

# *USER MANUAL*



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#### Logos definitions :



Warning, risk



Document evolutions



Sepro robotique inventions



Handy hints



What to do ?



Example



New function available  
with the software version  
marked

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## I - SAFETY INSTRUCTIONS

The robot must only be used on an injection machine in a safe environment. Safeguards must be installed so that the robot's work zone is inaccessible. Access for operations such as maintenance or part manipulation by operators must only be carried out after a shut-down procedure or if the safeguards have been specifically adapted.



A robot which is immobile is not stopped. A robot which is stopped is not shut-down.

### I - 1. Emergency stops



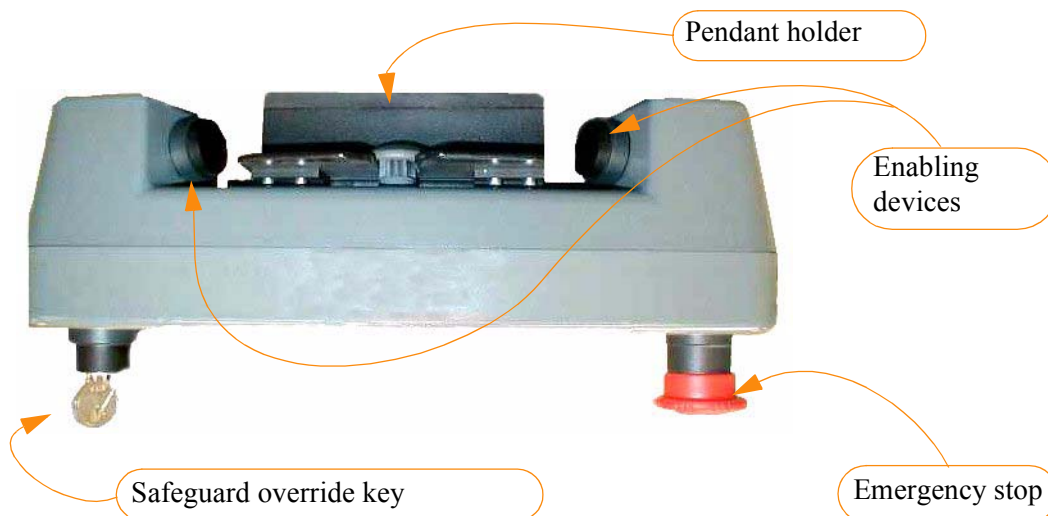
An emergency stop does not necessarily cut the pneumatic air supply, which means that:

- the pneumatic movements being executed are finished,
- it is necessary to dump the pressure before intervening on the robot.

When the robot's emergency stop button is pressed:

- the actuators' electric power supply is cut. The numeric movements are therefore stopped brutally.
- the IMM stops.

### I - 2. The pendant's safety devices



#### I - 2. 1. The safeguard override key

This key authorizes the robot movements in **manual** mode and in **test** mode, even if the safeguards are not installed. When requesting a movement, you must also push one of the 2 push buttons called **enabling devices**. The speed of the axes' movement is reduced.

#### I - 2. 2. Working with the pendant out of its holder


When the pendant is out of its holder, only the **manual** and **test** modes are authorized. Automatic mode is prohibited.

### I - 3. Peripheral units and safeguards

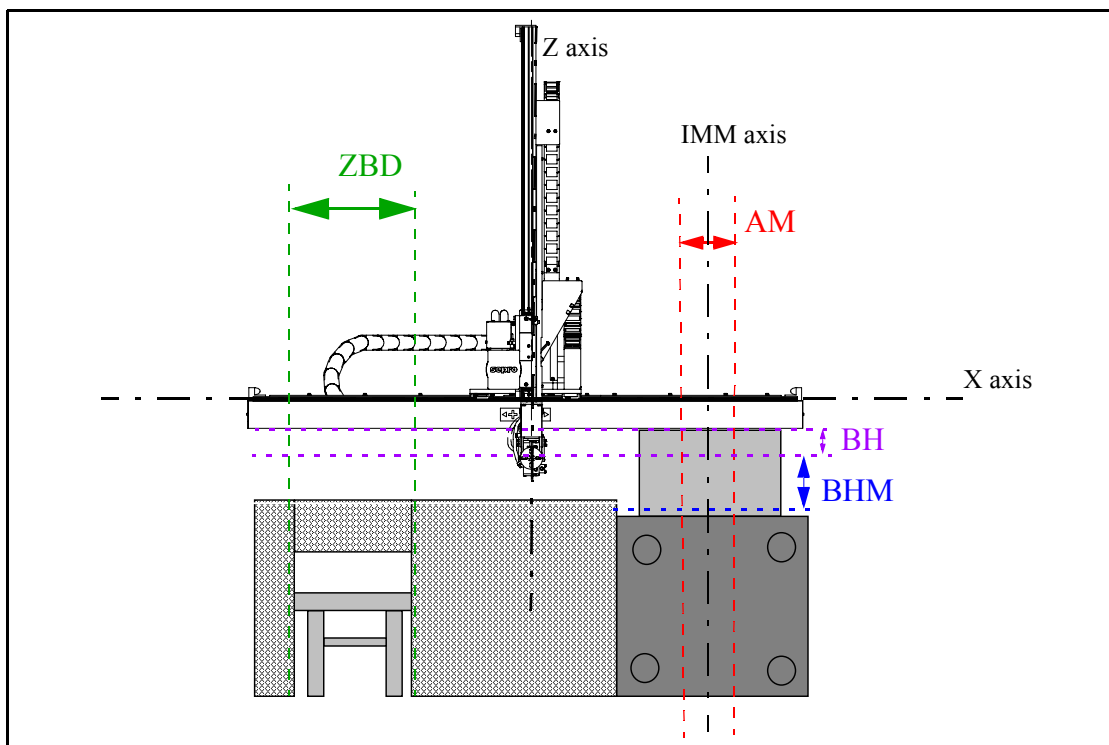
After any intervention on the peripheral units (conveyor ...) and/or safeguards, you **MUST** then check that they are correctly installed and connected. To do this, you may need to refer to the electrical drawings or to the application's specific documentation.


### I - 4. The work zones

These zones limit the robot movements when it's in **automatic** or **test mode**. The purpose of these zones is to avoid mechanical interference.

 In **manual mode**, the robot no longer manages these zones. It's the operator who controls the movements.

- 2 zones are defined on the X axis, Machine Axis **AM** and Arm Free Zone **ZBD**.
- 2 zones are defined on the Z axis, Arm Up **BH** and Arm Outside Mold **BHM**.



**AM** : the **Machine Axis** zone is placed on either side of the IMM axis. It is marked on the robot beam with a blue arrow . In this zone, the robot is authorized to work in the IMM.

**ZBD**: the **Arm Free Zone** is placed outside the IMM. The release area is in this zone. All movements are authorized.

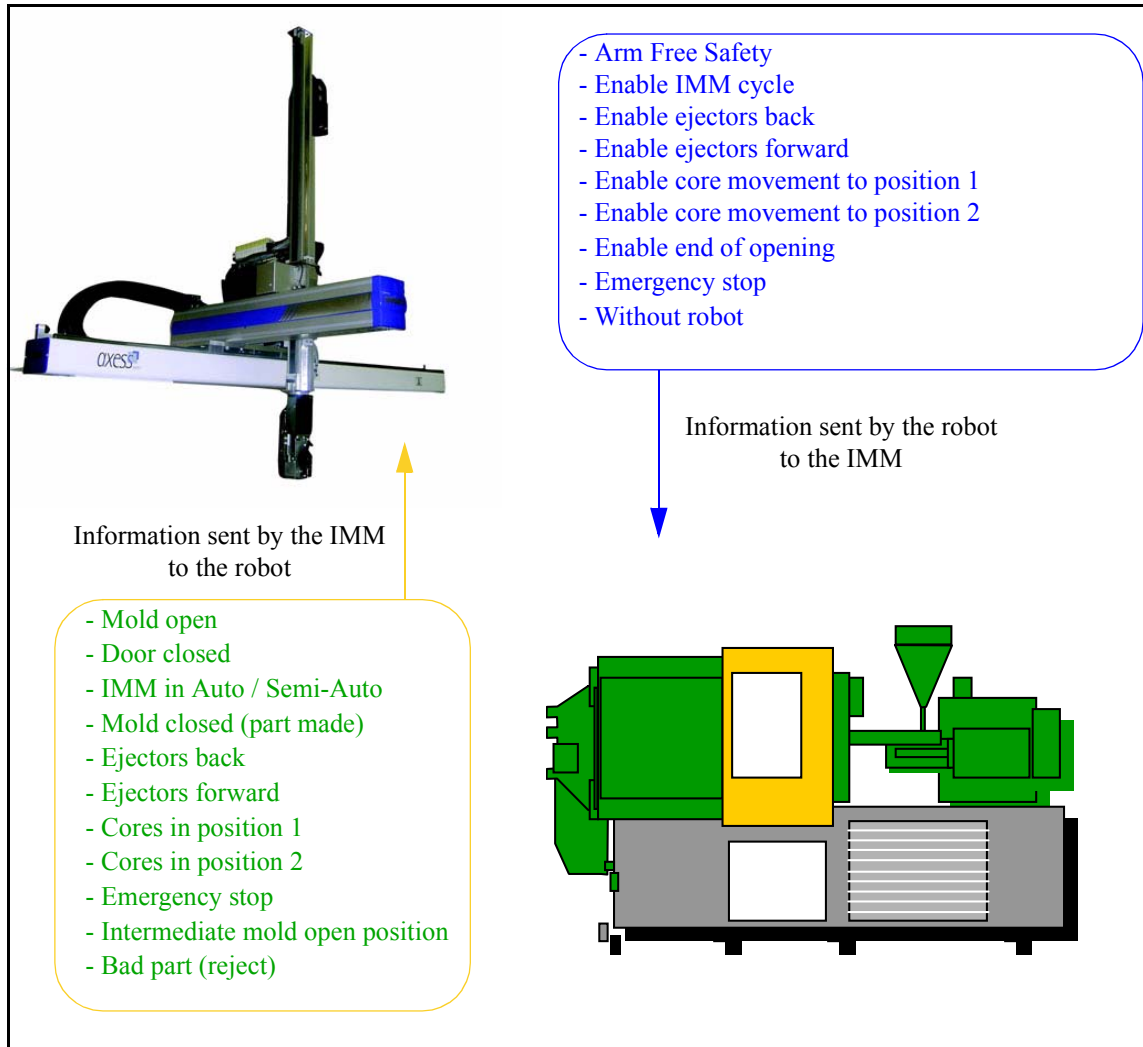
**BH**: **Arm Up** zone. The Z arm must be in this zone for all robot movements between **AM** and **ZBD**.

**BHM**: **Arm Outside Mold** zone. This zone is used if the robot is in the **AM** zone. It enables you to place the robot in a waiting position just above the mold, to reduce the mold unloading time. Outside this zone, the arm can only descend if the IMM gives the Mold Open (MO) information.

## II - ROBOT / IMM DIALOGUE

The robot / IMM interface is the definition of the dialogue between the robot and the IMM.

Example with a EUROMAP 12 interface :

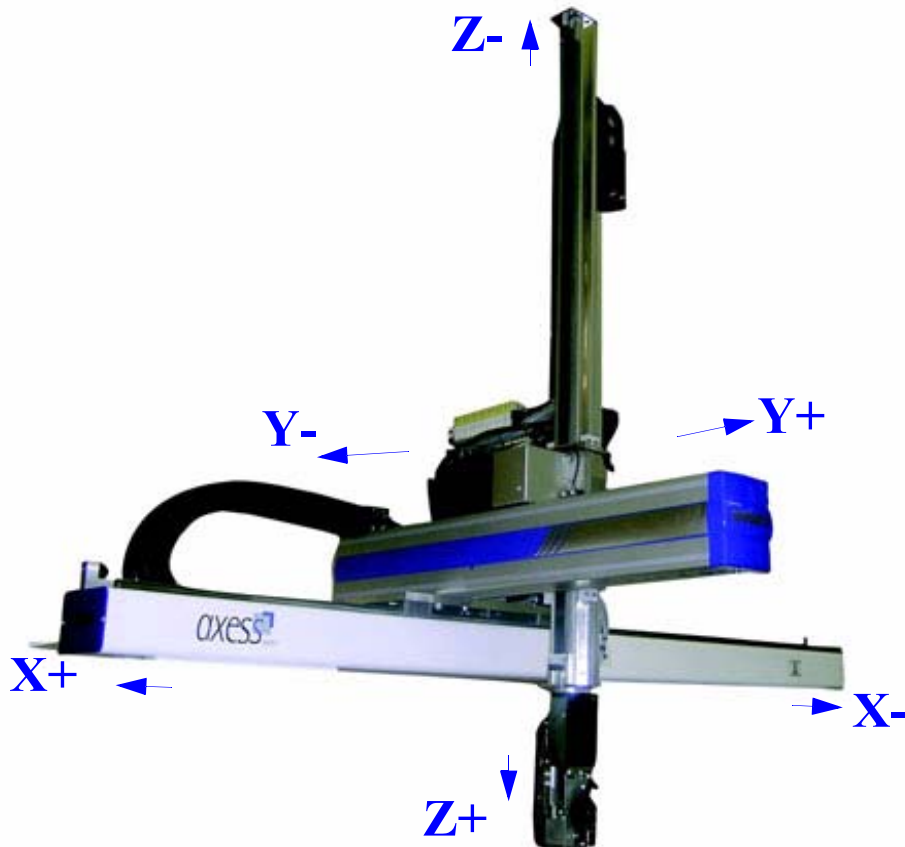


To see the status of this information, see:


- “Enabling a manual movement of the IMM”, page 11.
- “Production - Automatic mode”, “Home page”, page 22.

## III - QUICK REFERENCE

### III - 1.The axes








### III - 2.Powering up

- When you power up, the screen displays: NO POWER
- Press  to power up again and cancel the fault.



## III - 3.Navigating

### III - 3. 1. The modes

- Automatic mode  for production. This mode is used when the selected program has been fine-tuned. It allows you to start production, after a cycle optimization phase.
- Test mode  for mold changes. This mode is used for selecting the cycle to be run, creating and fine-tuning new cycles.
- Manual mode  for carrying out movements that are controlled by the user. This mode is used in particular for the following operations:
  - Initializing the axes.
  - Setting the EOATs and the peripheral units.
- Without robot mode . This mode is used for operating the IMM without the robot, in particular when fine-tuning IMM cycles, without the robot unloading the parts.
- Programming mode  for creating programs. This mode is described in the Programming Manual.

---

**Note:** When you select a mode, you stop the mode currently running.

---

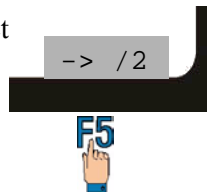
### III - 3. 2. The function keys

- Each mode has its own distinct home page. Various functions are displayed on the bottom of each screen. To access these functions, you must select the corresponding function key on the keyboard:



- If there are more than 5 functions, to access the functions that are not visible,

select



- When a function is active, the tab is "lit up". Example:



Only the CONT . function is active



- In general, a function contains sub-functions. The same principles apply.

### III - 3. 3. Returning to the previous screen



To exit a function or a sub-function, use  until you get to the screen you want.

### III - 3. 4. Locking the numeric pad

By pressing the  key, you get:

- Led on  and numeric pad locked -> for entering figures.
- Led off  and numeric pad unlocked -> for using the arrows.




**III - 3. 5. Entering a numeric value**

- Using the numeric pad (  ):
  - Press the key on the numeric pad once, and the value on the screen flashes. Enter your value.
  - The change is only taken into account once you have confirmed with  . The display stops flashing.
- By increasing/decreasing:
  - If it is possible, the screen offers the "-" and "+" functions. The value changes when you press the corresponding function keys.
  - The change is taken into account as soon as you release the function key.

**III - 3. 6. Entering text**

- The letters A to V are entered using the specific keys on the keyboard, apart from the letter O which is entered using 0 on the numeric pad. The pad must not be in "Num lock".
- The letters W, X, Y, Z, and the Space, are entered using the function keys.



- Use the  key to change between capitals and small letters.
- To enter a figure, use the numeric pad (  ).
- To delete a character, use the  key.


**III - 3. 7. Help key **

Allows you to do the following:

- when there is a fault, display the help.
- in manual mode, choose the type of display : with or without detail. Choosing with details displays the status of the current pneumatic movement's I/O or, the movement speed of the active axis.
- in automatic mode, to know which movement is requested and which input is expected, in addition to the `Waiting for PRG Step information` message.


The display disappears if you press  , or automatically after 5 seconds.

## IV - MANUAL MODE

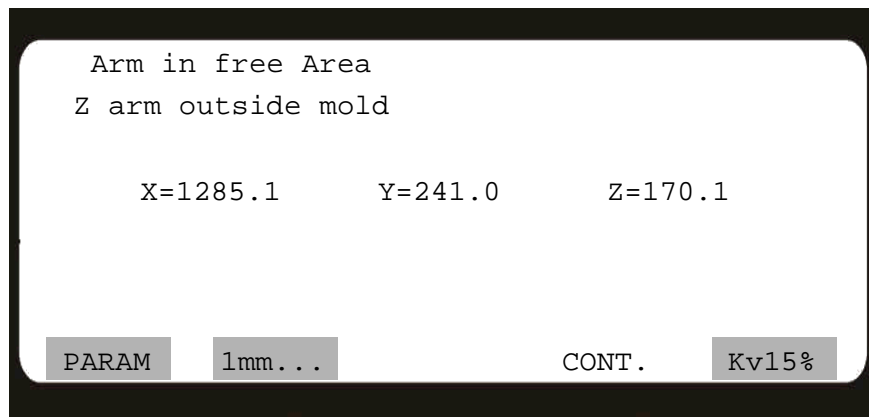
 In manual mode, the robot does not manage the work zones, it's the operator who controls the movements (see "The work zones page 2").

The manual mode enables you to control all the robot's movements separately from the program. It is used in particular for the following operations:

- Initializing the axes.
- Setting the EOATs and the peripheral units.

To access the manual mode, select .

The following screen appears:



---

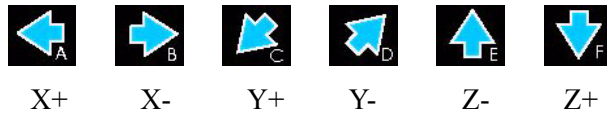
**Note:** If the axes are not initialized, a different screen appears. See "Initializing the axes", page 34.

---

**IV - 1. Manually controlling a numeric movement**

**IV - 1. 1. Moving an axis**

- Select the movement keys (held down):



- The screen displays (example with X+ or X-):

Zones that determine the movement (see “The work zones”, page 2)

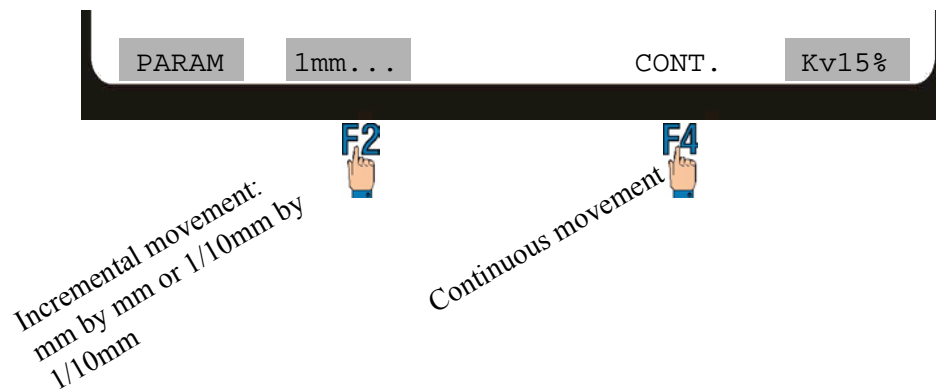
**IV - 1. 2. Changing the movement speed - Kv**

- Select:



- Then, change within the possible limits:

### IV - 1. 3. Changing the movement mode



## IV - 2. Manually controlling a pneumatic movement


### IV - 2. 1. Part grip and release

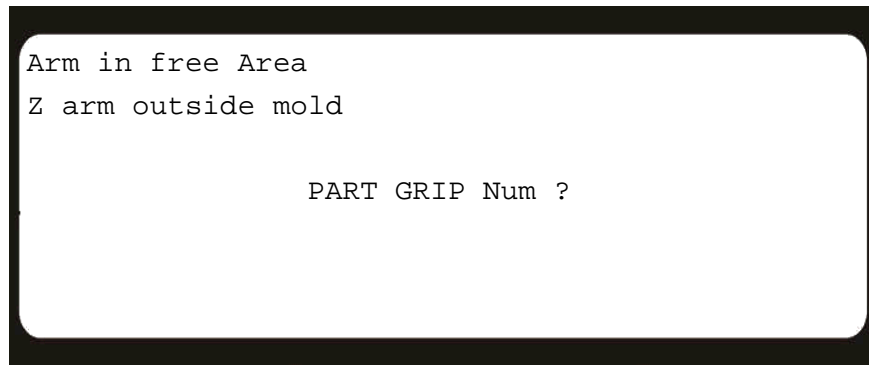


part grip command




part release command


- When you press one of these keys, the following screen appears (Example when  is pressed):



- Enter the part grip number from the numeric pad.
- The command is carried out immediately.

**IV - 2. 2. Rotations**

- Select , then the corresponding function key:



Arm in free Area  
Z arm outside mold



Rotation ... or [Esc]


F1 EOAT vertical  
F2 EOAT horizontal  
F3 Rotation 2 minus direction \*  
F4 Rotation 2 plus direction \*  
F5 Rotation 2 intermediate \*


\* : options

**IV - 3. Enabling a manual movement of the IMM**

**Note:** The movement order is given from the IMM. The IMM must be in manual mode.


  Enable mold opening and closing

 Enable ejectors back and forward. Then select the corresponding function key.


 Enable core movements to positions 1 and 2. Then select the corresponding function key.

#### **IV - 4.Manually controlling an output**

It is only possible to control the outputs associated with the OUT-Aux ancillary outputs.

- Select  then the OUT-Aux number:
  - If the output is at 1, it switches immediately to 0 and stays at 0.
  - If the output is at 0, it switches immediately to 1 and stays at 1 :
    - until the output is activated again
    - or, if it isn't zero, for the time entered in the associated time delay cycle parameter.

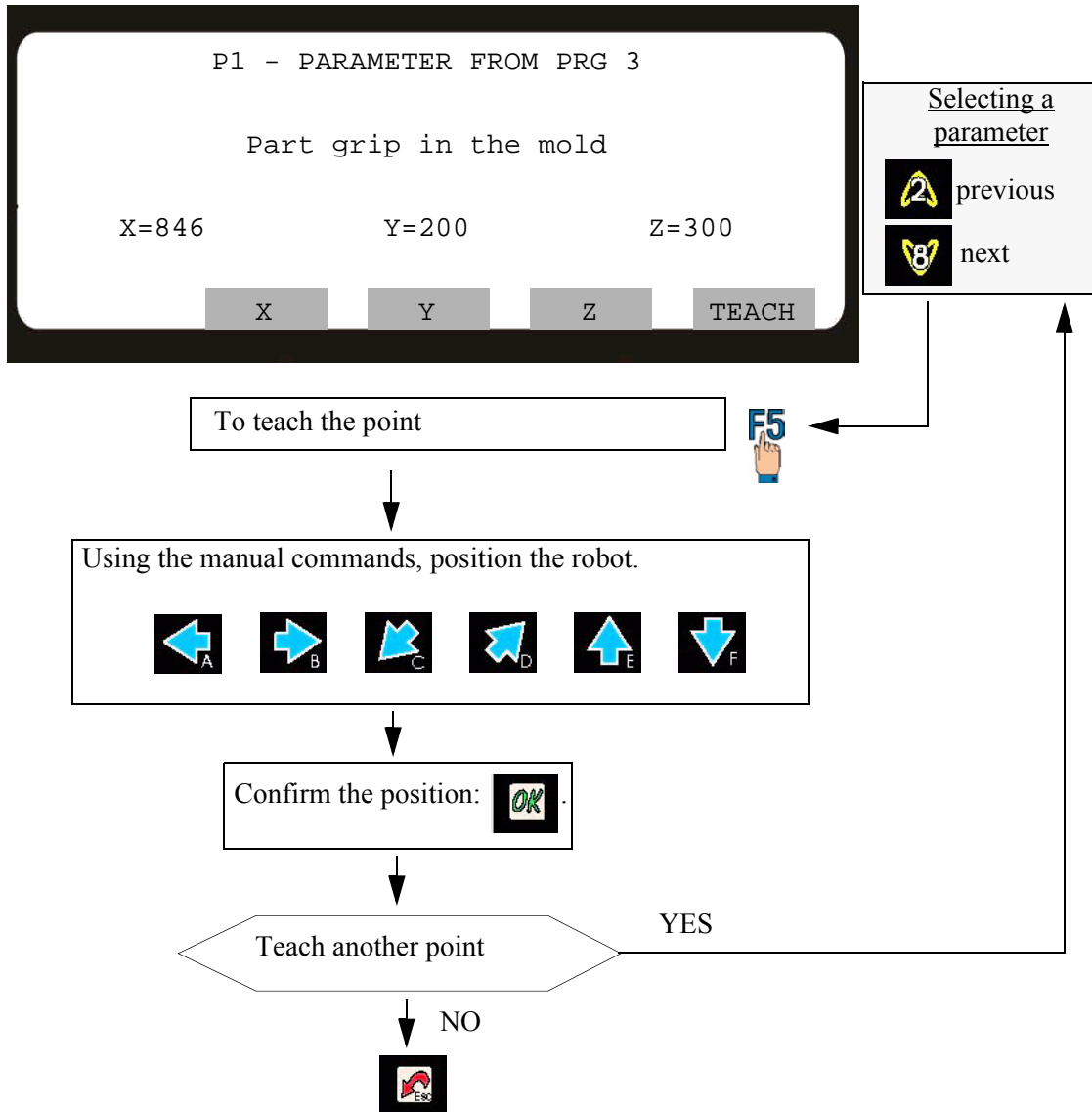
#### **IV - 5.Controlling the belt**

- Select  :
  - If the belt is functioning, it stops immediately.
  - If the belt is stopped, it starts immediately and continues moving:
    - until the key is pressing again
    - or, if it isn't zero, for the time entered in the associated time delay cycle parameter.



**IV - 6. Teaching the points in manual**

- Select PARAM, then POINTS. The following screen appears:

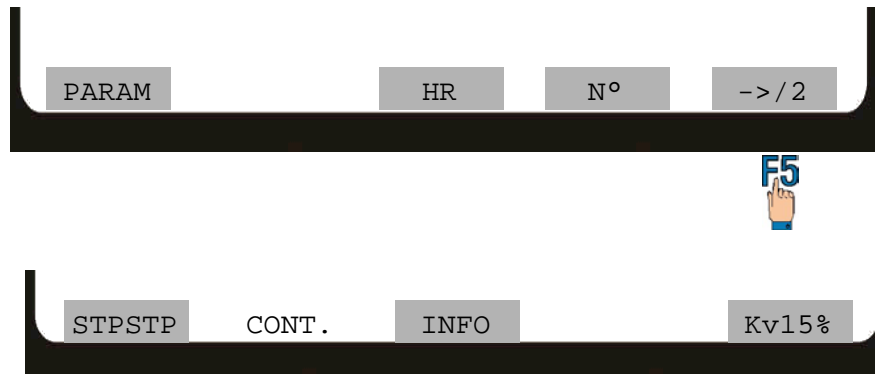


It is possible to carry out rotations and part grips, which makes it easier to teach the point.

## V - MOLD CHANGE - TEST MODE

### V - 1. Home page

All the procedures described in this chapter are done from one of the following screens :



### V - 2. Selecting a program



---

**Note:** This step can be done if the program for the new production exists. If it doesn't, skip to the chapter "Creating a program page 14".

---

The program can be selected from the pendant or be imposed by external encoding.

#### V - 2. 1. Selecting a program on the pendant

- Select N°:  .
- Select a program from the list.
- Confirm:  .
- If the IMM is in **manual** mode, the message Simulate part production ? appears. If you reply "yes", you can run the cycle without starting up the IMM. The presence of the part is still controlled. You may also need to manoeuvre the IMM's ejection system.

### V - 3. Creating a program

#### V - 3. 1. Introduction

---

**Note:** If the program for the new production exists, go directly to the chapter "Testing the program", page 18.

---

To create a program, you must use one of the following possibilities:

- Copying an EPS: create a program from an existing template.
- Programming: see the programming manual.



### V - 3. 2. Creating a program from an EPS

**How it works:** Copying programs present in the robot's memory, inspired by standard applications, called EPS. See the Description of the EPS in file G of the Instruction Manual.

The EPS are made up of cycle parameters. These allow you:


- to adapt the program for your application by teaching the key positions in the cycle (Point parameters: part grip, release, ... points).
- to optimize the cycle by adjusting the positions, speeds or time delays. See “Cycle optimization”, page 23..


#### Creating the program:


- Select N°:  , then EPS:  .
- Select an EPS corresponding to your application:

```
>EPS 1
EPS 2
EPS 3
v ^ Selection then [OK]
```

Selecting an EPS

 previous

 next


Then 


↓


- The system then asks for a program number. The first free number is proposed. You can however select another one if you wish.

```
Copy EPS 1 to PRG 6?
v ^ Selection then [OK]
```


Selecting the PRG N°

 previous

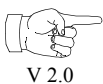
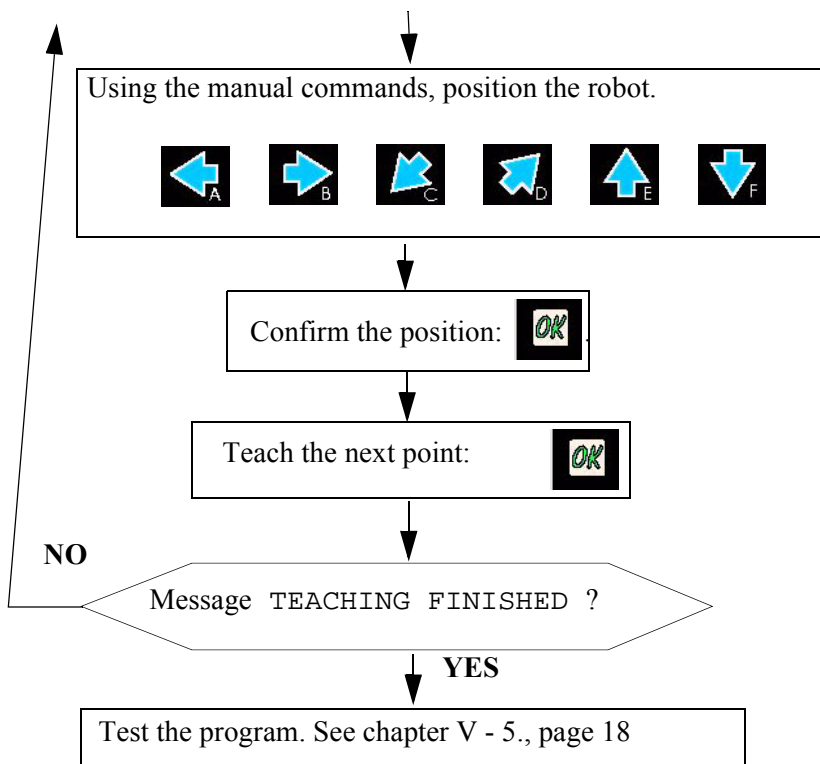
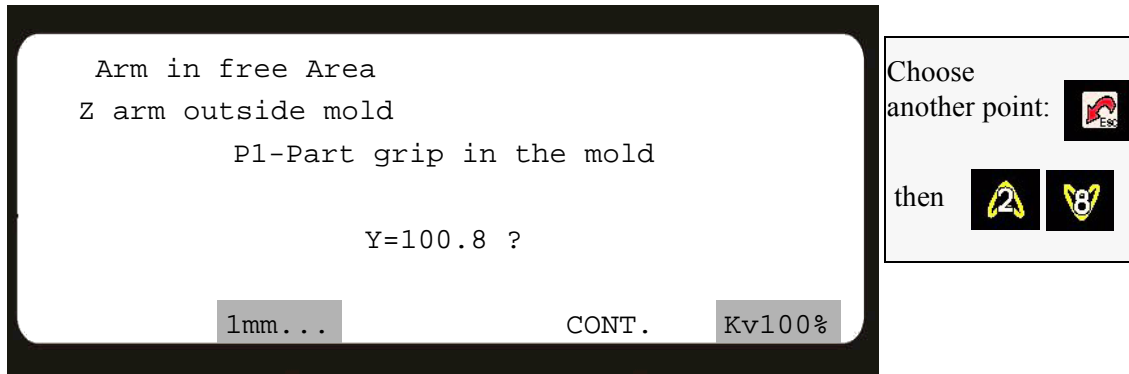
 next

Then 

↓

- Enter the program's name. This name then appears in the list of programs (see “Selecting a program”, page 14) and is therefore very practical for seeing which production the program corresponds to (reference of the part produced, mold number used, ...).
- Confirm with  .

- If the IMM is in **manual** mode, the message `Simulate part production ?` appears. If you reply "yes", you can run the cycle without starting the IMM. The presence of the part is still controlled. It may also be necessary to manoeuvre the IMM's ejection system.
- You must now carry out the Point parameters teaching phase. There are 2 possible solutions. The first one is automatically proposed:
  - **Teaching in manual**  
You are given the cycle points to be taught in order (P1, P2, P3, etc ...). You can however choose another order if you wish:






It is possible to carry out rotations and part grips, which makes it easier to teach the point.

- **Teaching in cycle**  
The points are taught as they appear in the cycle. When a destination is represented by a point to be taught, the cycle stops and asks you to teach the point. Once the point has been taught, the cycle continues. See "Teaching the points in cycle", page 17.

**V - 4. Teaching the points in cycle****V - 4. 1. Principle**

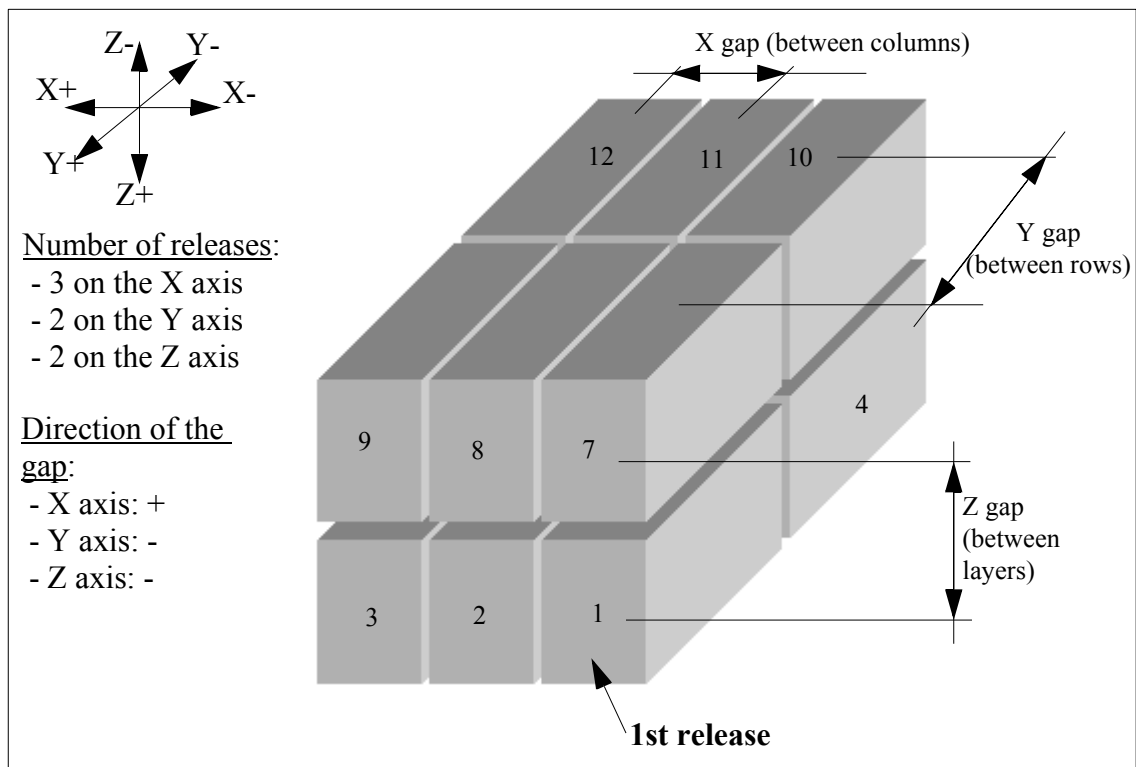
In a program, when a destination is defined as to be taught, the robot stops and the system asks the user to teach the destination. The robot must then be taken to the point desired, using the manual controls.

The Test mode must be selected:

1. Press  . The cycle starts.
2. When the cycle comes across a point to be taught, the robot stops. The number and the wording of the point to be taught are displayed.
3. Release  .
4. Take the robot to be point desired, using the manual controls. Once the point has been found, select  to confirm the position.
5. Start again from step 1 until the cycle has finished.

**V - 4. 2. Stacking sequence**


When the program contains a stacking sequence, you are asked to teach the first release point (if it is defined as to be taught). See "1st release" in the following example:



**Note:** It is possible to change the first release point and the gaps afterwards. See “Cycle optimization”, “Stacking and counters”, page 29.



## V - 5. Testing the program

You are advised to run the first cycle in **test** mode, even if it has already been run to teach the points.




The **test** mode is used to confirm that the cycle functions correctly. In this mode, the user can interrupt and restart the cycle at any time by pressing .

There are 2 types of test modes:

- **Continuous test mode.** The cycle is run without stopping. Procedure:

- Select CONT . : .
- Hold  down. If this key is released, the cycle stops. Press the key again to continue.

- **Step by step test mode.** The cycle is automatically interrupted each time you change step in the program. This mode is used when you wish to stop at a precise point. Procedure:

- Select STPSTP: .
- Hold  down until the Release START message appears.
- Release  then press it again to carry out the next step.

Movement speed:

In test mode, the movement speed is limited to  $Kv = 15\%$ .

INFO Function:




This function is identical to the automatic mode's one, described in Chapter VI - 3. ,page 22.

**To start production, see "Starting the robot and the IMM in automatic mode page 21".**

## V - 6. Home return

The Home Return is used to put the robot in a position so that the cycle can start. It must be used to free the robot following an incident that hinders the continuation of the cycle. There are 2 types of Home Return.

### V - 6. 1. Simple Home return

- Select HR:  .
- You are asked the following question: SIMPLE HOME RETURN ? . Confirm with  .
- Hold  down until you hear a beep and the SIMPLE Home Return finished message appears .




#### Notes:

The simple Home Return is **automatically selected** after the following operations: cabinet powered up, new program selected, robot moved in manual mode.


The simple Home Return is **automatically run** if there is a part grip fault in the mold.

### V - 6. 2. Total Home return

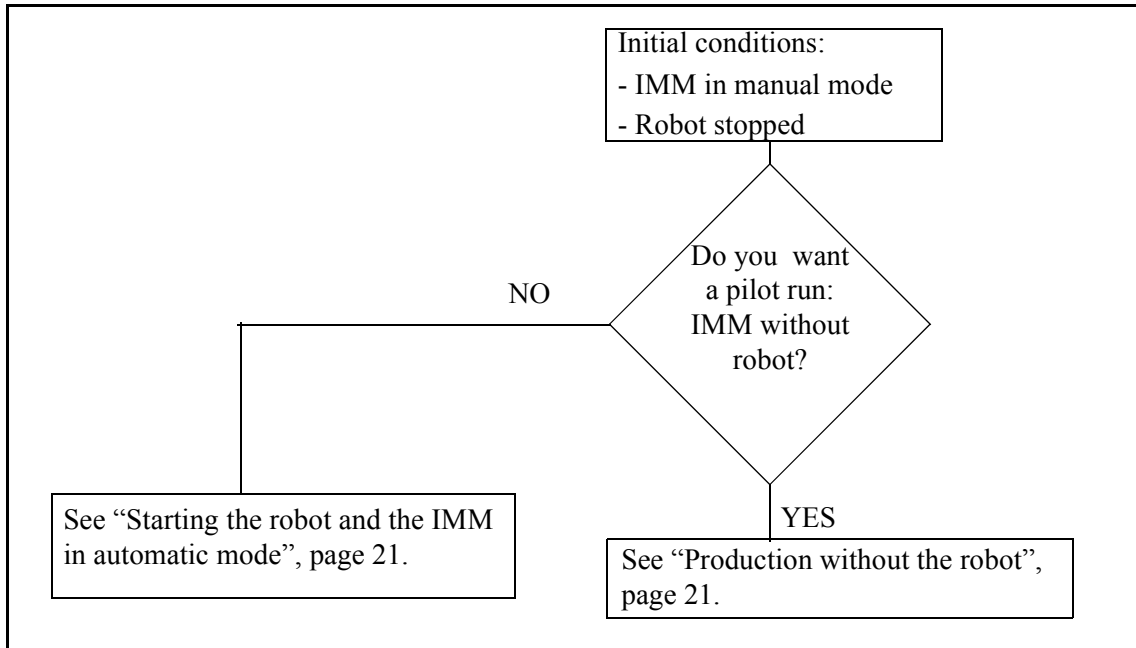
The special feature of the total Home Return is that it puts the system into a start of production situation. Once it has been run, you must remove the parts being stacked.

- Select HR:  .
- You are asked the following question: SIMPLE HOME RETURN ? .
- Select TOTAL:  .
- Hold  down until you hear a beep and the TOTAL home return finished message appears.

## VI - PRODUCTION - AUTOMATIC MODE

 Before starting a production run, the installation must be correctly set-up by trained personnel (see “Mold change - Test mode”, page 14).





### VI - 1. Starting production











## VI - 2. Operating and Stop modes

### VI - 2. 1. Starting the robot and the IMM in automatic mode



- Press  then .
- If a Home Return is necessary, it is selected automatically. Hold  down until you hear a beep and the SIMPLE Home Return finished message appears.
- Press  to start the robot cycle.
- Start the IMM in automatic mode.

### VI - 2. 2. Production without the robot


 The IMM settings may be different to work with or without a robot. This must be taken into account before switching modes.

- The robot is stopped outside the IMM.
  - Press  to enable the IMM to function on its own.
  - If the IMM is in automatic mode, you are asked to confirm.
  - Run the IMM without the robot.
  - To run the robot, press the  key again; the IMM stops at the end of its cycle.
  - Restart as described in VI - 2. 1.
- The IMM and the robot are operating in automatic mode:
  - Press  ; the robot stops at the end of its cycle.
  - You are asked to confirm that the IMM can function on its own; confirm this.
  - The IMM operates without the robot.
  - To restart the robot, press  again then .

### VI - 2. 3. Requesting an immediate stop

- If the robot is in automatic mode, pressing  stops the robot immediately.
- To restart the robot, press .


### VI - 2. 4. Requesting an end of cycle stop

- Select .
- The robot unloads the last part made and the mold stays open.

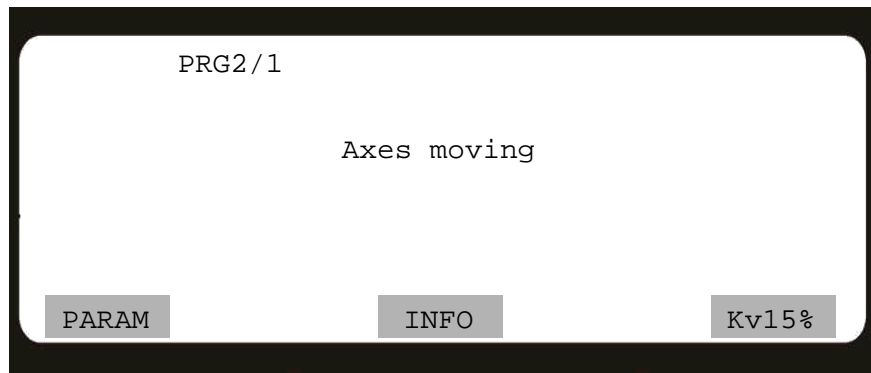
Press  to enable a new IMM cycle and restart the robot.

**VI - 2. 5. Quality sampling request**

**Note:** This function which is intended for quality sampling releases, is only valid if it has been integrated in the program.

- Select  .
- The robot runs a specific release cycle.

**VI - 3. Home page**



- PARAM: this function is identical to the one presented in test mode. See “Cycle optimization”, page 23.
- Kv15%: changing the KV, function identical to the one presented in manual mode. See “Changing the movement speed - Kv”, page 9.
- INFO: this function gives access to the following data:

TIMES	CNT	AXES	IMM	CYCLE
<b>F1</b>	<b>F2</b>	<b>F3</b>	<b>F4</b>	<b>F5</b>
Time data	Counter values	Data on the axes: positions, speeds (v), tracking error (d)	Status of the Robot/IMM interface,	Data on the program currently running

```

Cycle time: application n-1          33 s 25
Cycle time: application n-2          32 s 49
Robot time in machine                 0 s 52
Robot stopped time                    0 H 00 mn
Operation in Automatic:  2 H 12 Mn
Robot powered up.....: 15 H 23 Mn
    
```


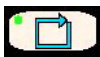

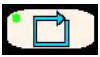


At the bottom of the screenshot are buttons for: TIMES, CNT, AXES, IMM, CYCLE.

## VII - CYCLE OPTIMIZATION

### VII - 1.Introduction


The cycle is optimized using the cycle parameters. The changes are only carried out in the cycle running. The changes are saved and therefore retained when you change program.

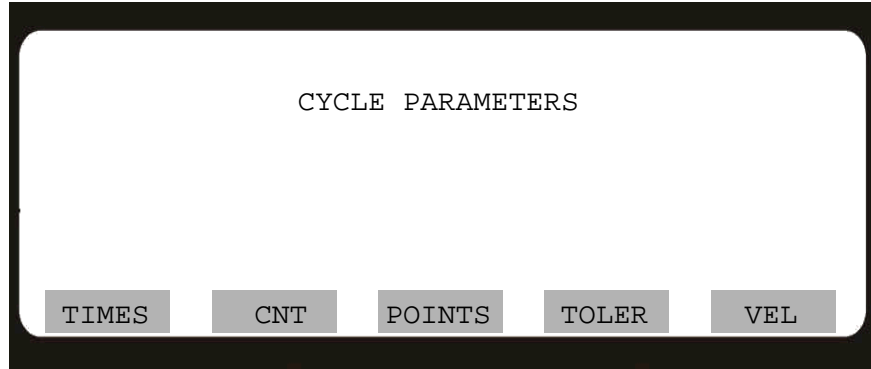
There are 5 types of cycle parameters:

Type of cycle parameter	Function	Use	Mode advised for optimization
Points	POINTS	For changing the destination of a numeric axis, either by entering a position from the keyboard, or by teaching it.	
Speeds	VEL	For changing the movement speed of the numeric axes.	
Time delays	TIMES	For changing the wait time between 2 actions or an output's activation time.	
Tolerances	TOLER	For changing the tolerance from which it is possible to order the following action even if the current movement hasn't finished. <u>Note:</u> The tolerance is only taken into account in automatic mode when speed $K_v \geq 80\%$ .	
Stacking and counters	CNT	For changing the gaps between releases or the value of the counters CNT.  For changing the stacking structure or the value of the stacking counters CNT-Stk.	 

**Note:** The procedure for changing these parameters is the same whatever mode is selected, apart from one particularity in manual mode: see "Teaching the points in manual", page 13.

### VII - 2.Changing the cycle's parameters

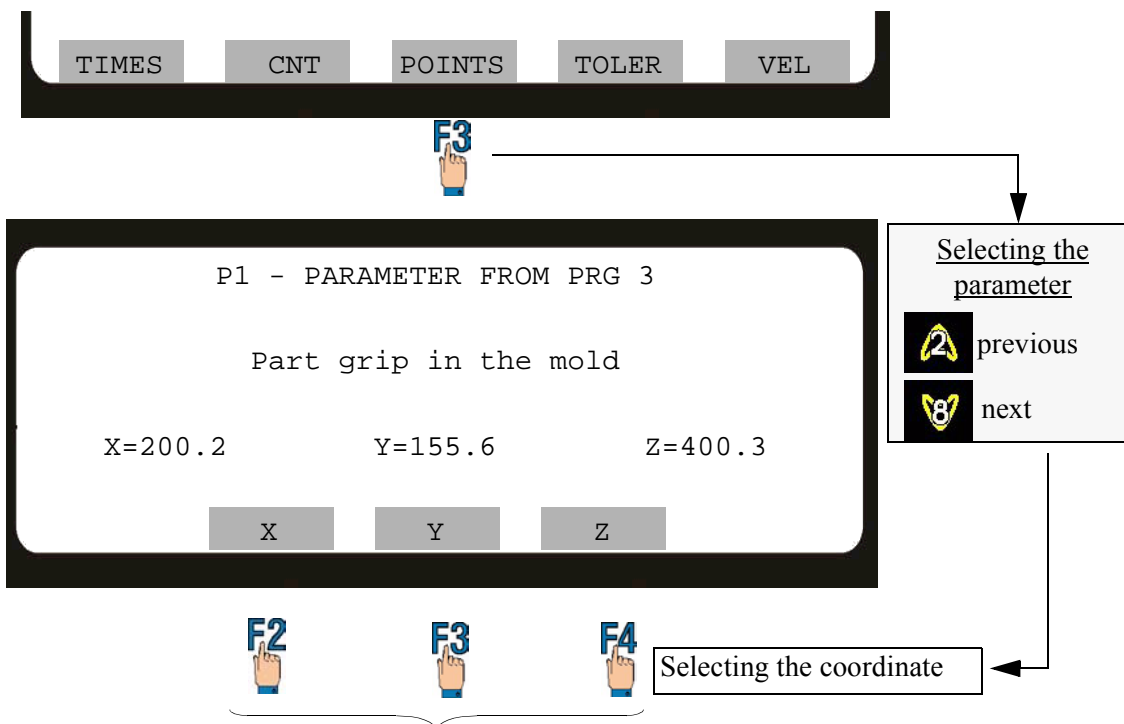
- Select PARAM:  . The following screen appears:



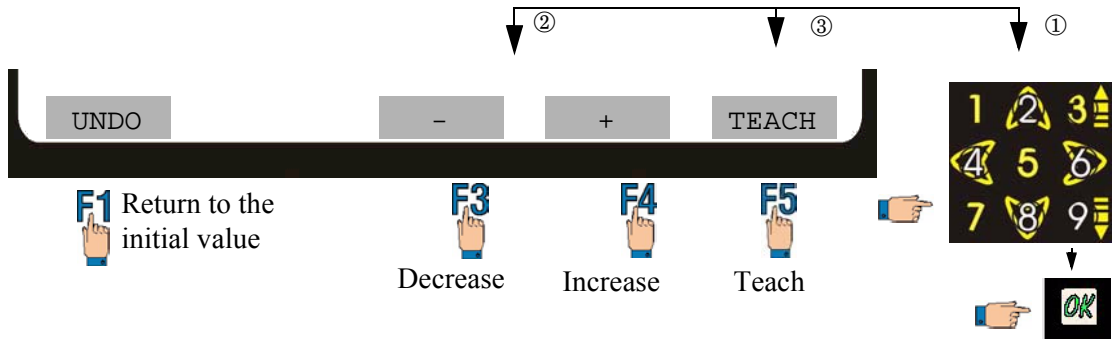
- The rest of the procedure is detailed below depending on the type of parameter selected.

**Note:** Only the types of parameters present in the program are displayed.

### VII - 3.Points



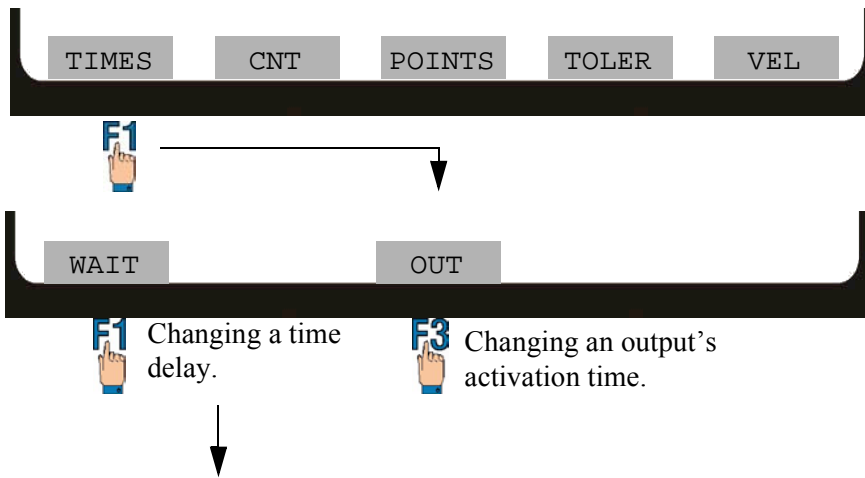
- Several possibilities are then offered:
  - You know what position to enter.  
Change the position:
    - ①: either using the numeric pad,
    - ②: or using the +/- functions.
  - You don't know what position to enter:
    - ③: assign TEACH to the coordinate. The teaching will be carried out when the cycle is next run.



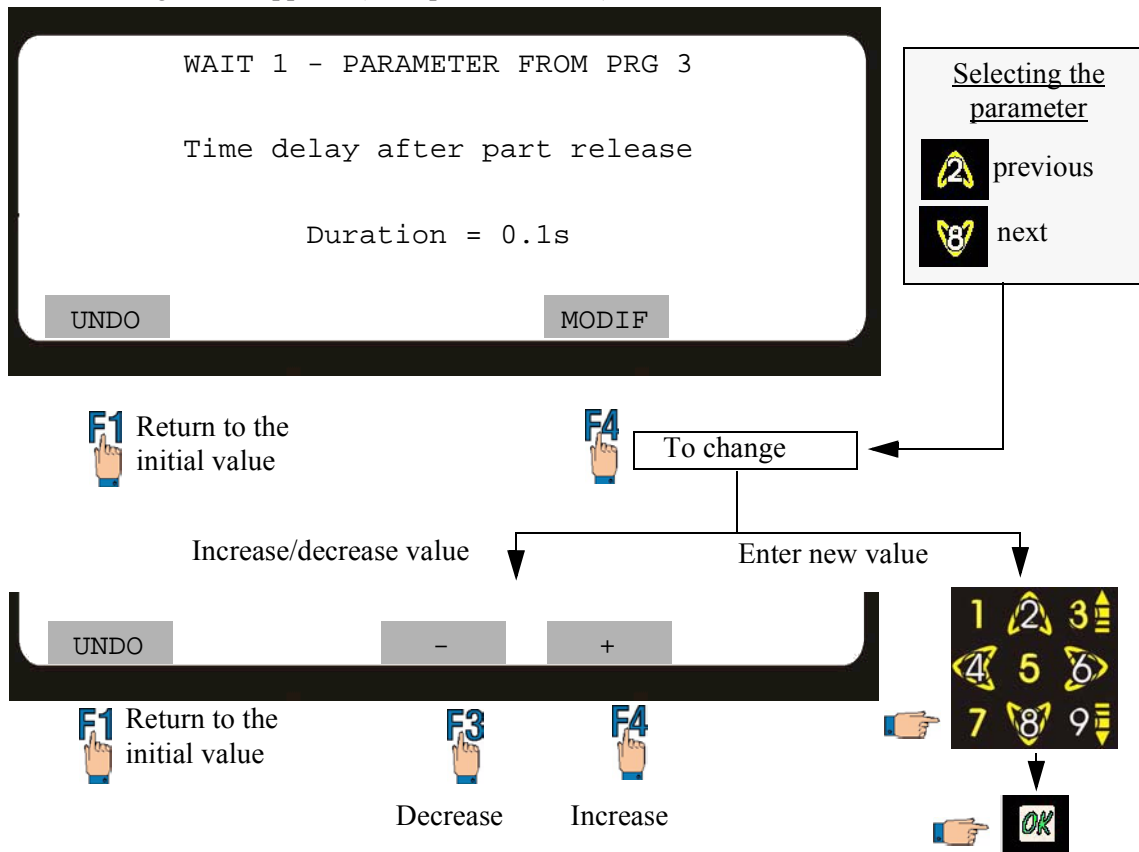
- Carry out the same operation for the other coordinates if you want to change them.

**Note:** For safety reasons, the changes are limited to  $\pm 10$  mm. For bigger changes, repeat the operation several times or choose TEACH.

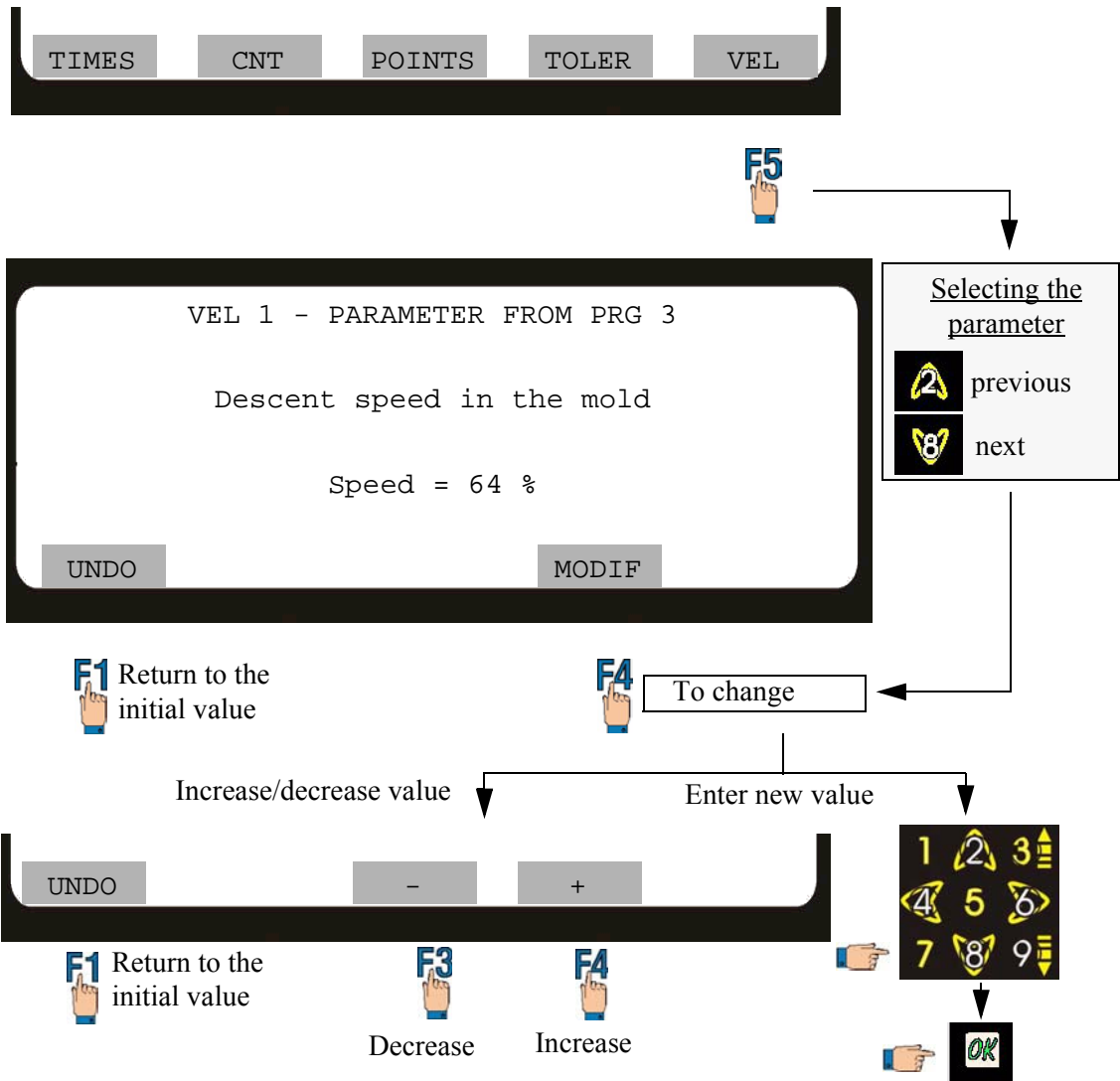
**VII - 4. Time delays**



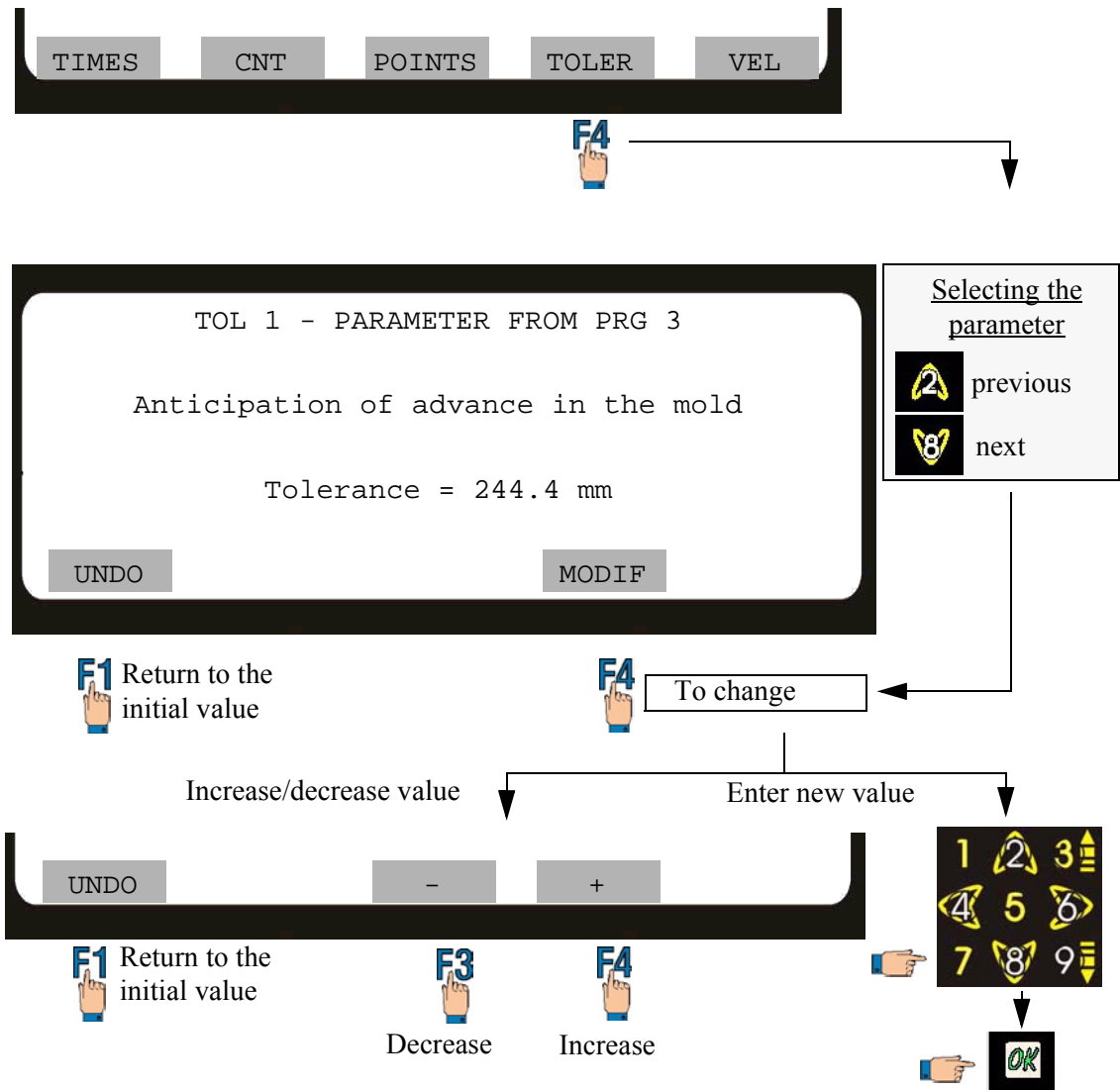
The following screen appears (example with WAIT):



**VII - 5.Speeds**



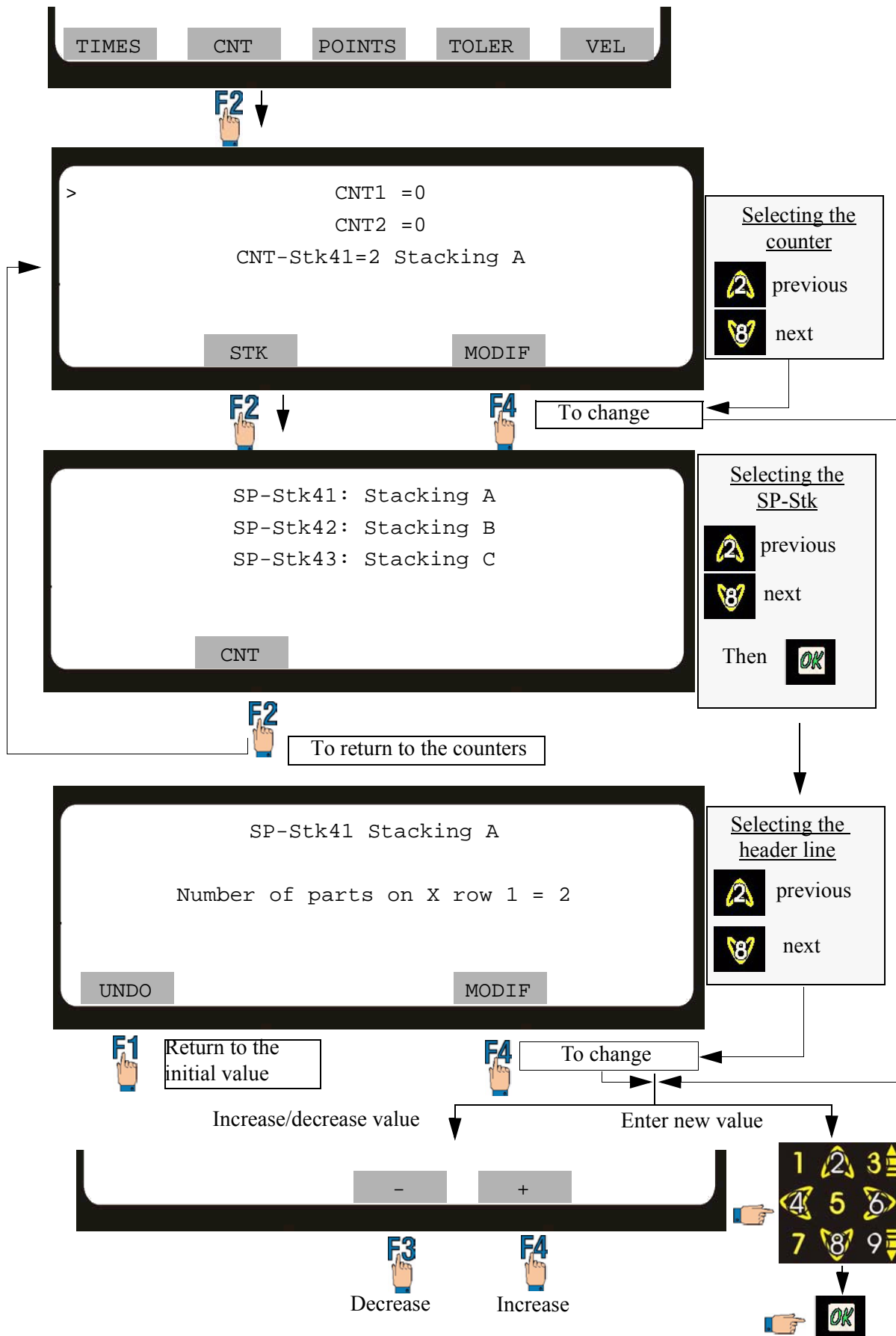
**VII - 6.Tolerances**



**Note:** For safety reasons, the changes are limited to  $\pm 50$  mm. For bigger changes, repeat the operation several times.



**VII - 7.Stacking and counters**





## VIII - TROUBLESHOOTING

### VIII - 1. Introduction

The purpose of this chapter is to help you with simple troubleshooting.

At all times, it is important to carefully read the message displayed on the pendant.

### VIII - 2. Cancelling a fault


- Read the fault message and write it down to analyze it later on.
- If necessary, select  to display help concerning the troubleshooting.
- Apply the solution(s) offered.
- Press  to cancel the fault.

If the fault doesn't disappear, continue the troubleshooting procedure. Use the pneumatic and electric drawings (files O and Q in the customer file).

If the current cycle cannot be continued, run a Home Return. See "Home return", page 19.

### VIII - 3. Standard messages

NO POWER


This message appears when the KM1 power relay is not engaged (in particular, when you power up). Press  to power up again once you have solved the problem (cause may be marked in additional message):

- IMM Emergency Stop
- Peripheral Emergency Stop pressed in
- Robot Cabinet Emergency Stop
- Safeguard open Emergency Stop
- Enabling device released.

Arm position not compatible

Use the manual mode to position the robot in an authorized zone. See "The work zones", page 2.

WAITING FOR DATA :




The program is waiting for information to move on to the next step. The missing information is indicated by the rest of the message. The program will only continue once the information has been received and  has been pressed.

**VIII - 4. Difficulties related to the part grip****VIII - 4. 1. Causes and actions**

<b>The robot "waits for the part" and therefore wastes time</b>	
<b>Possible causes</b>	<b>Actions</b>
The Enable ejectors forward signal is given too late by the robot.	Change the program: Programming mode (must be done by trained personnel).
The ejectors forward movement is too slow.	Increase the ejection speed.
<b>The robot doesn't grip the part, PART GRIP FAULT \$ message:</b>	
<b>Possible causes</b>	<b>Actions</b>
The part grip point is not correct.	See "Cycle optimization", page 23.
The parts falls or is displaced before the EOAT is in position.	Check that the robot speed is at 100%. Increase the tolerance used to anticipate Y forward. See "Cycle optimization", page 23. Reduce the ejection speed.
The part presence control is not correctly set.	The message gives the No. of the faulty part grip. See "Settings", page 32.
The EOAT is badly set or in bad condition (suction cup ...).	Adjust the EOAT or replace the damaged suction cup.
The part is not complete.	Adjust the IMM.
<b>Part lost during Y back, WAITING FOR DATA: message:</b>	
<b>Possible causes</b>	<b>Actions</b>
The ejection stroke is not sufficient to free the part.	Increase the ejection stroke. Change the part grip point or the mold opening stroke accordingly.
An effort or particular movement is necessary to free the part.	Intervention needed on the mold. A specific cycle or EOAT is necessary.
<b>Part lost during Z up, PART LOST IN MOLD message:</b>	
<b>Possible causes</b>	<b>Actions</b>
The part catches onto the ejectors during the up movement.	Control that the ejectors are back before the up movement. Change the program (programming mode /must be done by trained personnel).

### VIII - 4. 2. Starting again after a fault

To start again after a part grip fault and free the robot automatically:

- Press  .
- You are asked if you want to take the parts again.
  - Select  : the robot moves down again into the IMM.
  - Select  : a new IMM cycle is enabled.

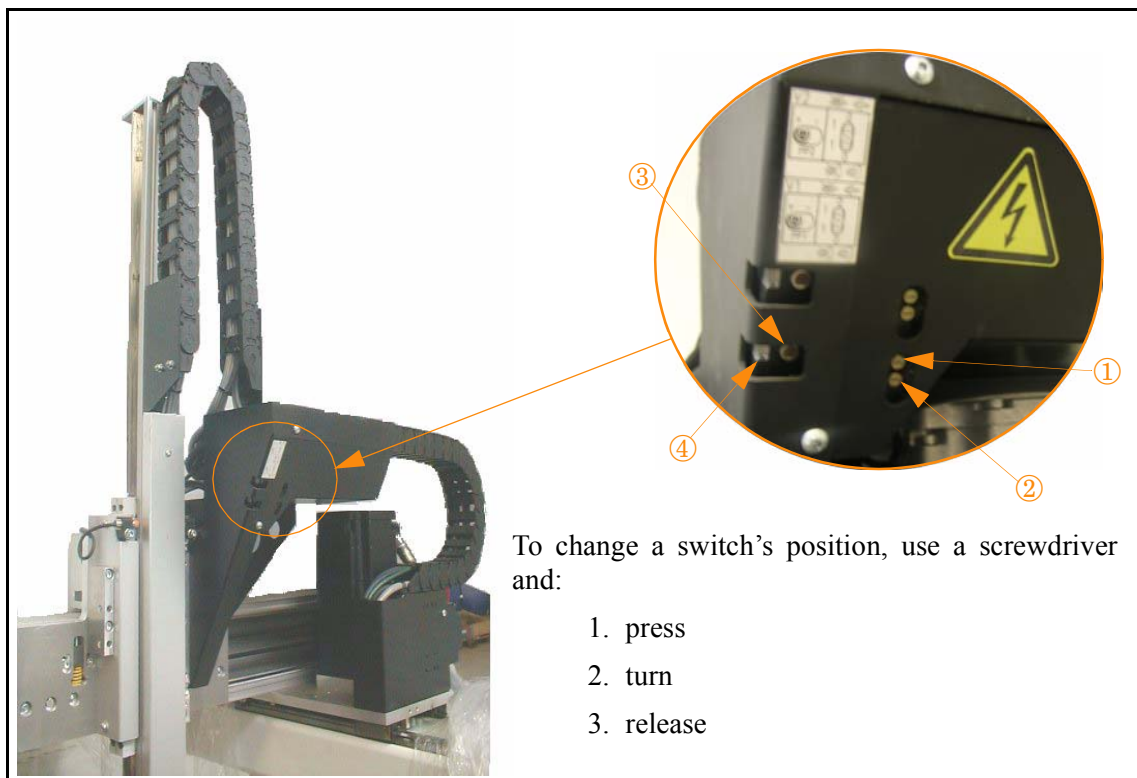
### VIII - 4. 3. Settings

#### EOAT with suction cups:

When the selector ① is in position 1, the air is directed onto a Venturi meter that the suction cups are connected to. When the selector ② is in position 1, occasional blast pressures are sent into the suction cups when the "part release" command is given, which makes the release easier. The vacuum sensor signals that a part is present via the signal light ④. The detection threshold is adjusted using the screw ③, in order to differentiate between a correct and an incorrect part grip (use the screwdriver provided).

#### EOAT with mechanical grippers:

The selector ① must be positioned at 0 so that the Venturi meter doesn't consume any air. The detection threshold must be adjusted according to the system used. In most cases, you just need to adjust the position of a sensor.



**VIII - 5. IMM - robot dialogue**

In automatic or test mode, two messages give information on the IMM-robot exchanges:

IMM cycle enabled :

- the robot enables the IMM cycle.

Await end of machine cycle :

- the robot waits for the IMM to open before taking the parts.

The IMM data page (See chapter VI - 3., page 22) shows the status (0 or 1) of the data exchanged by the IMM and the robot.












## VIII - 6. Initializing the axes

Whenever it is necessary to initialize, it is not possible to run a cycle and a message is displayed:

AXI (e) S NOT INITIALIZED



Make sure that there are no obstacles in the robot's path.

- Press  to power up again.
- Select the manual mode .
- You can then choose the type of initialization:
  - **Automatic initialization:**
    - The robot must be on BHM.
    - Select INIT: .
    - Select . The automatic initialization starts. You can quit it whenever you want by pressing any key.
    - When all the axes are initialized, the buzzer rings and test mode is selected.
  - **Manual initialization:**
    - The robot's arm must be in the Arm Up zone. If it is not:
      - Place the arm in the Arm Up zone
      - Select INIT: .
    - Initialize the X axis: Select  or  (held down) until the axis stops and the Not Init message is replaced by a numeric value. The buzzer rings.
    - Initialize the Y axis: Select  or  (held down) until the axis stops and the Not Init message is replaced by a numeric value. The buzzer rings.
    - Initialize the Z axis: Select  or  (held down) until the axis stops and the Not Init message is replaced by a numeric value and the arm moves up into the Arm Up zone. The buzzer rings.
    - When all the axes have been initialized, test mode is selected.

---

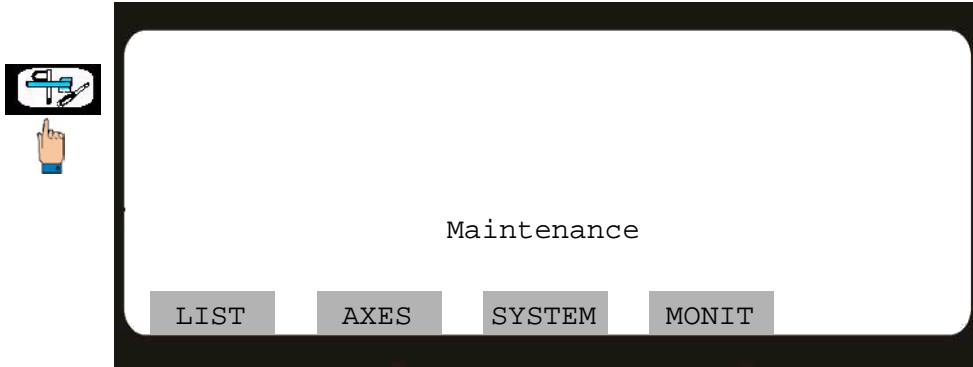
**Note:** When initializing, the user doesn't need to choose in which direction the axis moves; the system chooses by itself. This is why you may get a movement in the reverse direction when you press a movement key.

---

## IX - MAINTENANCE FUNCTION

### IX - 1.Home page:

All the procedures described in this chapter are done from the following screen:



### IX - 2.Fault log book



- LIST : To display the last faults with the date and time they appeared.



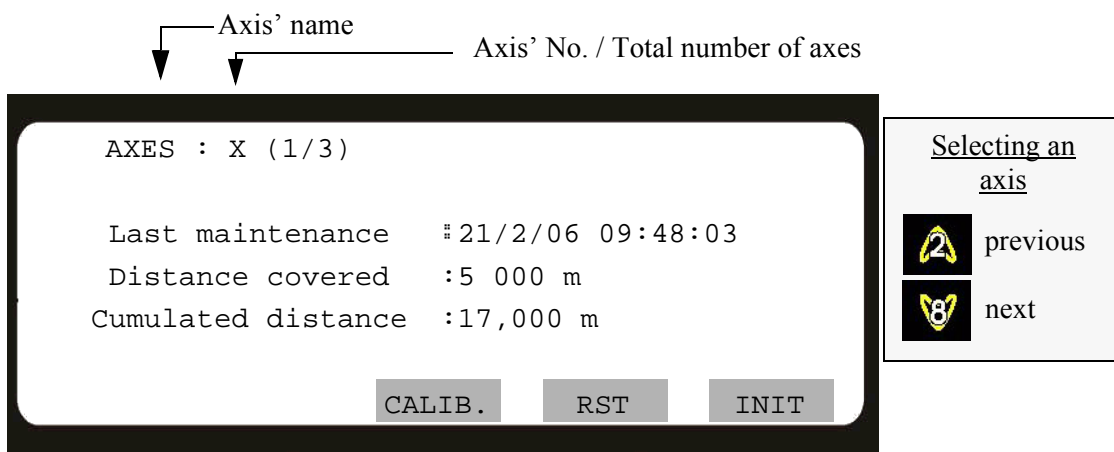
- RST : To delete the log book

### IX - 3.Axes' maintenance



- AXES :

Axis' name      Axis' No. / Total number of axes



AXES : X (1/3)

Last maintenance : 21/2/06 09:48:03

Distance covered : 5 000 m

Cumulated distance : 17,000 m

CALIB.    RST    INIT

Selecting an axis

2 previous

8 next

Last maintenance : date and time at which the last maintenance was carried out, or date and time at which the distance covered was reset to zero by RST.

Distance covered : Distance covered by the axis since its last maintenance.

Cumulated distance : Distance covered by the axis since the robot's first commissioning.



- CALIB. : to calibrate the axis. This specific function is used to assign a numeric position to the axis that is coherent with its physical position. How to use this function is described in the Maintenance manual. It must be done by qualified personnel.



- RST: To be used when carrying out maintenance on the axis.  
- Enters the current date and time in Last maintenance.  
- Sets the Distance covered value to 0.




- INIT : This function enables you to initialize the axes again, without having to power the cabinet down.

V 2.0

Initialize the axis again ...

Select the axis


X Y Z

Select the axes to be initialized again and confirm with .

The "axes initialization" function is then automatically proposed. See "Initializing the axes", page 34.



**IX - 4.System configuration**

 - SYSTEM :

Robot's serial number	: 17123
CPU software version	: 2.00
CPU boot version	: 2.1
Pendant software version	: V0.2

MODIF
LANG
DATE/H
OPTION


Selecting an axis


2


previous


8

next

 - MODIF : to change the robot's serial number.

 - LANG : to display messages in another language.

 - DATE/H : to change the current date and time.

 - OPTION : list of the options installed.

**IX - 5.Monitor**

**F4** - MONIT : to display the robot/IMM interface and shows the status of each data item exchanged :

Page No. / Total number of pages

IMM INFO (1/5)

>0 Enable IMM cycle


0 Mold open


0 Mold closed

0 Bad part

ROBOT TYPE

Scrolling through the data

 previous

 next

**F5** - TYPE : to change the type of the selected variable.

**F1** - ROBOT : to read / change the robot variables:

Selected variable

Status of the selected variable

Status of the 7 following variables

ROBOT INFO (1/3)


> OUT-Aux 1 = 0\_010 0000


IN-Aux 3 = 0\_001 0000


BIT-Aux 3 = 0\_001 0000


BIT-Usr 15 = 1\_000 0000

IMM NUMBER SET RST TYPE

 Previous line

 Next line

 Previous variable

 Next variable

**F1** - IMM : to display the robot/IMM interface.

**F2** - NUMBER : to change the number of the selected variable.

**F3** - SET : to position the selected variable at 1 (OUT-Aux, BIT-Aux and BIT-Usr only).

**F4** - RST : to position the selected variable at 0 (OUT-Aux, BIT-Aux and BIT-Usr only).

**F5** - TYPE : to change the type of the selected variable.

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