

QUICK REFERENCE GUIDE

PLATINOHS 1530-2040



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PREFACE

This manual introduces and supports the **“Use and Programming”** training for 2D laser machines.

The aim of this manual is to cover some arguments of the training.

The **“Quick Reference Guide”** does not substitute the **“Use, Programming and Maintenance”** manual of the PLATINOHS machine.



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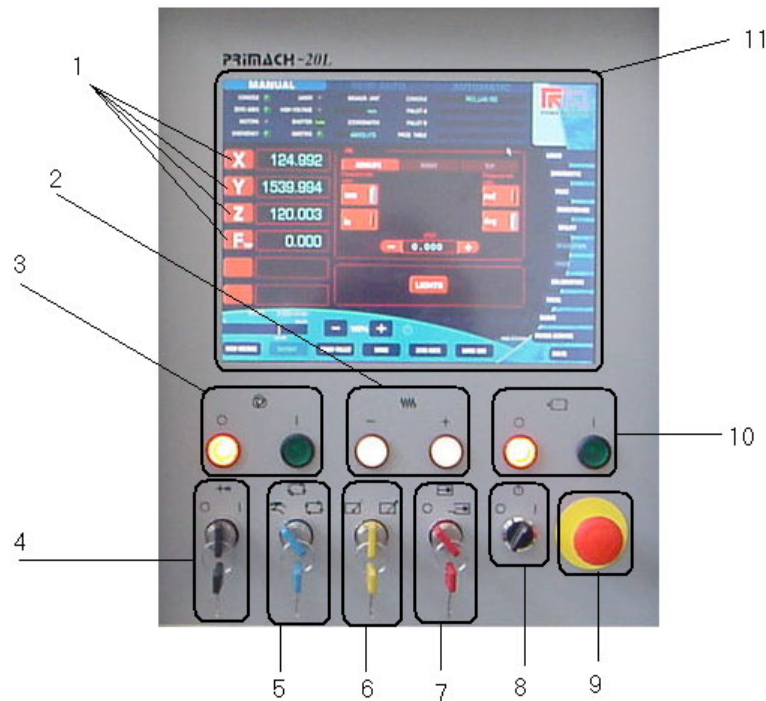
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PRIMACH 20L CONTROL SOFTWARE KEYS DESCRIPTION



1. Soft-key examples.
2. Axis movement keys: *Jog+* *Jog-*.
3. Keys used to enable the axis movement (in manual mode) or to carry out the cutting cycle Start/Stop function (in semiautomatic mode).
4. Key selector used to disable the over strokes. It is normally in the vertical position. This key selector, when in position 1, allows the over strokes of all the axis to be disabled.
5. Key selector used to change the work mode: Manual/Semi-automatic/Automatic.
6. Not used.
7. Key selector used for the laser source management.
8. Console switch.
9. Emergency pushbutton. Switches off the laser and removes power to the motors.
10. Motors power: 0=Disabled ; 1=Enabled.
11. Touch Screen screen.




This is the “**REWIND**” key, used to eliminate all the operations carried out previously.

NB: The list and description of the various “Hardware” keys and the key selectors on the control, are fully described in the “Use & Programming Manual” supplied with the machine.



PLATINO HS-P20L WITH CP LASER SERIES SWITCHING ON PROCEDURE

1. Position the **main machine switch** in position **I**.
2. Switch on the **drier** and open the **air** taps.
3. **Open** the **laser gas** cylinders (He, N₂, CO₂) and the **cutting** cylinders (O₂, N₂).
4. **Switch on** the number **control** by rotating the **"CNC"** selector to **ON**.
5. Wait for the machine interface page to load (**MMI**).
6. Power the motors and wait for the **"MOTORS"** led to turn green.
7. Position the key selector on **"MANUAL"** mode.
8. Press the **"ZERO AXIS"** soft-key.
9. Press the **"START"** key.
10. Wait for the blinking **"ZERO AXIS"** indicator to turn green.
11. Open the "CP Laser Series" interface by pressing the icon  on the task bar.
12. Rotate the **red key selector** in the **central** position (laser start).
13. Wait for the **laser** blinking **indicator** on the console to turn **green**.
14. Press the **"HIGH VOLTAGE"** soft-key (key on the screen).
15. Wait for the **high voltage** **blinking indicator** on the console to turn **green**.
16. The machine is ready to start production.

NB: The sensor must be calibrated prior to starting production.



PLATINO P20L WITH LASER CP SERIES SWITCHING OFF PROCEDURE

1. Position the **blue** key selector on **"MANUAL"** mode.
2. Position the **head** of the machine **close** to **zero** with the **"HOME"** soft-key.
3. Press **"MOTORS POWER OFF"**.
4. Press the **"HIGH VOLTAGE"** pushbutton and wait 1 minute.
5. Call up the laser window by pressing: **CTRL+ESC** and selecting the **CP LASER TERMINAL** icon.
6. Switch off the laser by rotating the **red key** selector to **0** and wait 1 minute.
7. Press **"BACKFILL"** in the laser window and wait for the **"Backfill"** to turn yellow.
At the **end** of this procedure the **pressure** in the cavity must be equal to 1 bar (Atmospheric pressure) and **"Backfill complete"** is red.
8. Close the laser window.
9. Close the laser and the cutting cylinders.
10. Close all open windows by pressing **"ALT+F4"**.
11. Press **start** on the bottom left hand side of the screen.
12. Press **close session**.
13. Press **Shut down**.
14. Wait for the console to switch off (black screen) and position the console switch on **0**.
15. Position the main switch on **0**.
16. Close the air tap.
17. Switch off the drier.



ZERO AXIS PROCEDURE

This **procedure** must be carried out every time the operator **switches on** the **machine**.

* * * * *

POSSIBLE PROBLEMS WITHOUT THE ZERO AXIS

- Positioning the blue key selector on **"MANUAL"** mode, the positive or negative limit stop of the axis being moved could be enabled when moving the axis.
- Positioning the blue key selector on **"SEMI AUTOMATIC"** mode no cutting program can be carried out.

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ZERO AXIS PROCEDURE


1. Position the blue key selector on **"MANUAL"** mode.
2. Press the **"MOTORS POWER"** pushbutton.
3. Ensure that the **"MOTORS"** indicator on the screen is steady **green**.
4. Press the **"ZERO AXIS"** soft-key (key on the screen). Once the key has been pressed it becomes white.
5. Press the **"START"** pushbutton. The machine will then carry out the zero axis. At the end of the procedure the **"ZERO AXIS"** indicator must be green.



ERRORS RESET

Each time that an error is generated, the MMI page will open automatically. This page can be viewed by pressing the “**DIAGNOSTIC**” soft-key.



1. Read the error description in the “**description**” screen.
2. Press .

NOTE: The control will reset the error only if the problem displayed in the “**description**” has been eliminated as for the following example:

“ **Motors power disabled**”

1. Power the motors.
2. Press .

NOTE: In some cases the “**manual**” mode must be engaged to reset the error.



AXIS MANUAL MOVEMENT

1. Position the blue key selector on manual mode.



2. Check that the motors are powered.



3. Press the soft-key of the desired axis.



4. Move the selected axis by using the JOG+ JOG- keys:





CAPACITIVE SENSOR CALIBRATION

The sensor calibration must be carried out:

- every time the **machine is switched on**;
- if the **nozzle** (tip) is **replaced or disassembled**;
- when the type of **material** used is changed (from normal steel to stainless steel and vice versa).

It is further recommended to **carry out the operation any time** the sensor doesn't work correctly.


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POSSIBLE PROBLEMS WITH A SENSOR NOT CALIBRATED

- Cutting problems.

* * * * *

CAPACITIVE SENSOR CALIBRATION PROCEDURE

1. Ensure that the **nozzle** (tip) is **clean** and well **screwed**.
2. Position the "work mode" blue key selector on "**MANUAL**".
3. Manually **move** the axis so that the **head** is **above the sheet** to be cut.
4. Press the "**UTILITY**" soft-key.
5. Press the "**SENSOR SELF CALIBRATION**" soft-key .
6. Once the "**Sensor Self calibration**" soft-key has been pressed it turns "**BLUE**".
7. Press "**START**".

* * * * *

After having launched the program, the head will lower itself until it touches the sheet and subsequently it will lift itself by a tenth at a time, carrying out a reading of the frequency detected. The procedure is finished when the "**START**" pushbutton switches off and the "**STOP**" pushbutton switches on.

* * * * *

NOTE: do not carry out the **calibration operation** on **protected materials**.

To carry out the calibration on this type of materials, use the "**SENSOR CALIBRATION CLEANTIP PROGRAM**" section or remove the film at the point on the sheet where the calibration operation is to be carried out.



CAPACITIVE SENSOR CALIBRATION WITH THE CLEANTIP PROGRAM

The **calibration of the sensor** on the **block** must be carried out:

- every time the **machine is switched on**;
- if the **nozzle** (tip) is **replaced or disassembled**.

It is further recommended to **carry out the operation any time** the sensor doesn't work correctly.

* * * * *

POSSIBLE PROBLEMS WITH A SENSOR NOT CALIBRATED

- Cutting problems.

* * * * *

CAPACITIVE SENSOR CALIBRATION PROCEDURE

1. Ensure that the **nozzle** (tip) is **clean** and well **screwed**.
2. Position the "work mode" blue key selector on "**MANUAL**".
3. Select the "Z" axis with the "**Z**" soft-key.
4. Press the **JOG+** key to bring the head in the **out of side play** position (greater than or equal to **120mm**.)
5. Press the "**UTILITY**" soft-key.
6. Press the "**1.ISO**" soft-key.
7. Ensure that the "**1.ISO**" program name is displayed in the "**CONSOLE**" field on the MMI.
8. Position the "work mode" blue key selector on "**SEMI AUTOMATIC**".
9. Press "**START**" on the operator console.

* * * * *

NB: At this point the machine will position the head in the out of side play position, above the brush, carrying out the tip cleaning and subsequently the sensor calibration above the block. At the end of the procedure the head will return to the starting point.




LENS CENTRING

The lens **centring** operation must be carried out each time the **lens is changed** (from 5" a 7.5" and vice versa). The centring must at any rate be **checked once a day**.

POSSIBLE PROBLEMS WITH A LENS NOT CENTRED

- **Problems** during the **Piercing**.
- Uneven **cutting quality**.
- **Sensor** heating.

LENS CENTRING PROCEDURE

1. Position the **"WORK MODE"** blue key selector on **"MANUAL"** mode.
2. Press the **"Z"** soft-key to enable the axis to be moved.
3. Position the head until the **"30 – 35 mm"** value is achieved.
4. Select the **F** axis and position it at **ZERO** by using the **JOG+** or **JOG-** keys.
5. Press the **"FILES"** soft-key.
6. Open the **"MIF"** directory with double click.
7. Highlight the **"CENTRAT.ISO"** file by using the scrolling arrow keys on the keypad.
8. Press the soft-key: 
9. Check that the *Centrat.iso* file is in the **"Console"**.
10. Position the **"WORK MODE"** blue key selector in **"SEMI-AUTOMATIC"** mode.
11. Open the **shutter** by using the red key selector.
12. Centre the lens as set out in the **"Use & Programming"** course by using **adhesive tape and ink**.



RESEARCH OF THE FOCAL POSITION

The aim of this operation is to find the real focal position. This operation must be done every time that you use a new lens.

POSSIBLE PROBLEMS WITH THE WRONG FOCAL POSITION

- **Cutting** problems.

RESEARCH OF THE FOCAL POSITION PROCEDURE

1. Position the blue key selector on "**MANUAL**" mode.
2. Position the head of the machine near the operator. Unscrew the tip and Screw completely the tool.
3. Select the "**B**" axis.
4. Select the **B** axis and position it at **ZERO** by using the **JOG+** or **JOG-** keys.
5. Press the soft-key "**ARCHIVE**".
6. Highlight the "**MIF**" directory by using the scrolling arrow keys on the keypad.
7. Press the soft-key "**OPEN**".
8. Highlight the file "**FOCUS.ISO**" by using the scrolling arrows on the keypad.
9. Press the soft-key "**CONSOLE**".
10. Check that the *Focus.iso* file is in the "**Console**".
11. Position the blue key selector on "**SEMI AUTOMATIC**" mode.
12. Open the **shutter** by using the red key selector.
13. Look for the focal point as explained during the "**Use & Programming**" training.



IMPORT A .ISO FILE USING THE ARCHIVE PAGE (FILES) OF THE NUMERICAL CONTROL

The operator executes this operation every time he wishes to import a ".ISO" program done with the PICAM program.

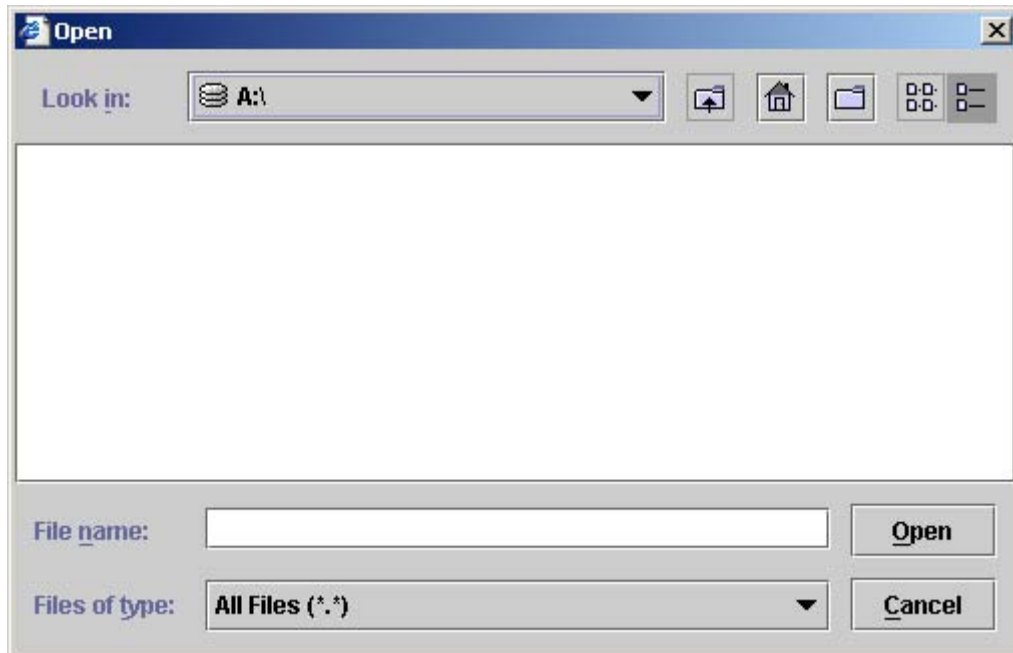
PROCEDURE

1. Insert the "floppy disk" in the rear part of the numerical control.
2. Press the soft-key "**FILES**".
3. Open the Directory where you want to import the file.

4. Press the soft-key:



5. Select the file and press "**OPEN**" in the following window:






LOADING AN .ISO FILE USING EXPLOER

This operation must be carried out every time the operator wants to load an **“.ISO”** cutting program made with the **PICAM** program.

PROCEDURE TO LOAD AN “.ISO” FILE

1. Press **“CTRL+ESC”** on the keypad.
2. Press (select) the icon to open the **“EXPLORER”**. 
3. Click **twice** on **“3.5 INCH FLOPPY DISK (A)”** to view the contents.
4. Select the cutting program and copy it (Ctrl + C).
5. Paste the cutting programs (Ctrl + V) inside the main directory **“PROGRAMS”** (**“D:\CNC-SHARE\PROGRAMS”**). Subsequently other subdirectories can be created inside the **“PROGRAMS”** and added to the ones already present.
6. Close **“EXPLORE RESOURCES”**.
7. Press the soft-key **“ARCHIVE”** soft-key.
8. Highlight the directory containing the cutting program by using the scrolling arrows on the keypad.
9. Press the **“OPEN”** soft-key.
10. Highlight the cutting program by using the scrolling arrows on the keypad.




HOW TO SELECT A WORK PROGRAM

This **operation** is carried out each time the operator wants to execute a **cutting program** generated by the **"PICAM"**.

* * * * *

PROGRAM SELECTION PROCEDURE

1. Position the blue key selector on **"SEMI AUTOMATIC"** mode.
2. Press the **"FILES"** soft-key.
3. Highlight the cutting program by using the arrow keys on the keypad.
4. If you want to cut with the **Pallet** in the **Machine**, carry out the **Pallet** change in **Manual** or **semiautomatic** mode and press the **"CONSOLE"** soft-key: 
5. Press the **"MAIN"** soft-key.
6. Before pressing **"START"** carry out the checks inside the heading: **"Check to be carried before pressing Start"**.




CREATING A SHEET REFERENCE

This **operation** allows the machine operator to have a **reference point** inside the cutting program, to carry out the repositioning on the item to be cut. This (reference) point can be present in the program thanks to the post-processor.

POSSIBLE PROBLEMS WITH INCORRECT OR NON EXISTENT SHEET REFERENCE POINT

- Incorrect nesting positioning on the sheet.
- Difficulty in using the restart function.

CREATING THE SHEET ORIGIN POINT PROCEDURE

1. Position the head, in **"MANUAL"** mode, at the machine's origin (X=0; Y=0). Move the head close to the sheet corner with the aiming diode and detect the X and Y axis values.
2. Press the **"FILES"** soft-key.
3. Open the program to cut with double click.
4. Enter the values found at point 1 in the following line:
`G00 Z=P1`
 ► `G00 X0 Y0` (Where G00 X... Y... is the **sheet origin**)
`G92 X0 Y0`
5. Save the modifications and exit.
6. Highlight the program by using the scrolling arrows on the keypad.
7. Press the soft-key: 
8. Position the blue key selector in **"SEMI AUTOMATIC"** mode.
9. Press the **"REWIND"** soft-key.
10. Press the **"START"** pushbutton.

NB: If the line G00 X... Y... is not present, the program has been created without the sheet origin. In this case simply write the line: G00 X... Y....



PROGRAM SIMULATION

Program simulation can be useful when the operator is unsure of the cutting program, (Nesting previously carried out by another technician...)

POSSIBLE PROBLEMS IF THE PROGRAM IS NOT SIMULATED

- Realisation of an **incorrect** program.

PROGRAM SIMULATION PROCEDURE

1. Press the "**FILES**" soft-key.
2. Highlight the cut program by using the scrolling arrows on the keypad.

3. Press the soft-key:



4. Ensure that the cutting program name is in the console box.
5. Press the "**MAIN**" soft-key.
6. Position the blue selector key on "**SEMI AUTOMATIC**" mode.
7. Close the **shutter** using the **red key selector**.

8. Press the soft-key.



9. Reduce the **speed** to **20%**.
10. Press the "**START**" pushbutton.



CHECKS TO BE CARRIED OUT BEFORE PRESSING "START"

Check that the following indicators are all green:



"LASER" SECTION

- Open the **shutter** with the red key selector.

"CONTROL" SECTION

- The blue key selector must be positioned on "**SEMI-AUTOMATIC**" mode.
- Speed at **100%**.
- Program to be cut selected in "**CONSOLE**".

"TECHNOLOGICAL" SECTION

- **Nozzle** (Tip) correct and **Lens** centred.
- **Cutting gas** (Oxygen or nitrogen) in pressure (cylinders open and full).

PERIPHERALS

- Smoke suction system functioning (on).

NOTE: If the type of sheet or nozzle is changed, the sensor must be calibrated prior to carrying out the cut.



RESTART FUNCTION

This **function** allows the already started cutting program to be **restarted**.

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RESTART PROCEDURE

1. Position the blue key selector on **"SEMI AUTOMATIC"** mode and check the number of pieces that the machine has worked on the screen.
2. Press the **"RESTART"** soft-key.
3. A window will appear in which the operator will have three different possibility:



Possibility 1: With this option the machine will start from the same piece.

Possibility 2: It's possible to write the **number of the piece** from which to continue the cutting operation. The machine starts counting from **5000** therefore if the piece to cut is number **33**, the operator will write: **5033**.

Possibility 3: With this option it's possible to cut the same piece from the next piercing.

4. Press the **"START"** pushbutton to restart the production from the selected program.



TOOL RADIUS COMPENSATION

The **tool radius compensation** operation is always applied to the program, apart from the case in which the first instruction line **G40** is present inside the **ISO** listing.

POSSIBLE PROBLEMS IF THE COMPENSATION IS NOT ACTIVE

- Values of the item cut incorrect by a few tenths.

PROCEDURE TO COMPENSATE THE BEAM

1. Press the **"FILES"** soft-key.
2. Open the cutting program with a double click.
3. Cancel the **G40** instruction (**first line**) instruction, if present. Save the modification before exiting.

4. Press the soft-key:



5. Press the **"MAIN"** soft-key.
6. Position the blue key selector on **"SEMI AUTOMATIC"** mode and cut a piece.

Subsequently measure the item and if the measurement is not the actual one, if there is an error, carry on with the procedure.

7. Press the **"FILES "** soft-key.
8. Open the **"TABCMP.DAT"** file with double click.
9. The **editor** will open (the D variables correspond to each cutting line: **D1 for line 1, green; D2 for line 2, blue; D3 for line 3, red;** etc...). The value to set must be equal to half the value of the error encountered.
10. Save the modifications and exit.
11. Reload the cutting program in the **"CONSOLE"** pressing the soft-key.



12. Cut an item and check the measurements. If there is still an error, restart the procedure from step No **9**.

NB: Each time that the compensation values are modified the cutting program must be reloaded in the console.



PALLET CHANGE IN MANUAL MODE

1. Close the cabin.
2. Lift the **Z** axis until reaching a value greater than **140mm**.
3. **Reset** any **errors**.
4. **Press** the "**BARRIERS RESET**" key located on the side of the elevator (rear part of the machine).
5. Press the "**BARRIERS RESET**" key on the pallet change pulpit in order to **switch off** the **blue** coloured pushbutton.
6. At this point the movement to apply to the pallet change system can be selected. The possible **movements** are **4**:
 - *Dragger in machine.*
 - *Dragger on the elevator.*
 - *Elevator rise.*
 - *Elevator descent.*

NOTE1: For every operation the key must be kept pressed until the movement is complete.

NOTE2: If the dragger is not moved, check that the elevator is at the correct height and that steps 1 and 2 are followed.

Note3: If nothing moves check that step 3 is followed, that the **BLUE** pushbutton is off and that there is no object in the photocells optical run.



PALLET CHANGE IN SEMI-AUTOMATIC MODE

This operation can be carried out by the Operator if wanting to carry out the "**Pallet change**" directly from the operator console with the soft-key.

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PALLET CHANGE PROCEDURE

1. The "**WORK MODE**" blue key selector can be positioned by the Operator both in "**MANUAL**" and in "**SEMI-AUTOMATIC**" mode.
2. Check that the following conditions are followed:
 - Cabin closed.
 - "**PROTECTIONS**" indicator led on the MMI is green.
 - "**Z**" axis in out of side play position (the Z axis dimension must have a value greater or equal to 120mm).
 - No "**ERRORS**" on the operator console screen.
 - Barriers active (photocells enabled).
 - "**CYCLE**" key selector on the PA pulpit in "**AUT**" position.
3. Press "**PALLET CHANGE**" on the MMI.
4. Press the "**START**" pushbutton on the operator console.
 - Once Start is pressed the machine will carry out the **Pallet Change**.
5. The procedure is finished when the "**START**" pushbutton switches off and the "**STOP**" pushbutton lights up.



EXAMPLES OF SIMPLE SUBROUTINES

1. Piercing Subroutine:

N2000 (*Piercing)

G08

S302 T2 = 2 T3 = 0

G1 Z =-P3

M107 S3

S201 T1 = 1000 T2 = 3 T3 = 2 T4 = 2500 T5 = 50 T6 = 15 T7 = 1.1 T8 = 1 - Piercing parameters

M02

- Approaching and searching of the metal sheet
- Moving Z on -P3 position
- Sensor disabling
- Subroutine closing

NOTE: The piercing subroutine is only once written in the program and then recall when required.

2. Cutting Subroutine:

N1001 (*LINE 1 Piercing NORM)

S301 t2 = 2 T3 = 0

S101 T2 = 3 T4 = 1 T4 = 2100 T7 = 0.7 T8 = 1

G04 F500

F2000

M02

- The number of the line (**LINE 1**) corresponds to the colour assigned during the creation of the geometry of the icon to be cut by PICAM program.
- Activation of the sensor for the cutting movements
- Cutting parameters
- Waiting time after the Piercing
- Cutting speed
- Subroutine closing

NOTE: This structure is used with Mild and Stainless steel when the focal point is identical for piercing and cutting.



EXAMPLES OF DIFFICULT SUBROUTINES

Piercing Subroutine:

N2000 (*PIERCING)

G08

S302 T2 = 2 T3 = 0

G1 Z = -P3

M107 S3

S201 T1 = 1000 T2 = 3 T3 = 2 T4 = 2500 T5 = 50 T6 = 15 T7 = 1.1 T8 = 1 - Piercing parameters

S306 T2 = 2 T3 = -0.2

S201 T1 = 1000 T2 = 3 T3 = 2 T4 = 2500 T5 = 50 T6 = 18 T7 = 1.1 T8 = 1 - New piercing parameters

M02

- Approach and sensor searching of the sheet

- Moving Z on -P3 position

- Sensor disabling

- Piercing parameters

- Moving of focal point during the piercing

- New piercing parameters

- Subroutine closing

NOTE: The piercing subroutine is only once written in the program and then referred when required.

Cutting Subroutine:

N1001 (*LINE 1 Piercing NORM)

S302 T2 = 2 T3 = 2.5

G1 Z = -P3

M107 S3

S301 T2 = 2 T3 = 2.5

S101 T2 = 3 T3 = 1 T4 = 2100 T7 = 0.7 T8 = 1

G04 F500

P5 = 2200

F2000

M02

- The number of the line corresponds to the colour assigned in geometry

- Focal setting

- Moving Z on (-P3) position

- Sensor disabling

- Activation of the sensor during the cut movements

- Cutting parameters

- Waiting after the Piercing

- Cutting speed

- Cut speed for the attack

- Subroutine closing

NOTE: This structure is used with Mild and Stainless steel when the focal point is different piercing and cutting.



EXAMPLES OF SUBROUTINES WITH PRE-HOLE

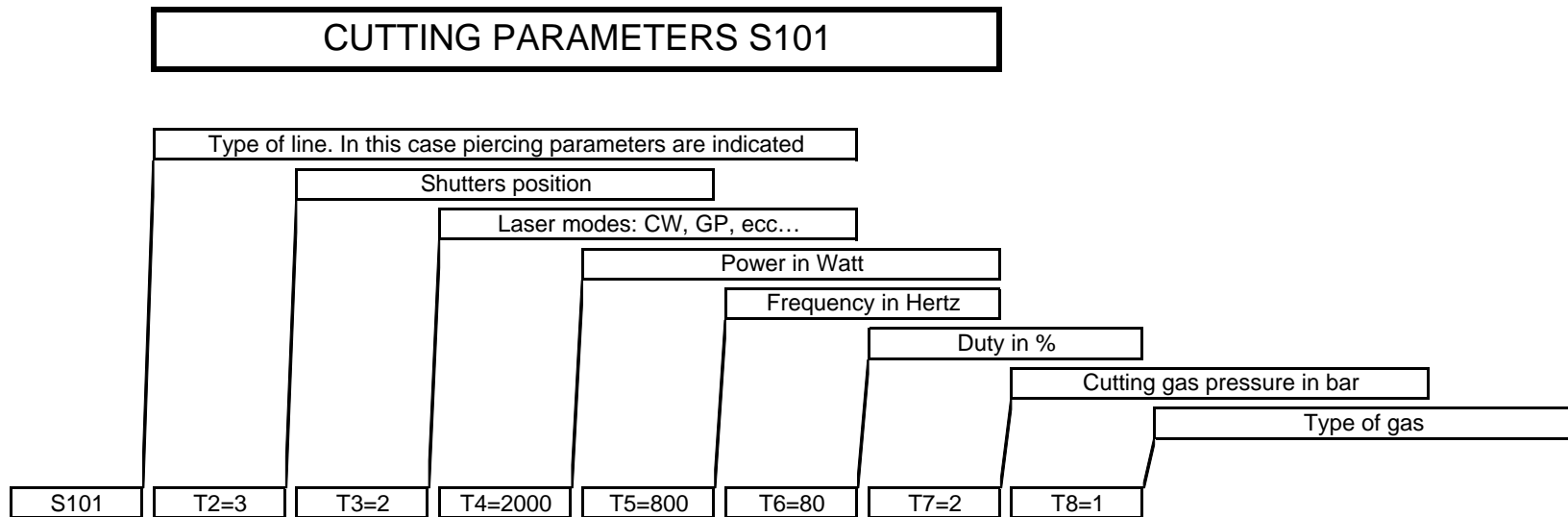
Pre-hole:

N1301 (*LINE 1 Piercing PREHOLE)	The number of the line corresponds to the colour assigned in geometry
IF P10=2 GO 1371	
S101 T2=3 T3=1 T4=2600 T7=3 T8=2	Parameters to realize the pre-hole
G04 f300	
F130	Pre-hole speed
P13=-0.4	
G01 Y1.25	Pre-hole movement
G03 J-1.25	Pre-hole movement
G01 Y-1.25	Pre-hole movement
S306 T2=0.6 T3=-3.5	Moving of focal axis
G01 Z-2 F500	
S101 T2=3 T3=1 T4=2600 T7=9 T8=2	Cutting parameters
G04 F300	Waiting before cutting
P5=650	Cutting speed
F390	Cutting speed for the attack
P10=2	
M02	
N1371	
S301 T2=0.6 T3=-3.5	Activation of the sensor during the cutting movements
M02	Subroutine closing

NOTA: This subroutines structure is use only for the following materials and thickness:

- **Stainless steel \geq 4mm.**
- **Aluminum \geq 3mm.**

PLATINO 1530-2040: QUICK REFERENCE GUIDE

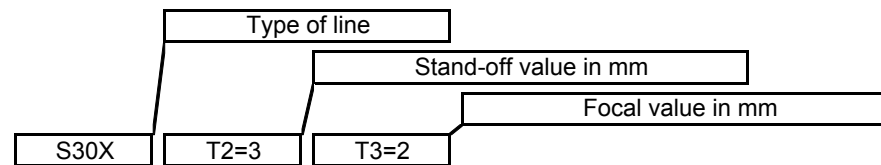


The following parameters must have these values

- T2 : Shutters positions (mechanical and electronic)
- | | | | | |
|---|--------------|--------|------------|--------|
| 0 | : electronic | closed | mechanical | closed |
| 1 | : electronic | closed | mechanical | open |
| 2 | : electronic | open | mechanical | closed |
| 3 | : electronic | open | mechanical | open |
- T3 : Laser modes
- | | |
|---|---|
| 1 | : Continuous CW |
| 2 | : Gated pulse |
| 3 | : Super-pulse SP (only for PRC or CP laser) |
| 4 | : Hyper-pulse HP (only for PRC or CP laser) |
- T8 : Type of gas
- | | |
|---|------------|
| 1 | : Oxygen |
| 2 | : Nitrogen |
| 3 | : Air |



SENSOR AND FOCAL AXIS PARAMETERS



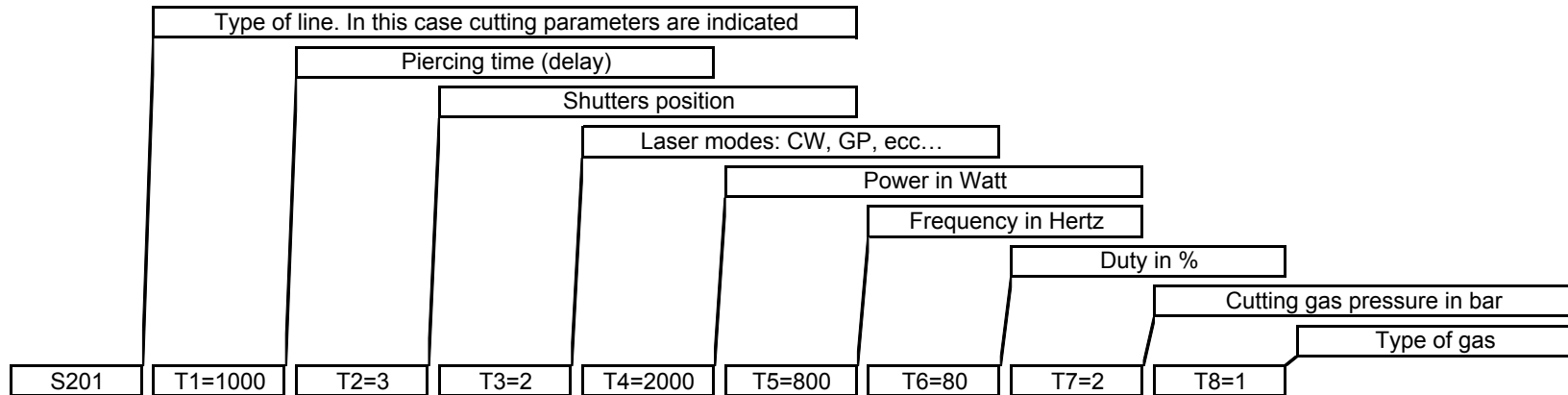
Ci sono 6 tipi diversi di linea

- S301 : Sensor enable during movement
- S302 : Sensore enable to look for the plate before piercing or cut
- S303 : Use to calibrate the sensore
- S304 : Tip-touch function. The sensore stop when the head touch the plate
- S305 : Anti-collision. The axes stop when the sensor touch the plate
- S306 : Use to move the focal axis when the sensor is disable

PLATINO 1530-2040: QUICK REFERENCE GUIDE



PIERCING PARAMETERS S201



The following parameters must have these values




- T2 : Shutters positions (mechanical and electronic)
- | | | | | | |
|---|---|------------|--------|------------|--------|
| 0 | : | electronic | closed | mechanical | closed |
| 1 | : | electronic | closed | mechanical | open |
| 2 | : | electronic | open | mechanical | closed |
| 3 | : | electronic | open | mechanical | open |
- T3 : Laser modes
- | | | |
|---|---|---|
| 1 | : | Continuous CW |
| 2 | : | Gated pulse |
| 3 | : | Super-pulse SP (only for PRC or CP laser) |
| 4 | : | Hyper-pulse HP (only for PRC or CP laser) |
- T8 : Type of gas
- | | | |
|---|---|----------|
| 1 | : | Oxygen |
| 2 | : | Nitrogen |
| 3 | : | Air |



Piercing on Mild steel-O₂:

All the following solutions are reliable only if the following conditions are verified:

- Oxygen purity at least 99,95% (or 3.5).
- Lens and nozzle not damaged.
- Good quality material (certified, without oxydation, calamine or paint).
- Laser mode without distortion (air free of acid or solvent).




Problem	Possible reasons	Possible solutions
<p><i>The piercing explodes at the beginning.</i></p> 	<ul style="list-style-type: none"> -Duty value too high. -Pressure too high. -Focal point too deep. 	<ul style="list-style-type: none"> -Decrease Duty in the first lines by step of 1-2% -Decrease gas pressure in all lines by step of 0.1 bar. -Move up focal point by step of 0.1-0.2 mm in the first lines.
<p><i>The piercing explodes in the middle of the process.</i></p> 	<ul style="list-style-type: none"> -Duty value too high. -Pressure too high. -Focal point too deep. 	<ul style="list-style-type: none"> -Decrease Duty in all lines by step of 1-2% -Decrease gas pressure in all lines by step of 0.1 bar. -Move up focal point by step of 0.1-0.2 mm in all lines.
<p><i>The piercing explodes between the end of piercing and the beginning of cutting.</i></p> 	<ul style="list-style-type: none"> -Not enough time to pierce the material 	<ul style="list-style-type: none"> -Increase the piercing time of the last line by step of 0.5 sec. -Increase duty by step of 1-2% in all lines. -Increase pressure by step of 0.1 bar in all lines.





Mild steel technology:

All the following solutions are reliable only if the following conditions are verified:




- Oxygen purity at least 99,95% (or 3.5).
- Lens and nozzle not damaged.
- Good quality material (certified, without oxydation, calamine or paint).
- Laser mode without distortion (air free of acid or solvent).

<u>Problem</u>	<u>Possible reasons</u>	<u>Possible solutions</u>
<p><i>Bad quality in opposite sides.</i></p> 	<ul style="list-style-type: none"> - Lens out of centering. - Nozzle hole close or not circular. - Mirror alignment not perfect. 	<ul style="list-style-type: none"> - Check lens centering. - Check nozzle conditions. - Check beam alignment.
<p><i>Wide cut at start.</i></p> 	<ul style="list-style-type: none"> - Too long or wrong lead-in. - Wrong laser line selection. - Piercing time too long. - Too much heat produced in the cut. 	<ul style="list-style-type: none"> - Check type and length of lead-in. - Check line colour. - Check that piercing time is longer not more than 2 sec. of necessary. - Reduce Duty by step of 2-3%.
<p><i>Wide cut in the entire piece.</i></p> 	<ul style="list-style-type: none"> - Pressure too high. - Focal point too high. - Power too high. - Bad quality material. 	<ul style="list-style-type: none"> - Reduce pressure by step of 0.1 bar - Reduce power. - Check focal zero point.



<u>Problem</u>	<u>Possible reasons</u>	<u>Possible solutions</u>
<p><i>Material expelled on the surface, welded on the bottom.</i></p> 	<ul style="list-style-type: none"> - Power too low. - Speed too high. - Pressure too low. 	<ul style="list-style-type: none"> - Increase power. - Reduce speed. - Increase pressure.
<p><i>Light burr with angled lines on the bottom.</i></p> 	<ul style="list-style-type: none"> - Speed too high. - Power too low. - Pressure too low. 	<ul style="list-style-type: none"> - Reduce speed. - Increase duty cycle by step of 5-10%. - Increase power by step of 100 W. - Increase pressure by step of 0.1-0.2 bar




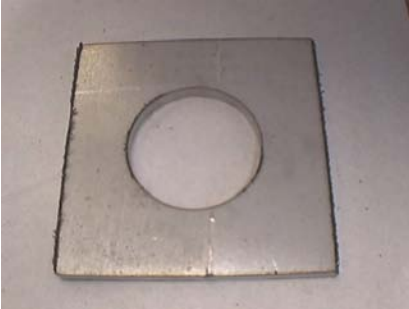

<u>Problem</u>	<u>Possible reasons</u>	<u>Possible solutions</u>
<p><i>Deep lines on cutting side.</i></p> 	<ul style="list-style-type: none"> - Too much heat in a small area. - Bad quality material. 	<ul style="list-style-type: none"> - Change cutting sequence. - Change, if possible, material quality.
<p><i>"Burned paper" effect on the bottom.</i></p> 	<ul style="list-style-type: none"> - Pressure too high. - Speed too high. 	<ul style="list-style-type: none"> - Reduce pressure by step of 0.1-0.2 bar. - Reduce speed.
<p><i>Drop burr and welded material on the bottom.</i></p> 	<ul style="list-style-type: none"> - Focal too low. - Pressure too low. 	<ul style="list-style-type: none"> - Increase the focal point by step of 0.1-0.2 mm. - Increase pressure by 0.1-0.2 bar.







Stainless steel-N₂ technology:

All the following solutions are reliable only if the following conditions are verified:


- Nitrogen purity at least 99,99% (or 4.0).
- Lens and nozzle not damaged.
- Laser mode without distortion (air free of acid or solvent).

<u>Problem</u>	<u>Possible reasons</u>	<u>Possible solutions</u>
<p><i>Loss of cut.</i></p> 	<ul style="list-style-type: none"> - Speed too high. - Focal too low. - Power too low. 	<ul style="list-style-type: none"> -Decrease speed. - Move up focal point by step of 0.1-0.2 mm -Increase power by step of 100 W.
<p><i>Burr on opposite sides.</i></p> 	<ul style="list-style-type: none"> - Lens not centered. - Nozzle hole not free or not circular. - Optical chain alignment not perfect. 	<ul style="list-style-type: none"> - Check lens centering. - Check nozzle conditions. - Check optical chain alignment.
<p><i>Black burr only on the outside.</i></p> 	<ul style="list-style-type: none"> - Focal point too low. 	<ul style="list-style-type: none"> - Move up focal point by step of 0.1-0.2 mm



<u>Problem</u>	<u>Possible reasons</u>	<u>Possible solutions</u>
<p><i>Long white burr.</i></p> 	<ul style="list-style-type: none"> - Pressure too low. 	<ul style="list-style-type: none"> -Increase nitrogen pressure by step of 1 bar.
<p><i>Black burr all around the piece.</i></p> 	<ul style="list-style-type: none"> - Focal point too high. 	<ul style="list-style-type: none"> -Move down focal point by step of 0.1-0.2 mm.
<p><i>Snatched cut</i></p> 	<ul style="list-style-type: none"> - Cutting speed too high. 	<ul style="list-style-type: none"> -Reduce cutting speed by step of 150-200 mm/min.
<p><i>Very light burr.</i></p> 	<ul style="list-style-type: none"> - Focal too low. 	<ul style="list-style-type: none"> - Move up focal point by step of 0.1-0.2 mm



<u>Problem</u>	<u>Possible reasons</u>	<u>Possible solutions</u>
<p><i>Yellow colored cutting side.</i></p> 	<ul style="list-style-type: none"> -Nitrogen not pure. -Presence of oxygen or air in the gas pipe. 	<ul style="list-style-type: none"> -Insert a delay after gas call in order to clean the pipe. -Check nitrogen purity. -Check gas circuit conditions (no leaks).

PLATINO 1530-2040: QUICK REFERENCE GUIDE



MILSTEEL DATA				MS WITHOUT QUICK PIERCING							
Thickness	1	2	3	4	5	6	8	10	12	15	20
Lens	5"	5"	5"	5"	5"	5"	7,5"	7,5"	7,5"	7,5"	7,5"
Tip	2mm	2mm	2mm	2mm	2mm	2mm	2,5mm	2,5mm	2,5mm	2,5mm	2,5mm
Tip D-Type	NO	NO	NO	NO	NO	NO	2mm	2mm	2mm	2,5mm	2,5mm
Raggio minimo	0/FLY	0/FLY	0,5	0,75	0,75	1	1,5	2	2,5	3	4
Minimal distance between pieces	8mm	8mm	8mm	8mm	8mm	8mm	8mm	10mm	12mm	15mm	20mm

STAINLESS STEEL DATA									
Thickness	1	2	3	4	5	6	8	10	12
Lens	5"	5"	5"	5"	7,5"	7,5"	7,5"	7,5"	7,5"
Tip	2mm	2mm	2mm	2mm	2,5mm	2,5mm	2,5mm	2,5mm	3mm
Minimum radius	0/FLY	0/FLY	0,5	1	1,5	2	2,5	3	4
Minimal distance between pieces	8mm	8mm	8mm	8mm	8mm	8mm	8mm	10mm	12mm

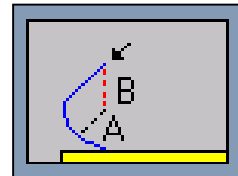
ALUMINUM DATA							
Thickness	1	2	3	4	5	6	8
Lens	5"	5"	5"	7,5"	7,5"	7,5"	7,5"
Tip	2mm	2mm	2mm	2,5mm	2,5mm	2,5mm	2,5mm
Minimum radius	0/FLY	0/FLY	0,5	1	1,5	2	2,5
Minimal distance between pieces	8mm	8mm	8mm	8mm	8mm	8mm	8mm



QUICK PIERCING MILDSTEEL

Piece without corners

Lead-in type

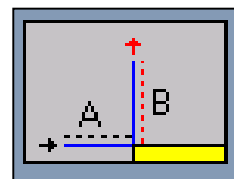


Lead-in dimension				
Thickness	INTERNAL PROFILE		EXTERNAL PROFILE	
	A	B	A	B
8mm	1,5mm	hole center *	1,5mm	10mm
10mm	2mm	hole center *	2mm	10mm
12mm	2,5mm	hole center *	2,5mm	10mm
15mm	3mm	hole center *	3mm	13mm
20mm	4mm	hole center *	4mm	15mm

* = the B value depends of the hole's radius. In this case the piercing must be done in the hole's center.

Piece with corners

Lead-in type



Lead-in dimensions		
Thickness	A	B
8mm	10mm	5mm
10mm	10mm	5mm
12mm	12mm	5mm
15mm	13mm	5mm
20mm	16mm	5mm



PLATINO 1530-2040: QUICK REFERENCE GUIDE

MILDSTEEL PIERCING

Thickness	1	2	3	4	5	6	8	10	12	15	20
Piercing type	LPM	LPM	LPM	LPM	LPM	LPM	LPM	HYBRIDE	HYBRIDE	HYBRIDE	HYBRIDE

STAINLESS STEEL PIERCING

Thickness	1	2	3	4	5	6	8	10	12
Piercing type	NORM	NORM	NORM	PREHOLE	PREHOLE	PREHOLE	PREHOLE	PREHOLE	PREHOLE

ALUMINUM PIERCING

Thickness	1	2	3	4	5	6	8
Piercing type	NORM	NORM	PREHOLE	PREHOLE	PREHOLE	PREHOLE	PREHOLE

PROGRAMMATION

	TECHNOLOGY		POST-PROCESSOR
NORM	NORM	+	-
PREHOLE	PREHOLE	+	-
LPM	NORM	+	LPM
QUICK *	QUICK	+	-
HYBRIDE *	QUICK	+	-

* : QUICK AND HYBRIDE PIERCING CANNOT BE MANAGED WITH THE SAME MACHINE



INTRODUCTION TO THE CELL-MANAGER

WHAT DOES IT SERVES ?

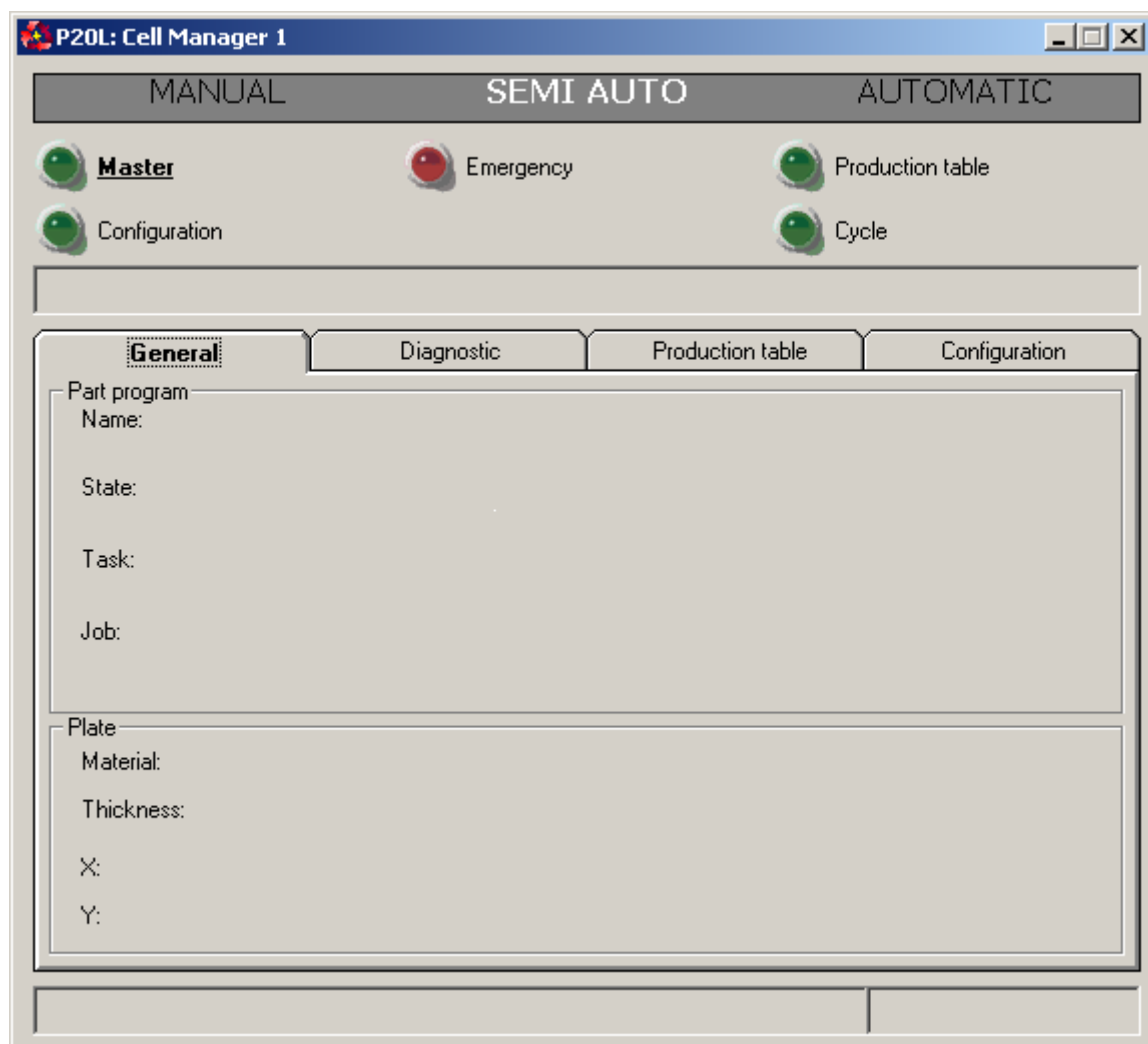
With the cell manager it is possible to execute a series of part-program in Automatic mode using the production table.

HOW DOES IT WORKS?

This application run in “parallel ways” with the MMI. These two software can manage the machine, but they can’t work simultaneously.

CELL MANAGER ACTIVATION

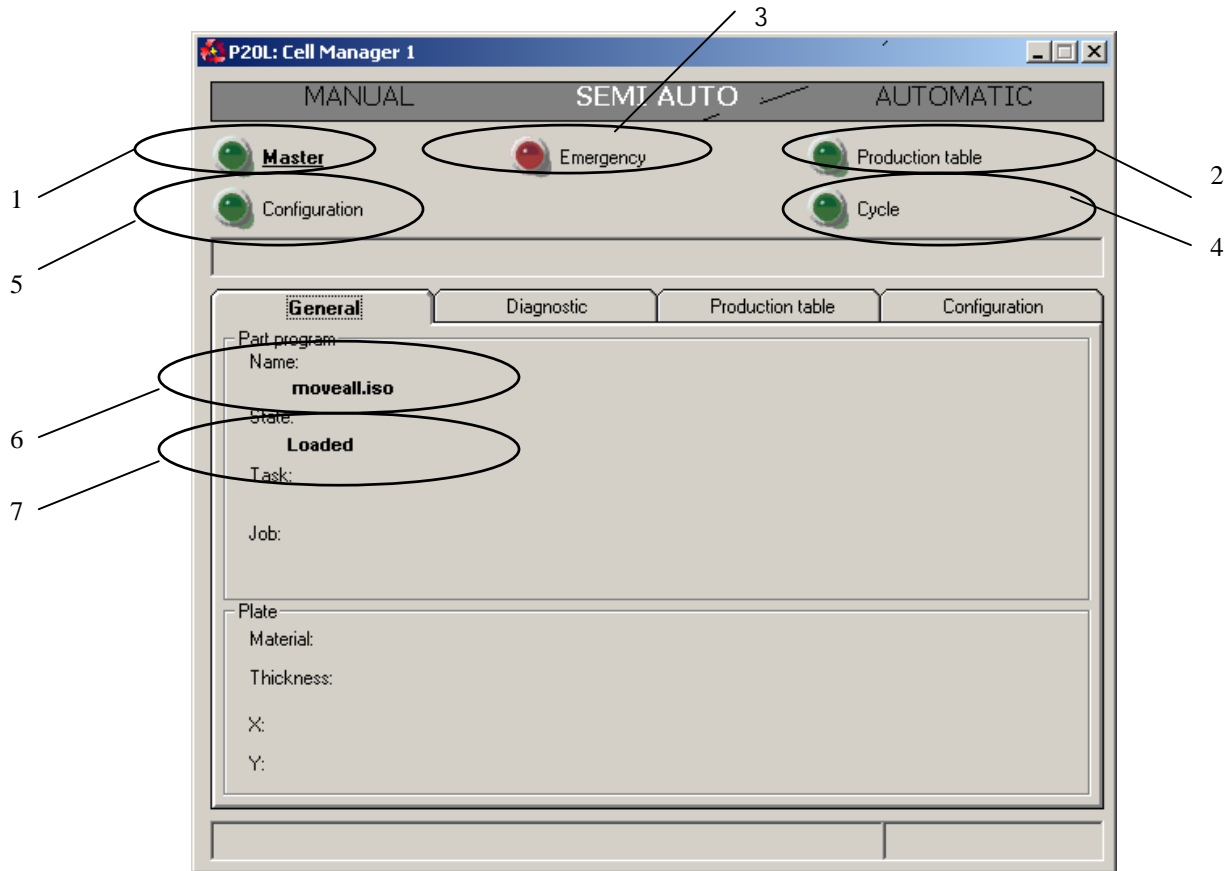
- Turn the “**blue key**” in **automatic** mode.
- Push “**ALT+TAB**” on the console and select the Cell Manager Plus icon.
When you release the button in automatic it will opened the following window:





Cell Manager – Main Page.

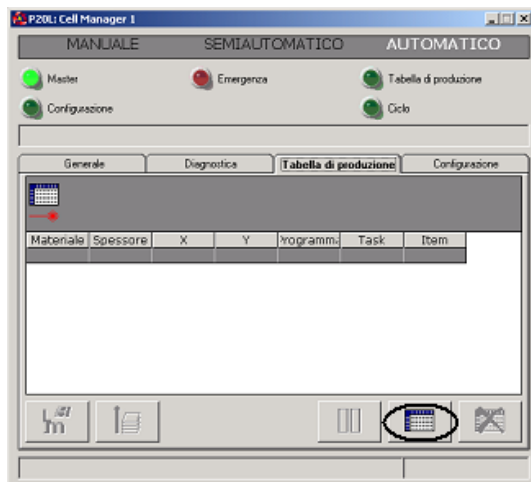
In the main page of the cell manager it is possible to see all the information of the program that is running.



1. Cell Manager+ situation:
 - Green: the Cell Manager is in Master mode and therefore available.
 - Red: the Cell Manager it is not in Master mode and therefore unavailable.
2. Production table
 - Red: the table is not loaded.
 - Green: the table is loaded.
3. Emergency's state:
 - Red: it is impossible to work.
 - Green: it is possible to work.
4. Cycle's state:
 - Red: the machine can't start the production table.
 - Yellow: the machine waits for the start from exchange pallet's console.
 - Green: The machine is working.
5. Cell Manager configuration.
6. Part-program name active.
7. Part-program state.



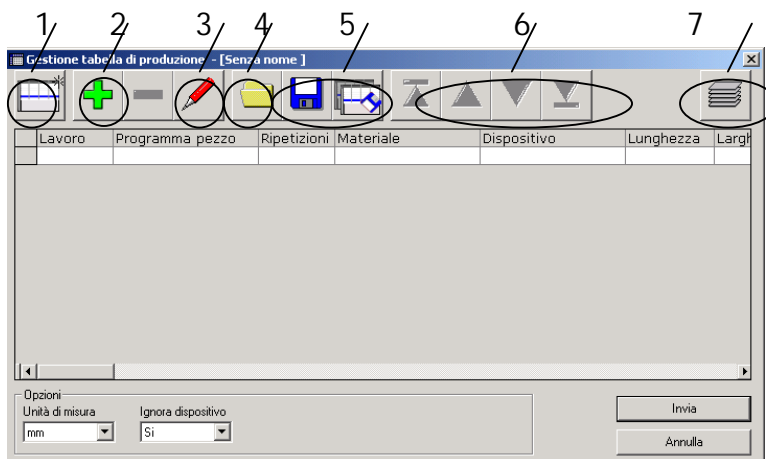
Cell Manager Production Table page



With this page is possible:

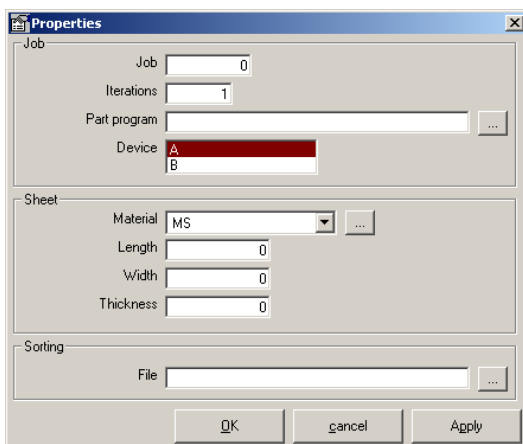
- To create a production table.
- To modify a production table.
- To load a production table to start a production.

Pushing the button is possible to see the next window:



1. To create a new table.
2. To add ISO file.
3. To Modify the properties of the table.
4. To Open a file .Tab
5. To Save a file like .Tab.
6. To Change the order for the table execution.
7. To change the material list.

In this window is possible to create a new table production, where:



Work (option used only with a tower server): attributing the same number of job to various part-program the same lease of drainage for such workings will be assigned, independently from their material and thickness.

Iterations: number of iteration for the part-program selected(the file must be in Automatic folder)

Device: pallet where you want execute the part-program

Sheet: all the characteristics (length; width; thickness) for the sheet to execute our part-program

Sorting: (option available only with the loader/unloader system Stima).

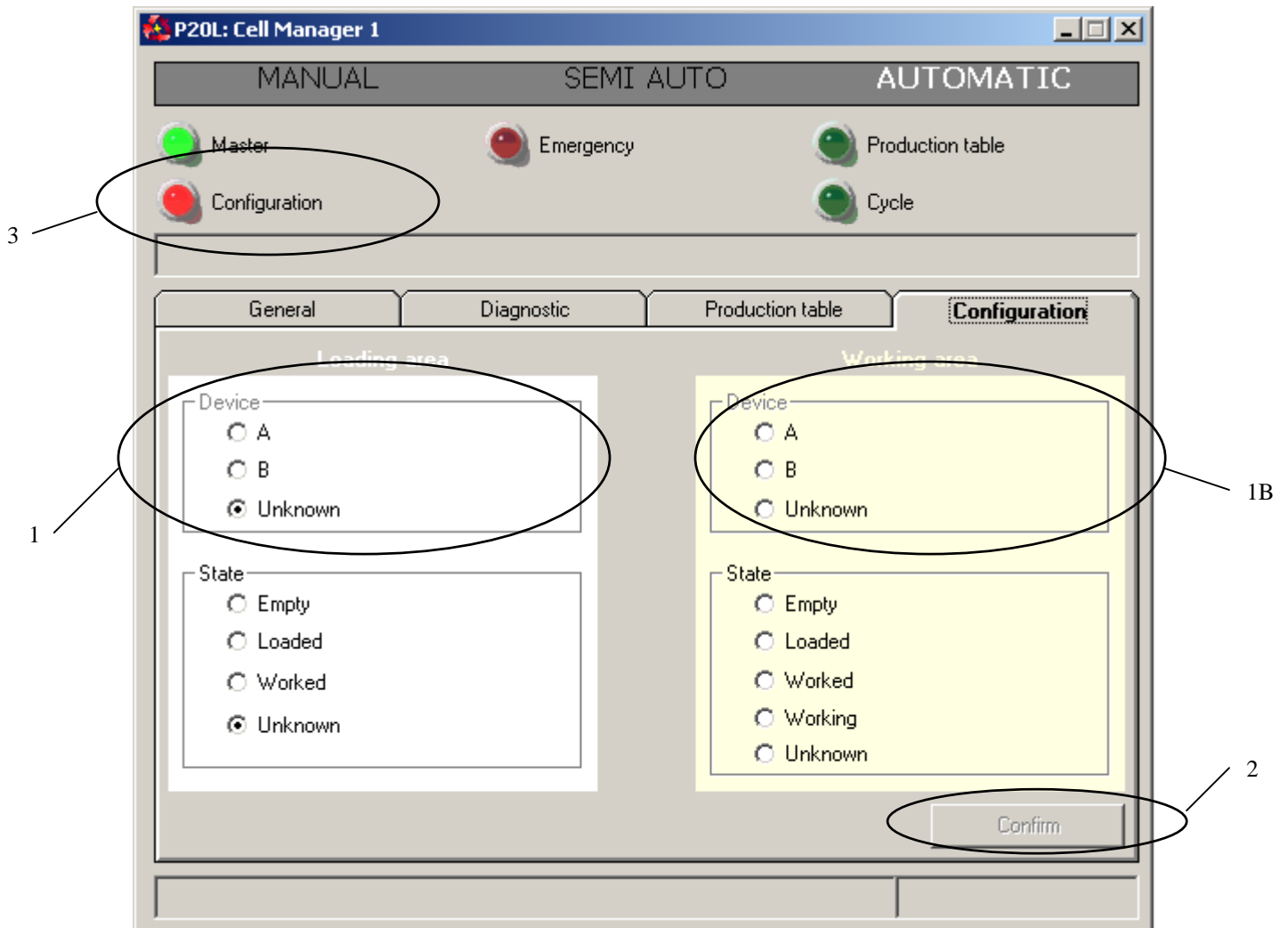
After to have inserted all the fields click send and led of table production must becomes green.

When all the led will be green, **Cycle** will become yellow in attended of the start from the pulpit.



CELL MANAGER CONFIGURATION PAGE.

In the following page is necessary to define the state of the pallets:



Put the state of each pallet in the working area and loading area.

Press "CONFIRM" (2).

Led "CONFIGURATION" (3) must be green.