5.1 Working position

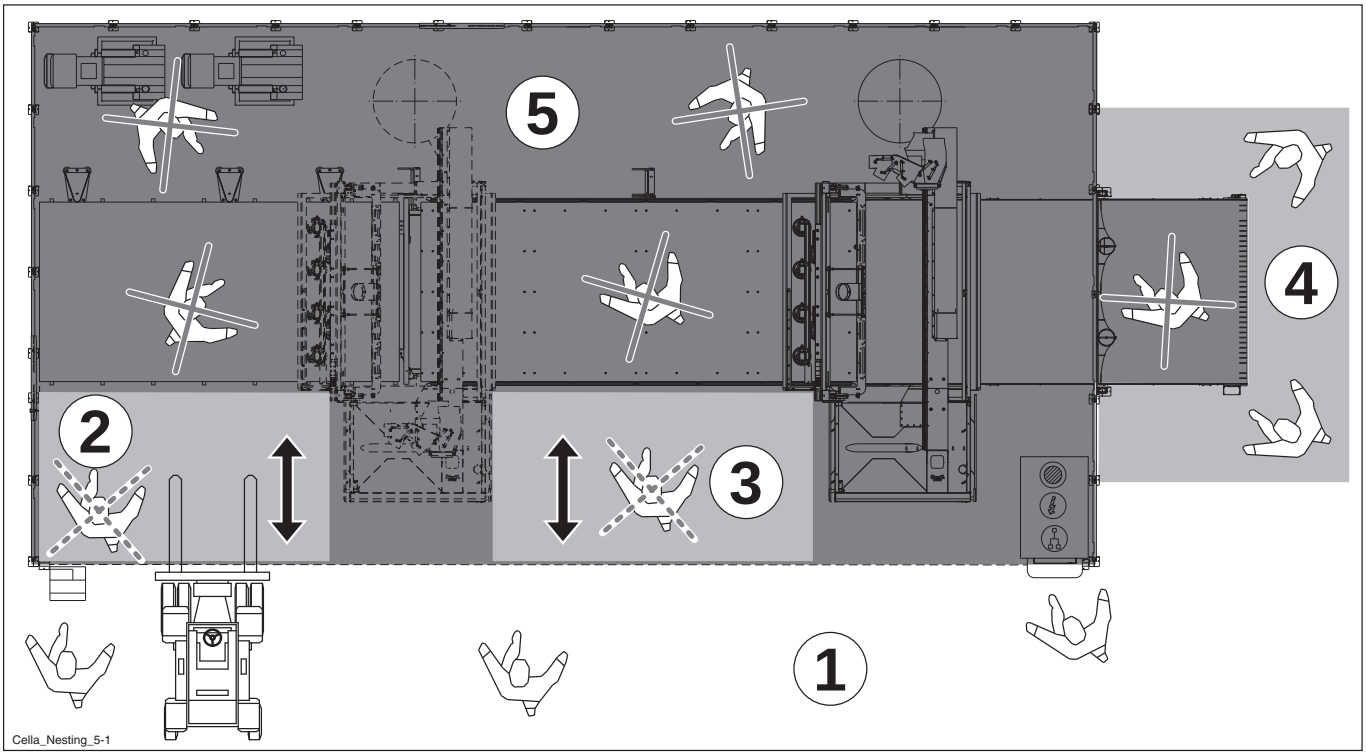
(cella_am600f_1.0_5.1)

During the machining the production user will be able to occupy only the working positions shown in LAY-OUT "Main working areas."

MAIN WORKING ZONES:

1 - Zone reserved for operators during machining
2 – Zone used to load panels on the elevator table
3 – Zone for manually loading the panels
4 – zone to unload the machined workpieces
5 - Zone which is always off limits during machining

IT IS FORBIDDEN TO CLIMB ON THE MACHINE



The user will be the only responsible of any possible damages to things or people whenever he adopts positions differing from the ones shown above.

5.2 Safety devices description

(cella_am600f_1.0_5.2)

The safety devices make the machine safe in case of irregular conditions.

"Safety devices" refer to all those safety measures that enable the machine to function without causing injury or damage. Safety measures consist in using specific technical measures to protect persons from any dangers that cannot reasonably be eliminated.

The machine is fitted with the following devices:
- Total guard A protecting the tool slide and the operating units so as to completely isolate the parts which move along the "Y" axis.
- Bars "B" and sensitive bars "B1" mounted on the sides of the cover for maximum safety in the event of collision with obstacles
- Safety photocell barrier C
- Splinter containment barrier "D" to prevent the ejection of workpieces or tools, or parts of them.
- Protective fence to prevent access to the rear and sides of the machine.
- Gates "F" to have access to the machine side and rear areas.
- Buzzer G that signals when the machine is turn on
- Luminous warning device “H” that indicates the photocells status
- Doors L opening microswitches with mushromm head pushbutton "E04"

WARNING: DO NOT REMOVE OR DISENABLE SAFETY PROTECTION OR EMERGENCY DEVICES FOR ANY REASON.

PRECAUTION: IT IS EXTREMELY IMPORTANT TO REGULARLY CHECK THAT SAFETY DEVICES ARE WORKING PROPERLY ESPECIALLY IF THEY ARE NOT OFTEN ACTIVATED.

Periodic checking of the functioning of the devices is the task of the production and expert operator. Any faults must timely be reported to the person in charge.

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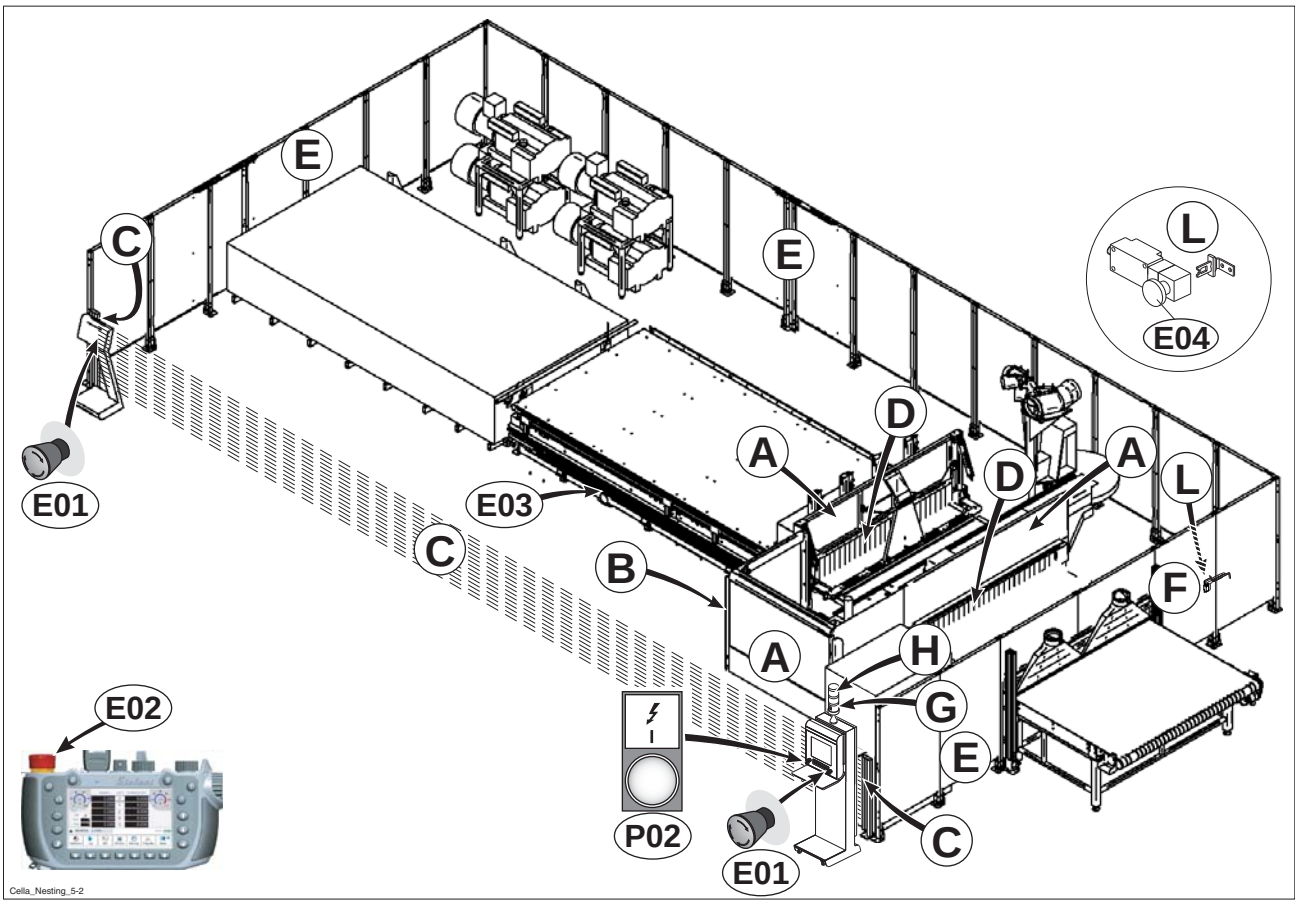
(cella_am600f_1.0_5.2a)



Beeper

(ux5-hde_2.0_c.1a)

Whenever the machine is turned on at the white “P02” button, the buzzer G sounds intermittently for about 2-3 seconds.
In this way, the signal is given that the machine is live and ready for the cycle to start.

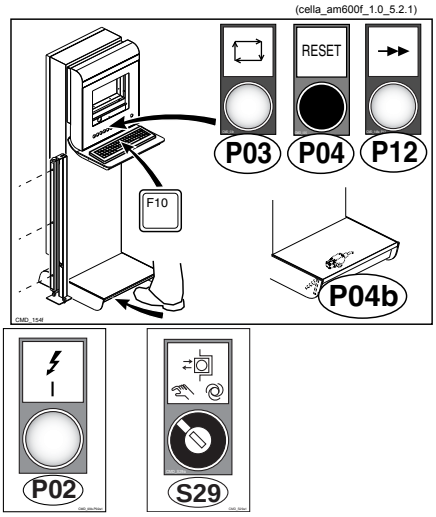
Luminous indicator

(cella_am600f_1.0_5.2b)

The luminous warning device “H” indicates the photocells status:
- light on = photocells active
- lamp switched off = photocell violation enabling for piece loading (machine in parking position)

5.2.1 Safety photocell barrier

The photo-electric safety barrier is in place to detect the presence of personnel in the loading / unloading zone where it is possible to come into contact with the moving carriage.



IN "CELL" MACHINING MODE ("S29" SELECTOR ON) CROSSING THE SAFETY PHOTOCELLS ALWAYS GENERATES AN EMERGENCY.

To reset the machine after an emergency:

- MAKE SURE THERE IS NOBODY INSIDE THE PROTECTED AREA

- Reset the CNC to exit emergency mode by pressing the “P04” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).

IN "STAND ALONE" MACHINING MODE ("S29" SELECTOR ON) THE PHOTOCELLS OPERATE WITH THE STANDARD MACHINE LOGIC.

The operational logic can prevent the program in execution from being cancelled in this way:

1) The operator can "reserve" an opportunity to enter the photocells area using push-button "P12": its non-illuminated state indicates that the machine is prepared to work at low speed and photocell violation will not stop the machine as it continues working.
This means it is possible to access the operating area of the machine without stopping production and the sensitive components (the bumpers) guarantee a high level of safety by putting the machine in emergency mode in the case of contact.

2) Violation of the photocells with push-button "P12" illuminated (high-speed operating mode) stops the machine without generating an emergency or cancelling the program in execution. In this condition the video messages appear:

- OPERATING SHUTDOWN
- RESET PHOTOCELLS

Once violated the photocells field, it is necessary to reset the photocells at operational zone output using buttons "P03 - P04b" .

The photocells have to be activated at the same time in order to be reset. LED "P12" should turn on after the buttons are pressed.
The full machine operation is in this way restored.

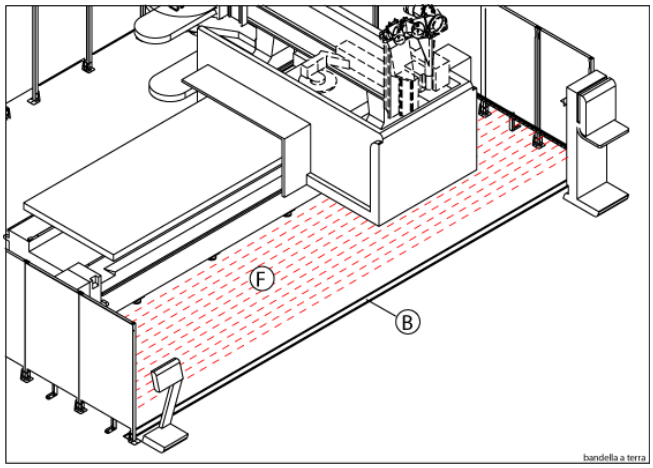
ATTENTION: THE PHOTOCELLS MUST BE RESET OUTSIDE THE OPERATING AREA OF THE MACHINE AND IT IS FORBIDDEN TO TRY RESETTING THE MACHINE INSIDE THE OPERATING AREA OR HAVE IT RESET BY SOMEONE ELSE WHEN YOU ARE INSIDE THE PROTECTED AREA.

The consoles and photocells must be fixed to the ground during the testing process: refer to the layout plan.

5.2.1.1 Slat at ground level #SMART-ENTRY# (PRO SPEED) (optional)

(bandella a terra)

If the machine is equipped with the ground slat, the photocells (F) are assembled horizontally.
The sensitive ground slat (B) that can be walked on is equipped with the functions already described in the paragraph above, but with the advantage that commands are given by stepping on the slat, leaving the operator's hands free to load/unload the pieces without having to set them down as in the case of traditional pushbuttons.



The operational logic can prevent the program in execution from being cancelled in this way:

1) The operator has the option of "reserving" his entrance in the photocells area by stepping on the slat (B): when the pilot lamp on the pushbutton (P12) turns off, it means that the machine is pre-set to work at low speed and that the engagement of the photocells does not stop the machine, which instead continues its machining steps. This means it is possible to access the operating area of the machine without stopping production and the sensitive components (the bumpers) guarantee a high level of safety by putting the machine in emergency mode in the case of contact.

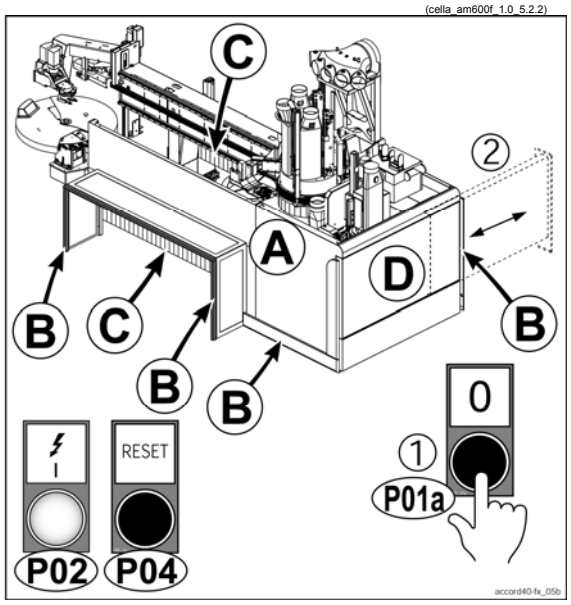
2) When the operator exits the photocells area, he steps on the slat (B) once again to reset the photocells; when the pilot lamp on the pushbutton (P12) lights up, it means that the machine is fully operational.

3) Engaging the photocells without having stepped on the slat (B) and with the pushbutton "P12" lit up (work mode at high speed) stops the machine without generating an emergency condition and without cancelling the program being executed. Under this condition, the following messages are displayed on the screen:

- OPERATIONAL STOP
- RESET PHOTOCELLS

After having engaged the photocells, when exiting the operational area, the photocells need to be reset through the pushbuttons "P03 - P04b" or by stepping on slat (B).

5.2.2 Machining unit cover



The purpose of the protective devices of operating unit A is to prevent the ejection of material (chips, shavings) out of the work area and to prevent the operator from being trapped by the moving carriage.
Mounted at the sides of the cover are the sensitive bumpers B that protect the operator in the piece loading / unloading area against the risk of being trapped by the moving carriage: activation of the sensitive bumpers puts the machine instantly in emergency mode.
To reset the machine after an emergency:
- Reset the CNC to exit emergency mode by pressing the “P04” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).

WARNING: always check the efficiency and good state of the operator unit guards. The integritty of this device is FUNDAMENTAL for the safety of persons and things.

On the front of the cover is a door with window that can be opened to check the processing.

IMPORTANT: you must replace parts made from POLYCARBONATE every 5 years.
ATTENTION: the use of lubricants during work causes a premature deterioration of the mechanical features of the plastic materials. It is essential for the operator's safety to replace the front door D at least EVERY 2 YEARS.

To open the door, one needs to first stop the machine or put it into emergency mode (at the P01 button) and then slide the door towards the right: it is only possible to open the door when the electrospindle is at standstill.

It is not possible to turn on the machine when the door is open.

Mounted under the cover are flexible screens C made of a special material that are flush with the worktable.
In TEST mode(see Xilog Plus manual) the curtain lifts up to allow you to see the movements of the mach= ining heads better.
To lift the screens in MDI or Manual mode, use the M codes in the ISO field: M177 = down; M178 = up

IMPORTANT: always keep the state of the flexible curtain under control . If the curtains are torn, cut or scraped you must replace them.
To use ONLY SCM original spare parts.
Failure to carry out the operations described above puts the operator at risk of accident and injury.

WARNING: DO NOT, UNDER ANY CIRCUMSTANCES ATTEMPT TO BYPASS THE EMERGENCY SAFETY DEVICES.

5.2.3 Perimeter Barriers

(cella_am600f_1.0_5.2.3)

The perimeter barriers E block access to the rear part of the machine when it is on, ensuring that dangerous zones are not reached.
They also protect from any material ejection (tool parts or parts of machined workpieces) from the work zone.
To have access to this area of the machine, use the door F .

WARNING: It is strictly prohibited to proceed beyond the perimeter fencing without using the appropriate door "F".

It is possible to open/close the doors only by using the safety key micro lock/unlock.

When you need to accede to the interior across the perimetral protections you must:
- Use the key-operated switch S05 to release the microswitch on the door and open the latter.
- Pull out the key from the selector and KEEP IT WITH YOU.

The key has to be handled by the personal that accedes to the interior across the protections.
We suggest you this to avoid that somebody,not noticing the eventual presence of personal inside the protections,closes the doors and re-starts the machine.

The release of the micro switch for the opening of a door activates the machine's emergency status.

Once the cleaning/maintenance/equipping operations have been completed exit the perimeter barriers.
To reset the machine after an emergency:

- MAKE SURE NO ONE IS INSIDE THE FENCES

- close the wicket to reset the micro
- Lock the door by turning the switch to "O / =>|<=" : it is not possible to turn on the machine with the switch in position " I / <=| |=>", even if the door is closed.
- Reset the CNC to exit emergency mode by pressing the “P04” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).

attention: verify systematically the efficiency and the condition of the perimetrical devices. The integrity of this device is FUNDAMENTAL for safety of persons and objects.

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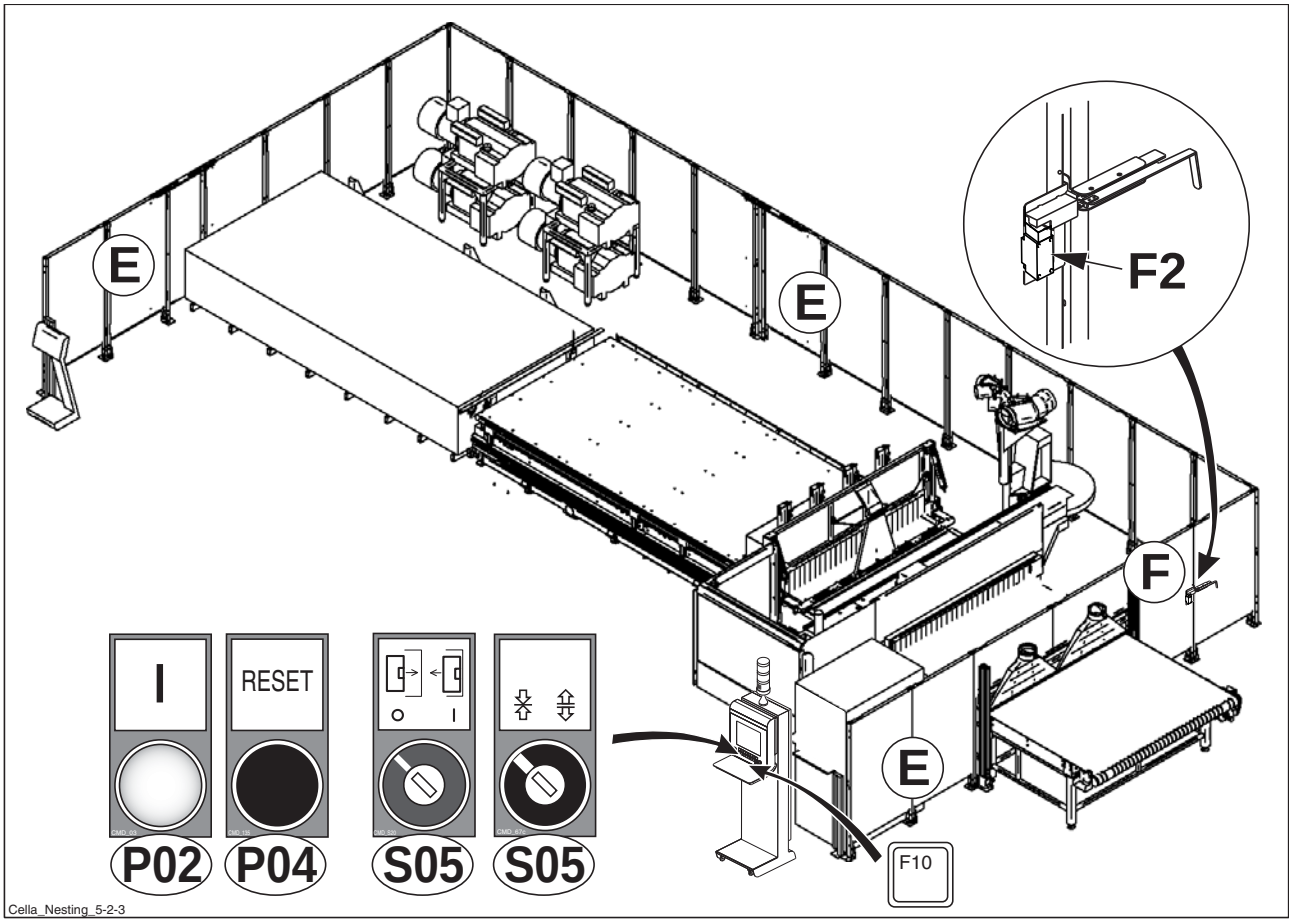
(cella_am600f_1.0_5.2.3a)



5.3 Description of emergency devices

(cella_am600f_1.0_5.3)

The emergency devices make the machine safe in case of irregular conditions and allow the user to block at the right time the machine functioning in case of danger or event.

The emergency devices are always active whatever mode the machine is working in.

The machine is fitted with the following devices:
- Emergency push button "E01 - E02"
- Emergency cable "E03"

AN EMERGENCY STOP DOES NOT FULLY ELIMINATE THE VOLTAGE SUPPLIED TO THE MACHINE.
See chap. "Description of emergency devices"

NOTE: The activation of an emergency device (mushroom button / rope / doors) cuts off the auxiliary power to the machine, except for:
- the vacuum pump
- the electrospindle cooling device (if available)
- the devices powered at 24VCC

THE ELECTRIC CABINET REMAINS COMPLETELY POWERED ELECTRICALLY.
In particular, pay attention to "category 3" Inverter and Drivers (EN954-1 Standard) that do not have a remote control upstream.

WARNING: DO NOT REMOVE OR DISENABLE SAFETY PROTECTION OR EMERGENCY DEVICES FOR ANY REASON. ALWAYS USE THE DOORS TO GAIN ACCESS TO THE FENCED OFF AREA AROUND THE SIDES AND BACK MACHINE AND DO NOT, UNDER ANY CIRCUMSTANCES ATTEMPT TO BYPASS THE EMERGENCY SAFETY DEVICES.

PRECAUTION: IT IS EXTREMELY IMPORTANT TO REGULARLY CHECK THAT SAFETY DEVICES ARE WORKING PROPERLY ESPECIALLY IF THEY ARE NOT OFTEN ACTIVATED.

Periodic checking of the functioning of the devices is the task of the production and expert operator. Any faults must timely be reported to the person in charge.

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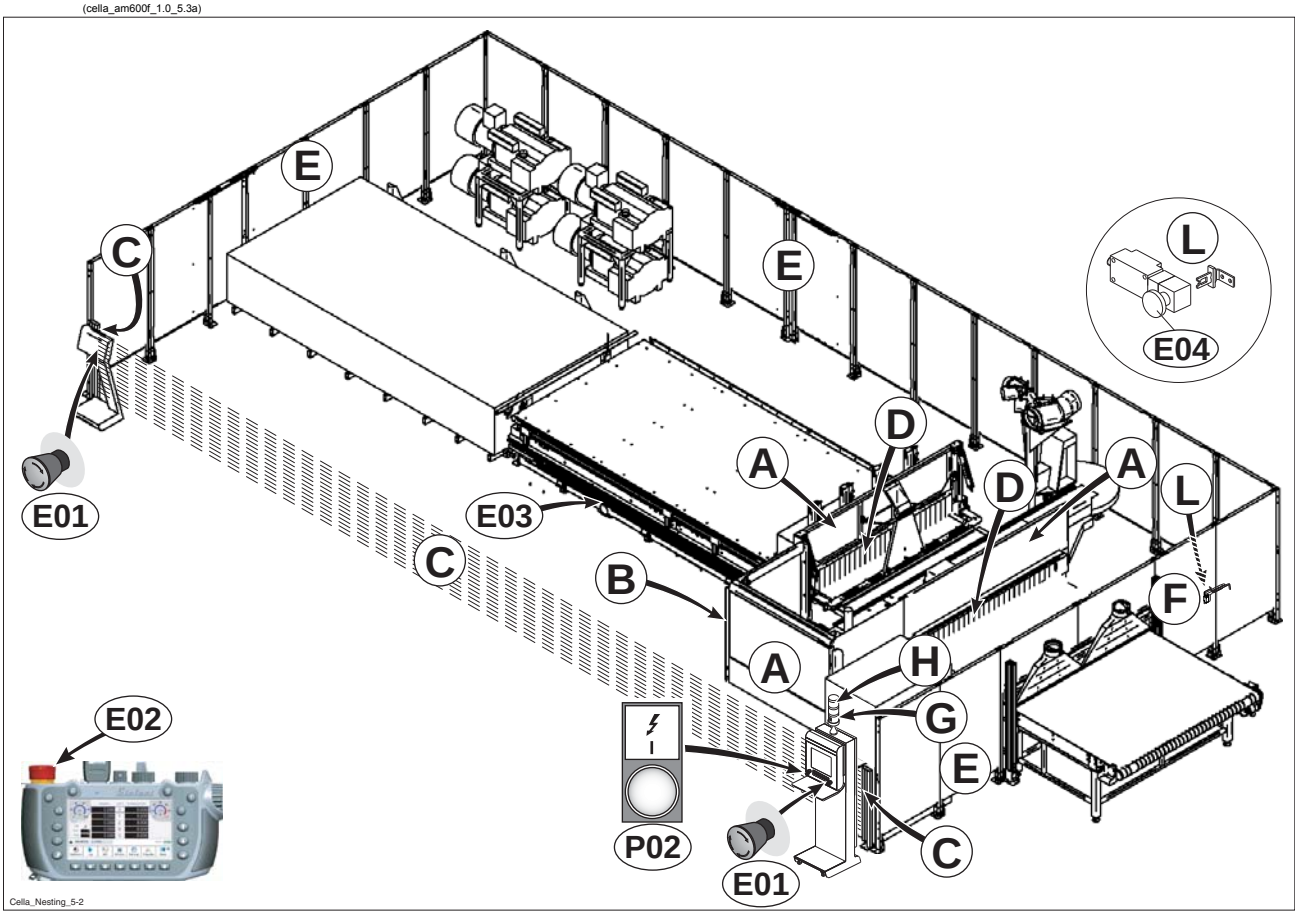
(cella_am600f_1.0_5.3a)



5.3.1 Mushroom-head emergency stop push-buttons

(cella_am600f_1.0_5.3.1)

The EMERGENCY mushroom-headed pushbuttons are located:
- close to the control panel - "E01"
- on the mobile pushbutton panel - "E02"

To stop the machine in an immediate danger situation, press one of the red mushroom-headed pushbuttons situated on the machine near all the work stations

WARNING: before starting to operate the machine you must identify the position of all the emergency pushbuttons, especially the ones closest to your work station

WARNING: When the operator has to execute controls or other operations on a machine, he has not to activate the buttons "E01 - E02", but he has to use the normal stop button "O" . This is necessary to avoid the frequent and inaccurate use of the safety buttons that can cause their deterioration.
WARNING: before restoring the machine and the CNC from emergency condition, verify that the cause for the emergency has been resolved.

To reset the machine after an emergency:
- reset push-button "E01" by turning it and reset "E02" by pulling it

- MAKE SURE NO ONE IS INSIDE THE FENCES
- Reset the CNC to exit emergency mode by pressing the “RESET” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).

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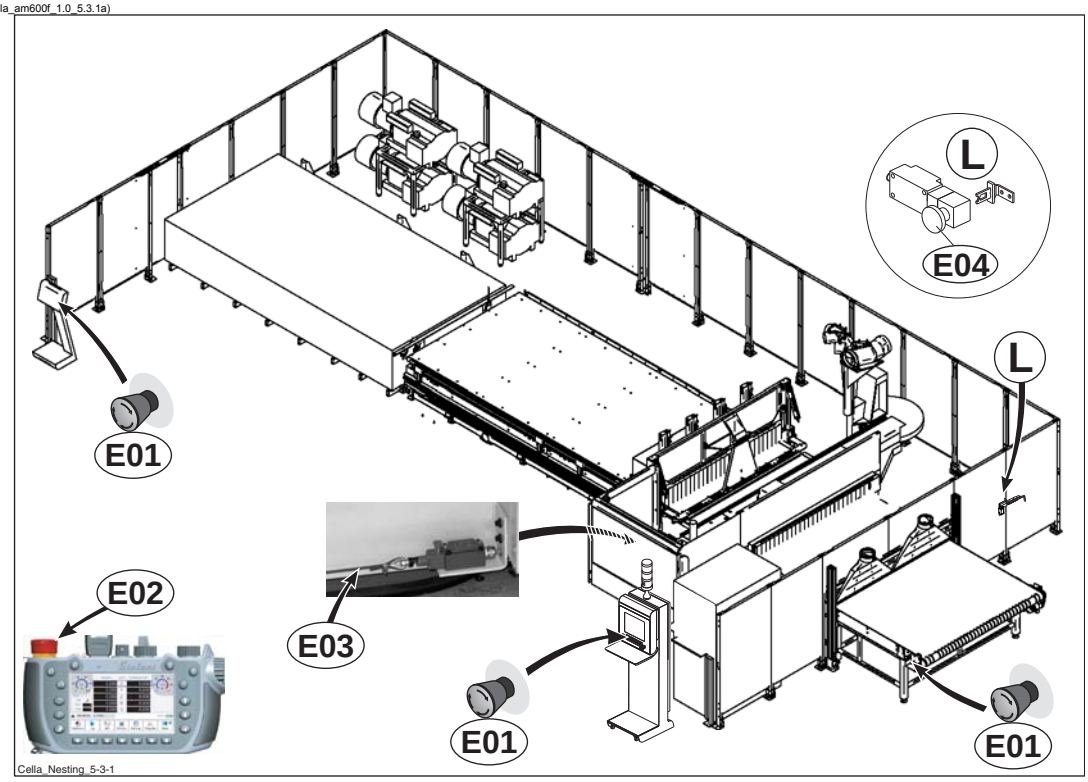
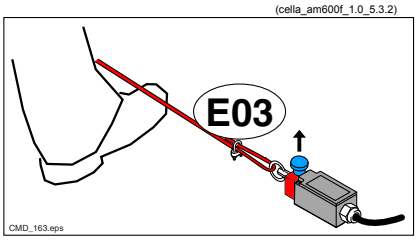
(cella_am600f_1.0_5.3.1a)



5.3.2 Emergency cable



There is an “E03” emergency cord that the operator can activate with his feet in the event of an emergency when loading / unloading pieces.

To stop the machine in an immediate danger situation, pull the emergency cord

WARNING: before restoring the machine and the CNC from emergency condition, verify that the cause for the emergency has been resolved.

To reset the machine after an emergency stop, proceed as follows:
- reset the microswitch by pulling push-button .
- Reset the CNC to exit emergency mode by pressing the “RESET” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).