

# INSTRUCTIONS

## CP-40 EXTERNAL



*A Valco Cincinnati Company*

Polígono Industrial Agustinos, calle G, nave D-34  
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31160 ORCOYEN (Navarra) ESPAÑA



# Declaration of conformity

The product: \_\_\_\_\_  
Model no.: \_\_\_\_\_  
Serial no.: \_\_\_\_\_  
Year of manufacture: \_\_\_\_\_

Described in the enclosed documentation is in conformity with:

- Directive 98/37/EC of 22 June 1998 relating to the *approximation of the laws of the Member States relating to machinery*, combining in a single text Directives 89/392/EEC of 14 June 1989, 91/368/EEC of 20 June 1991, 93/44/EEC of June 14, 1993 and 93/68/EEC of 22 July 1993.
- Directive 73/23/EEC of 19 February 1973 relating to electric equipment.
- Directive 89/336/EEC of 3 May 1989 relating to electromagnetic compatibility.
- Directive 93/68/EEC of 22 July 1993, amending Directive 73/23/EEC, and Directive 89/336/EEC.

within the scope of the specifications indicated in the chapter describing the equipment with a B1 risk level. Since it is intended to form part of a set of machines which, to obtain a result, are arranged and connected to perform together, it cannot be operated until the set of machines has been declared in conformity with the applicable Directives by the person responsible for the final assembly.

Orcoyen, on : \_\_\_\_\_

Signed.: \_\_\_\_\_

Gonzalo Marco, Managing Director



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31160 ORCOYEN (Navarra) SPAIN



## IMPORTANT!



THIS INSTRUCTION MANUAL SHOULD BE KEPT IN A PLACE ACCESSIBLE TO AND KNOWN BY ALL OPERATORS AND MAINTENANCE PERSONNEL.

BEFORE STARTING UP THE MACHINE, PLEASE READ ALL THE INSTRUCTIONS CAREFULLY AND STRICTLY FOLLOW ALL INDICATIONS.

FOR PROPER USE AND HANDLING OF THE EQUIPMENT IT IS NECESSARY TO CARRY OUT THE SAFETY INSTRUCTIONS GIVEN IN THIS MANUAL.

**WARNING:**

**If you alter the function, performance or safety aspects of the machine, replacing original parts with other similar but not identical components (substantial alterations), without the authorisation of MELTON and as specified in Directive 89/392/EEC, you will be classified as a manufacturer and therefore become liable for the alterations made.**

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# CHAPTER 1 SAFETY INSTRUCTIONS

## 1.1. SYMBOLS AND TERMS:



Miscellaneous prohibitions



European Community markings



Precaution: electric current



Note of special interest



Miscellaneous precautions

### Qualified personnel:

This is personnel (technical staff) who has acquired sufficient know-how in a specific field, either through training or from experience.

This personnel must be familiar with safety and accident prevention standards, and have general knowledge of the technical aspects of the machine.

## 1.2. PURPOSE:



This unit has been manufactured according to current safety standards.

This unit has been designed for the purpose described in chapter 2 of this manual, Description.

To use the machine correctly, follow the instructions provided in the Operating Manual, particularly:

- The machine should only be installed and used by qualified personnel, previously familiarised with the operating instructions (contacting the manufacturer whenever necessary) and the risks involved, the safety measures required, including adjustment and maintenance, and expressly forbidden operations.
- This unit has not been manufactured to operate in hazardous, explosive and/or flammable atmospheres
- Repairs should be performed by personnel with basic knowledge of the machine and of electricity that will allow them to carry out their tasks properly.
- Make sure that the equipment is properly grounded.





## CHAPTER 2 DESCRIPTION

### 2.1. INTRODUCTION:



The CP40 model is a pattern control device with 4 channels and a working speed of up to 240 m/min (800 ft/min).

The control may work on timer mode on time basis or on encoder mode with a recommended resolution of 1 pulse per millimetre.

To ensure the optimum functioning, the ENCODER must be installed in such a way that, when this one gives a whole turn, the displacement in millimetres of the line which we are working on is the same to the resolution of the installed ENCODER.

The CP40 is equipped with 2 inputs for PNP photocells or any other sensor of application start. These inputs will give the star signal of the 4 channels.

The calculation system for variable speed applications includes inertia compensation for the opening and closing of the guns following two programmable parameters.

The programming allow 4 application lines between 0 and 5000 ms/mm with a gap of 0 to 5000 ms/mm from the input signal.

The control has 24 pattern formats for their use in different configurations.

It also offers the options of cycle application and stitch mode.

In variable speed applications, the control has a 0-10 v analogical output that can be adjusted to the line speed following a Ratio.

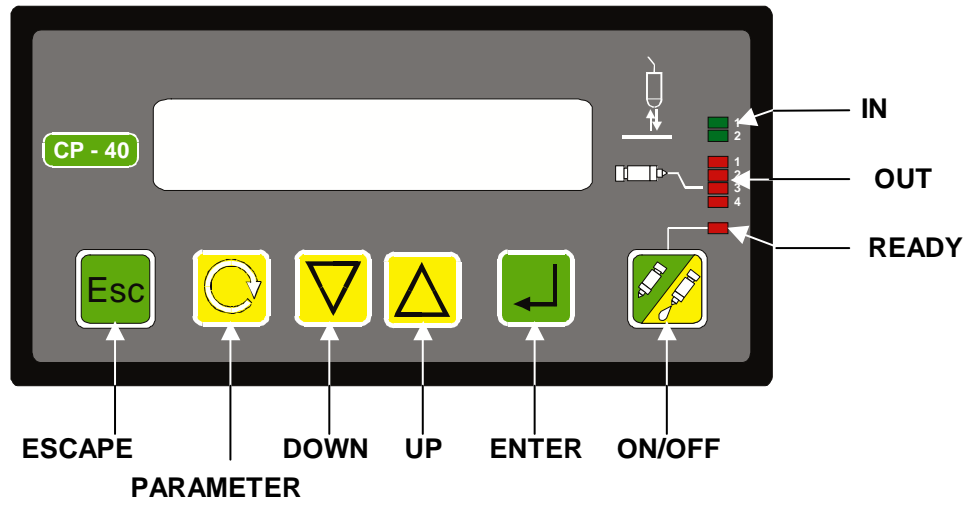
Other characteristics offered by this system are:

- Cycle counter.
- External permission input
- External permission output
- Line noise filter programmable
- Language selection
- Manual value test system
- Led Indication of in/out signals

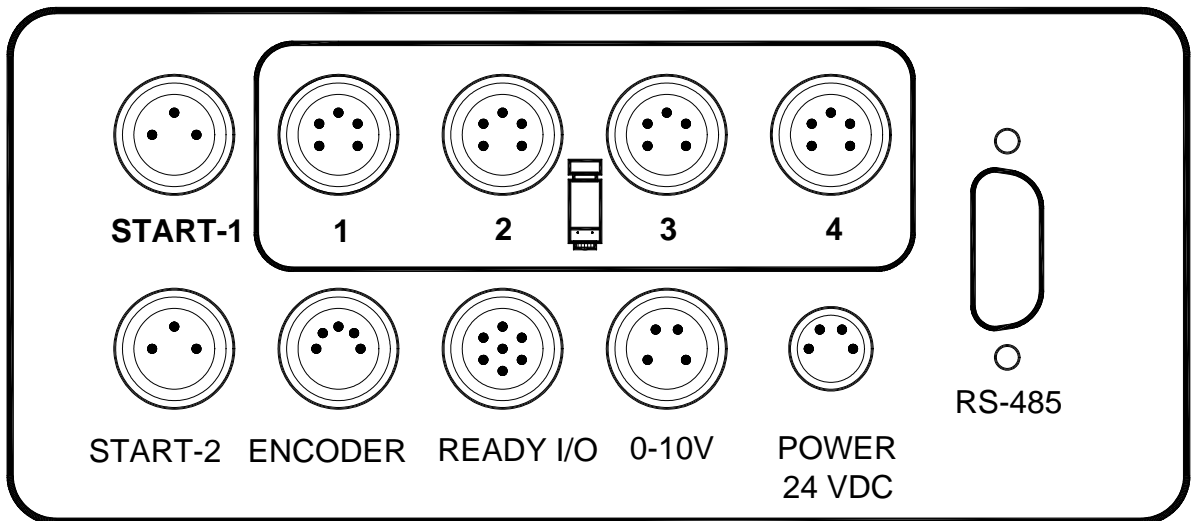
### Specifications:

|                     |  |
|---------------------|--|
| Power supply:       | 24 VDC   |
| Output signal:      | 24VDC up to 25,5W per channel.   |
| Photocells:         | PNP photocell at 15V   |
| Encoder:            | 500 ppr at 15V, with a ratio with the movement of the line of 500mm/turn |
| Proportional valve: | Power supply 24VDC control signal 0-10VDC                                |
| Permission signals: | Input signal: NO at 24VDC<br>Output signal NO voltage free contact.      |
| Max line speed:     | 240m/min (800ft/min)   |

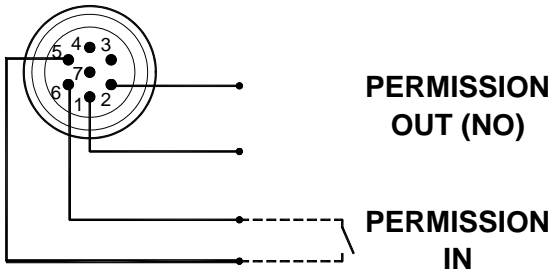
**Display:**



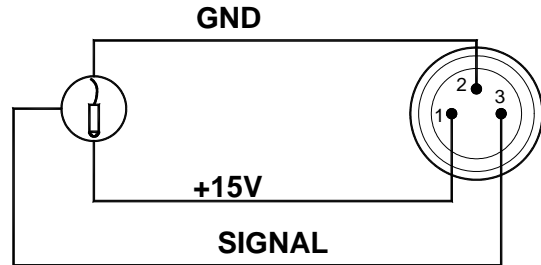
**Connections:**



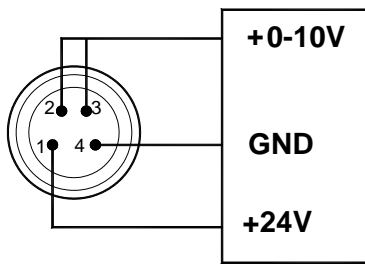
### READY I/O



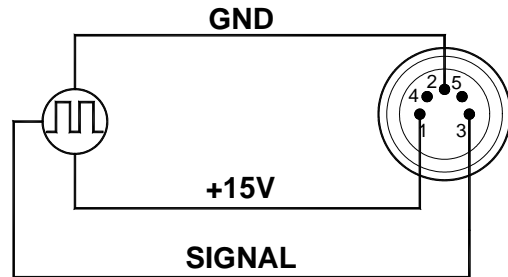
### START 1-2 (PHOTOCELL 1-2)



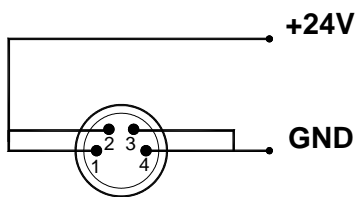
### 0-10V



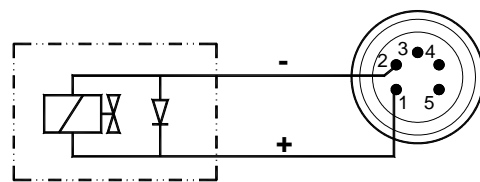
### ENCODER



### POWER 24 VDC



### 1-2-3-4 (SOLENOID VALVE 1,2,3,4)



## CHAPTER 3 MACHINE INSTALLATION

### 3.1. INTRODUCTION:



This chapter explains how to install the machine correctly.

**WARNING:** The operations described in this chapter should be performed by qualified personnel, following safety instructions.

### 3.2. POWER SUPPLY CONNECTION:



The CP-40 model has a power supply of 24 VDC.

### 3.3. CONNECTING THE SOLENOID VALVES:

The CP-40 model allows for the possibility of connecting four solenoid valves with a pluggable connector per output.

The solenoid valves are connected to the CP-40 using pluggable connectors. Each output (solenoid valve) supports up to 25.5W.

### 3.4. CONNECTING THE PHOTOCELL:

The CP-40 model has two input from the optoisolated PNP type shot photocell or sensor with a power supply of 24 VDC.

The photocell is connected to the CP-40 using pluggable connectors.

### 3.5. CONNECTING THE EXTERNAL PERMISSION:

The CP-40 model has an external permission input

The gluing equipment sends a permission signal to the CP-40 as soon as the programmed temperature has been reached.

The CP-40 sends a permission signal to the gluing equipment as soon as the CP-40 is ON.

### 3.6. CONNECTING THE ENCODER:

The CP-40 model has an input from an encoder with a ratio with the movement of the line of 500mm/turn.

## CHAPTER 4 MACHINE ADJUSTMENTS

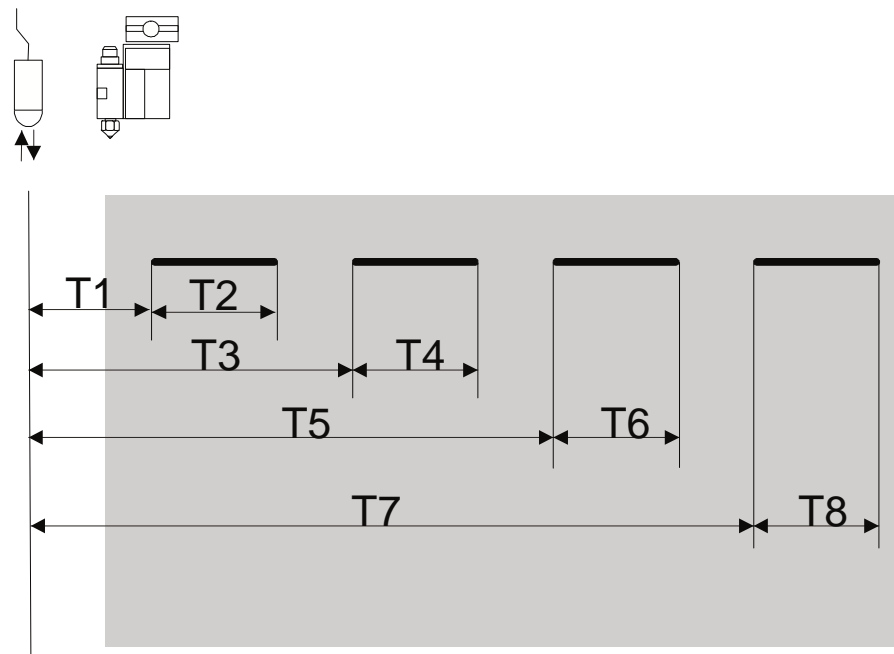
### 4.1. INTRODUCTION:

The following adjustments should be made before the machine is switched on or while it is operating. They will ensure that the machine works properly and safely.

### 4.2. SHOT CONTROL:

#### 4.2.1. Introduction:

Pattern diagram for each channel:



**Note:**

*The values of the spaces (L1 – L7) should always be longer than the end of the previous bead i.e.: L5 should be longer than L3 + L4..*

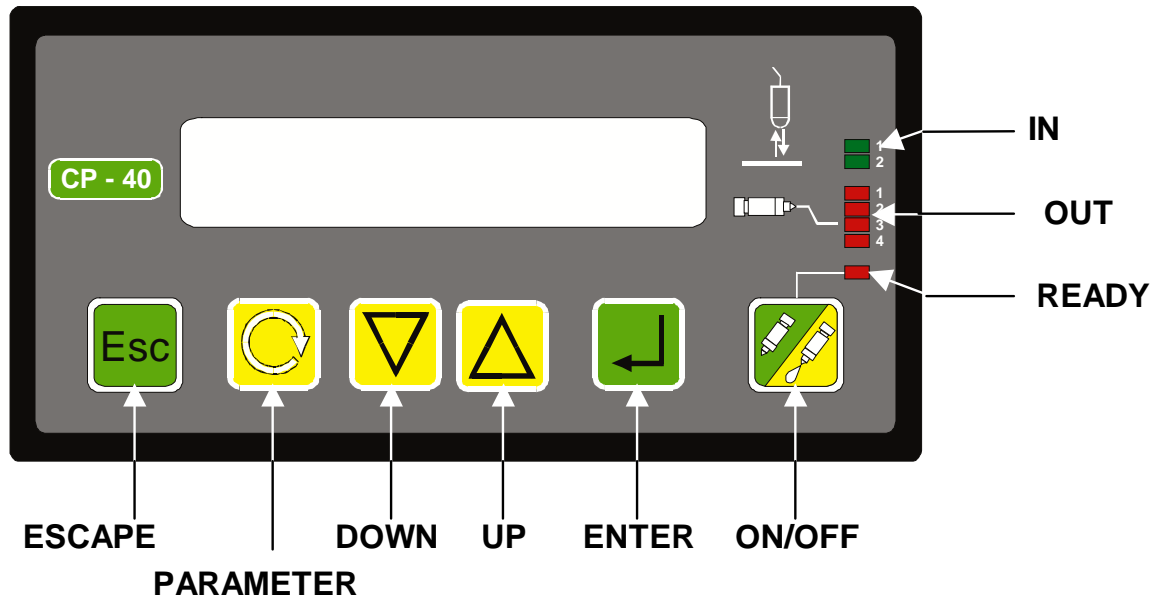


*In case of a wrong programming the control will add the following line to the previous one.*

*i.e.: If L5 is programmed shorter than L3 + L4 the control will take automatically a value of L3 + L4 obtaining a space of L3 and a bead of L4 + L5.*

*When 0 is assigned to a value, this remains deactivated*

#### 4.2.2. Description of the CP-40 control panel:



#### Keyboard:

The CP- 40A has six control keys that allow access to the programming menus and general operating functions:



KEY ESCAPE: Exit the menu.



KEY PARAMETER:



KEY UP: This key is used to change the format number and parameter and time values.



KEY DOWN: The same as key UP but in ascending order.



KEY ENTER: The ENTER key is used to validate the data modified in the programming modes. In operating mode, it is not operative.

***To validate a programming value, the ENTER key must be held down until the display blinks (approx. 0.5 s), which is when the value will be recorded in the non volatile memory.***

***If the ENTER key is not held long enough, the value is not recorded and the previous one remains valid. This prevents accidental changes in programming.***





KEY ON/OFF: This key is used to test the solenoid valves.

**LEDs :**



IN: Indicates photocells activation.





OUT: Indicates solenoid valves activation.


READY: Indicates test valves.

### 4.3. GENERAL PARAMETERS CP-40:

#### System Programming Menus:

For choosing the working menu, press the key . When the wanted menu is displayed press .

Once the wanted menu is entered, use key  for moving among the parameters and   to change the value of the parameter. Press  to validate the new value.

Press  to exit the menu.

The available menus are:

- Job data
- Format data
- Test Valves
- Reset counter
- Configuration

#### 4.3.1 Job data Menu:

This menu displays the active format, the number of cycles made since the last reset and the line speed in m/min.

**Format: XX No. XXXXXX**

**Speed: XXX m/min.**

**Format: XX No. XXXXXX**

**Timer = 60 m/min.**

#### 4.3.2 Format data menu:

When entered it displays the following parameters:

### Format number:

The display will show:

**\* Format data \***  
**Num: xx**

Where XX is the pattern format that the system is using. This parameter can be modified between 1 and 24.

### Application type:

The display shows:

**\* Format data \***  
**mould type: x**

Where X can be modified between 0 and 1.  
When application type is 0 the control will make a complete cycle every time it receives an input signal.  
When application type is 1 it will repeat the cycle until the input signal is finished.

### Application Mode:

The display will show:


**\* Format data \***  
**Channel x mode x**

Where mode can be set in either 0 or 1 for each channel.  
When mode is 1 the control will enable the stitch system, making dashed lines on the application in order to save adhesive.

### Format Data:


The display will show:

**\* format data \***  
**vref.: xxx m/min**

Where XXX is the reference speed for the pressure control (maximum line speed). Press  to validate the changes. The display will then show:

**\* format data \***  
**Press. At vref. Xx %**



Press  to validate the changes. The display will then show:

**\* format data \***  
**minimum press. Xx %**

Where XX is the minimum pressure in % of the line pressure.  
The control will maintain the minimum pressure until the calculation of pressure is over that value.

### **Bead programming:**

Following, the display shows the application parameters that can be set between 0 and 5000.

When working in timer mode the display will show parameters T1 to T8.

**Data Format xx**  
**Channel x T1:xxxx ms**

When working in encoder mode the display will show parameters L1 to L8.

**Data Format xx**  
**Channel x L1:xxxx MM**

Odd parameters are the spaces between the input signal and the start of each of the 4 lines. Pair parameters represent the length of the line.


### **4.3.3 Test Valve menu:**

This menu is used for the manual testing of the good operation of the valves mounted on each channel.

On/Off must be Off.

The display will show

**Test Valve**  
**Valve x**

Where X is the channel to be tested. Modify this channel with the arrows and press  to fire that values connected to that channel. This menu is only available when the control is enabled to work.

### **4.3.4 Reset Counter menu:**

When entered, the display shows:

**Reset Counter**  
**Press ENTER 2 sec**

Value 1 selects programming with rising edge and falling edge of the start sensor (photocell).



**Counter reset**  
**Counter to 0 Esc**

The cycles counter is activated when the application type is normal (Application type: 0) in the menu "DATA FORMAT"; This counter counts the made cycles through outlet channel 1 to solenoid valve. In case of work with more than one outlet channel, we recommend to connect the solenoid valve with the most extensive cycle device to the outlet channel 1 of the CP40.

### 4.3.5 Configuration menu:



When entered, the control request an access password

**Configuration**  
**Password:**



If Password is ON, press at the same time   and  to enter the menu.

#### Valves compensation:


**\* Configuration \***  
**-- Compes. valves**

Press  to enter the menu or  to exit.  
The display will show:

**\* compens. Valves \***  
**Activ.: xx,x ms**

Where XX,X is the time in milliseconds that the guns need to close (the time from the control signal until the adhesive stops). Press  to validate the change. Use key  for moving among the parameters.

**\* compens. Valves \***  
**Deactiv.: xx,x ms**



Where XX,X is the time in milliseconds that the guns need to open. Press  to validate the change.

Standard values for these parameters are:



|              | Simple effect | Double effect |
|--------------|---------------|---------------|
| Deactivation | 19,0 ms       | 9,0 ms        |
| Activation   | 8,0 ms        | 9,0 ms        |

### Stitch pattern configuration:

**\* Configuration \***  
**-- Mould at dots**

Press  to enter the menu or  to exit.  
When entered, the display shows:

**\* mould to dots \***  
**total cycle: xx ms**



Where XX is the total cycle time for the dashed line. This means the time between the beginning of two consecutive dots. Press  to validate the changes. Use key  for moving among the parameters.

**\* mould to dots \***  
**on dot: xx ms**

Where XX is the time length of the dot of the stitch pattern.

### Photocells filter:

**\* Configuration \***  
**-- FTCs Filter**

Press  to enter the menu or  to exit.



**\* FTCs filter \***  
**T. Filter: xx ms**

This menu is used for the selection of the photocell used as start signal for every channel.

Where XX,X is the time in milliseconds that the photocell needs to give the start signal to that channel.

### Photocells allocation:

**\* Configuration \***  
**-- Allocate PTCs**



Press  to enter the menu or  to exit.  
This menu is used for the selection of the photocell used as start signal for every channel.  
The display will show:

**\* Allocation ftcs \***  
**Ftc for channel x: X**

Where X is the number of the photocell that will give the start signal to that channel. If this parameter is set to 0 the channel is disabled.

#### Minimum speed:

**\* Configuration \***  
**-- Minimun speed**

Press  to enter the menu or  to exit.  
The display will show:



**\* minimum speed \***  
**Vmin.: xxx m/min**

Where XXX is the minimum speed at which the pattern control has to work. When the line speed is below the programmed value, the control disables all the programming automatically.

#### Cycle selection:



This control only works if mould type = 1.

**\* Configuration \***  
**-- Close Cycle**


Press  to enter the menu or  to exit.  
The display will show:

**\* Close Cycle \***  
**By FTC Signal**

When FTC Signal is ON the control finish with the photocell.



Use the arrows   to change the selection.  
The display will show:

**\* Close Cycle \***  
**By Pattern ended**

Press  to choose the selection. In this way The CP-40 finish all cycle.

**Password:**

**\* Configuration \***  
**-- Password activ.**

Press  to enter the menu or  to exit.  
This menu is used for active the password.

**Language selection:**

The display will show:




**\* select language \***  
**XXXXXXXX**

Where XXXXXXXX is the display language. The display is available in Spanish, English, French and German.

**Fix/ Variable speed selection:**

The display will show:

**\* Close Cycle \***  
**By FTC Signal**

Use the arrows   to change this value between timer and encoder.  
Press  to validate the changes.

## CHAPTER 5 MAINTENANCE



**WARNING:** The maintenance operations described in this chapter should only be performed by qualified personnel understanding the processes and familiar with the safety measures involved.

### 5.1. INTRODUCTION:

This chapter contains the procedures required for proper maintenance of the CP-40. Following these procedures will ensure safe operation and longer machine life. Before starting a maintenance operation, carefully read chapter 1, Safety.



- 1 Disconnect the equipment from mains.
- 2 Check that it is not energised.
- 3 Carry out maintenance tasks following applicable safety regulations.

### 5.2. MAINTENANCE RECOMMENDATIONS:

The following table shows the frequency with which maintenance operations should be performed:

| Frequency | Maintenance   |
|-----------|---|
| Daily     | Clean the outer surfaces of the CP-40.                  |
|           | Clean the control panel periodically using a soft cloth |
|           | Inspect all electric connections.                       |
|           | Test valves.  |



***Do not let the panel come into contact with any solvents that may corrode the controls***