be found in the **Edit job > Movement management** menu.

`Final position`
: Quota to be reached.

`STOP FORCE`
: Force that commands the cylinder to stop before the final position.

`End approach position`
: Quota to be reached in rapid advance for approaching the piece. This height must be lower than the contact point with the piece. If a force is measured during the approach, the system goes into collision alarm.

`REST POSITION`
: Return quota finished the pressing cycle. In fact, the cylinder does not necessarily have to return to zero position (this item is visible only if the relative option is activated in the TOOLS> CONFIGURE> VISIBLE OPTIONS menu).

`WAITING BEFORE RETURN`
: In some cases, it may be useful to stop at the end of pressing position for a few seconds.

`WORK SPEED`
: Speed of the pressing section.

`APPROACH SPEED`
: Speed of the rapid feed section for approaching the piece.

`CONTACT SPEED`
: Speed used at the end of approach until contact with the piece. If zero is not used.

`RETURN SPEED`
: Return speed after pressing at rest level.

`PRE-STOP POSITION`
: Pre-stop start quota. If zero is not used.

`PRE-STOP SPEED`
: Speed with which the cylinder performs the last section of work starting from the pre-stop position. If zero is not used. During the pre-stop the cylinder adjusts the speed with the measured force value.

5.2 Limits and thresholds

The control limits, together with the band, determine the outcome of the work.

Maximum force limits, maximum altitude limits, initial altitude limits and checkpoints can be set.

Note: Control limits, set equal to zero, are not used.

`Contact position limits`
: They control the contact dimension of the machining. For a piece to be classified as good, the measured contact height must be above the minimum contact height limit and below the maximum contact height limit.

`Peak position limits`
: They check the maximum height reached during processing. For a piece to be classified as good, the measured quota reached must be higher than the minimum quota reached limit and lower than the maximum reached quota limit. If the minimum quota limit reached is not set and the tolerance band is present, the position of the band is used as the minimum limit.

`Peak force limits`
: They control the force achieved during processing. For a piece to be classified as good, the maximum force achieved must be higher than the minimum force limit and less than the maximum force limit.

`Force for contact detection`
: The start force is the force threshold used to measure the contact height.

5.2.1 How to choose the limits

Contact dimension limits allow you to control component sizes even before work begins. They can be used to check the dimensions of the pieces to be assembled or to check that there are all the details necessary for processing.
The choice of the limits of the height values and of the force reached depend on the type of machining. In general you can follow this guide:

Limits with machining with mechanical stop
When there is a mechanical stop the press will always reach either the stop force or the maximum force it can exert. In this case the minimum reached force limit can be used simply to control the achievement of the stop force. The maximum height limit reached can be used to check that the maximum force that the piece can withstand is never exceeded.
In this process, to check the effective force required, the band or check points are necessarily used.
The reached dimension limits are used to verify that the dimensions of the assembly, after machining, are in tolerance.

Limits with machining without mechanical stop

In this case the force limits are not very useful other than to check that the force does not exceed the maximum force supported by the workpiece. The force check must be performed with the band or check points.

Dimension limits can be used to verify that the final assembly size is actually what is required.

Limits for bending and breaking tests

In bending tests the force limits are used simply to check the force that has been applied while the height limits are used to check the measured bending.

In breaking tests, force limits are used to verify the force that was required to break the piece.

5.3 Check points

Checkpoints are additional tools for work control. It is possible to define up to five check points according to this type:

Force control at a certain position (Check force)

Position control at a certain force (Check position)

Software filter of the measured force (Digital force filter)

Measurement of the minimum and maximum force value within a height range and control of the maximum delta (Min/max measurement).

Measurement and control of the slope of the curve within a height interval (Check the force variation)

5.4 Job options

The following job options can be changed with the CONFIGURE OPERATIONS> OPTIONS command.

`Use relative odds`

By activating this option, relative dimensions are used instead of absolute ones (chapter 1.3).

`Ask for the part number`

By activating this option, before the execution of each piece you are asked to enter a numeric code that identifies the piece itself. This code is used by the WinScope program for archiving the curve and measured values.

`Ignore consent`

It does not condition the start to the logical state of these inputs (if configured).

`Exclude PRESS SELF-CHECK`

Disable the self-check of the press in the job.

`Exclude SELF-CHECK "TEST 1 "`

Disable the self-check of the additional control in the job.

`Save curves good pieces`

Saves the curves of the good pieces on the SD memory.

`Save scrap curves`

Saves the curves of the rejected pieces on the SD memory.

Do not use waste basket

Disable the control of the waste basket in the job.

6 The tolerance bande

The band is used to control the curve and consequently to control the quality of the piece.
The band consists of two lines called the upper edge and lower edge.
For the piece to be classified as good the points representing the curve cannot be above the top edge, and they cannot be below the bottom edge.
The figure shows a curve relating to a good piece, as it is between the two edges of the band.

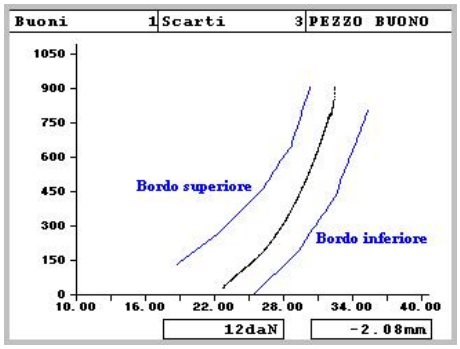


Figure 3

Each border is made up of a sequence of stitches joined by segments.

6.1 Create the bande

To modify the band, use the **Edit job > Tollerance band** command. When moving stitches, be careful not to reverse the top and bottom edges.
The RESET key can be used to end the modification of the band.
The modification of the band is carried out by moving the points that determine the two edges. When modifying the band, only one point of one of the two edges is highlighted, this point is the active one, that is the one that can be moved using the keys  .
It is possible to change the active point with the commands “select previous point” and “select next point”. To activate the points of the other edge, press the “select the other edge” command. The force and elevation of the active point are displayed below the graph.
You can add a point by dividing the segment that follows the active point in two. To do this, press the "add point" command.
It is possible to delete the active point with the “delete point” command.
When using the arrow keys, it is possible to change the pitch by pressing the “change shift pitch” command.

6.2 Delete the range

In order to delete a range, use the command **Edit job > Tollerance band > Delete band**.

7 Rejected piece

When a scrap piece is detected, the tool stops, preventing the execution of new pieces. In the standard configuration, to re-enable the instrument, RESET must be performed.
If the work has several phases, the Press-Right can request confirmation of the rejection.

7.1 Causes rejection

A piece can be good or bad. The instrument can manage two reject signals to classify the rejects. The rejection can be caused by one or more different causes. The following list shows all the possible causes of rejection.

MAXIMUM FORCE EXCEEDED
The maximum force achieved has exceeded the maximum force limit. The maximum force reached may not coincide with the force of the last point of the curve.

MINIMUM FORCE NOT REACHED
The maximum force reached did not reach the minimum force limit. The maximum force reached may not coincide with the force of the last point of the curve.

UNDER THE BOTTOM EDGE
The curve has passed under the lower edge of the band.

ABOVE THE TOP EDGE
The curve has passed over the upper edge of the band.

CANCELED FROM KEYBOARD
The execution of the job was interrupted by the operator pressing the key 

.

EXECUTION ABORTED
The START input was removed during the execution of the job. It is usually caused by the intervention of emergencies.

TIME OUT
The execution of the work took too long.

"ADDITIONAL" BEYOND THE MAXIMUM
The value of the additional transducer is higher than the additional maximum limit.

"ADDITIONAL" BELOW THE MINIMUM
The value of the additional transducer is less than the additional minimum limit.

"ADDITIONAL" CONTROL
The additional check caused the rejection.

MAXIMUM QUOTA EXCEEDED
The maximum altitude reached has exceeded the maximum altitude limit. The maximum height reached may not coincide with the height of the last point of the curve.

MINIMUM QUOTA NOT REACHED
The maximum quota reached has not reached the minimum quota limit or has not reached the range. The maximum height reached may not coincide with the height of the last point of the curve.

HIGH STARTING ALTITUDE
The value of the starting altitude is higher than the maximum limit of the starting altitude.

LOW STARTING ALTITUDE
The value of the starting altitude is lower than the minimum limit of the starting altitude.

MAXIMUM LIMIT CHECK POINT

The value measured in the checkpoint is above the maximum value.

MINIMUM CHECK POINT LIMIT

The value measured in the checkpoint is below the minimum value.

7.2 Rejected management

For each discard cause, it is possible to tell the device how to classify the piece or how to behave. For the configuration, choose the discard cause desired from the menu that appears by selecting **JOBS MANAGEMENT > EDIT JOB > CHANGE JOB > SCRAP AND MONITORING OPTIONS > SCRAP MANAGEMENT**. Once the discard cause is selected, the following sub-menus appear:

CLASS

For each discard cause, it may be classified as regular or special. This allow to classify scrap materials and sort them. For instance, it is possible to sort reusable scraps from not recyclable materials. When a special scrap is detected, *Press-Right* activates the second scrap port ad count the piece separately. This way, it is possible to know whether the pieces are rejected by mistake by the operator.

DISCARD PROCEDURE

For each discard cause, it is possible to shutdown the press as soon as it detects the discard cause, stop the press being operated and/or enter the unlock password.

The first item of the discard cause list is **ALL**, by selecting this item, the choices to be made will be applied to all the whole cause list.

8 The Tools menu

Press-Right configuration is carried out through the TOOLS menu. When the Press-Right is supplied already connected to the machine, it is not necessary to perform the configuration.
In this menu there are the following submenus:

DISPLAY MANAGEMENT
: It allows to change visualization (chapter 0).

MAINTENANCE
: It allows to set a interval for maintenance and with the command **Move to lubrification position**, the cylinder descends to the greasing level. Make sure the cylinder is free to move forward.

MANUAL CYLINDER MOTION
: It allows to move manually the cylinder (chapter 8.3).

ADVANCED OPTIONS
: It allows to set up the device and caliber the transducer (chapter **Errore. L'origine riferimento non è stata trovata.**).

8.1 Display options

The display options change the display.

DO NOT DISPLAY THE MEASURED VALUES
: At the end of the acquisition, normally, a window is shown that contains the measured values and the result of the processing, by activating this option the window will not appear automatically, but you will have to manually choose the MEASURED VALUES command in the main menu.

OVERLAP CURVES
: By activating this option, all the curves will be superimposed on each other creating a strip that represents the dispersion of the forces.

8.2 Counters and self-verification

Press-Right can be set up so that, at fixed intervals, the tool must be replaced, the transducers calibrated and the self-verification system monitored. The self-verification function is described in chapter 4.13.

8.3 Manual moving

Allows manual handling of the press.

ENABLE MANUAL MOVEMENT
: With this command you can use the arrow buttons to move the cylinder. In the manual movement the first stretch occurs very slowly, then the speed increases. If the cylinder is under stress the speed will be limited.

GO TO POSITION
: With this command it is possible to bring the cylinder to a known position.

DESCENT TO TOUCH

With this command the cylinder descends until it touches the piece. The feed speed and contact force is set in the cylinder configuration menu.

9 Intrument configuration

In general, when the Press-Right is supplied already connected to the machine, it is not necessary to configure it.

Thanks to the many configuration options, the Press-Right can adapt to your needs.

To configure the Press-Right, access the TOOLS> CONFIGURE menu.

In this menu you will find the following items:

GENERAL OPTIONS

It allows to configure the Press-Right according to the type of press connected and to activate some functions. See the chapter0.

ELECTRICAL CONNECTIONS

Allows setting the function of each input and each output.

CONFIGURE CYLINDER

Allows cylinder configuration. Some parameters are protected by a particular password which must be requested from Alfamatic.

SELECTABLE WORKS

The work to be performed can be chosen by means of a combination of the inputs or by means of a command sent via serial communication. In this case it is necessary to indicate how many jobs can be selected from the outside.

AUTOMATIC JOB SELECTION

These options determine how the Press-Right has to manage the selection of the job and the phases, see the chapter 9.2.

NETWORK AND CLOCK

Allows definition of the machine name, network settings and system clock.

VISIBLE OPTIONS

Allows you to indicate which options should be visible.

9.1 General options

Some general options depend on the type of press connected, others activate particular functions. The general options are accessible from the TOOLS> CONFIGURE> GENERAL OPTIONS menu.

TURN OFF RED WITH RESET

Normally when a scrap piece is machined the red light is made to flash until the reset is pressed. At this point the red light remains on steady. By activating this option the red light will go out once the reset has been given.

ACCEPT STOP FROM EXTERNAL SIGNAL

Normally it is the Press-Right that stops the acquisition and stops the press. If the START signal is removed during the acquisition, the Press-Right stops the press and a reject signal due to unexpected interruption. By activating this option, when the START input is deactivated, the Press-Right ends the acquisition and checks the curve marks forcing the piece as waste.

WAITING TO SAVE COMPUTER DATA

By activating this option, the Press-Right does not allow the machining of the pieces if it is not connected with the WinScope program. This option is useful if you want to archive all the workings in the computer memory.

IT ONLY COUNTS IF YOU TOUCH THE PIECE

By activating this option, the Press-Right will not increase the piece counter if it has not measured a starting position, that is, if it has not met the piece.

DIFFERENT WASTE CLASS IN EVERY JOB

By activating this option, each job has a different waste management (chapter 7).

9.2 Automatic selection of jobs

These options change the method used by the tool for automatic selection of jobs and phases. The options are accessible from the TOOLS> CONFIGURE menu.

ALLOW PHASE CHOICE WITHOUT PASSWORD

By activating this option, the operator can perform a phase out of sequence without having to enter the password.

ASK IF REPEAT THE WASTE PHASE

By activating this option in the event of a reject phase, the operator can repeat the execution of the same phase.

RUN THE CHOSEN JOB ONLY ONCE

When the selection of jobs is external, by activating this option, the operator can choose a job other than the one selected. Once the execution of a piece with this chosen job is finished, the tool will reselect the correct job.

ALLOW JOB CHOICE WITHOUT PASSWORD

By activating this option, the operator can choose a job other than the one selected externally without having to enter the password.

USE DIFFERENT CELL FOR EVERY PHASE

If multiple load cells are connected to the instrument, activating this option will use a different cell for each phase. This option allows you to connect up to four identical presses that work in sequence one after the other to a single Press-Right.

9.3 Phase repetetion

A phase can be repeated several times. Upon completion of the job, you can see a confirmation message.

To enable the phase repetition function, activate the option in the menu: TOOLS> VISIBLE OPTIONS> CHOICE OF PHASE REPETITIONS NUMBER.

To enable the possibility of confirming the piece, activate the option in the menu: TOOLS> VISIBLE OPTIONS> ASK FOR CONFIRMATION AT THE END OF THE PIECE.

To indicate how many times a phase must be repeated, enter the number of repetitions in the menu: CONFIGURE OPERATION> REPEAT PHASE.

To reset the repetition counter during processing, touch the counter shown on the instrument display and confirm.

10 Diagnosis

The diagnostic function enables: the visualization of the input status, the visualization and the forcing of outputs, the calibration of the transducers.
Given the complexity of these operations, we recommend the use of qualified personnel.
The activated inputs and outputs that are highlighted with a black rectangle.

To force the outputs, move the cursor with the  keys on the desired output and press  . In order to force an output, enter the hardware password.

The diagnostics window also displays the firmware version of the tool.
Note: During diagnostics, the tool does not work. To monitor the input and output status while the tool is running, press the "dot" key in the main display (off the menu).

10.1 Firmware version

To find out the firmware version of the instrument, enter diagnosis and choose help TOOLS> DIAGNOSIS.

11 Special configurations

On request it is possible to have special configurations.

11.1 Additional force transducer

It is possible to provide the instrument with a small force transducer for greater precision in processes that require reduced forces. The Alfamatic pressure transducer has been designed to withstand the maximum force that can be exerted by the cylinder.

11.1.1 Configuration of additional force transducer

To be able to connect an additional force transducer, the instrument must have the inputs for two load cells. In addition, a sensor is required that remains active if the smaller load cell is not mounted under the press. In this way the instrument can know when to use the normal load cell.

The sensor that feels the absence of the smallest load cell must be connected to an input configured as TEST SIGNAL 3 in the TOOLS menu> ADVANCED OPTIONS> CONFIGURE> INPUTS AND OUTPUTS SETUP> INPUTS.

The connection of the smallest load cell must be made to terminal block X22.

To configure a second load cell, activate channels 1 and 2 from the TOOLS menu> ADVANCED OPTIONS> CONFIGURE> CHANNEL PHASE JOBS> CHANNEL NUMBER.

Once the two channels have been activated, the Additional cell option must be activated for reduced forces in the TOOLS menu> ADVANCED OPTIONS> CONFIGURE> CHANNEL PHASE JOBS> OPTIONS.

11.1.2 Use of additional force transducer

The work to use the additional force transducer must have the option as Use transducer for reduced force in the menu WORK MANAGEMENT> EDIT THE JOB> CHANGE WORK> OPTIONS AND WASTE> OPTIONS.

11.2 Tool recognition

Up to three RFID transceivers can be connected to the instrument to re-recognize press-mounted equipment.

Thanks to the recognition of the equipment it is possible to prevent the operation of the press if the equipment is not that provided by the work, or it is possible to have the work selected selected based on the equipment fitted or it is still possible to have the phase of the work in operation automatically selected of the tool in use.

12 Password

Press-Right can store a list of users with their identification codes.
The identification code is a four or five-digit code.
The last three digits are never displayed, and serve as a password.
Each user can define permissions, that is, the functions that can be accessed to.
There is a special password that allows access to all functions and user management. This hardware configuration password, when the tool is new, **is 9724**.
The passwords can be changed: to order to do this, it is necessary to know the old password.
When you enter a user name that is authorized to change jobs, the display shows the 🔓 icon.
When you enter a user name that is authorized to change setup, the display shows the 🔓 icon.
By selecting the **REACTIVATE PASSWORD** item, the icons will disappear and the user code will be requested again to enter the adjustment values.

PASSWORD-PROTECTED FUNCTIONS

This sub-menu defines which tool functions are only accessible by entering the user code. The user who enters his or her code can only access if the permits are enabled.

USER MANAGEMENT

In the user management menu, users can be added or deleted. When a user is added, choose a name, a code (four or five digits) and the permissions granted to the new user. The code must have a unique pair of four and five digits.

13 Computer connection

Press-Right can be connected to a computer. It is possible to connect the tool to the computer via USB or the Ethernet port (optional).
The tool is provided together with the *Winscope* software, enhancing the tool capabilities.

13.1 Connection via USB port

If you are using the USB connection you must use a standard USB type A / B cable.

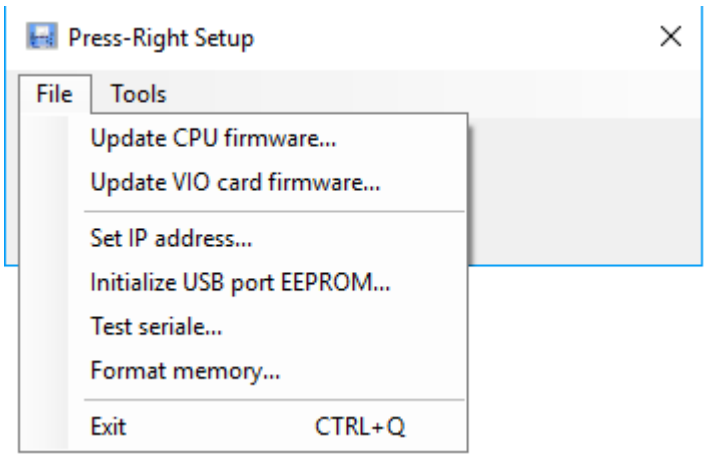
When the Press-Right is connected to the computer for the first time, the operating system will search for drivers to properly manage the device. For this reason the computer must have access to the internet at the first connection.
Once the drivers have been installed, the instrument will automatically be displayed in the WinScope Connection menu.

13.3 Connection via LAN port (Ethernet)

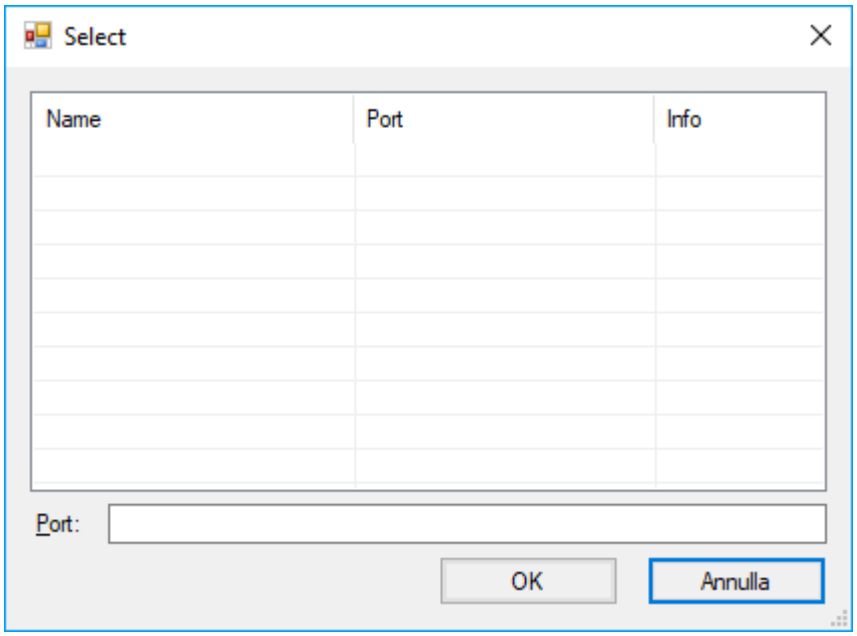
In order to use the Ethernet port, a unique IP address must first be assigned to the instrument. To do this, you need the Press-Right Setup software or access the TOOLS menu> ADVANCED OPTIONS> NETWORK NAME AND CLOCK SETUP> ETHERNET CONFIGURE. After assigning an IP address to the instrument, it is necessary to add it to the list of ports that can be used in WinScope through the relative Preferences command in the File menu.

13.3.1 Assign IP address to the instrument

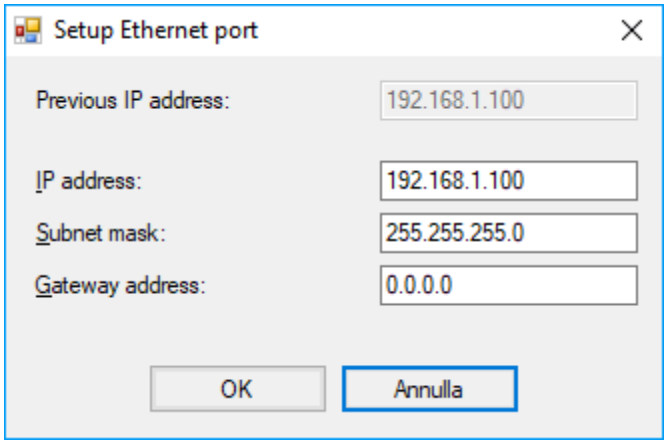
Install and start the Press-Right Setup program; Select the Set IP address command in the File menu.



Select the tool to which the IP address is to be assigned in the list that is shown.



If the list is empty, monitor the status of the firewall in your computer, if any. The firewall can be disabled in the Windows monitor Panel.
If you cannot find the tool to be set up, just turn it off, reload the list and see which one is missing.
After choosing the tool, the following window appears, where an IP address can be assigned:



14 Field bus

The Press-Right instrument can communicate via Modbus TCP field buses (standard), PROFINET or EtherNet/IP (optional).

14.1 Organization

The instrument has a list of registers that can be read or written via fieldbus communication.
Each register has an address. From the field bus it is possible to access the registers by indicating the address of the same.
With the PROFINET and EtherNet / IP buses, you also have direct access to 11 registers for reading and 11 registers for writing. It is possible to decide, by filling in a table, which information should contain these direct access registers.

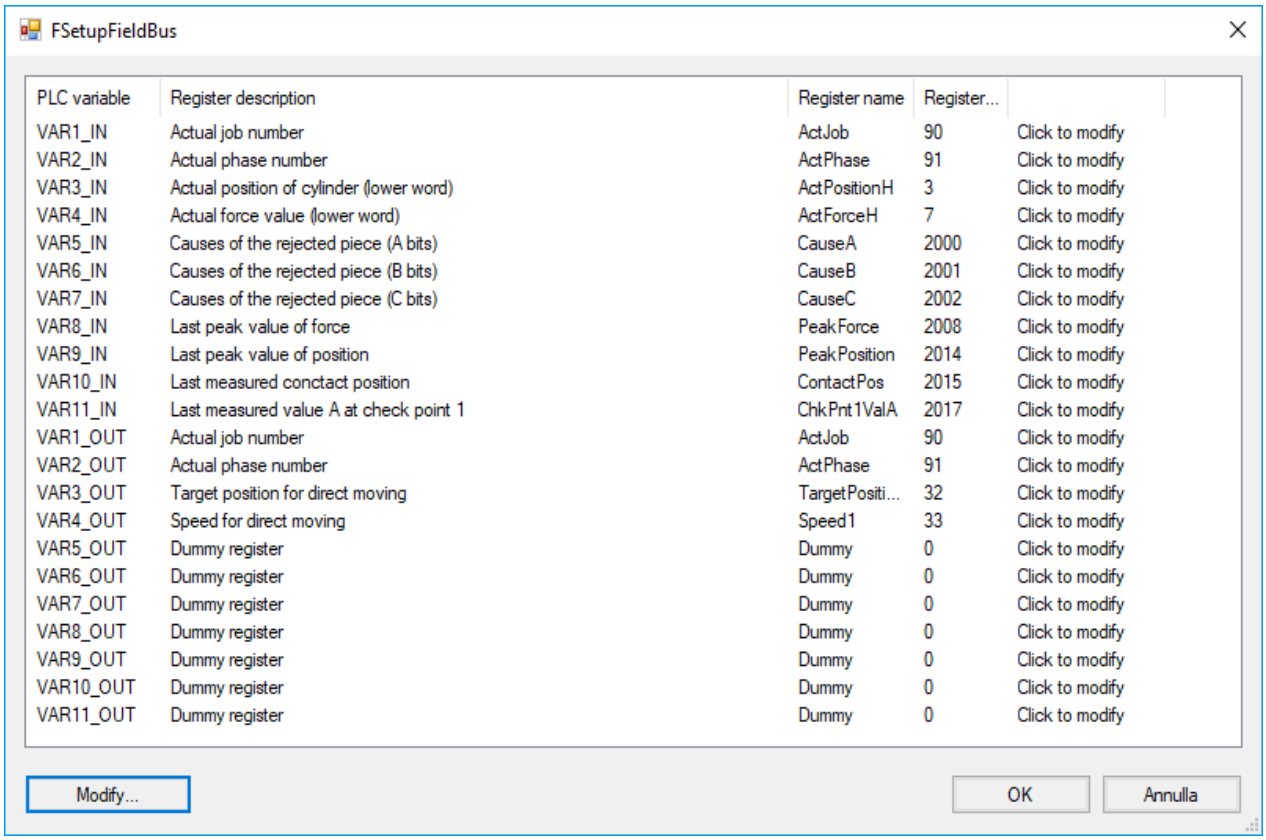
14.2 Status and Control

The register at address 1STATUS_WORD_INPLC contains the instrument status bits.
The register at address 24 CONTROL_WORD_OUTPLC allows the command of the instrument.
When a command (other than zero) is written, the CMD_BUSY bit of the status register is raised to indicate that the command has been received by the instrument.
If the command is valid, the RUN bit of the status register is raised.
If the command is not valid, the ERROR bit of the status register is raised.
At the end of the execution of the command, the RUN bit is reset and the COMPLETED bit activated.
The CMD_BUSY bit is cleared if zero has been written as a command and if execution is finished.
The COMPLETED and ERROR bits are cleared when a new (non-zero) command is written.

14.3 PROFINET and EtherNet/IP

Through these field buses, you have access to 16 variables in input and 16 variables in output.
Through the first four input variables (CTRL_INPLC, SUBINDEX_INPLC, INDEX_INPLC, PV_INPLC) and output (CTRL_OUTPLC, SUBINDEX_OUTPLC, INDEX_OUTPLC, PV_OUTPLC) it is possible to have read and write access (if allowed) through address / data to all instrument parameters .
The STATUS_WORD_INPLC input word contains the instrument status bits (register 1).
The CONTROL_WORD_OUTPLC output word contains the commands to be supplied to the instrument (register 24).
The content of 11 words in input (VAR1_INPLC ... VAR11_INPLC) and 11 words in output (VAR1_OUTPLC ... VAR11_OUTPLC) can be configured by the user through the “Press-Right Setup” software.

The default content of these words is the following:



14.3.1 Access via address / data

14.3.1.1 Initialization

Load the value 0x00 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x00

14.3.1.2 Reading a 16-bit register

Load the register address into INDEX_OUTPLC
Load the value 0x40 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x10
Read the value from PV_INPPLC
Load the value 0x00 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x00

14.3.1.3 Reading a 32-bit register

Load the register address into INDEX_OUTPLC
Load the value 0x10 in CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x20
Read the value from PV_INPPLC
Load the value 0x00 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x00

14.3.1.4 Writing a 16-bit register

Load the register address into INDEX_OUTPLC

Load the value to be written into PV_OUTPLC
Load the value 0x20 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x10
In case of an error CTRL_INPLC will contain 0x70
Load the value 0x00 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x00

14.3.1.5 Writing a 32-bit register

Load the register address into INDEX_OUTPLC
Load the value to be written into PV_OUTPLC
Load the value 0x30 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x20
In case of an error CTRL_INPLC will contain 0x70
Load the value 0x00 into CTRL_OUTPLC
Wait for CTRL_INPLC to contain 0x00

14.3.2 PROFINET interface

To install the GSD file in the library, select Tools> Device Description File Management.
You can find it in the library under Additional field devices> PROFINET IO> General> Alfamatic> PressRight.
The name and address of the device is set by TIA:
Open the TIA, under "Online access" select "Update accessible nodes". It should appear just below with the name CompactCom 40 PIR.
Open the device and in the "Functions" branch you will find set IP and set Name.
A new module is found automatically if it has the same IP address and name.

15 Organization of registers

15.1 Command execution

By writing in the CONTROL_WORD_OUTPLC the press is controlled.
The command must be written until the STATUS_WORD_INPLC command busy bit becomes high; at this point it is necessary to write zero in CONTROL_WORD_OUTPLC.
Regardless of whether the command involves a movement or not, as long as the command is present, bit 11 of STATUS_WORD_INPLC will remain high.

15.2 Behavior of the status register

Below is the behavior of the status bits under the most common conditions:
In this chapter the Busy bit is not indicated because it always behaves the same way: High when a command is received, low when the zero command is received.
The Result OK and KO bits are activated at the end of the phase and must be reset with command 16 or 17.
If the operator stops the cylinder by pressing the reset key or if a malfunction occurs, the Fault bit is activated instead of the Completed bit and the Ready bit is not activated.
The fault is reset with command 1.

Stop at the resting altitude ready to go:
Ready + Rest position + (Zero Position)

Starting the phase with command 10:
As soon as the movement begins:
Running + Execute
At the end of the movement:
Ready + Rest Position or Zero Position + Completed + (Rest position and / or Zero Position if with automatic return)

Return to rest position or to zero with command 12 or 11:
As soon as the movement begins:
Running + Execute
At the end of the movement:
Ready + Rest Position or Zero Position + Completed + Rest position and / or Zero Position

15.2.1 Note

Rest Positionit behaves differently depending on whether an input is configured as “Start return” or not. With a “Start return” input, the Rest Position bit is active if it is at rest position. Without a “Start return” input, the Rest Position bit is active if it is at rest position or further behind it.

15.3 Strings

The strings are made up of single 8-bit ASCII characters terminated by the code 0x00.
It is advisable to avoid accented letters.
Since each register has 16 bits, there are two characters in a single register.

The high byte of the register contains the first character of the pair.
The low byte of the register contains the second character of the pair.
Below is an example of reading the name of the job that we assume to be "Job 2":
ASCII Codes:

J	0x4A
or	0x6F
b	0x62
space	0x20
2	0x32

The following registers will have the following content:
register 1000 will contain “Jo” 0x4A6F
register 1001 will contain “b” 0x6220
register 1002 will contain "2 " 0x3200

15.4 Table of registers

Some commands use, for their function, the text contained in the register at address 45. For example, to use the commands 2 (select job by text code), 3 (select job by name) and 4 (set the part number), the text must be uploaded to address 45 before executing the command.
Each job has a name, in addition to this it can have alphanumeric identification codes (barcode) and an index.
The current job name is listed at 1000.
The index of the job allows the selection through a simple numerical value. For selection by index, the index must be written to register 90.

Table:

Name	Description	Type	Addr	Access
Dummy			0	
Status and Flags	Bit 0 (BYTEH.0) Ready* Bit 1 (BYTEH.1) Zero Position Bit 2 (BYTEH.2) Rest Position Bit 3 (BYTEH.3) Fault Bit 4 (BYTEH.4) Running Bit 6 (BYTEH.6) Start enabled Bit 7 (BYTEH.7) New Part Number Bit 9 (BYTEL.1) Result OK (*from version 2.30 to* reset use control word = 16 or 17) Bit 10 (BYTEL.2) Result KO (*from version 2.30* to reset use control word = 16 or 17) **Field bus status bits:** Bit 11 (BYTEL.3) Command BUSY Bit 12 (BYTEL.4) JOG mode Bit 13 (BYTEL.5) Command ERROR Bit 14 (BYTEL.6) Command COMPLETED Bit 15 (BYTEL.7) Command EXECUTE	UINT16	1	Read only
PositionAct	Current position of the cylinder	INT32	2	Read only
SupplAct	Current value of additional transducer	INT32	4	Read only

ForceAct	Current force	INT32	6	Read only
Control Word	0 no command Write 1 to reset fault Write 2 to select job by text code (&45) Write 3 to select job by name (&45) Write 4 to set the part number (&45) Write 5 to save data on persistent memory Write 7 to reset flags *(from version 1.58)* Write 8 to delete the curves in memory Write 9 to Re-read registers *(from version 1.86)* Write 10 to start phase Write 11 to start to position zero *(from version 1.58)* Write 12 to start to rest position *(from version 1.58)* Write 13 to start touching *(from version 1.58)* Write 14 to disable driver *(from version 1.77)* Write 16 to enable start command Write 17 to disable start command Write 18 to reset job pieces counters Write 20 to stop movement Write 21 to start basic movement Write 24 to enable Jog *(from version 1.58)* Write 25 to disable Jog *(from version 1.58)* Write 26 to Stop Jog Mov *(from version 1.58)* Write 27 to Start Jog+ *(from version 1.58)* Write 28 to Start Jog- *(from version 1.58)* Write 30 to Set new Order number (&45) *(from version 1.92)* Write 32 to Reset rejected *(from version 2.21)*	UINT16	24	Write
Position1	Target position for basic movement	UINT16	32	Write/read
Speed1	Speed for basic movement	UINT16	33	Write/read
ToolA	Tool A ID	UINT16	42	Read only
ToolB	Tool B ID	UINT16	43	Read only
ToolC	Tool C ID	UINT16	44	Read only
StringBuffer	Text buffer	STRING 24L	45	Write/read
~~OrderNum~~	~~Order number~~	~~STRING 24L~~	~~62~~	~~Write/read~~
JobIndex	Job number The first job is number 1	UINT16	90	Write/read
PhaseAct	Phase number The first phase is number 1	UINT16	91	Write/read
PhaseValue	Phase values	UINT16	92	Write/read
MainCounter	Main counter	UINT32	95	Read only
JobNumOK	Number of good pieces (to reset use control word = 18)	UINT32	97	Read only

JobNumNOK	Number of rejected pieces (to reset use control word = 18)	UINT32	99	Read only
MaxNumOK	Maximum number of good pieces	UINT32	101	Write/read
PartNumber	Code	STRING 28L Read only	103	Read only

~~InstrumentName~~	~~Name of the instrument~~	~~STRING 15L~~	~~200~~	~~Read only~~

DecimalsY	Number of decimals digit of force values	UINT16	207	Read only
DecimalsX	Number of decimals digit of position values	UINT16	209	Read only
DecimalsP	Number of decimals digit of probe values	UINT16	211	Read only
InstrumentName	Name of the instrument	STRING 24L	213	Read only
JobName	Name of current job	STRING 14L	1000	Read only
StopPosition	Stop position	UINT16	1014	Write/read
StopForce	Stop force	UINT16	1015	Write/read
EndApproachPos	End position for fast approach	UINT16	1016	Write/read
RestPosition	Rest position	UINT16	1017	Write/read
ApproachSpeed	Speed for fast approach	UINT16	1018	Write/read
TouchSpeed	Speed for contact after approach	UINT16	1019	Write/read
WorkSpeed	Main working speed	UINT16	1020	Write/read
ReturnSpeed	Return speed	UINT16	1021	Write/read
PreStopPos	Pre-stop start position	UINT16	1022	Write/read
PreStopSpeed	Pre-stop speed	UINT16	1023	Write/read
StopDelay	Delay before return *(from version 1.86)*	UINT16	1024	Write/read
ContactForce	Force for contact sens *(from version 1.94)*	UINT16	1025	Write/read
PeakPosMin	Value minimum of reached position	UINT16	1027	Write/read
PeakPosMax	Value maximum of reached position	UINT16	1028	Write/read

PeakForceMin	Value minimum of reached force	UINT16	1029	Write/read
PeakForceMax	Value maximum of reached force	UINT16	1030	Write/read
InitPosMin	Value minimum of conctact position	UINT16	1031	Write/read
InitPosMax	Value maximum of conctact position	UINT16	1032	Write/read
CP1par1	First value of check point 1	UINT16	1033	Write/read
CP1par2	Second value of check point 1	UINT16	1034	Write/read
CP1par3	Third value of check point 1	UINT16	1035	Write/read
CP1par4	Fourth value of check point 1	UINT16	1036	Write/read
CP1par5	Fifth value of check point 1	UINT16	1037	Write/read
CP2par1	First value of check point 2	UINT16	1038	Write/read
CP2par2	Second value of check point 2	UINT16	1039	Write/read
CP2par3	Third value of check point 2	UINT16	1040	Write/read
CP2par4	Fourth value of check point 2	UINT16	1041	Write/read
CP2par5	Fifth value of check point 2	UINT16	1042	Write/read
CP3par1	First value of check point 3	UINT16	1043	Write/read
CP3par2	Second value of check point 3	UINT16	1044	Write/read
CP3par3	Third value of check point 3	UINT16	1045	Write/read
CP3par4	Fourth value of check point 3	UINT16	1046	Write/read
CP3par5	Fifth value of check point 3	UINT16	1047	Write/read
CP4par1	First value of check point 4	UINT16	1048	Write/read
CP4par2	Second value of check point 4	UINT16	1049	Write/read
CP4par3	Third value of check point 4	UINT16	1050	Write/read
CP4par4	Fourth value of check point 4	UINT16	1051	Write/read

CP4par5	Fifth value of check point 4	UINT16	1052	Write/read
CP5par1	First value of check point 5	UINT16	1053	Write/read
CP5par2	Second value of check point 5	UINT16	1054	Write/read
CP5par3	Third value of check point 5	UINT16	1055	Write/read
CP5par4	Fourth value of check point 5	UINT16	1056	Write/read
CP5par5	Fifth value of check point 5	UINT16	1057	Write/read
ProbeStop	Stop value of external probe	UINT16	1068	Write/read
ProbeMin	Value minimum of external probe	UINT16	1069	Write/read
ProbeMax	Value maximum of external probe	UINT16	1070	Write/read

JobPhase	Name of current phase	STRING 14L	1100	Read only
JobCode1	Code of current job	STRING 24L	1114	Read only
JobCode2	Code of current job	STRING 24L	1128	Read only
JobCode3	Code of current job	STRING 24L	1142	Read only
JobCode4	Code of current job	STRING 24L	1156	Read only
JobCode5	Code of current job	STRING 24L	1170	Read only
JobCode6	Code of current job	STRING 24L	1184	Read only
JobCode7	Code of current job	STRING 24L	1198	Read only
OrderNumber	Order number	STRING 24L	1212	Read only

Issue A	BIT0: STOP FROM USER INTERFACE BIT1: STOP FROM ALLARM CONDITION BIT2: TIME OUT BIT3: MAX PROBE BIT4: MIN PROBE BIT5: PROBE NOT OK BIT6: HIGH SPEED	UINT16	2000	Read only

	BIT7: LOW SPEED			
Issue B	BIT0: MAX POSITION BIT1: MIN POSITION BIT2: MAX CONTACT BIT3: MIN CONTACT BIT4: MAX CHECK POINT BIT5: MIN CHECK POINT BIT6: TEST INPUT 2 BIT7: TEST INPUT 3	UINT16	2001	Read only
Issue C	BIT4: MAX FORCE BIT5: MIN FORCE BIT6: MAX BAND BIT7: MIN BAND	UINT16	2002	Read only
PeakForce	Force reached	UINT16	2008	Read only
PeakPosition	Position reached	UINT16	2014	Read only
ConctactPos	Contact position	UINT16	2015	Read only
ProbeValue	Probe measured	UINT16	2016	Read only
CP1ValueA	Value A at check point 1	UINT16	2017	Read only
CP1ValueB	Value B at check point 1	UINT16	2018	Read only
CP2ValueA	Value A at check point 2	UINT16	2019	Read only
CP2ValueB	Value B at check point 2	UINT16	2020	Read only
CP3ValueA	Value A at check point 3	UINT16	2021	Read only
CP3ValueB	Value B at check point 3	UINT16	2022	Read only
CP4ValueA	Value A at check point 4	UINT16	2023	Read only
CP4ValueB	Value B at check point 4	UINT16	2024	Read only
CP5ValueA	Value A at check point 5	UINT16	2025	Read only
CP5ValueB	Value B at check point 5	UINT16	2026	Read only

* To have the ready signal, the reject piece signal must be reset. To activate the auto reset, the option “Disable reset of keypad rejects” must be activated.

15.5 Description of Check Point registers

The check points are described by five different parameters: CPxPar1, CPxPar2, CPxPar3, CPxPar4, CPxPar5. The function of these parameters varies according to the type of check point.

With check points, for each piece worked, the instrument measures one or two values. These values are available in the CPxValueA and CPxValueB registers.

The type of check point is indicated by the three least significant bits of parameter 5 (CPxPar5).

The types currently available are the following:

CP_FORCE = 011b

CP_POSITION = 100b

CP_PEAK = 001b

CP_SPEED = 000b

CP_SETPOINT = 101b

15.5.1 Registers for check point force

Register	Function	Data type
CPxPar1	Quota di misura forza	Position
CPxPar2	Limite minimo di forza	Force
CPxPar3	Limite massimo di forza	Force
CPxValueA	Forza misurata	Force

15.5.2 Registers for check point position

Register	Function	Data type
CPxPar1	Forza di misura quota	Force
CPxPar2	Limite minimo di quota	Position
CPxPar3	Limite massimo di quota	Position
CPxValueA	Quota misurata	Position

15.5.3 Registers for check point peak

Register	Function	Data type
CPxPar1	Quota di inizio misura valori minimo massimo	Position
CPxPar2	Quota di fine misura valori minimo Massimo	Position
CPxValueA	Valore minimo misurato	Force
CPxValueB	Valore massimo misurato	Force

15.5.4 Registers for check point speed

Register	Function	Data type
CPxPar1	Quota di inizio misura velocità	Position
CPxPar2	Quota di fine misura velocità	Position
CPxValueA	Speed	Speed

15.5.5 Registers for check point setpoint

Register	Function	Data type
CPxPar1	Quota attivazione setpoint 1	Position
CPxPar2	Quota attivazione setpoint 2	Position
CPxPar3	Quota attivazione setpoint 3	Position

16 Specifications and troubleshooting

Before calling for assistance, refer to this chapter.

16.1 Troubleshooting

Refer to the table below to quickly find the information contained in the manual.

Problem	Cause
The tool does not allow you to change the graph setting.	It is not possible to modify the origin of the graph and the full scale with values that would make the tolerance band not visible even only partially.
The instrument is not communicating with the computer.	See the paragraphs **Errore. L'origine riferimento non è stata trovata.**, **Errore. L'origine riferimento non è stata trovata.**
The acquired curve is not displayed.	Check that the origin and full scale of the graph are sufficiently correct by comparing them with the measured values.

16.2 The instrument does not communicate via the USB port

To use the USB port, the instrument drivers must first be installed on the computer.

16.3 The instrument does not communicate via LAN (ethernet) port

Check if there is a firewall. If there is a firewall, check that it is not blocking WinScope.
When the instrument is connected next to the connector, the green LINK light must turn on and, if in a fast network, the yellow 100BaseT light.
Check that the IP address of the instrument is reachable using, for example, the PING command.

16.4 Technical data

The list of the technical features follow:

Subject	Features
Power supply DC version	24VDC 1A Absorption (excluding transducer, input and output absorption)
SAMPLING FREQUENCY	700 samplings/second
Dimensions	Width: 205 mm Height: 175 mm Depth: 240 mm

16.5 Characteristics of the instrument

The Press-Right detects the position-force curve during work.
Manages and controls the cylinder speed profile.
Work on a continuous tolerance band by controlling the entire position-force curve.
Check the height and the peak force values.

It controls the stop of the press when reaching a position or a force.
Check the starting dimension measured on contact with the piece.
Check critical points of the position-force curve via check-point.
It manages up to eight consecutive phases with independent parameters.
All control parameters are stored in 200 independent and selectable jobs.
Advanced user management with personal passwords and permissions.
It is possible to connect the Press-Right to the computer and, thanks to the WinScope program, to save the curves, modify the settings, perform statistical analysis, print the data.
Saving of curves on internal flash memory accessible via FTP.
Job selection by barcode reading.
Registration of the serial number of the piece by reading a barcode.
Manages up to three antennas for equipment recognition via RFID tags.
It manages up to three enabling signals.
It manages up to three additional good / bad control signals.
Periodic programmable request for tool replacement due to wear.
Periodic programmable maintenance request.
Integrated management of a small pick to light system.

This product must not be disposed of as an unsorted urban waste; secure proper recycling.