



**AMERI-CAN**  
**MACHINERY LTD.**

# TS7002

## INSTRUCTION MANUAL

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# USAGE LICENCE

## 0.1 USAGE LICENCE

### THIS PRODUCT HAS NOT TO BE CONSIDERED OF PROPERTY

#### LICENCE ALLOWANCE

In the terms described below, the manufacturing company allows the Client, who accepts, the right to use the program included in the bought Equipment, and all material concerning it: that is the disks, and the User's manual (disks and instruction manual, will be called from now only "material"), delivered with this Usage Licence. The use of the material is limited to connection only with one computer.

#### LICENCE CONDITIONS

The licence clauses become effective as soon as the enclosed registration form, is filled in, signed and sent to the manufacturing company.

#### PROPERTY RIGHTS

The Client accepts that the material, the property rights and the copyright of the software product, and its concerning documentation, belong exclusively to the manufacturing company.

#### POSSIBILITIES OFFERED BY THE LICENCE

1. The Client has at his disposition a copy of the programm and a safety copy.
2. The Client can incorporate the programm to another programm, with the purpose of using it only on one computer; it's obvious that the copyright has to be reproduced, and that there is no possibility of changing or modifying the original programm. The programm can not be used in a Data processing Center for third parties.
3. The material can not be used by the Client, nor copied, modified or transferred –even partialy- if not according to the present licence, except for other written agreements stipulated with the manufacturing company.
4. The Client engages to take the necessary precautions in order to avoid that the bought material is reproduced, published or distributed.

#### LICENCE EXPIRATION

The licence will be revoked if the Client transfers the concession of any part of the programm, or if he doesn't respect one of the clauses of this present licence. If the licence should be revoked, the Client engages to destroy the programm and any possible copy.

#### LIMITS OF THE GUARANTEE

The manufacturing company guarantees the magnetic enclosures against any material or production defects, for a period of 90 days from beginning from the date when this present licence becomes effective. If within this period, the delivered disks containing the program should be faulty, the manufacturing company engages to replace it, free of charge, through its agents, after the sending back of the the faulty disk with its Usage Licence filled in and signed.

#### UPDATING

If the registration form, enclosed to the licence, has been filled in and sent back, the Client will be informed about any new version of the product, together with the terms of purchase. Any updating will be considered as an integrative part of the material and will be subjected to all clauses of this present licence.

#### TERMS OF THE LAW

This present Usage Licence is in accordance with all laws in force in the Italian Republic, and it has to be interpreted in accordance with them. The Client accepts that any controversy, is under the jurisdiction of Vigevano's Court (PV).

#### ACCEPTANCE OF THE LICENCE

The Client confirms to have read this Usage Licence, to have understood its terms and clauses. The Client accepts and takes into consideration this Licence as the only and exclusive agreement stipulated with the manufacturing company, which replaces any previous written or verbal agreement between the parties. Any modification, instance or amendment will not be considered valid, if they are not part of a document written and signed by an authorised the manufacturing company representative. **Omissions or delays of any of the two parties to observe the defined conditions of the Licence, don't entail any renunciation of the obtained rights with the subscription of the Licence. If any clause of the Licence should be invalidated by law, the other parts of the contract will be still valid.**

#### TRADE MARKS

MS-DOS is a Microsoft Corporation Trade Mark

Unix is an American Telephone & Telegraf Co. Trade Mark

IBM is an internacional Business Machines Co. Trade Mark

Other names of products used in this manual may be protected by Trade Mark, and they are used only for identification reasons.

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## 1.1 INTRODUCTION

The **TS7002** is a computer-controlled positioning device with RAM memory which is fed by a standby battery (it keeps the data even if the machine is off), with data display on a LCD video. The equipment has been integrated with a management program for the machine functioning (PLC) Another memory, type Flash DRIVE, allows the storage of programs and every other DATA.

### 1.1.1 THE EQUIPMENT SWITCHING ON

The equipment switches on by means of the main switch of the machine. When you switch on the machine Windows XP and EC7002 will start. After EC7002 is completely loaded, the equipment is ready for the reset axes cycle.



The computer is directly linked to the main control board of the machine. When the machine is switched on and all programs completely loaded release the Emergency key (1) (on the control board) turning it according to the direction shown by the arrows, then press the green Restore key (which lights up if there are no electrical emergencies).

### 1.1.2 ALARMS

Any possible alarm is shown on the display. When the equipment shows an alarm no operation can be carried out. You have to find and eliminate the cause in order to go on.

## 1.1.3 MESSAGES

Any possible message for the operator is shown on the display.


## 1.2 CALIBRATION/ RESET AXES

Every time the equipment is switched on or at every reset the control system foresees a calibration cycle; without this operation no cutting cycle can be carried out. Other possible options will be later better described.



### 1.2.1 CALIBRATION ON MICRO

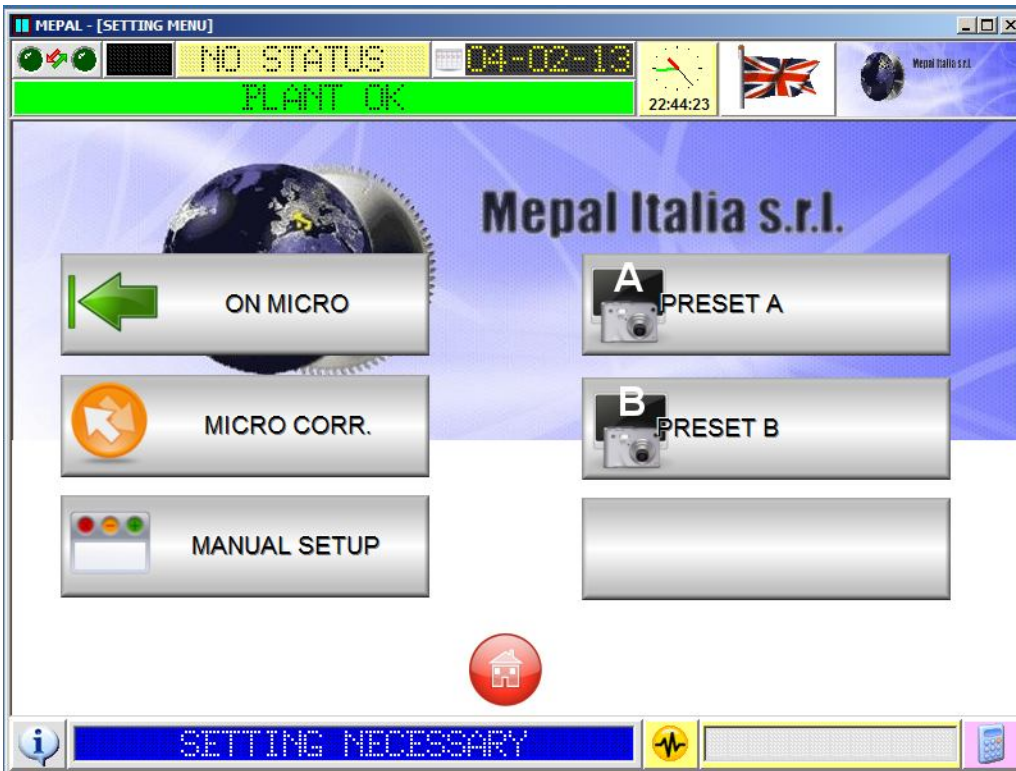
**ATTENTION:** during the micro calibration the movement of the movable head is always in decrease of the distance between the units, in search of the calibration micro switch which is placed about at 360 mm from the fixed head. If the machine has been stopped, before switching it off or before the RESET when the distance is less than the mentioned one, **THE MICRO CALIBRATION CYCLE MUST NOT BE CARRIED OUT**, otherwise the two units could crash into each other. In this case it's necessary to carry out a manual positioning. That operation will be later better explained.

When the display shows that image press on , then another page will be opened:

# CALIBRATION



Press then in the next page



The automatic calibration cycle will begin once the START button on the ma-

# CALIBRATION

chine will be pressed.

The display will show:



The movable head moves to the left looking for the calibration micro switch, which is placed near the fixed head. When the movable head reaches the micro switch, the movement of translation is reversed in search of the zero point of the machine.

If the machine has the electronic control of the heads inclination, these will calibrate at about 20° then will move at 90°.



# CALIBRATION

After the calibration cycle the display will show:



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# CALIBRATION

## 1.2.2 MANUAL CALIBRATION

The manual calibration is enabled for technical purposes and it is not recommended.

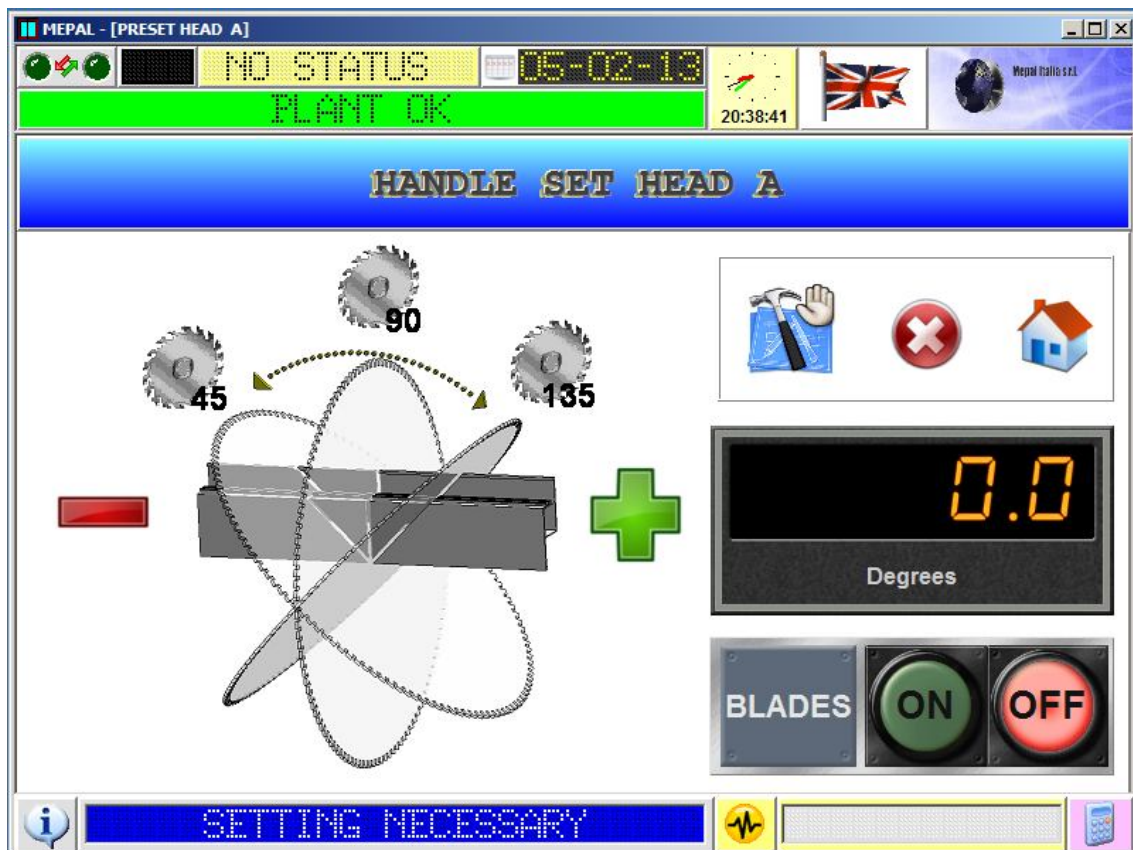
This function foresees the immediate calibration of the machine and allows to put in, by the keyboard, the real size of the distance between the blades. It's evident that, if the put in measure is not right, all the cuts will be wrong of the same



difference. Press on . The software will ask for the actual measure.

Press on **ENTER** in order to save the new size. If the new value is right (according to the machine parameters), the equipment will accept it.

If the machine has the electronic control of the heads inclination, it is also possible to make a **MANUAL CALIBRATION** of the heads pressing



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# CALIBRATION



Press  and write the actual inclination, then confirm with ENTER.

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# CALIBRATION

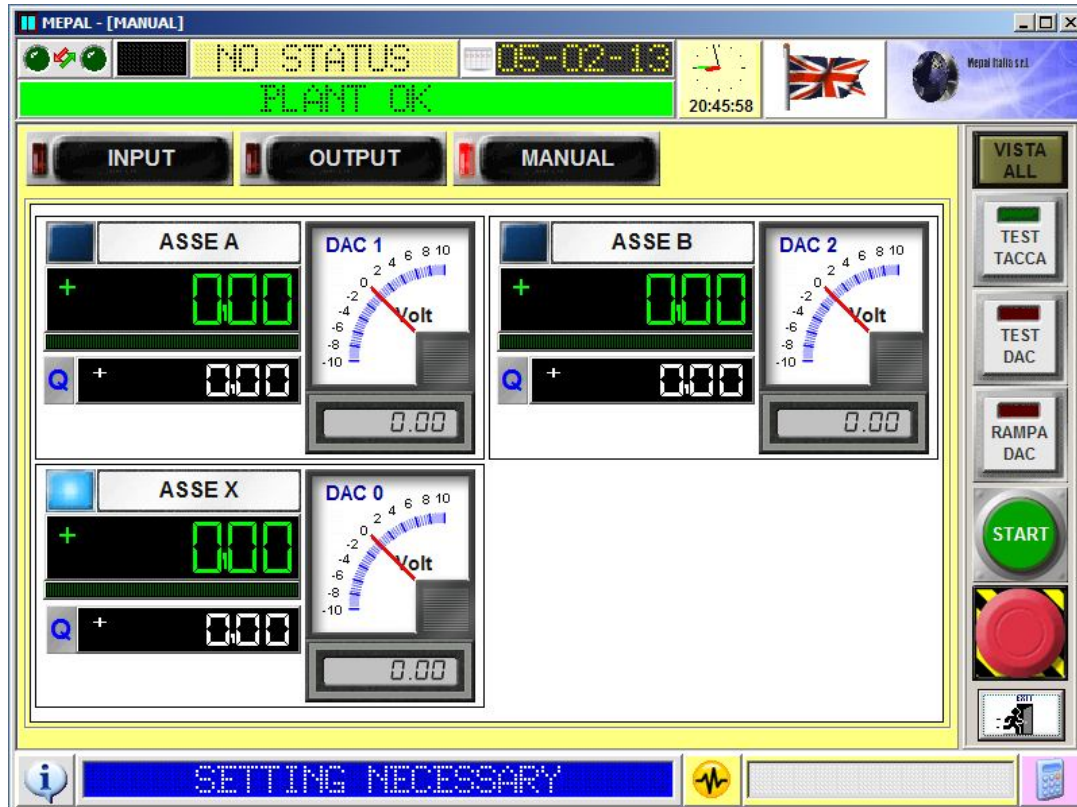
## 1.2.3 MANUAL POSITIONING

This function has been foreseen in order to help the operator who has to carry out the micro calibration. When the two heads are too close (usually less than 350 mm), the execution of an automatic calibration could cause uncontrollable movements of the axis. (See the paragraph about the micro calibration). In order to avoid to move the unit by hand, this function allows to move the movable head controlling it by a translation engine. When the display shows:



This function can start pressing on  . The display will show:

# CALIBRATION



Select the axis to move, write the quote and press



**ATTENTION:** that function controls the axis movement but not its position; that is the axis in motion is not controlled by the parameters of the equipment but only by the operator's ability who has to avoid any mechanical accident.

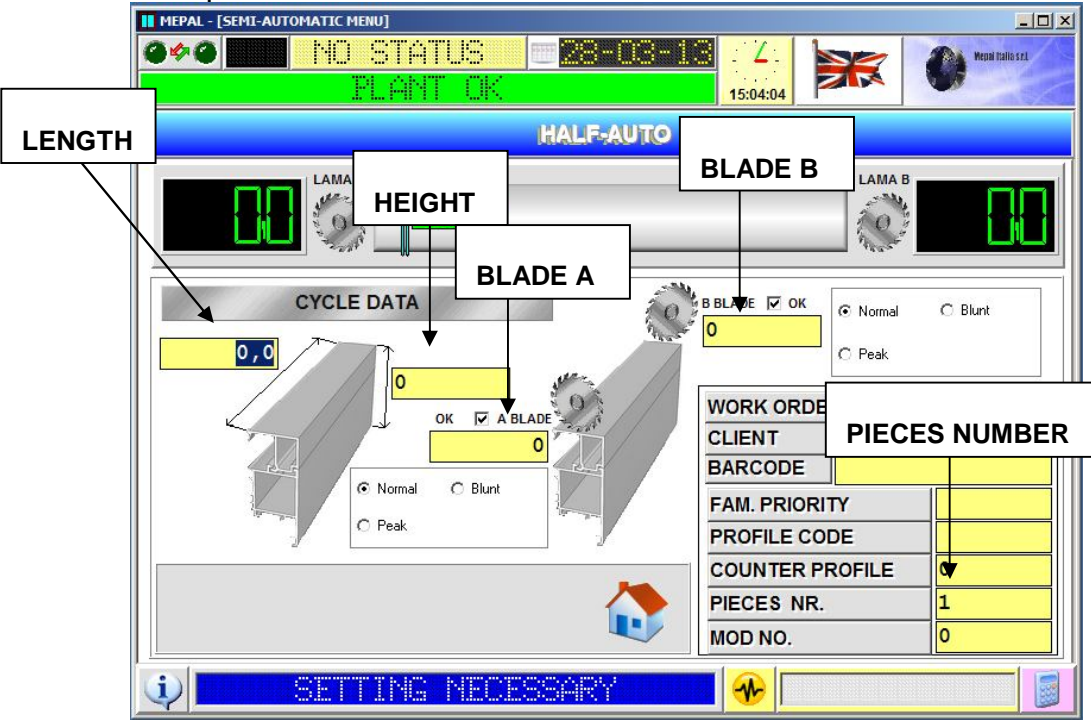
# SEMI-AUTOMATIC

## 1.3 SEMI-AUTOMATIC

The SEMI-AUTOMATIC function allows to carry out the cut of single pieces of profile, even if they are not stored in the section file. When the display shows:



press on  . The display will show:



# SEMI-AUTOMATIC

where **LENGTH** means "the piece length to be obtained"  
**BLADE A.** means "tilting of the left head"  
**BLADE B.** means "tilting of the right head"  
**PIECES NR.** means " number of the pieces to be cut"  
**COUNTER PR.** means "counter-block height"  
**PROFILE CODE** means "profile code"  
**HEIGHT.** means "profile height"

## 1.3.1 CUTS WITH THE HEADS TILTED AT 90°

In this case you have to put in the length of the piece to be cut, the tilting of both heads, the number of the pieces to be obtained (it's not necessary to put in neither the code, nor the thickness, nor the counter-block). After that operation you have to press the green key **START**.

## 1.3.2 CUTS WITH OTHER TILTINGS (NOT AT 90°)

The cutting length refers to the piece peaks which are usually turned upwards. That means that the reference point of the measure will be detached from the support plane and that the distance between the blades will have to be less than that measure. In this case the computer needs the profile thickness (THICK.) and the counter block height (COUNTER-B.) so that it's possible to calculate how much the blades inter-axis has to be reduced in order to get the right chosen length. If the profile is stored in the sections file, you have to put in the code on the line CODE and the equipment automatically looks for it and takes the required sizes.

If both code and thickness and/or counter-block are put in, the computer takes into consideration only the code (but not thickness and counter-block) and takes the data from the section file.

Every head has internal references for the positioning at 90° and 45°. For the cuts with different tiltings, it's necessary to place the head at 90° (with the selector on manual), place the mechanical stop on the chosen tilting, turn the selector on automatic again and set the same tilting in the cutting data. The computer, according to the set angle, to thickness and counter-block calculates the right distance between the blades.

When you have put in all the required data, press on START.

## 1.3.3 MACHINE MOVEMENT

All the translation movements are controlled by the pressure at the same time of both keys P1 and P2 (they are round, yellow and placed on the control board).

The temporary release of only one of the two keys causes the stop of the movement: it's necessary to start the movement again, pressing on START and, according to the request on the display, pressing on the two keys P1 and P2 again.

You have to keep them pressed till the movement ends (at the end of the movement the engine of the left blade starts up and, after a few seconds, the right one too).



## 1.3.4 CUTTING PHASE

After pressing on START, the heads will move and the blades engines will start up. It will be now possible to load the profile to be cut. Pressing on P1 the clamps (for the piece locking) are enabled. Release the pressed key.

If the profile is not well placed and it's necessary to release the clamps, press and release P1.

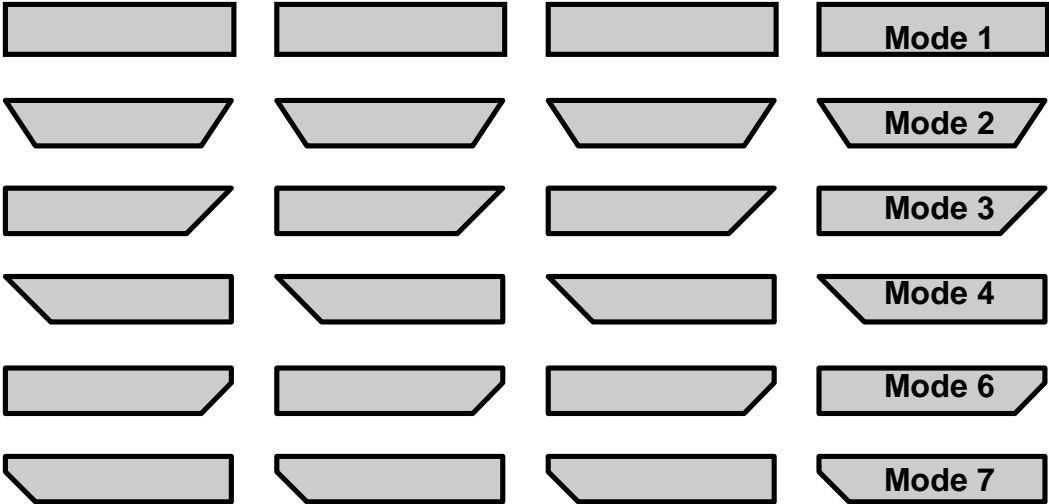
When the clamps are locked, if you want to cut, it's necessary to press at the same time the two keys P1 and P2. Releasing only one of the two keys, the blade goes back but the clamps are still locked. In order to finish the cut in the right way, you have to keep the two keys pressed until the blades go back automatically.

If you want to release the clamps, you have to press and then to release one of the two keys P1 or P2.

# SEMI-AUTOMATIC

## 1.3.5 INCREMENTAL PHASE

This function allows to cut pieces or profile bars to obtain a given number of equal pieces. The logic of the program provides for a special as shown:



**NOTE:** Modes 2 -3 - 6 are possible only with some saw models designed for cuts at 45, 90 and 135 degrees.

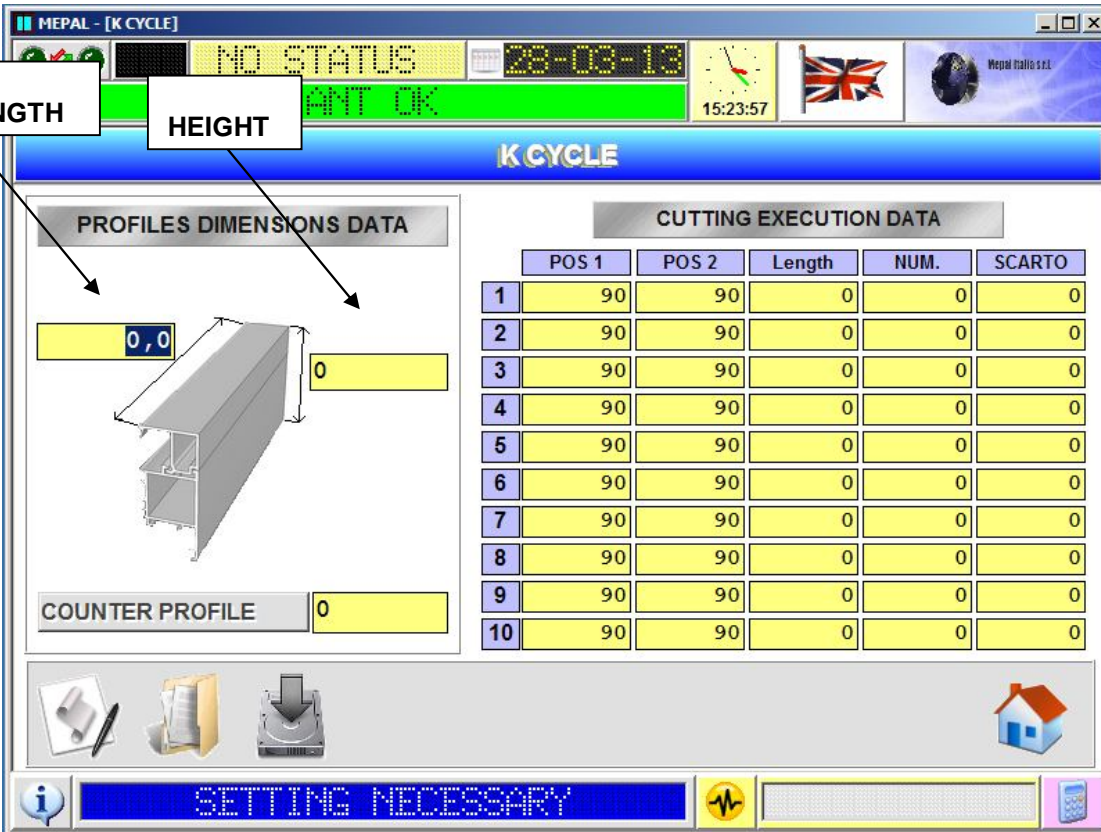
When the display shows the following configuration:



# SEMI-AUTOMATIC



and the display will show:



**PROFILES DIMENSIONS DATA**

TOTAL LENGTH: 0,0

HEIGHT: 0

COUNTER PROFILE: 0

**CUTTING EXECUTION DATA**

	POS 1	POS 2	Length	NUM.	SCARTO
1	90	90	0	0	0
2	90	90	0	0	0
3	90	90	0	0	0
4	90	90	0	0	0
5	90	90	0	0	0
6	90	90	0	0	0
7	90	90	0	0	0
8	90	90	0	0	0
9	90	90	0	0	0
10	90	90	0	0	0

SETTING NECESSARY

where TOTAL LENGHT means "length of the bar profile to load"

COUNTER-PROFILE means "height of the counter profile "

HEIGHT means "height of the profile "

POS 1 inclination of the first cut (to the left of the piece)

POS 2 inclination of the second cut (to the right of the piece)

LENGTH. length of each piece

NUM. number of pieces to be cut

SCARTO Length of a possible intermediate bevel

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## SEMI-AUTOMATIC

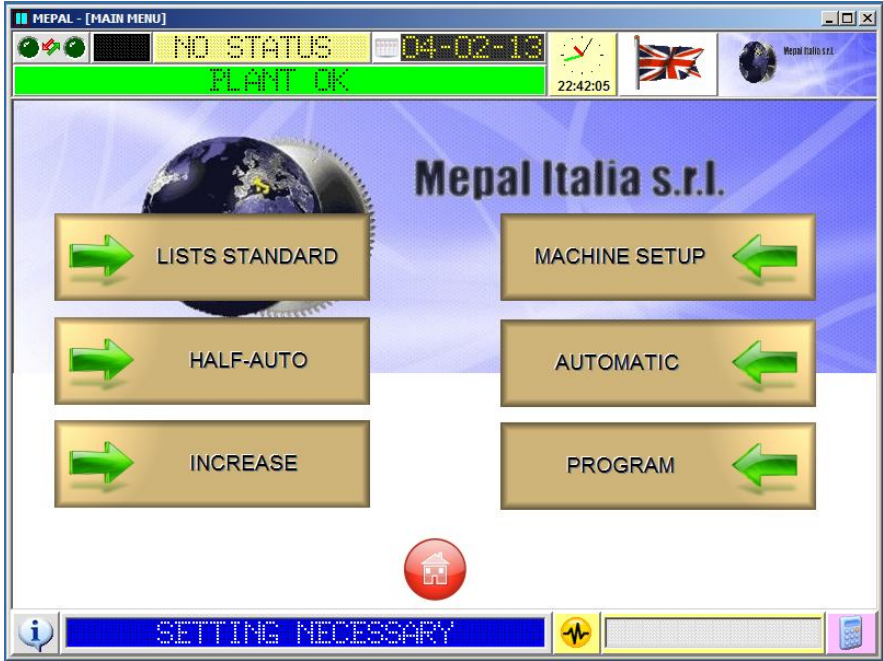
There are 10 lines for the insertion of different values that the machine will cut in sequence.

To proceed with the cutting step, press the START button.

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# 1.4 PROGRAM

In Main Menu,



if you want to go in the PROGRAM menu, you have to press on



and the display will show:



# TECHNICAL SERVICE

Where

1. **PROFILES:** it is the file containing the profiles data.
2. **PROGRAMS:** it is the file containing the programs data.

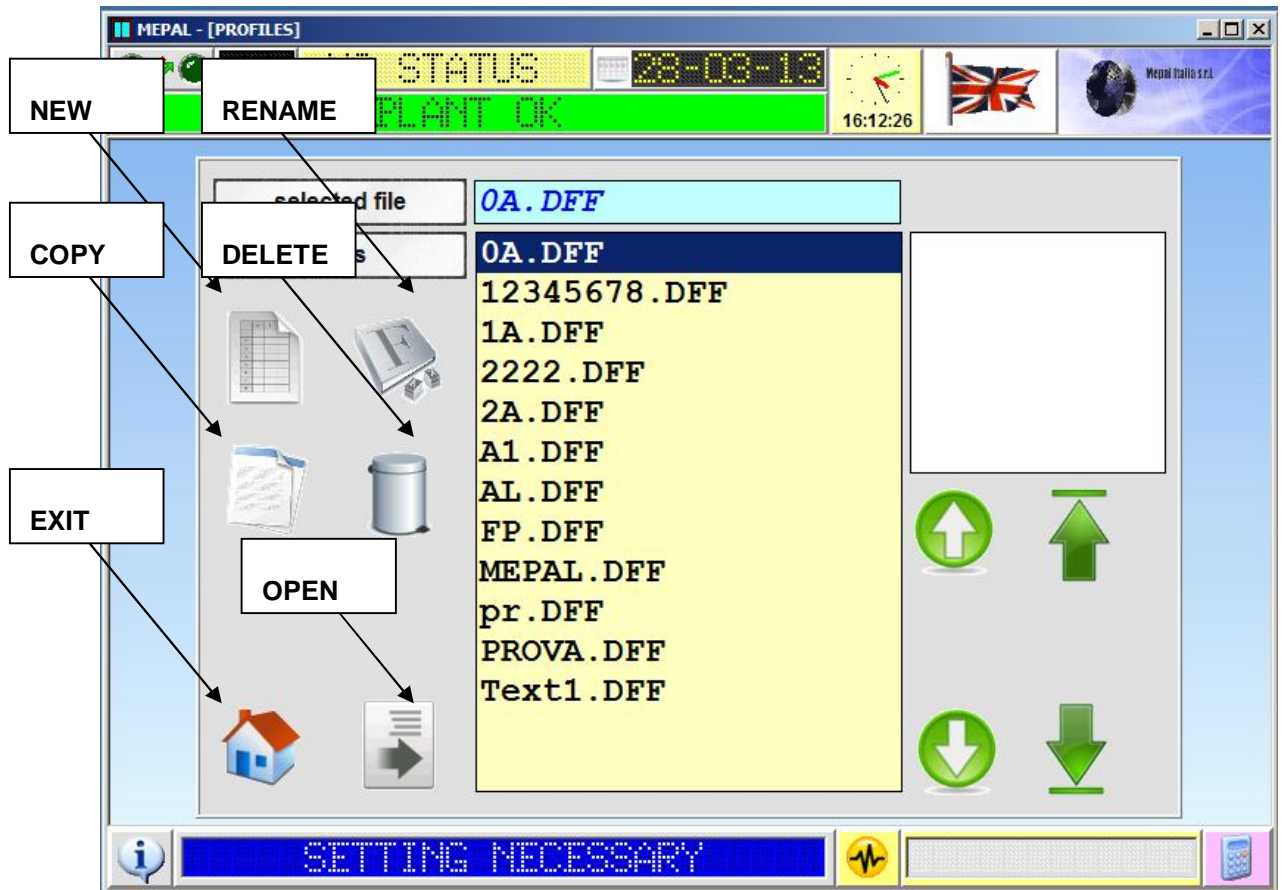
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## 1.4.1 PROFILES

This file allows to store all the profiles in use, combining every code with its height in millimeters. When you are in PROGRAM Menu press on



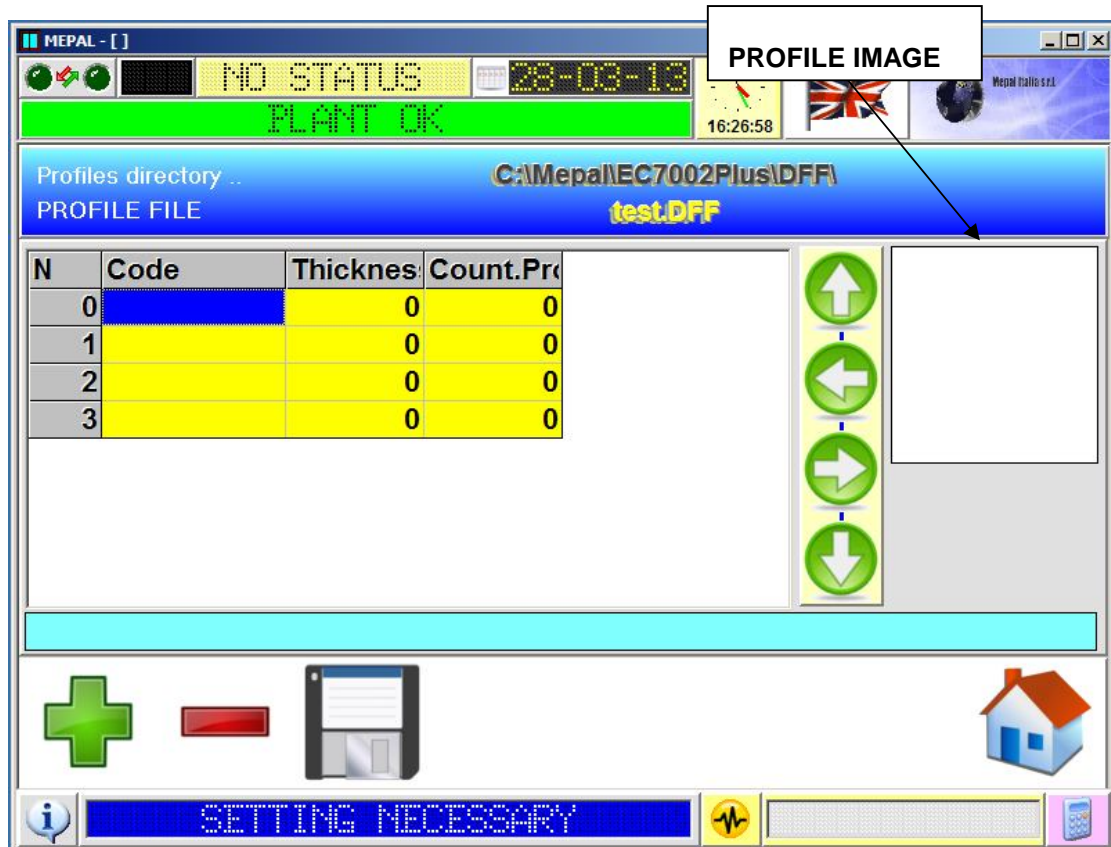
and the display will show:



Pressing the NEW button it will be possible to create a new profile series.

# TECHNICAL SERVICE

The program will ask for a new file name and a new page will open:



On every line it's possible to put in a profile code, its thickness and the possible counter profile height in millimeters.

**Attention:** check the thickness by a gauge and don't trust the values written on the catalogues. The real values differ of some tenths of millimeters: a difference of 0.5 mm could cause a cutting error of 1 mm.

The maximum number of profiles which can be stored in the file is **200**.




Pressing on the white box on the right is it possible to associate an image to the profile code. Select the image from the list.

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# TECHNICAL SERVICE

**Attention:** the images must be pasted in C:\Mepal\EC7002Plus\ModelliImg, in .BMP (bitmap) format and with a resolution of 190x310 pixel.

Press  to SAVE,  to add a new profile code and  to delete an existing one.

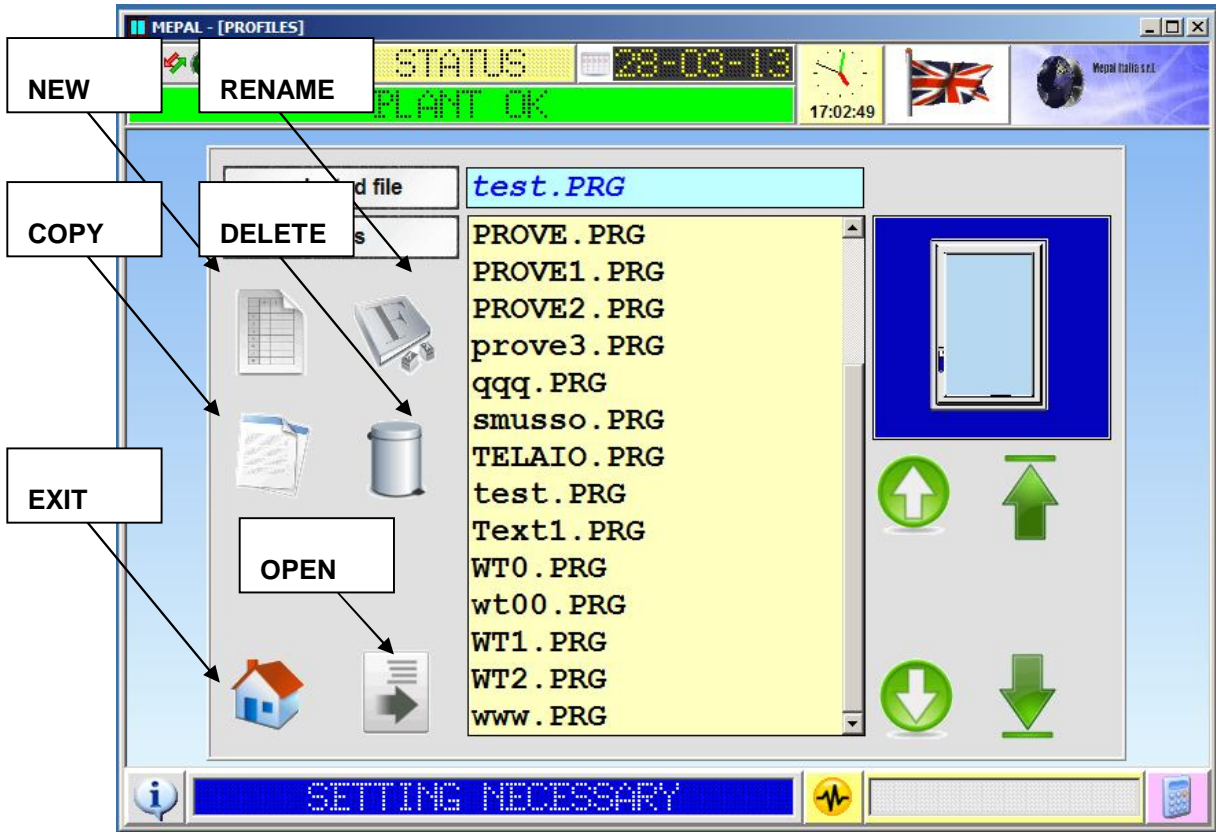
## 1.4.2 PROGRAMS

From the PROGRAM page



Press .





# TECHNICAL SERVICE



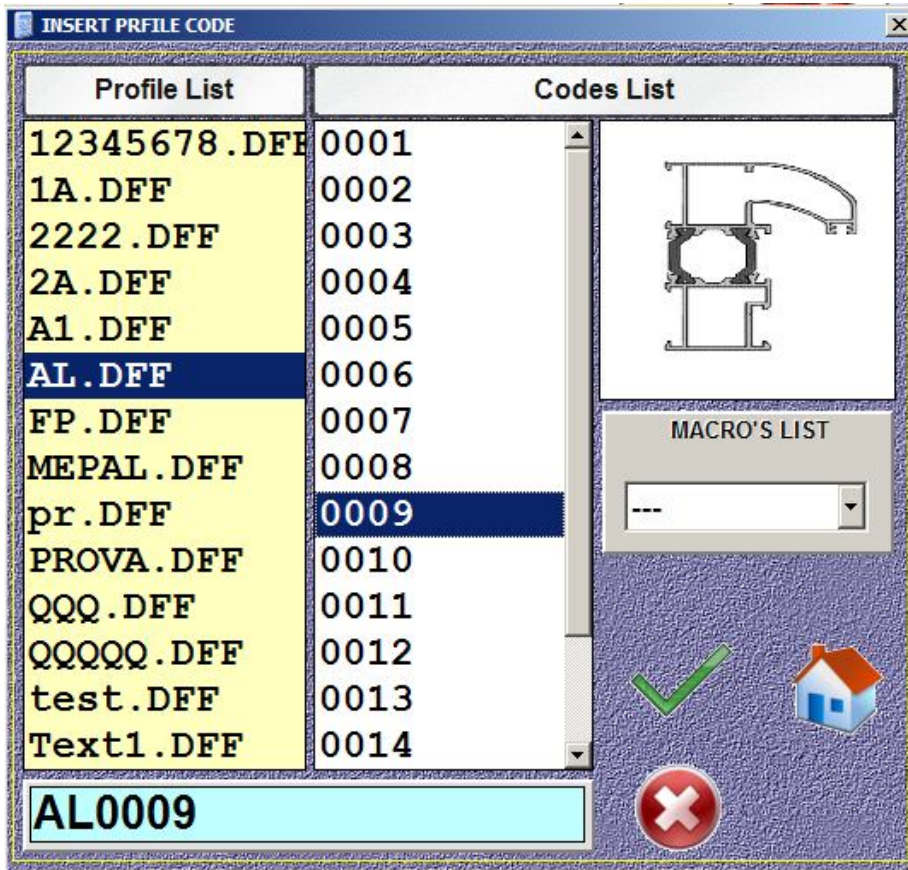
Press NEW and the program will ask for a new file. The display shows:



# TECHNICAL SERVICE

Press  to SAVE,  to add a new line,  to delete and  to copy an existing one.

Select the profile series and profile code:



Profile List	Codes List
12345678 .DFF	0001
1A.DFF	0002
2222 .DFF	0003
2A.DFF	0004
A1 .DFF	0005
<b>AL .DFF</b>	0006
FP .DFF	0007
MEPAL .DFF	0008
pr .DFF	<b>0009</b>
PROVA .DFF	0010
QQQ .DFF	0011
QQQQQ .DFF	0012
test.DFF	0013
Text1.DFF	0014

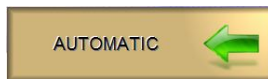
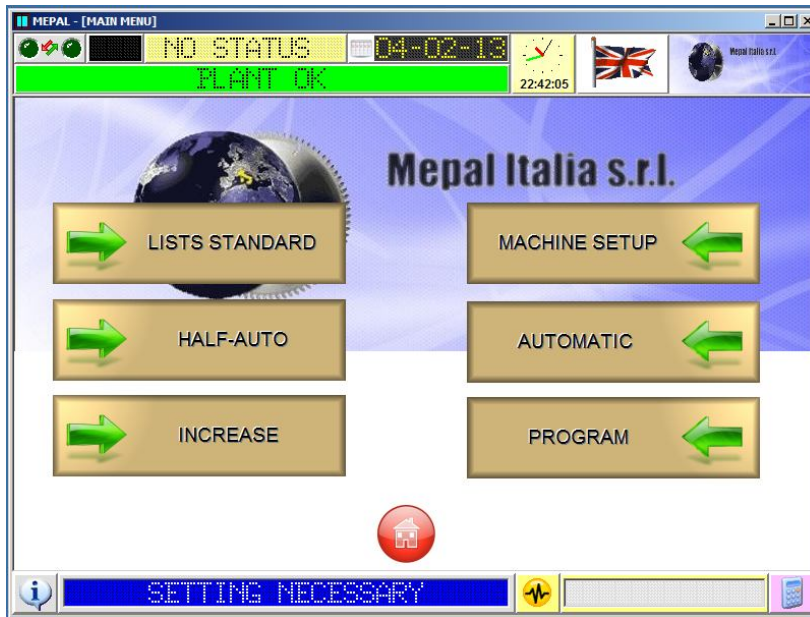
AL0009

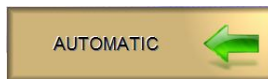
Write in the **A** and **B** fields the inclinations of the **BLADE A** and **B**, then the number of pieces. In **Length formula** it is possible to write a value using the variables **L** and **H** that will be specified later.

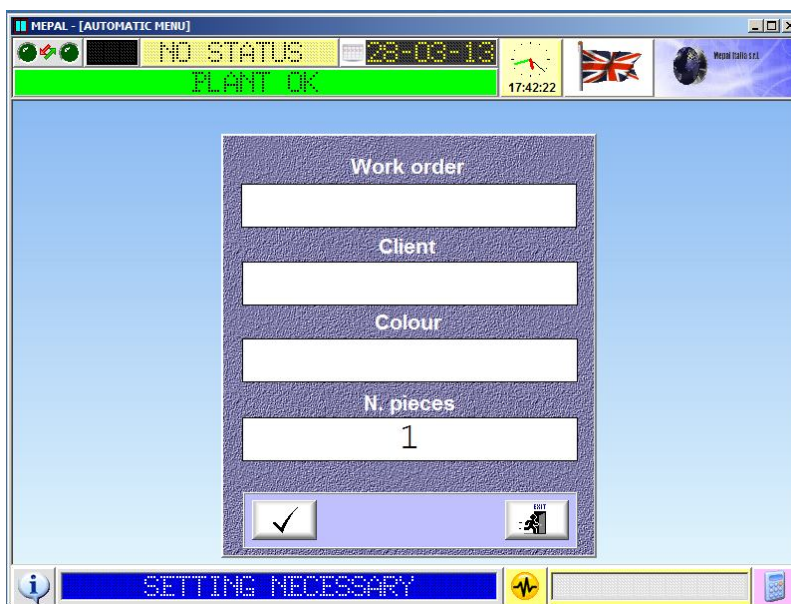
## 1.5 AUTOMATIC

### 1.5.1 CUTTING LIST

It is possible to generate a cutting list from the program created in the previous section. From the main menu



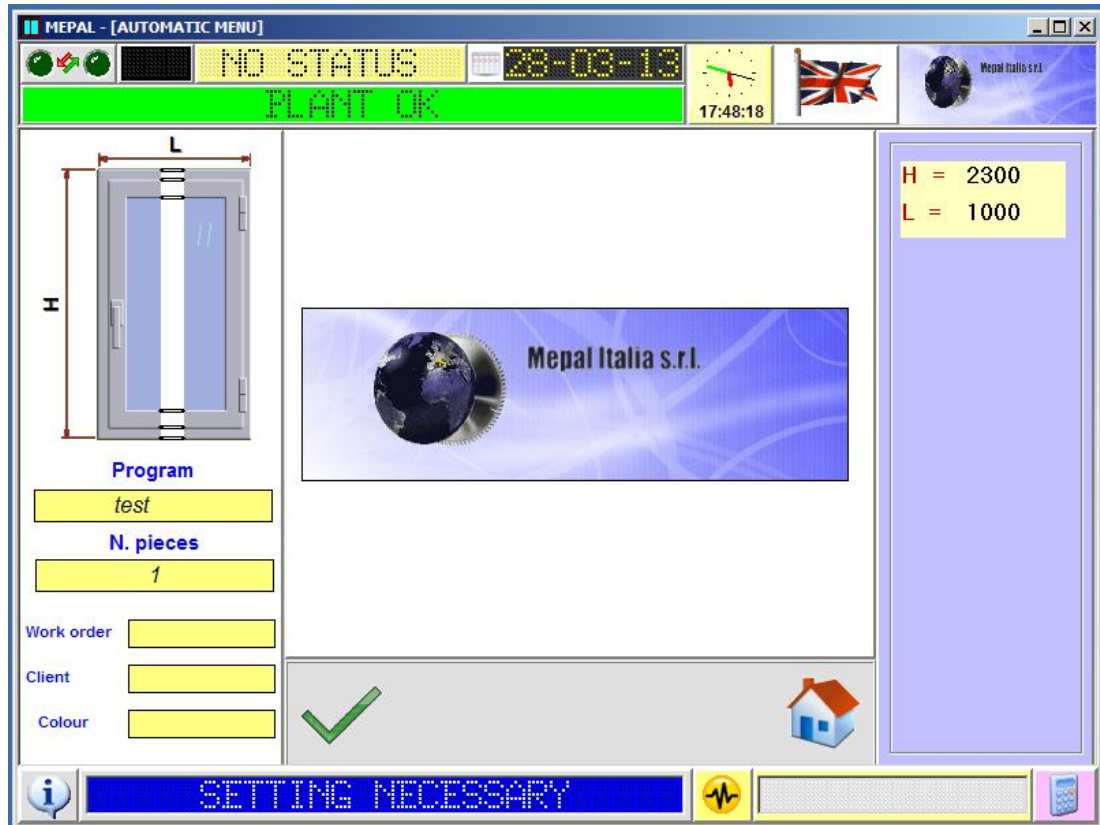
Press the button , the program will ask some order informations:



# TECHNICAL SERVICE

After the informations are completed, our programs list will open.

Choosing our program another page will open:



After the H and L values are written the program will calculate the different lengths considering the formulas previously specified.

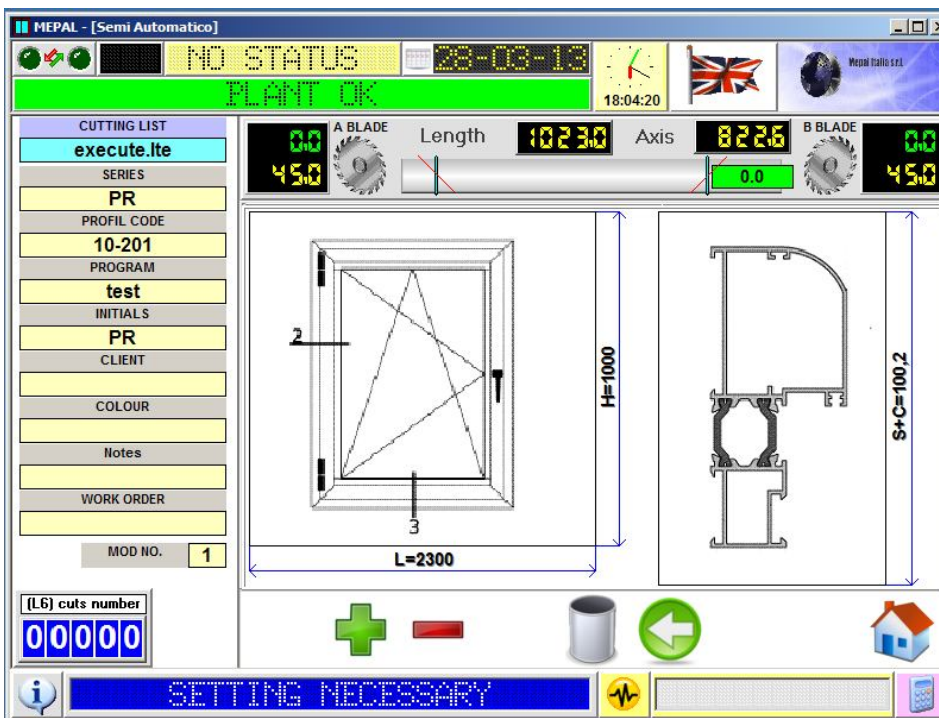
Pressing the EXIT button it will possible to SAVE the cutting list for a later use or to EXECUTE the list immediately. In both cases when the list will be selected the screen will be:

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# TECHNICAL SERVICE



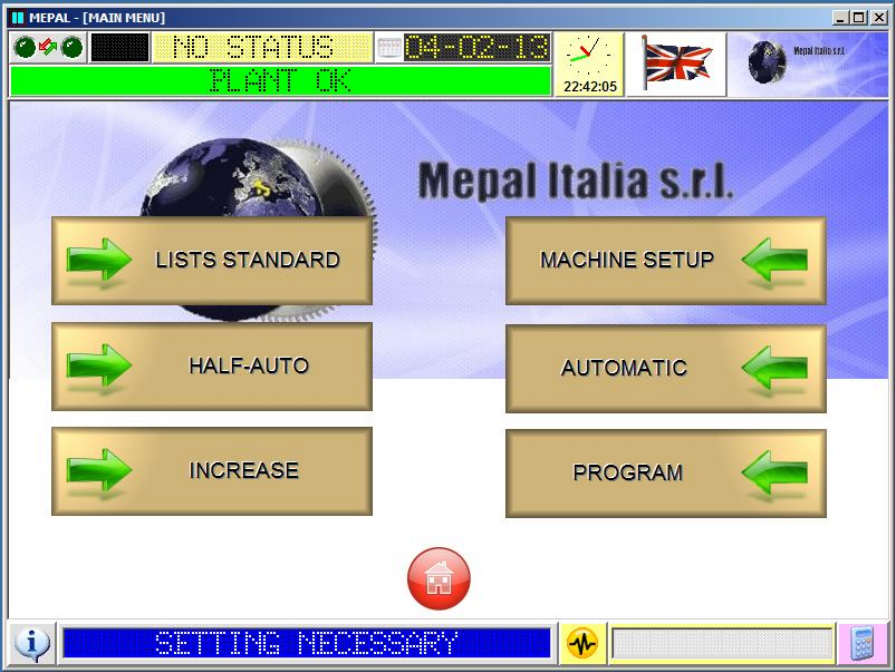
Pressing the button will start the cutting cycle:



In this page it is possible to review all the informations and then START the cutting cycle.

## 1.6 INFORMATION FOR THE TECHNICAL SERVICE


The parameters and input/output test pages are located in the MACHINE SETUP page.



From the main menu press



## 1.6.1 AXIS AND MACHINE PARAMETERS FILE

When in the MACHINE SETUP page, press  and the display will show:



**ATTENTION:** the modification of some values stored in the parameters files can cause some functioning problems: don't modify any value before talking with the manufacturing company staff.



## 1.6.2 TEST I/O (2)

The inputs/outputs test is important in order to check the functioning of the electrical and pneumatic systems.

Pressing on , the display shows:



### 1.6.2.1 INPUTS TEST

Pressing on INPUTS, the display shows:



Light off = not enabled      Light on= enabled.

# TECHNICAL SERVICE

- INP01 – SETTING MICRO: calibration limit switch.
- INP02 – EXTERNALSTOP: possible external STOP key.
- INP03 – FC MIN MICRO HEAD 1: minimum position switch head 1.
- INP04 – EMERGENCY: (emergency) emergency devises chain.
- INP05 – MANUAL PUSH BUTTON 1: enabling BUTTON: it's the yellow BUTTON on the control board on the left.
- INP06 – MANUAL PUSH BUTTON 2: enabling BUTTON: it's the yellow BUTTON on the control board on the right.
- INP07 – EXTERNAL START: possible external START key.
- INP08 – AIR PRESS: check if the pressure is at least 5,5-6 bar.
- INP09 – THERMAL EMERGENCY: (thermic) they are the thermic motor protections installed on the relays of the electrical system.
- INP10 – FC MAX MICRO HEAD 1: maximum position switch head 1.
- INP11 – FC MAX MICRO HEAD 2: maximum position switch head 2.
- INP12 – MS BLADE FORW 1: blade feed limit switch– left head.
- INP13 – MS BLADE BACK: blade coming-back limit switch – right and left heads.
- INP14 – MS BLADE FORW 2: blade feed limit switch– left head.
- INP15 – QUIETE ZONE MICRO: slowing-down limit switch.
- INP16 – FC MIN MICRO HEAD 2: minimum position switch head 2.

In order to exit, press the EXIT button .

## 1.6.2.2 OUTPUTS

Pressing on OUTPUTS, the display shows:



in order to enable the output, press the green button on the right side and the

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corresponding output will go on “On”. Before going to another output, press the button again in order to go to “Off”.

## 1.6.3 LANGUAGE

Pressing on the FLAG in the upper-right side , the display will show a list of the languages which can be chosen.

Press the flag which corresponds to the chosen language and all the words will be immediately shown in that language.