MCP-6 Control Unit

Manual Number: **MC090**

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Declaration of Conformity

(According to EN 45014)

CE

The following declaration is issued under the sole responsibility of the manufacturer:

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declares that the product:

Product Name:	MCP-6 Control Unit

complies with the following Council Directives:

Safety of Machinery:	2006/42/EC
Low Voltage Equipment:	2014/35/EU
EMC:	2014/30/EU
Reduction of Hazardous Substances (RoHS)	2011/65/EC

and conforms to the following standards:

Safety:	EN60204-1:2006 EN13849-1
Risk:	ISO12100:2010
EMC Emissions:	EN61000-6-4:2007 EN61000-4-2
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VALCO MELTON™

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SECTION 1 - INTRODUCTION

System Description

This manual has been prepared by Valco Cincinnati, Inc. to provide assistance in the set-up and operation of the MCP-6 Control Unit.

The MCP-6 Control Unit from Valco provides operators with a full-featured affordable solution to adhesive system pattern control. The unit allows program changes and adjustments, so you can get desired results immediately.

The MCP-6 Control Unit works with Valco's 24VDC adhesive dispensing valves, and is CE Compliant .

> All hardware must be up-to-date for all new functions to work. Please see the Parts List for a compatibility chart.

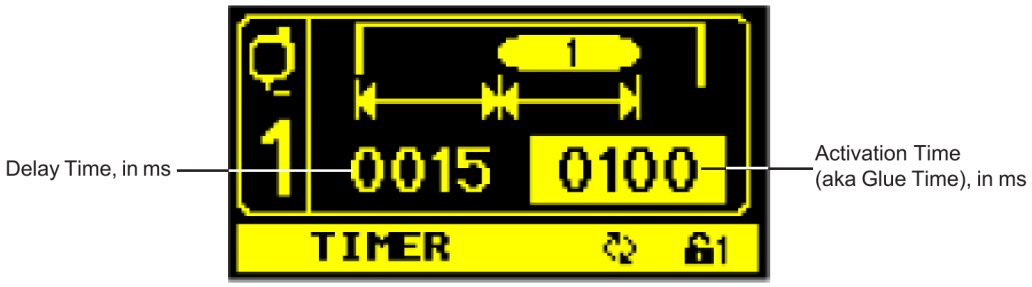
Special Applications

Labeler Application Control Description

The scanner provides a momentary signal to start the independent time cycle, affording maximum scanner mount flexibility.

The scanner also performs an automatic jam detection function by seeking a void between each product. If the scanner doesn't see avoid, it won't allow another cycle to start.

The operator dictates the cycle time by setting the activation.



The reason for providing variable time ranges is to extend the performance life of both the glue valves and solenoid valves. When the time cycle is set properly, all valves remain energized during continuous product flow. Upon startup, or after a production interruption, the valves are energized and de-energized per individual container, until product flow reaches the production rate corresponding with the cycle-time setting.

EPC12 Application Control Description

The EPC12 monitors pulses received from an optical encoder (the encoder is driven by the parent machine).

Pulse speed is converted to voltage.

An air manifold is mounted within the EPC12 cabinet. Air pressure within the manifold is monitored by a pressure transducer. EPC12 circuitry compares transducer voltage with encoder-speed voltage. Air is supplied to the manifold if the transducer voltage is lower than the encoder-speed voltage. Air is exhausted from the manifold if the transducer voltage is higher than the encoder-speed voltage. This way, manifold pressure is proportional to parent machine speed.

On cold-glue systems, manifold air pressure enters the cap of a standard non-relief fluid regulator through the vent port. The adjusting screw is set for low speed or idle operation. Manifold air pressure from the EPC12 moves the diaphragm away from the regulator spring in proportion to parent machine speed.

On hot-melt systems, the EPC12 can control the air pressure to an air-driven adhesive pump and pneumatic compound relief valves, to increase and decrease adhesive pressure related to machine speed.

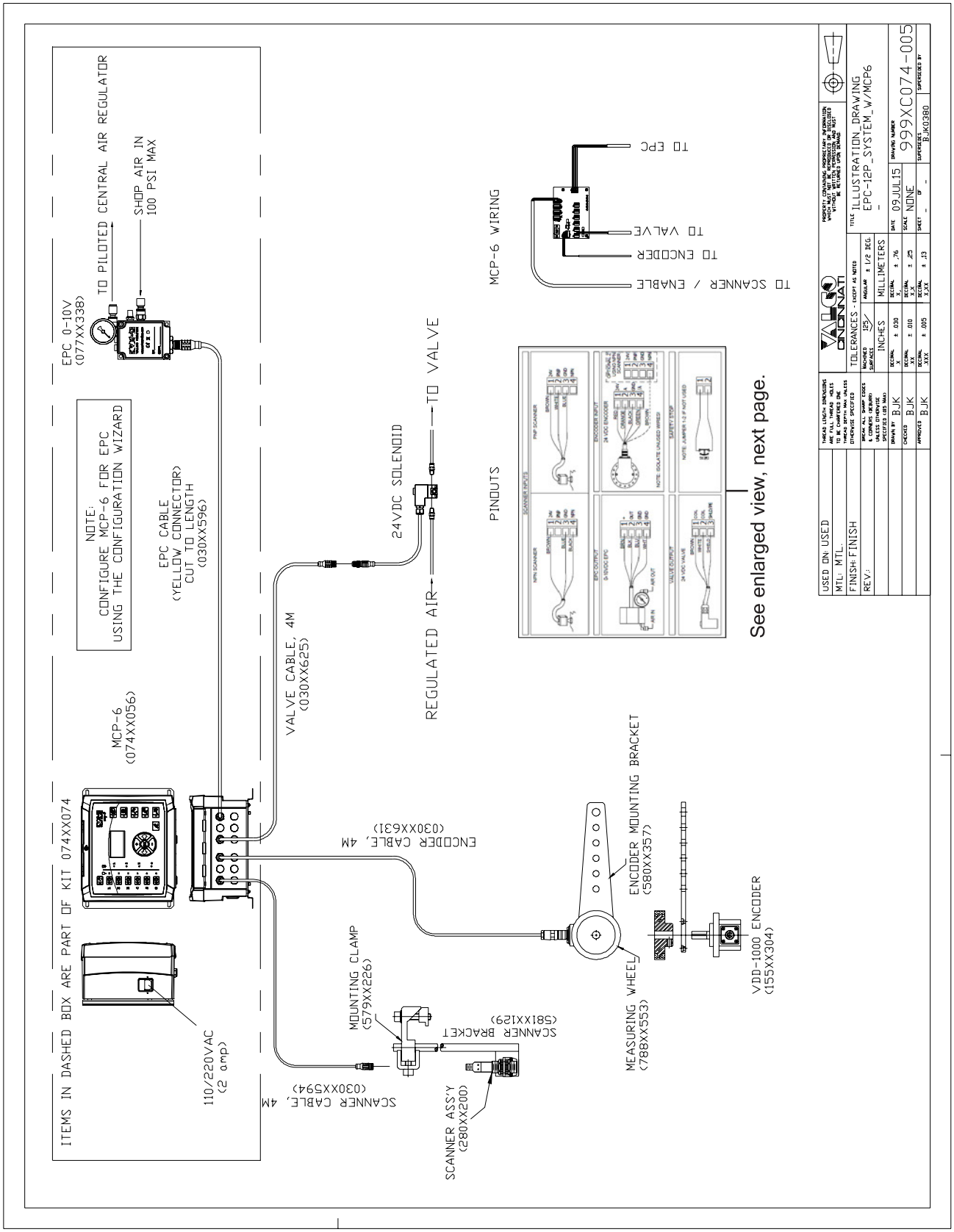
EPC12 Capabilities

- **Fluid-flow control** - The EPC12 changes fluid-pressure regulator output in response to parent machine speed changes. The unit controls air-driven, cold-glue systems to obtain uniform glue application regardless of parent machine speed. In adding an external EPC, refer to the wiring diagram below for options.

- **Glue-valve activation** -The EPC12 can supply a signal to operate a 24-volt, 3-way solenoid. The EPC can also send a signal to another control, when more than one valve is being activated (8.5 watts maximum). A minimum-speed adjustment feature disables this valve output below a threshhold machine speed.

- **Web detection (optional)** - For continuous gluing applications, an LED scanner can be added to monitor the web. If the web breaks, the glue application will stop (scanner 4).

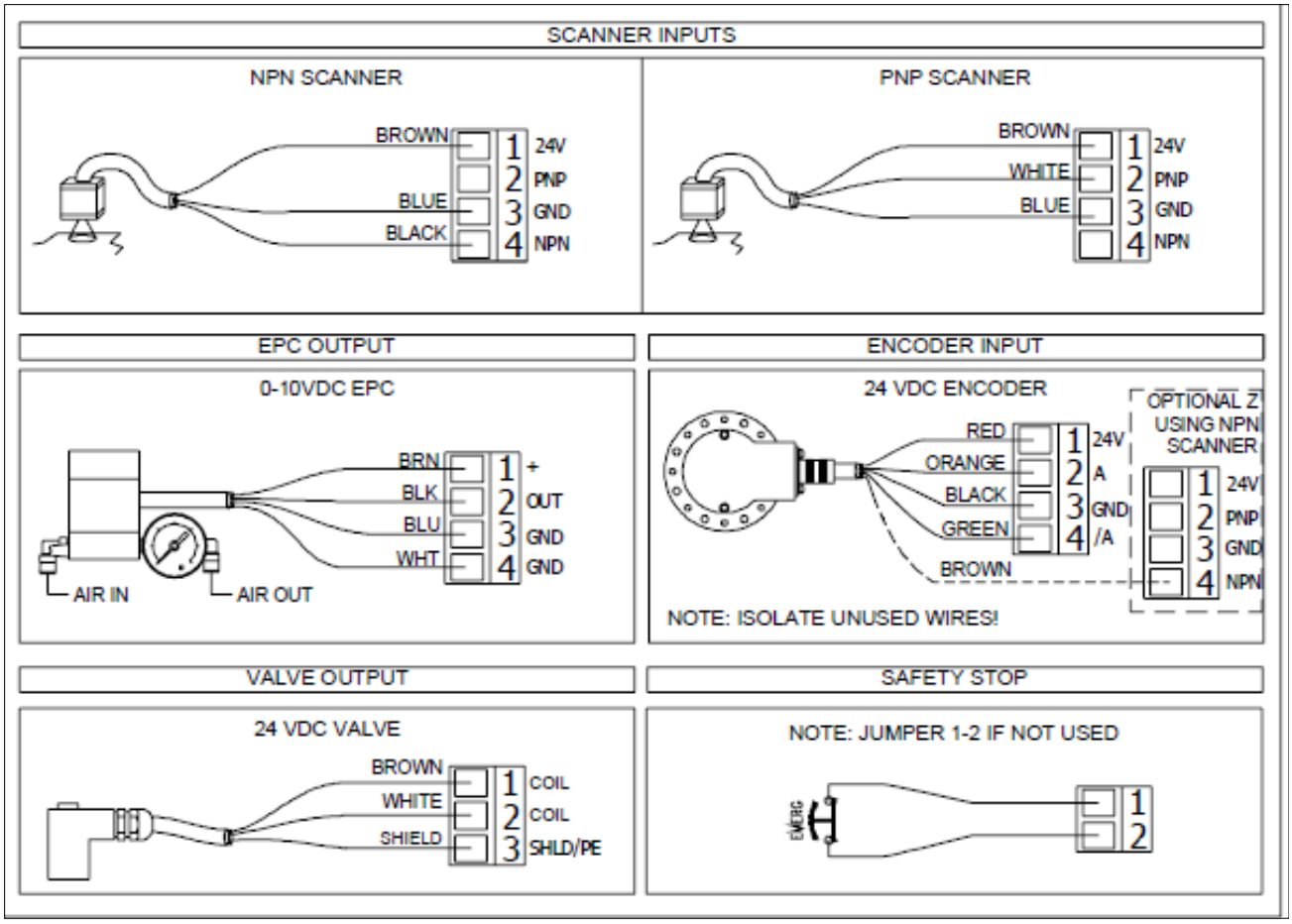
EPC12 Capabilities - Continued



EPC12 Capabilities - Continued

PINOUTS

(Enlarged View)



SECTION 2 - SAFETY AND USE

Read Thoroughly Before Handling Equipment

Warning!

Read and follow all safety precautions, warnings, cautions, and other recommendations in this manual. OTHERWISE, DEATH, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.

Read this entire section before handling the equipment.

Symbols

The following symbols may be used on the equipment and/or in this manual.

This symbol represents a **Caution** or a **Warning**. *Cautions* draw special attention to anything that could damage equipment or cause the loss of data. *Warnings* draw special attention to anything that could injure or kill the reader. Both Cautions and Warnings are placed before the step they apply to.

This symbol represents a **Hot Surface**.

This symbol represents a **Puncture Risk.** It is usually used in regard to nozzle cleaning appliances and other sharp instruments that can cause puncture wounds and risk exposure to bloodborne pathogens and other debris.

This symbol means that **Working Gloves** are required.

This symbol means that **Goggles** are required.

This symbol indicates a **Shock Hazard**. There is a presence of non-insulated dangerous voltage within the product's enclosure. This voltage may cause electrical shock or fire.

Continued next page

Symbols - Continued

This symbol indicates the need to **Unplug/Disconnect All Power Sources** and to let them de-energize before attempting any type of work or maintenance. Remember that there can still be energy in equipment, cords, and wires even when unplugged/ disconnected.

This symbol indicates the need to **Lock Out All Power Sources** and to let them de-energize before attempting any type of work or maintenance. If power is not locked out, the person working on the equipment may be injured or killed if someone unknowingly switches on the power to the equipment.

This symbol indicates a **Note**. Notes point out something of special interest or importance to the reader. They give tips, hints, and information in addition to what is necessary for the step preceding it.

Owner Responsibilities

The owner of the equipment is under obligation to manage all safety information. Some examples include:

- Examine all safety materials and documents as well as jurisdictional laws and make certain all laws, recommendations, and other safety/hazard laws, certification requirements, training, and instructions are followed and kept current.
- Maintain all safety materials including tags, labels, documents, and MSDS information. Make certain they are distinct and can be read/understood. Replace any that are dirty, worn, or unreadable.
- Make sure all personnel who will handle, install, maintain, operate, fix, and work around the equipment have ready access to the safety information, training, and equipment according to jurisdictional authorities.

The owner of the equipment is under obligation to make certain that all instructions, requirements, and jurisdictional laws are met. Some examples include:

- Make sure there are regular inspections of equipment and safety devices.
- Have regular safety drills and inspections supervised by the proper authorities.
- Provide all required safety items, first aid equipment, and training.

The owner of the equipment is under obligation to make certain that all personnel who will handle, install, maintain, operate, fix, and work around the equipment are qualified, trained, and up-to-date with all information regarding the equipment. Some examples include:

- Make sure all personnel have the proper safety training, equipment, education, and abilities necessary for the job function according to safety instructions and all jurisdictional laws and regulations.
- It is strongly advised that personnel receive first-responder medical care training in case of burns, medical emergencies, or other injuries. Training should be kept up to date.
- Make sure all personnel understand and can follow safety policies and procedures for the organization as well as for the specific equipment.
- Make sure that all personnel are consistently trained, evaluated, free of alcohol and medications that may impair judgment and reflexes, and are tested for banned substances according to jurisdictional authorities.

Limitations of Use

Read this document and all information regarding the equipment before handling the equipment. The intended use of the equipment is stated in Section 1 of this manual.

Do not use this equipment for anything other than its intended use. Do not modify, change, or alter the equipment in any way. If you are unsure of the intended use and the limitations of use for the equipment, contact your Valco Melton Representative before handling the equipment.

Installation/ Startup/Use Safety Information

Valco Melton hot melt units, cold glue units, controllers, inspection systems and all related accessories have the following universal safety precautions (this is not intended to be an exhaustive list; follow all instructions and safety precautions for the specific type of equipment involved):

Warning!

Only qualified personnel should install the equipment. Valco Melton strongly recommends that a Valco Melton Technician install all equipment. OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.

Warning!

The equipment should be installed so that it can be turned off at a location **away** from the equipment in case of injury, electrical problems, or malfunction. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

Properly route all electrical wires. Never tamper with equipment. Only use approved and correct voltage, type of current, fuses, and other power supplies. Replace worn cords, hoses, etc. immediately. FAILURE TO OBSERVE WARNING MAY RESULT IN DEATH, PERSONAL INJURY, AND/OR EQUIPMENT DAMAGE.

Warning!

Poor ventilation, smoking, and open flames can cause overheated hot melt to ignite. Adequate ventilation must be provided. Smoking should be prohibited in the immediate vicinity of the molten adhesive. Open flames must be kept away from the area around molten adhesive. OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.

Warning!

Never use any Valco Melton equipment in an explosive environment. Explosive environments include, but are not limited to, solvent-based cleaners or adhesives, explosive materials, radioactive materials, etc. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

Equipment will start automatically when remotely controlled by triggering devices. Be sure to disable all triggering devices, carefully release hydraulic pressure, and disconnect air pressure before servicing or working near guns, valves, and other triggered devices. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

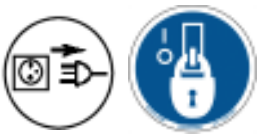
Shut Down Safety Information

Valco Melton hot melt units, cold glue units, controllers, inspection systems and all related accessories have the following universal safety precautions (this is not intended to be an exhaustive list; follow all instructions and safety precautions for the specific type of equipment involved):

Warning!

Purge the fluid pressure and the air pressure from the system before disconnecting/disabling any part of the system. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!



Disconnect and lock out all power before maintenance or other need to open the equipment. Only qualified personnel should open and service the control. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

Equipment may still be energized even if unplugged! When making adjustments or performing checkout procedures, stay clear of any moving mechanical parts and do not touch exposed electrical equipment or electrical connectors. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

Disconnect/disable all mechanical and/or electrical devices that send activation signals to the gun(s), valve(s), melter pump(s), etc. This includes pattern controls, timers, input/output signals, etc. Only qualified personnel should open and service the control. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

Disable all triggering devices, relieve all residual pressure (hydraulic and air) and allow adhesive to cool before attempting to disconnect guns, hoses, valves, etc. Only qualified personnel should open and service the control. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

Never point an adhesive dispensing gun, valve, hose, air hose, or anything else at yourself or another person. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Hot-Melt-Specific, General Safety Information

Valco Melton hot melt units have the following universal safety precautions **in addition to all other universal precautions previously mentioned** (this is not intended to be an exhaustive list; follow all instructions and safety precautions for the specific type of equipment involved):

Warning!

Never process any polyurethane reactive (PUR) hot melt or solvent-based material in a Valco Melton unit unless you are certain that the unit is compatible and is marked “PUR”! Read all instructions and MSDS sheets carefully, following manufacturer’s instructions, especially regarding heat levels. If you have any question as to the compatibility of a Valco Melton unit for PUR hot melt, call your Valco Melton Representative before attempting to use the unit for PUR or solvent-based materials. OTHERWISE, HAZARDOUS FUMES, EXPLOSION, DEATH, OR PERSONAL INJURY COULD OCCUR.

Warning!

Keep pump cover and electrical enclosures closed except during setup, service, and checkout procedures. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

People with respiratory problems (e.g., asthma, bronchitis, etc.) should not work in the vicinity of molten adhesive. RESPIRATORY PROBLEMS MAY BE AGGRAVATED BY THE FUMES. Do not wear a face mask when working around molten adhesive. THE MASK MAY TRAP THE FUMES AND DEATH OR PERSONAL INJURY COULD OCCUR.

Warning!

Keep hot melt hoses away from walkways and the moving parts of hot melt systems. OTHERWISE, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.

Warning!

Hot surfaces! Do not touch! Use extreme caution when refilling the unit by hand. OTHERWISE, PERSONAL INJURY COULD OCCUR.

Warning!

Wear protective gloves and goggles at all times around all machinery, especially hot melt. OTHERWISE, SERIOUS PERSONAL INJURY COULD OCCUR.

Warning!

Never use an open flame to heat hot melt components or adhesive. OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.

What to Do if Contact with Hot Adhesive Occurs

If hot adhesive comes in contact with the skin, do the following:

Warning!

Do not attempt to remove heated hot melt adhesive from the skin. OTHERWISE, SEVERE PERSONAL INJURY AND DEATH COULD OCCUR.

1. Immediately immerse the contacted area in clean, cold water.

   It is strongly recommended that a source of clean, cold water be provided near the hot melt work area.

2. Cover the affected area with a clean, wet compress and call the emergency medical response system (such as 911) immediately.

3. Watch for and treat the subject for signs of shock while waiting for professional help to arrive.

What to Do if Inhalation of Adhesive Fumes Occurs

If adhesive fumes are inhaled, immediately follow these steps:

1. Take the victim away from the immediate work area.

2. Provide victim with fresh air.

3. Call the emergency medical response system (such as 911) immediately.

What to Do if Adhesive-Related Fire or Explosion Occurs

During the heating and melting process, the surface of the adhesive will be exposed to air. The mixture of polymer fumes and air can catch fire if the hot melt is overheated.

Warning!

Poor ventilation, smoking, and open flames can cause overheated hot melt to ignite. Adequate ventilation must be provided. Smoking should be prohibited in the immediate vicinity of the molten adhesive. Open flames must be kept away from the area around molten adhesive. OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.

Warning!

Exposed arcing may ignite the fume/air mixture. Shield all electrical equipment from melt fumes to avoid exposed arcing. OTHERWISE, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.

Warning!

Do not use a water extinguisher to extinguish the fire! OTHERWISE, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.

If the hot melt adhesive ignites, promptly perform the following steps:

1. Sound a fire alarm.
2. Evacuate the immediate area.
3. Turn off all local electrical equipment at the source.
4. Leave the area immediately if conditions are unsafe.

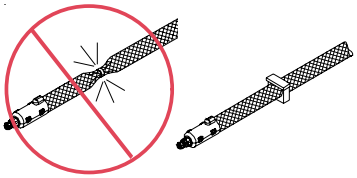
   If you feel you can fight the fire **safely**, do ***one*** of the following:

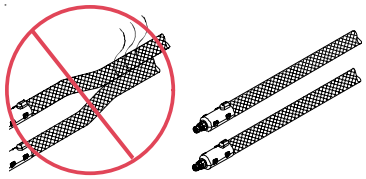
   - Smother the fire with a fire blanket.
   - Aim a CO_2 fire extinguisher at the base of the flames.
   - Aim a dry-powder fire extinguisher at the base of the flames.

Hose Safety Information

Do not use bindings, wire ties, or unapproved fasteners around the hoses.

Do use approved wrapping (P/N KAP0434), making sure the wrapping is slightly snug but not tight.



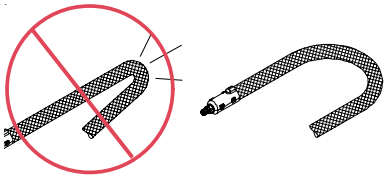


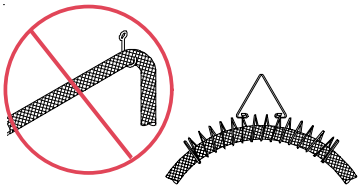
Do not place hoses close together.

Do allow at least 2 inches (5.1 cm) between hoses for proper ventilation.

Do not bend hoses sharply. **Do not** allow kinks or indentations in the hoses.

Do use a minimum bend radius of 10 inches for a 20-inch diameter coil hose.



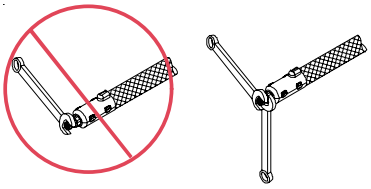


Do not use unapproved hooks to hang hoses. **Do not** wrap hoses over or around objects.

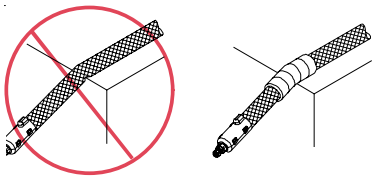
Do use a hose hanging kit (P/N 781xx827).

Do not use the “one handed/one wrench” technique to attach or remove hoses. **Do not** wrench on any surface other than the large hexagon swivel nuts.

Do use two hands and two wrenches to tighten or loosen connections on hoses. **Do** wrench only on large hexagon swivel nuts.



Hose Safety Information - Continued

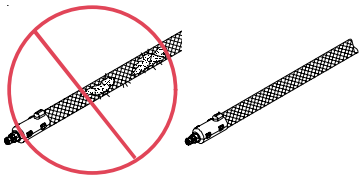


Do not allow hoses to rub against objects or to come into contact with sharp edges or points.

Do wrap the hoses in approved padding (P/N 795xx549) if the hoses must be installed where they will come into contact with objects.

Do not use worn, damaged, or bent hoses.

Do inspect all hoses regularly for damage and/or wear and replace damaged or worn hoses immediately.



MCP-6 Control

Front Panel

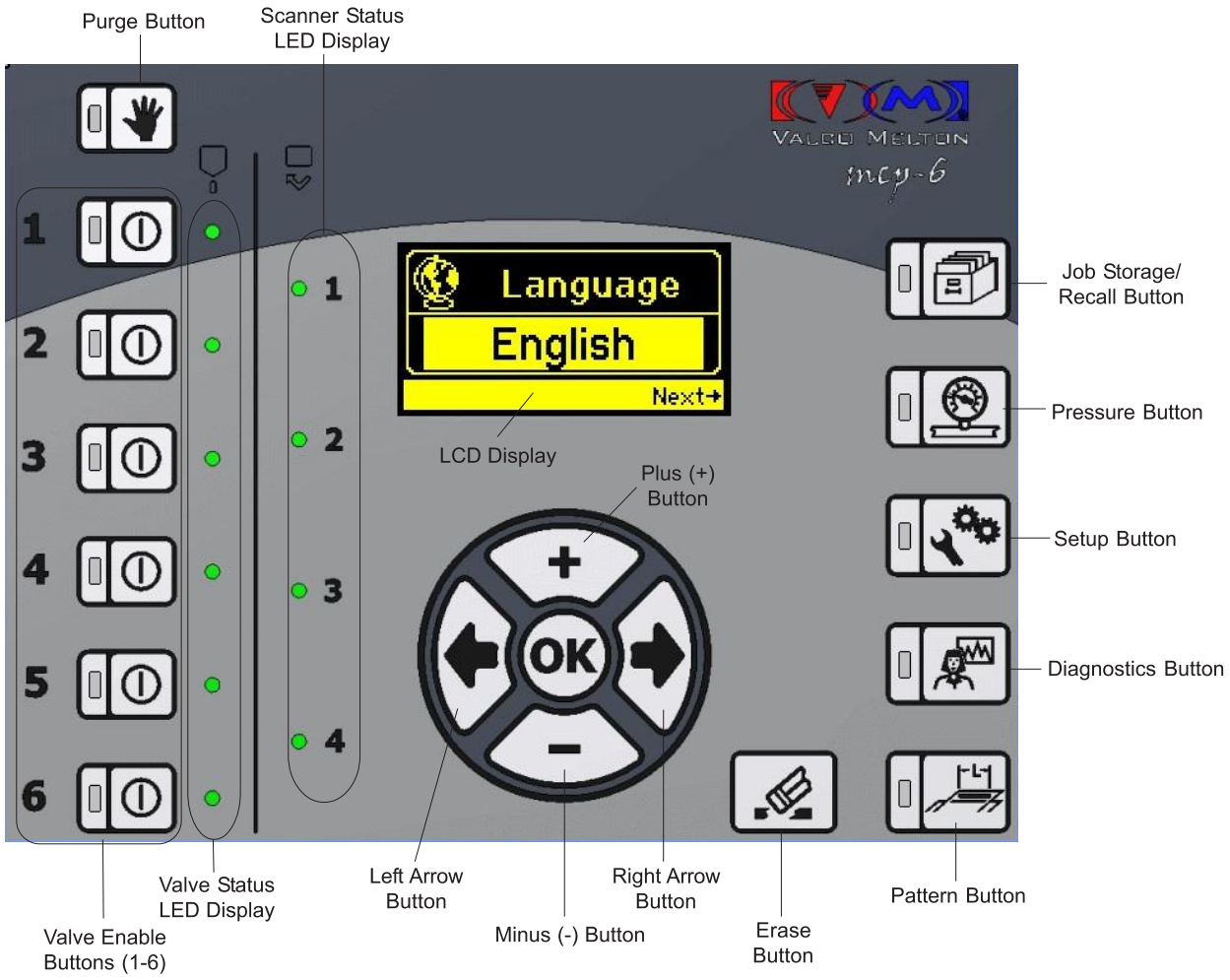


Figure 3-1. MCP-6 Operator Panel

Bottom Panel

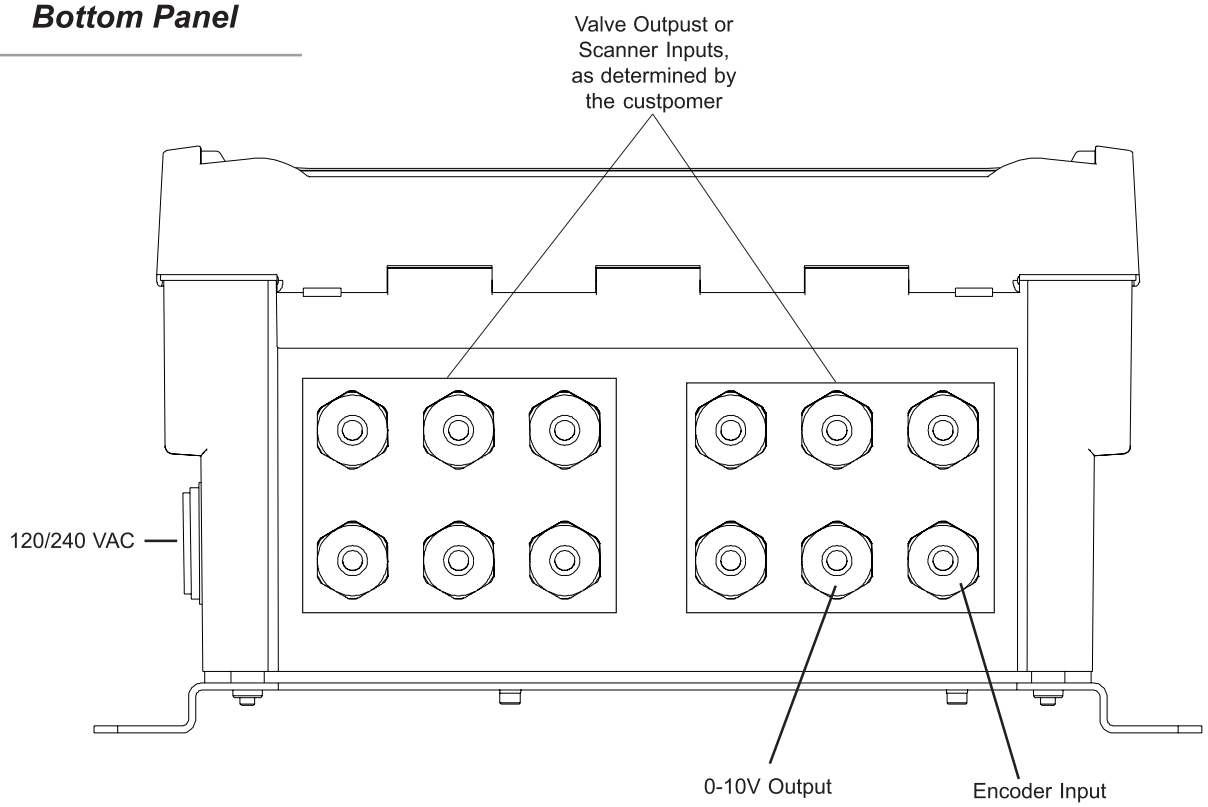
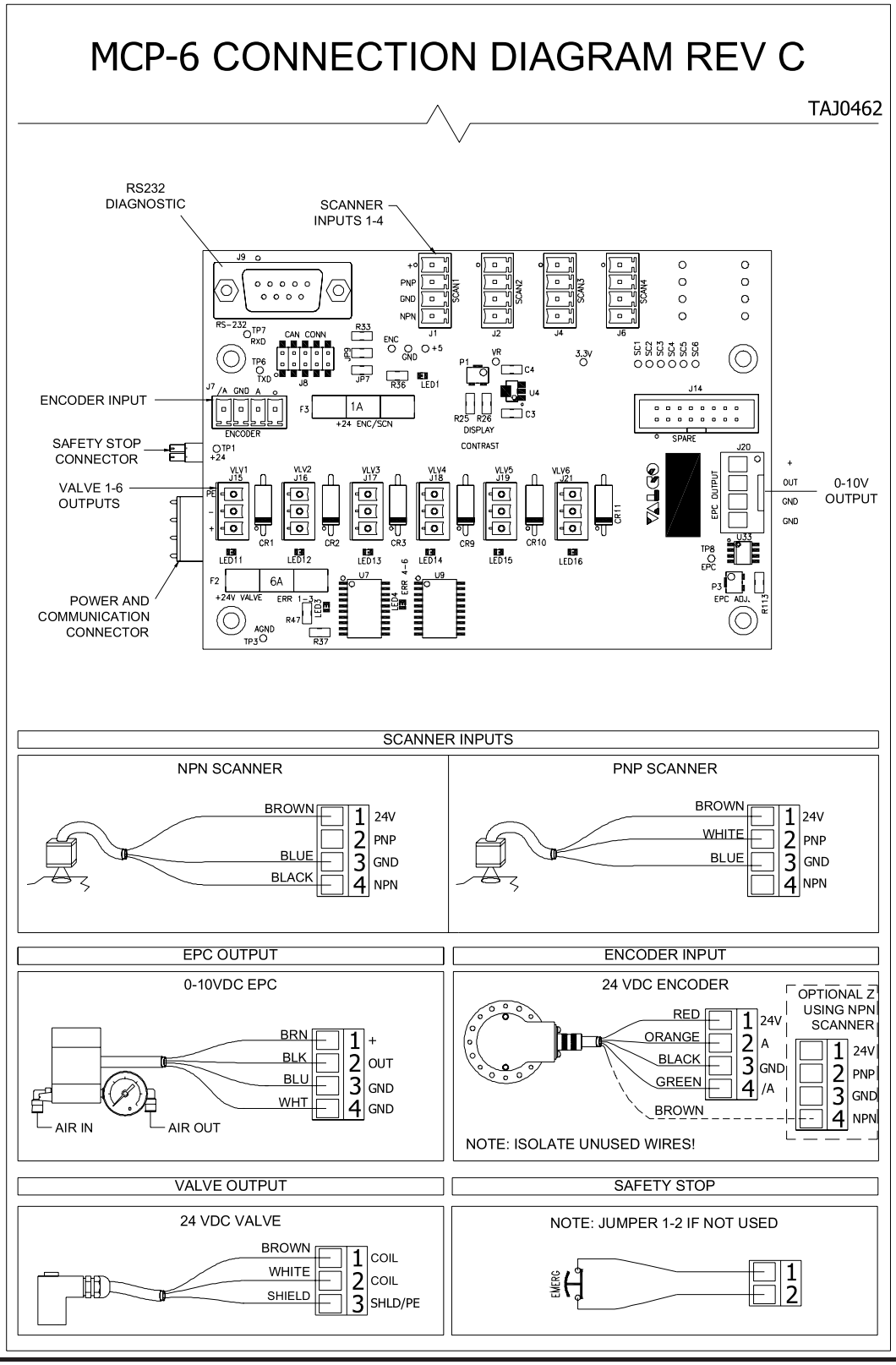


Figure 3-2. MCP-6 Bottom View

Wiring Diagram



Mounting Footprint

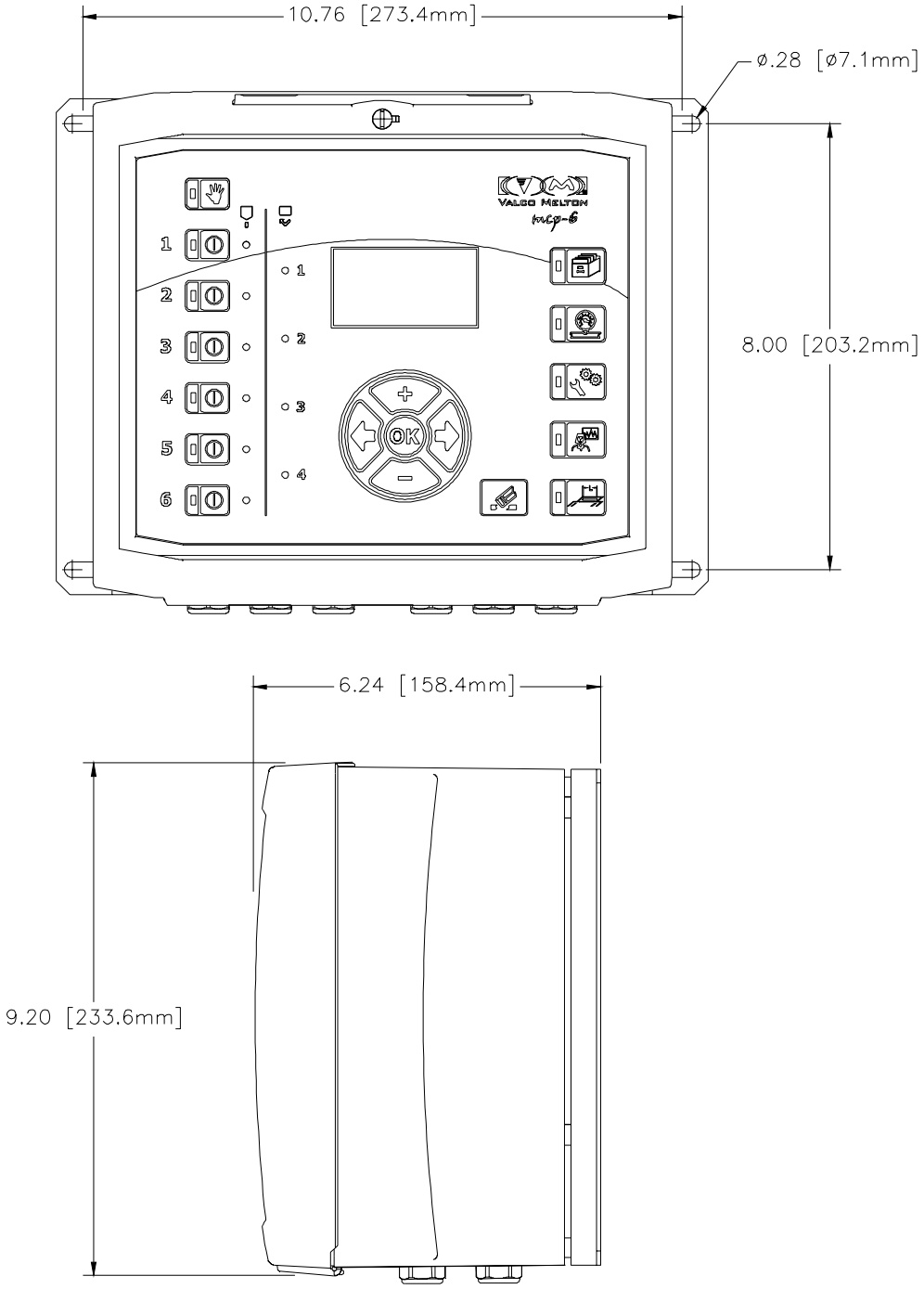


Figure 3-4. MCP-6 Mounting Footprint

SECTION 4 - PROGRAMMING

Mounting

The MCP-6 Control Unit can be mounted on any flat, stable surface close to the machine glue station.

Using the Operator Interface

The Operator Interface Buttons

The Operator Interface Buttons can be grouped into four categories (see Figure 4-1):

- Main Menu Buttons
- Valve Buttons
- Navigation Buttons
- Edit Buttons

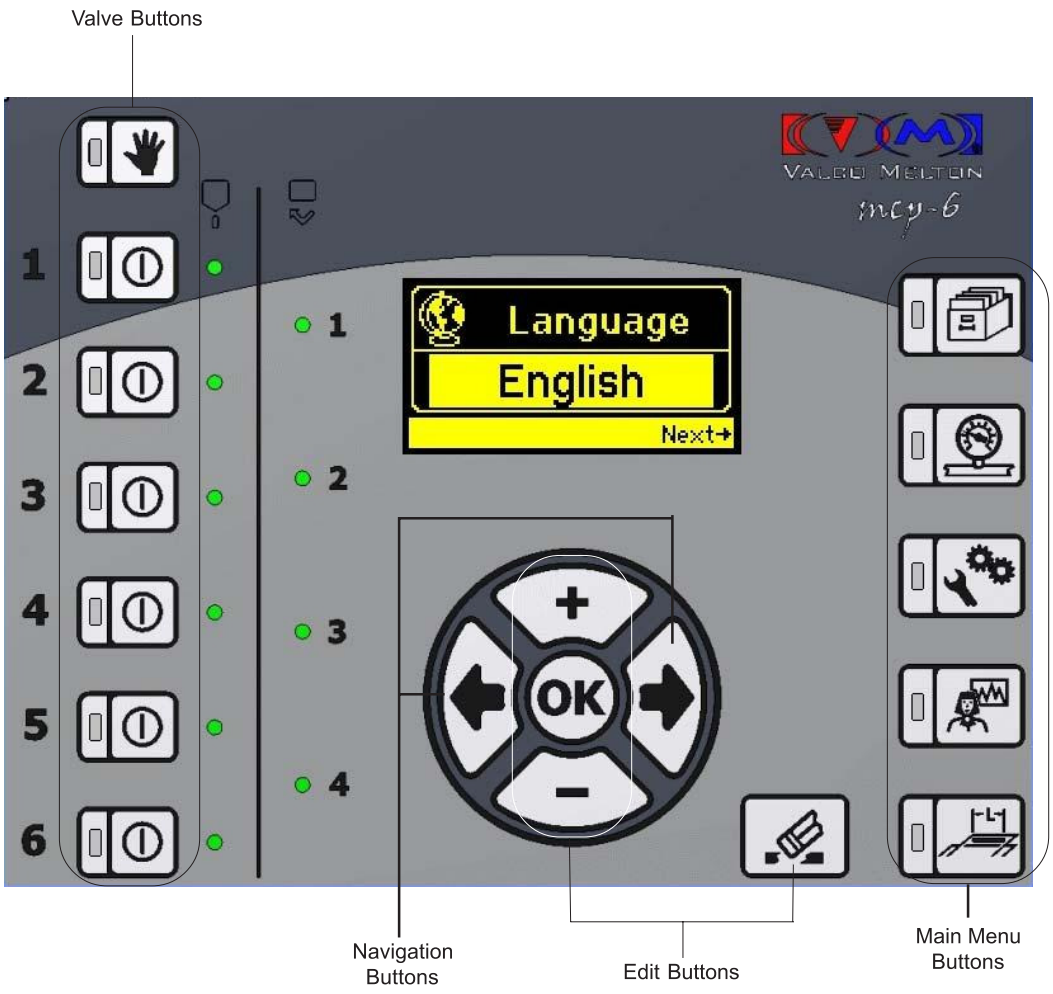
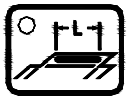


Figure 4-1. The Operator Interface Buttons

The Main Menu Buttons

There are 5 Main Menu Buttons. The LED in the upper Left hand side of the Buttons indicates which Main Menu Button is selected.



Pattern Button - Pressing the Pattern Button allows you to begin to enter gluing patterns for valves 1-6.

Pressure Button - Pressing the Pressure Button allows you to begin to enter the pressure settings.

Setup Button - Pressing the Setup Button allows you to begin to setup the MCP-6 Control Unit.

Diagnostics Button - Pressing the Diagnostics Button allows you to view the MCP-6 Control Unit diagnostics.

Job Button - Pressing the Job Button allows you to save a job and load a job.

The Valve Buttons

There are 5 Valve Buttons:

Purge Button - Pressing the Purge Button allows you to turn the Manual Purge Mode on and off.

> When the Purge Button LED is on, Manual Purge Mode is on. In this Mode, the Valve Buttons act as “purge buttons.” When the LED is off, the Valve Buttons turn the valves on and off.

Valve 1-6 Buttons - Pressing the individual Valve Button(s) allows you to tell the MCP-6 Control Unit which valves you are going to use for the job you will run. The LED in the upper Left hand side of the Buttons indicates which valve is selected.

The Navigation Buttons

There are 2 Navigation Buttons: the Right Arrow Button and the Left Arrow Button.

Right Arrow Button - Pressing the Right Arrow Button moves the cursor to the right, highlighting each editable field (see Figure 4-2A through 4-2C).

When there are no more editable fields on the screen to highlight, a Right Arrow Symbol may appear in the lower right corner of the screen (see Figure 4-2C). If this Right Arrow Symbol appears, there is an additional menu screen to the right of the current display. Press the Right Arrow Button to view the menu screen to the right.

Figure 4-2A

Figure 4-2B

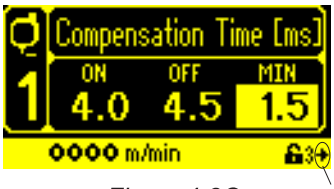


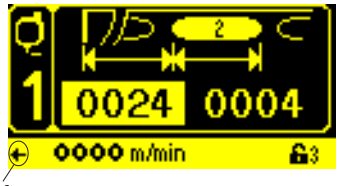
Figure 4-2C

Right Arrow Symbol

Left Arrow Button - Pressing the Left Arrow Button moves the cursor to the left, highlighting each editable field (see Figure 4-3A and 4-3B).

If a Left Arrow Symbol appears in the lower left corner of the screen, it indicates there is an additional menu screen to the left of the current display (see Figure 4-3B). Press the Left Arrow Button to view the menu screen to the left of the current display.

Figure 4-3A



Left Arrow Symbol

Figure 4-3B

Flash Memory Storage

The symbol consisting of two arrows in a circular pattern indicates that a value has been changed but the change is not yet stored in the flash memory (see Figure 4-4).

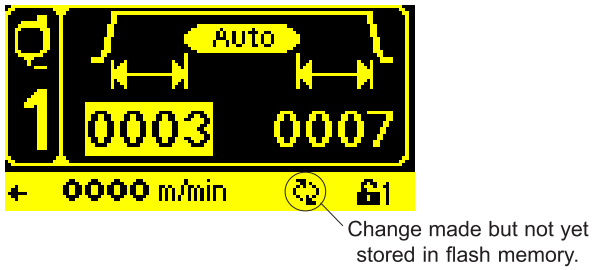


Figure 4-4. The "Storing Information" Symbol

The Edit Buttons

There are 4 Edit Buttons: the Plus Button, the Minus Button, the Erase Button, and the OK Button. These Buttons are used to change/enter information.

> You can only change a value when it is highlighted (see Figure 4-5).

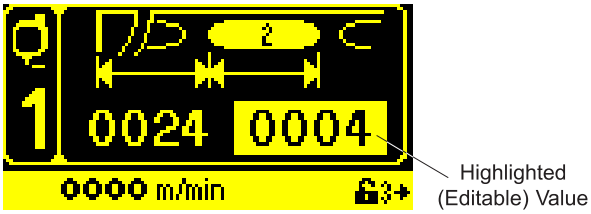


Figure 4-5. Highlighted Value

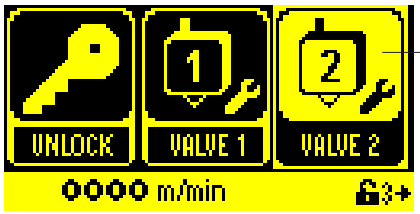
Plus Button - Pressing the Plus Button allows you to increase the value of the input.

Minus Button - Pressing the Minus Button allows you to decrease the value of the input.

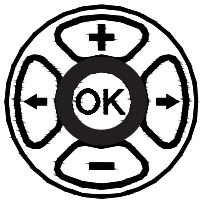
Erase Button - Pressing the Erase Button allows you to return to the factory default settings. Holding the Erase Button longer than five seconds will change all pattern settings to "0."

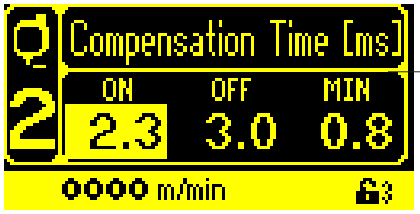
OK Button - Pressing the OK Button opens and closes the thumbwheel control. It also "opens" highlighted menu screens for editing (see example next page).

Open a Highlighted Menu with the OK Button



Highlighted Menu (Valve 2)



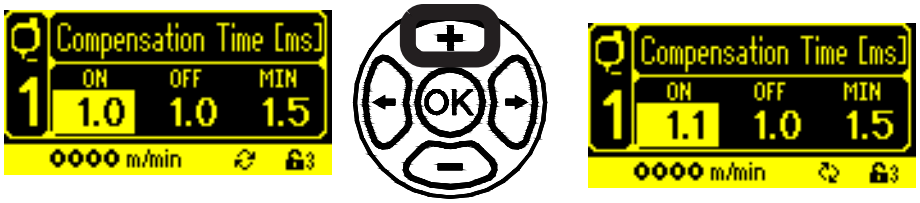


The Valve 2 Menu Screen Opens

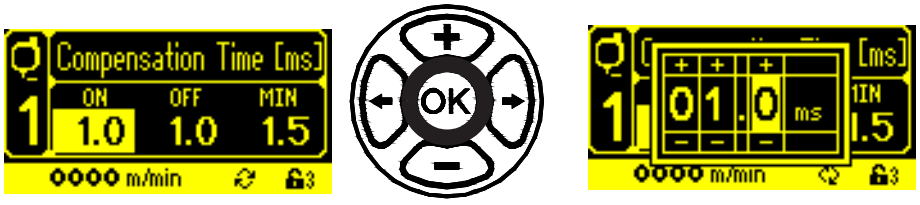
If a highlighted menu will not open with the OK Button, check the password level. A higher password level may be required to view the menu.

Thumbwheel vs. Single Digit Edit

When editable information is numerical, the information may be edited with the Plus/Minus Buttons for single digit editing, or the OK Button may be pressed to bring up a thumbwheel for more detailed editing.



Single Digit Editing



Thumbwheel Editing

In Thumbwheel Edit, use the Right/Left Arrow Buttons to select the digit position, and the Plus/Minus Arrow Buttons to increase/decrease the value of the selected digit.

The Status LEDs

Status LEDs - The Status Display LEDs show on/off status. When an LED is on (lit up), the corresponding input or output is activated (see Figure 4-6).

> Be sure the encoder, scanners, valves, and the MCP-6 Control Unit have been properly mounted to the parent machine before setting up the control. The glue and air lines are not connected until after the control is programmed.

Figure 4-6. Status LEDs

First Use Setup (Wizard)

The first time the MCP-6 Control Unit is switched on, it will guide you through a series of menus in order to setup your control for your unique production needs. If these needs change later, the settings can be changed in the setup.

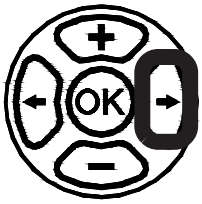
The first time the MCP-6 Control Unit is switched on, the following screen will appear:

The following is an example for the “other” application. Scroll through all choices to see which fits your needs the best. Applications that have the screen are listed after the screen name.

Use the Plus/Minus Buttons to scroll though choices. If asked to enter a numerical value, press the OK Button for the Thumbwheel Mode or use the Plus/Minus Buttons for single digit editing. Press the Right Arrow Button to move to the next setup choice. Continue this until all selections are made. For example:

Language

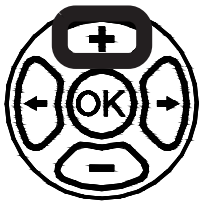
(All Applications)



Language - Language is a global setting. This means that all screens will appear in the chosen language.

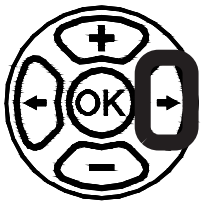
Application

(All Applications)



x3
(Press three times)

Application - Many applications are available. Each application type has “built in, behind-the-scenes” default settings to assist you in programming the unit for the application type. If your application type is not listed, simply choose “other.” (Use the Plus/Minus Buttons as needed to scroll through the choices.)



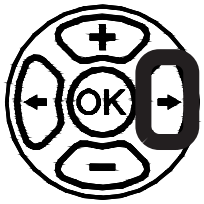
Application - Continued

Actual application options may vary based on the system.

Application	Description
Packaging	Applying glue to erected-and-filled boxes for closing/sealing
Core Winding	Applying glue to paper stock that is wound to create roll cores (for paper towels, bathroom tissue, etc.)
Timer	Mode for controlling (regulating) product location in system flow
Labeler	Applying glue to a label to be placed on canned product
EPC12	Mode for monitoring air pressure, to match glue output to machine speed, running a continuous pattern
Burn-In Test	Test function used ONLY by Valco Melton personnel
Others	Unique applications not listed in standard options

Encoder

(Packaging, Core Winding, and Others)



Encoder - Set the encoder type.

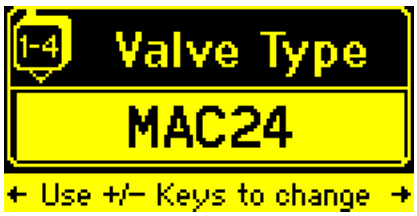
If the Wizard does not list the encoder your system uses, select “other.” The ratio compensation settings will be entered at a later time using the Encoder Menu Screen (discussed in this Section under “Encoder Menu Screen”).

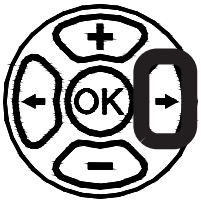
Red Encoder Wheel		
Pulses	**Setup**	**Circumference**
1000	Metric	250 mm
	Imperial	9.84 inches
500	Metric	250 mm
	Imperial	9.84 inches

Black Encoder Wheel		
Pulses	**Setup**	**Circumference**
1000	Metric	254 mm
	Imperial	10.0 inches
500	Metric	254 mm
	Imperial	10.0 inches

Valve Type

(All Applications)

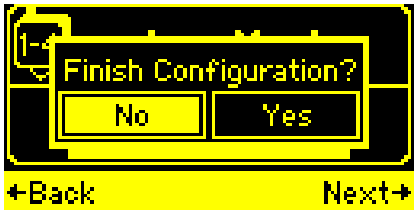


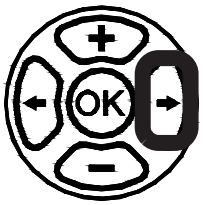


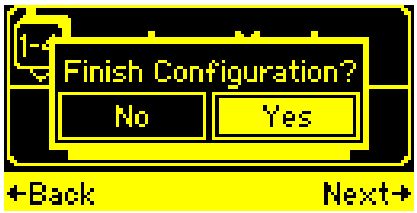
Valve Type - Set the valve type for valves 1-6. If the default valve type that appears is not applicable, use the Plus/Minus Buttons to scroll through the list of valve types available.

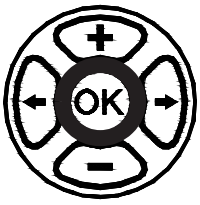
Finish Configuration

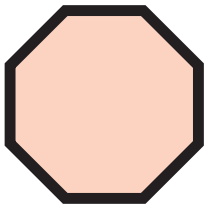
(All Applications)









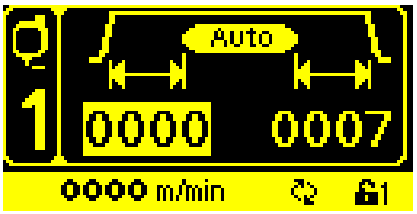


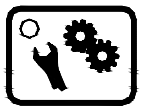
(Finished)

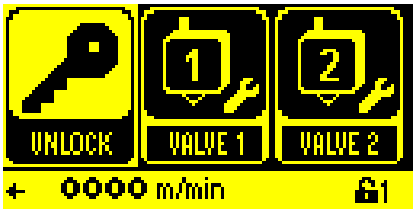
You must answer “Yes” to the “Finish Configuration” prompt and press the OK Button for all changes to take effect. Choosing “No” will return the unit to the previous settings with no changes made.

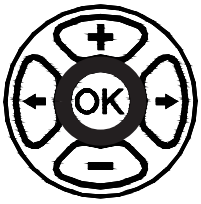
Enter Password

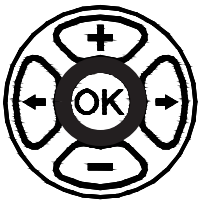
To view, setup, and use the various functions of the MCP-6 Control Unit, passwords are used. This ensures safety and security of all settings. To enter a password, do the following:

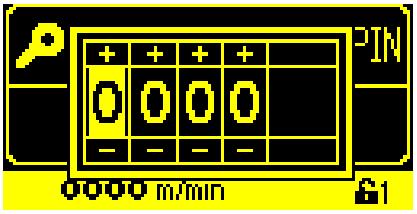




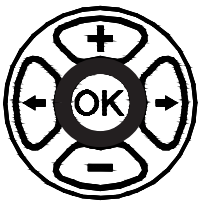


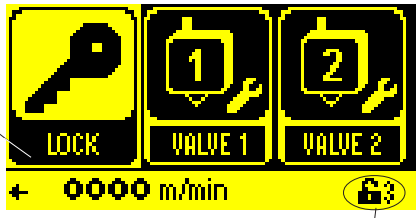


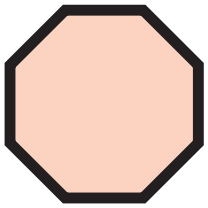




Enter password (see *Thumbwheel vs. Single Digit Edit,* this section)







"Unlock" changes to "Lock"

Unlocked symbol appears with password level.

Password Levels

There are five password levels:

Level 0: Protected

When the unit is set to Level 0, only basic pattern settings can be entered or changed. Level 0 provides the ultimate safety settings to prevent unauthorized and/or accidental changes. This level can be set as the "Default" level by someone with a Level 2 (Supervisor) password.

Level 1: Operator (No password required)

This is the "Default" level of operation when the unit is first turned on (unless the "Default" setting has been changed to Level 0 by a Supervisor). Level 1 allows Operators to set patterns, pressures, load jobs, and enter basic parameters necessary to run jobs.

Level 2: Supervisor (Default Password = 1234)

This is the highest user password level. At this level, the "Default" password level can be set, individual valve settings can be viewed and changed, jobs can be saved (as well as loaded), and the memory can be backed up. The Level 2 password can be changed (this is explained under the heading "Level 2 Password Options").

Level 3: Service

This password level is reserved for Authorized Service Personnel.

Level 4: Programmer

This password level is reserved for Factory Programmers.

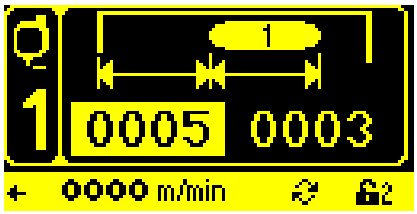
Level 2 Password Options

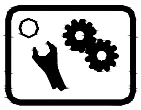
A Level 2 Supervisor has the ability to place the unit into the Protected Level Mode (Level 0) and to change the Level 2 password.

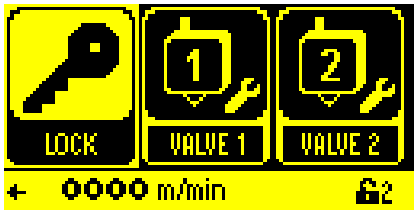
Protected Level Mode

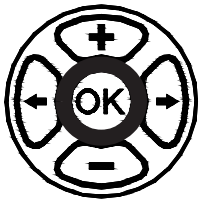
The Protected Level Mode (Level 0) increases security by changing the Default Level of the unit from Level 1 to Level 0. This means that when the unit is turned on, it will automatically be in Level 0 instead of Level 1 (until the supervisor changes the Default Mode to Level 1). Only someone with the Level 2 password can change the Default Level of the unit.

To change the Default Level of the unit, do the following:

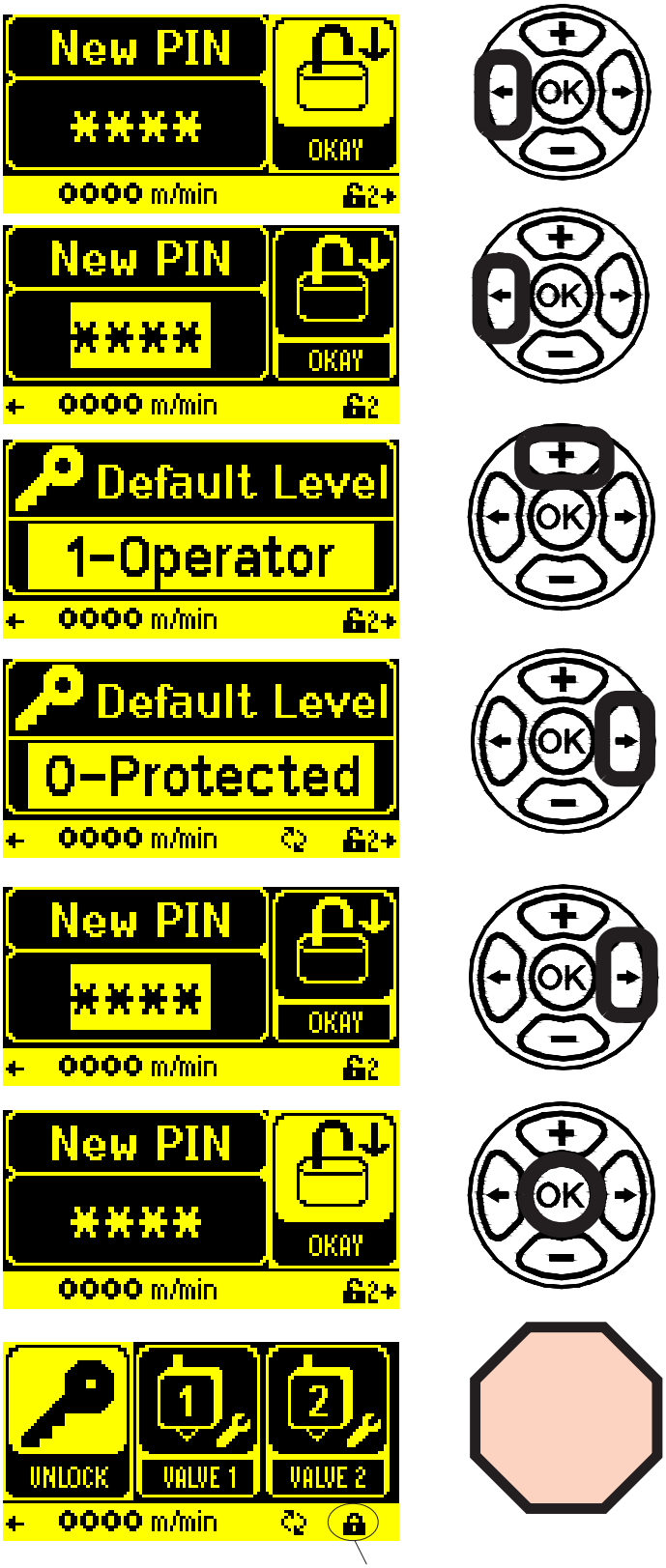








Protected Level Mode - Continued

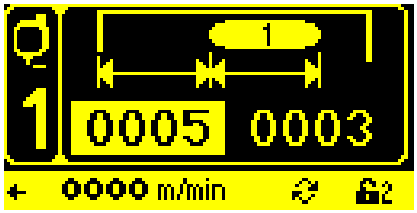


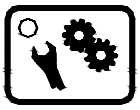
The locked icon appears, indicating the unit is in Protected Level Mode (Level 0)

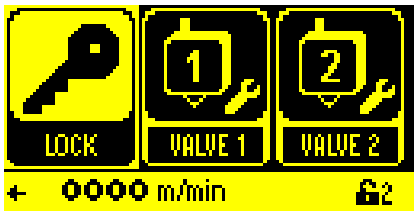
Change the Level 2 Default Password

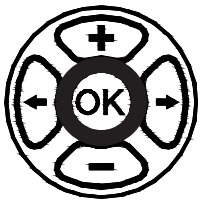
The Level 2 Default Password (1234) can be changed to a different numerical password containing four digits.

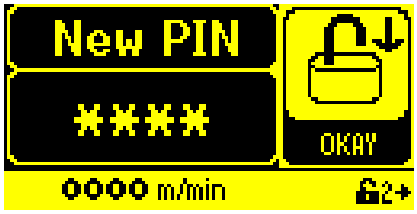
To change the Default Password for Level 2, do the following:

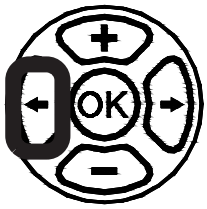


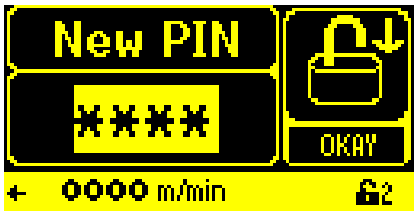


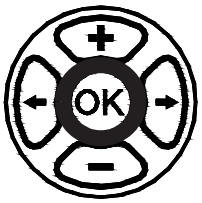


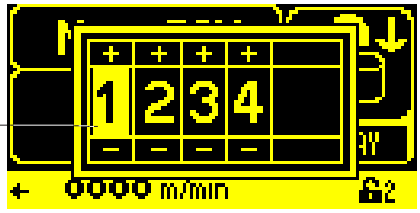












The old password used to enter the system will appear on the screen.

Caution!

Make certain the desired password is entered correctly before pressing the OK Button!

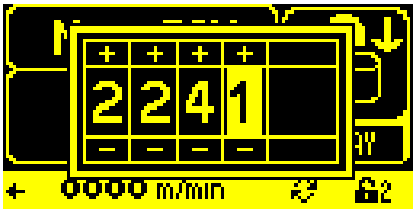
Use the Plus/Minus Buttons to increase/decrease the numbers and the Left/Right Arrow Buttons to move from digit to digit.

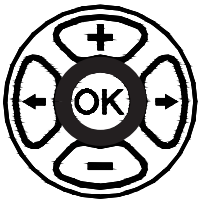
To cancel without changing the password, **be sure the current password showing is correct**, and (only after this confirmation), press the OK Button.

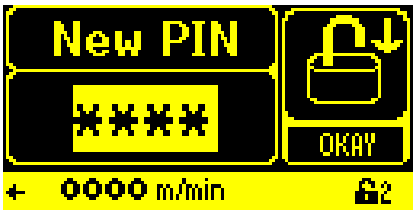
Change the Level 2 Default Password - Continued

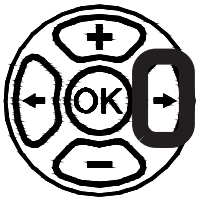
When the desired password is entered, press the OK Button to enter the new password.

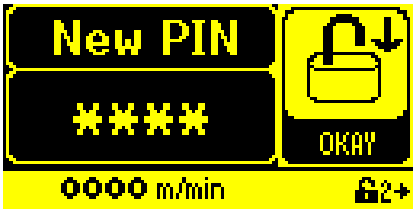
> The following is an example only. The password can be changed to any four digit number desired.

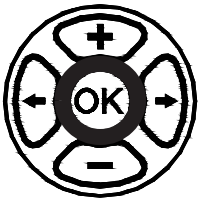










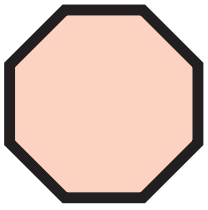


If the Default Level is set at Level 1, this screen appears.

OR

If the Default Level is set at Level 0, this screen appears.

The unit is now locked to the Set Default Level (see above). The new password saved for Level 2 access is required to unlock the system for Level 2 access (see the heading "Enter Password" in this section).



> If the new Level 2 password is forgotten, you may call Valco Cincinnati, Inc. Technical Service for assistance at (513) 874-6550.

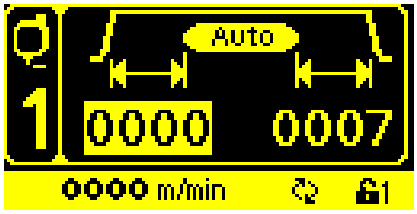
Configure the Valve/Channel Settings

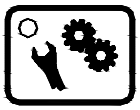
The settings are preprogrammed for the specific application selected. It is best not to change any setting unless you are a trained technician and/or have assistance from a member of the Valco Technical Assistance Team.

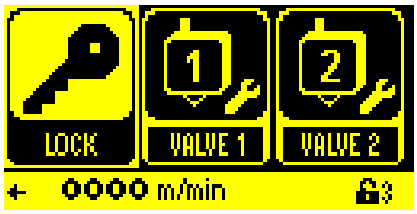
Caution!

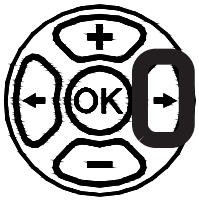
Changing settings may bring unwanted consequences in the performance of your system. Valco Cincinnati, Inc. recommends having a qualified technician setup your system parameters. Otherwise, loss of production time may result from improper settings.

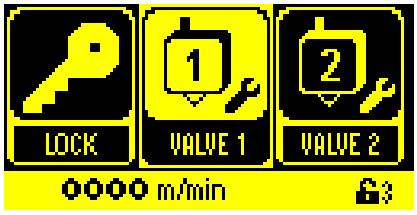
> All screens for configuring the valves/channels are available in all applications.

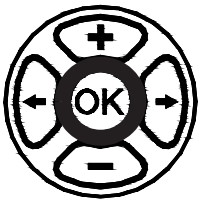




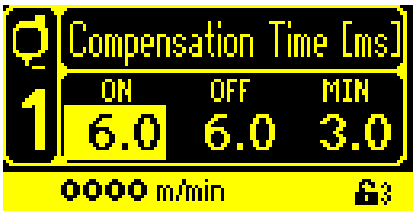


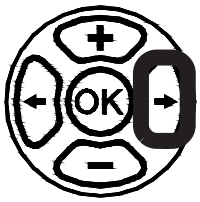






Compensation Time





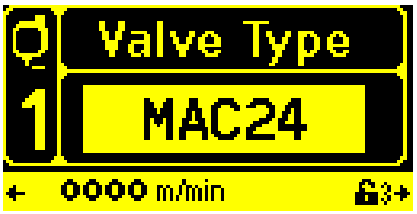
x3

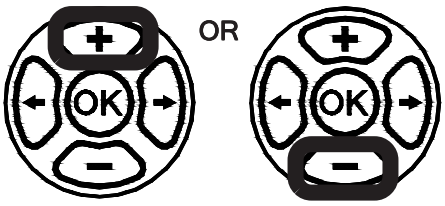
On Compensation Time (Ton) - This is the amount of time (in milliseconds) from when the valve is activated to when the glue is applied. Increasing the "ON" Compensation Time will move the start of the pattern forward.

Off Compensation Time (Toff) - This is the amount of time (in milliseconds) from when the valve is turned off to when the adhesive application is stopped. Increasing the Off compensation time will make the glue line shorter.

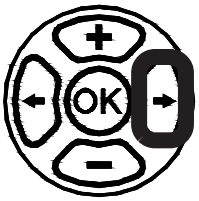
Minimum Compensation Time (Tmin) - This is the time the valve will be open, no matter what the pattern length, the machine speed, and the "OFF" Compensation Times are set at.

Valve Type

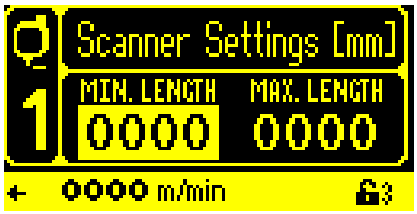


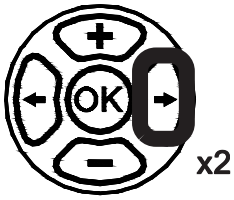


The Plus/Minus Buttons can be used to scroll through the different valve types available.



Scanner Settings

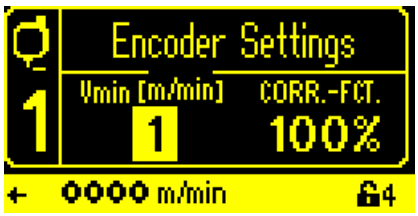


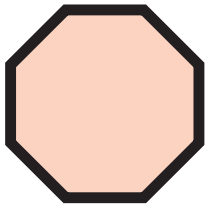


Minimum Product Length - The length of a product that is necessary to trigger a start signal. If there are tabs and/or dust causing false trigger signals, increase the Minimum Product Length.

Maximum Product Length - (Only active in Auto Glue) Determines the maximum pattern length in Auto Glue Mode. If this is set to “0” the function is disabled.

Encoder Settings

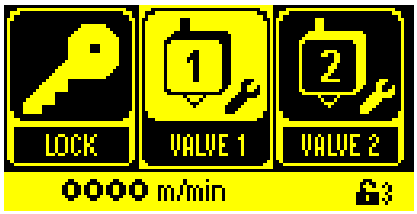


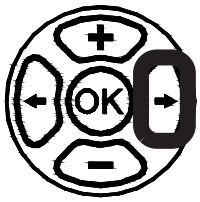


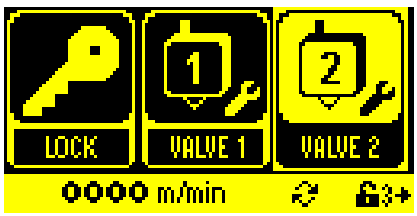
Encoder Input - Use to choose a scanner (1 through 4) or the encoder Z pulse to trigger the selected channel.

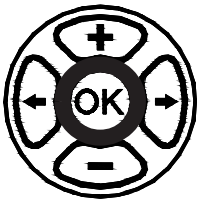
Correction Factor - The scaling factor used to adjust an individual/system ratio for the selected channel. This feature is used on right angle machines when the valves are mounted in sections that are running at different speeds. To be as precise as possible, the encoder should always be mounted in the section that is running the fastest.

Check Other Valves/ Channels







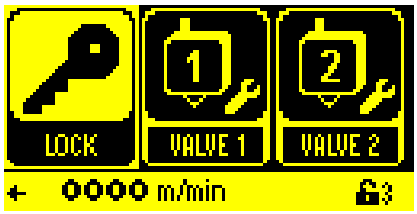


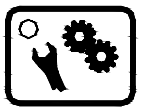
Check valve/channel 2 settings.
Repeat for all valves being used.

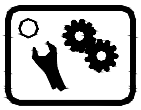
Additional Setup Button Parameters

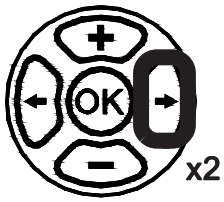
Some parameter screens that appeared in the “Wizard” may also appear in the Setup Button Menu.

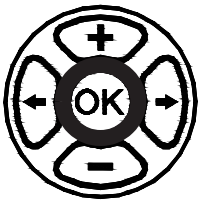
Use the Plus/Minus Buttons to scroll through all available choices. Make sure the desired choice is highlighted on the screen before moving to the next parameter setting. To move though the parameter screens, use the Right/Left Buttons.





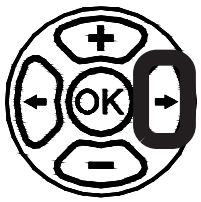






Language

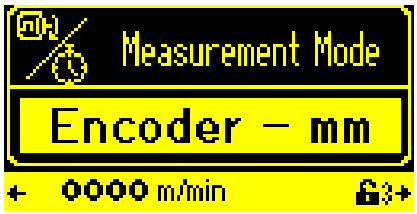
(All Applications)



Language - Language is a global setting. This means that all screens will appear in the chosen language.

Measurement Mode

(Packaging, Core Winding, EPC12 and Others)

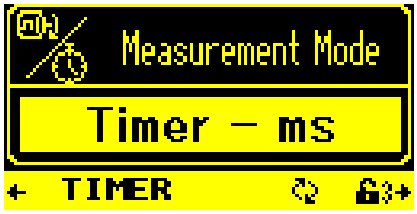


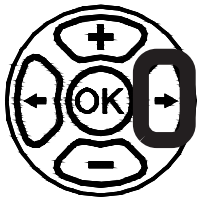
Measurement Mode - **Encoder** - Set the units to Inch or Millimeter (mm).

> See the heading “Encoder Menu Screen” in this Section for additional encoder settings.

OR

(Timer and Labeler)

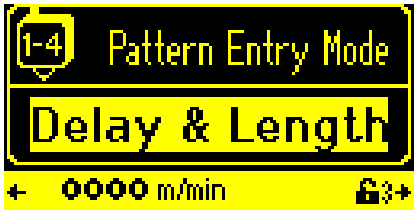




Measurement Mode - **Timer** - Set the units to Seconds (sec) or Milliseconds (ms).

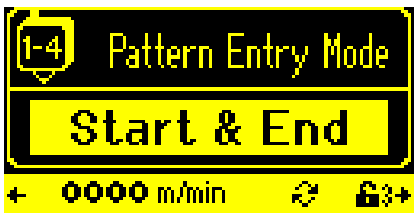
Pattern Entry Mode

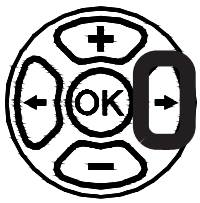
(All Applications)



Delay/Length Mode - There is a delay length from the leading edge of the product to the start of the glue line. These measurements, and the length of the glue line, will be input during the pattern setup (see Section 5 - Operation).

OR

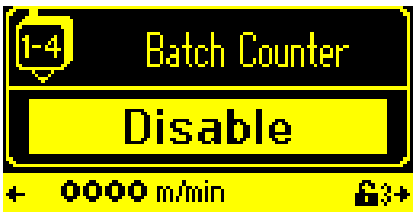


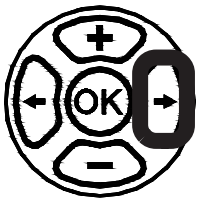


Start/End Mode - The measurements used include the start of the glue line from the leading edge of the product and the end of the glue line from the leading edge of the product (see Section 5 - Operation). This Mode requires an encoder and is not available for Timer applications

Batch Counter

(All Applications)

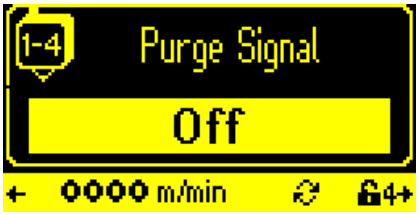


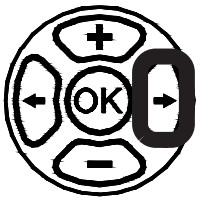


Batch Counter must be enabled in this menu (Pattern Menu) so individual Batch Count Menus will appear during setup (see Section 5 - Operation).

Purge Signal

(All Applications)

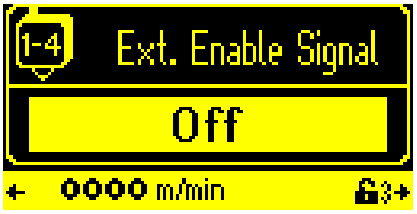


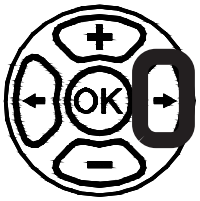


Purge Signal - This is a collective purge. When the Purge Signal is on, scanner 3 cannot be used as a trigger input.

External Enable Signal

(All Applications)

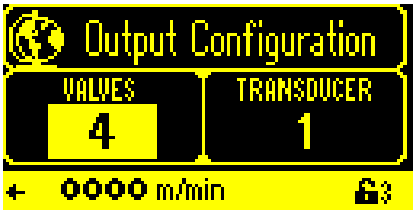


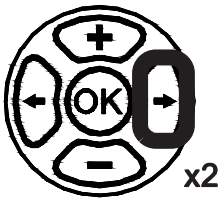


External Enable Signal - (This was also known as “web break detection.”) When enabled, this function uses Scanner #4 to enable and disable gluing.

Output Configuration

(All Applications)



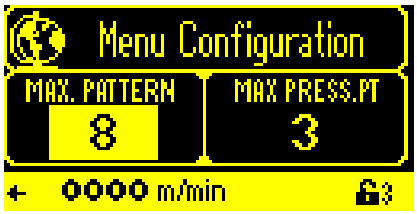


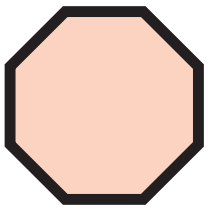
Output Configuration--Valves - Set the number of valves being used. Up to four valves (channels) are available.

Output Configuration--Transducer - Set the number of transducers being used. Currently, there is only one available.

Menu Configuration

(All Applications)

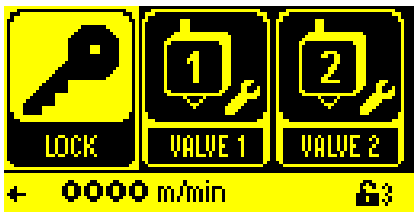


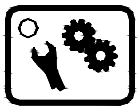


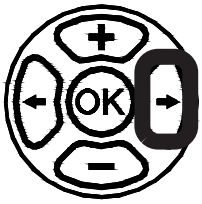
Menu Configuration--Maximum Patterns - Set the number of patterns being used. Up to ten patterns are available.

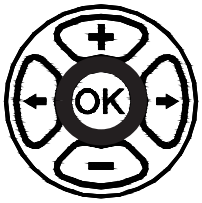
Menu Configuration--Maximum Pressure Points - Set the number of pressure points being used, from two to four.

Encoder Menu Screen

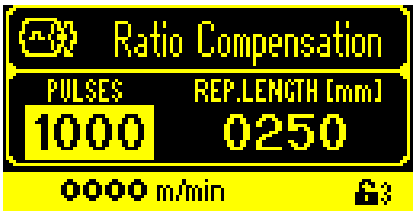


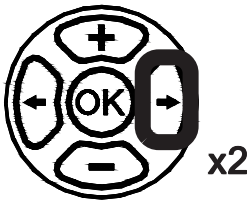






Ratio Compensation





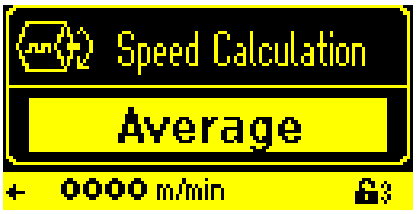
Ratio Compensation Pulses/Repeat Length - The scaling factors used to calculate the correction factor.

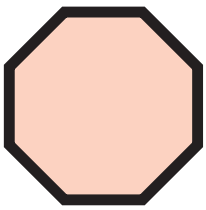
If the encoder type “Others” is entered in the Initial Setup (Wizard), it is necessary to input the encoder parameters on this screen. The following tables may be helpful:

Red Encoder Wheel		
Pulses	**Setup**	**Circumference**
1000	Metric	250 mm
	Imperial	9.84 inches
500	Metric	250 mm
	Imperial	9.84 inches
250	Metric	250 mm
	Imperial	9.84 inches

Black Encoder Wheel		
Pulses	**Setup**	**Circumference**
1000	Metric	254 mm
	Imperial	10.0 inches
500	Metric	254 mm
	Imperial	10.0 inches
250	Metric	254 mm
	Imperial	10.0 inches

Speed Calculation





Speed Calculation Immediate/Average - “Average” is the default setting and will work for the majority of jobs. However, if an immediate reaction to a change of the encoder speed is needed, the setting should be changed to “Immediate.”

SECTION 5 - OPERATION

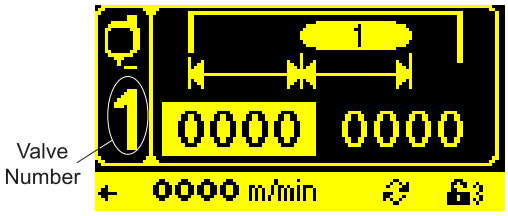
Set the Pattern Menu Information

Depending on the password level, some screens may not be seen and/or available. This is a security feature of the MCP-6.

After completing the mounting and the programming of the MCP-6 Unit, the unit is ready to operate. The first task is to input all pattern data and other essential information. Many of the options are “enabled” in the Setup Menu (see Section 4 - Programming). If you do not see a particular setting you need, be sure to check the programming parameters that were set in Section 4 of this manual--the desired option may not be enabled, and that option’s menu screens are hidden.

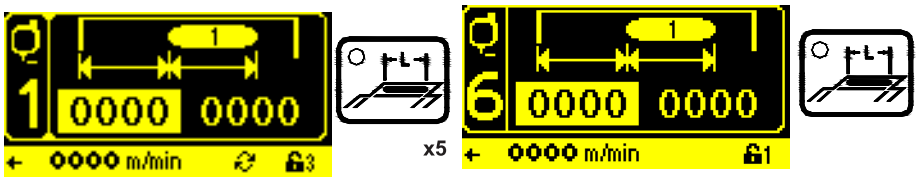
To edit the highlighted value, press the OK Button for the thumbwheel or press the Plus/Minus Buttons for single digit editing (see Section 4 - Programming, “Thumbwheel vs. Single Digit Edit”).

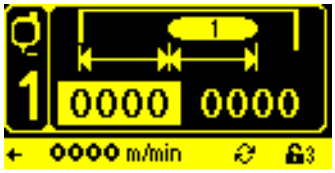
The default screen always shows valve 1. Before entering any data, it is advisable to check the left side of the screen for the valve number. Make certain the desired valve number appears before entering data.



Scrolling Through Valve Numbers with the Pattern Button

Each press of the Pattern Button will increase the valve number by one. When valve 6 is reached, the valve numbers restart at valve 1. For example:

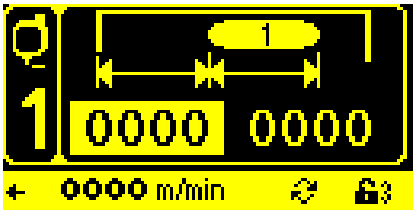


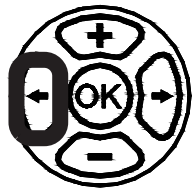


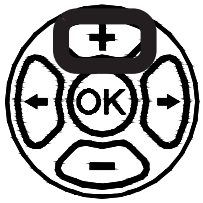
(ETC.)

Gluing Mode

(Applications include Packaging, Core Winding, Timer, and Others)



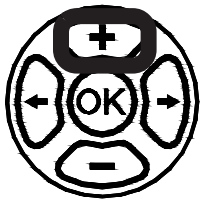




Glue Mode - The gluing style. Use the Plus/Minus Buttons to scroll through the choices. These are (depending on the application chosen):

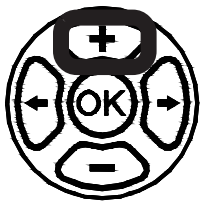
1. **Pattern** - Adhesive is applied in a pattern on each product.

(Applications include Packaging, Timer, and Others)



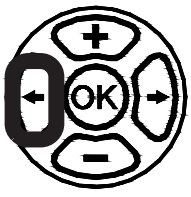
2. **Stitch** - Applies adhesive in a stitch-like pattern.

(Applications include Core Winding, and Others)



3. **Continuous** - Applies adhesive continuously when speed is higher than the Vmin setting.

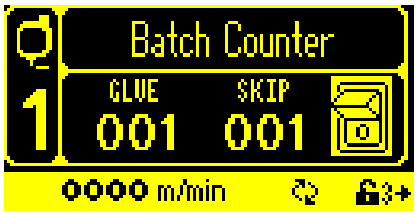
(Applications include Packaging, Core Winding, Timer, and Others)

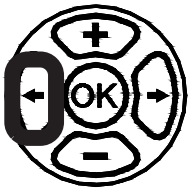


4. **Auto Glue -** Applies a strip of adhesive based on the length of the scanner signal. Input the start delay (length from the leading edge of the product to the beginning of the glue line) and the end delay (the end of the glue line to the trailing edge of the product).

Batch Counter

(All Applications)





Batch Counter must be enabled under the Setup Menu (see Section 4 - Programming).

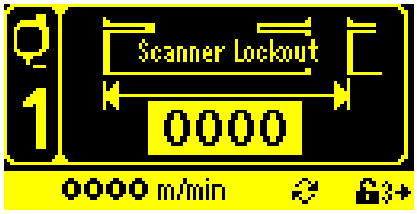
Batch Counter--On/Off- Turn the batch counter on and off with the “switch” using the Plus/Minus Buttons.

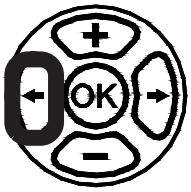
Batch Counter--Skip - The total number of products for which the pattern will be skipped (no adhesive will be applied).

Batch Counter--Glue - The total number of products the adhesive pattern will be applied to, one after the other without skipping any products.

Scanner Lockout

(Applications include Packaging, Timer, and Others, plus Core Winding when not in Continuous gluing mode.)

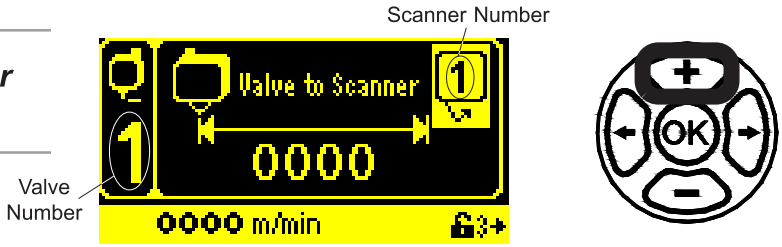




Scanner Lockout - Enter a product length to act as a scanner lockout when holes, writing, or other items produce a false trigger by the scanner.

Valve to Scanner Distance

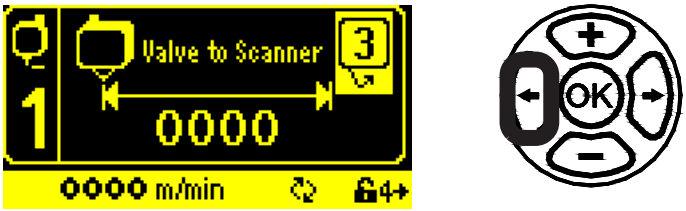
(All Applications)

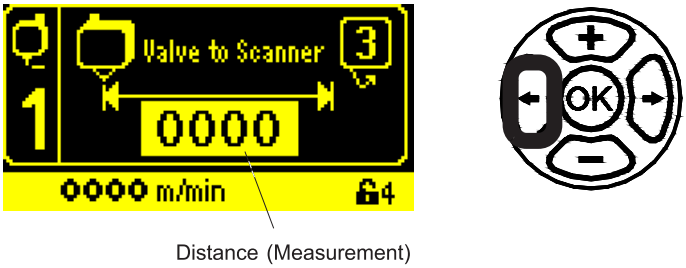


Scanner Number

Valve to Scanner Distance - Scanner Number - The number of the assigned scanner.

To choose a scanner, press the Plus Button until the desired scanner number shows in the upper right corner of the screen.

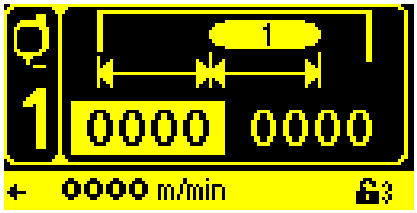




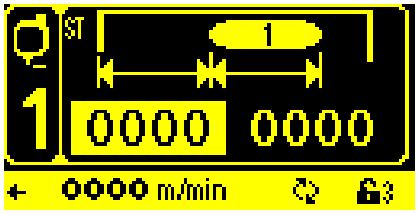
Valve to Scanner Distance - Measurement - The distance between the valve (shown on the left of the screen) to the scanner number shown in the upper right corner (see “Valve to Scanner Distance - Scanner Number” above).

Input Values/Gluing Mode

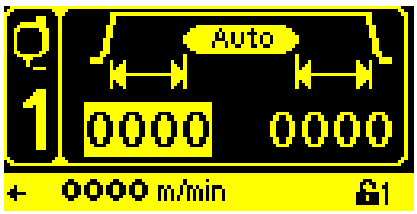
Depending on the application and the gluing mode chosen, input your values:



Pattern Mode
(Timer, Core Winding, and Others)



Stitch
(Others)



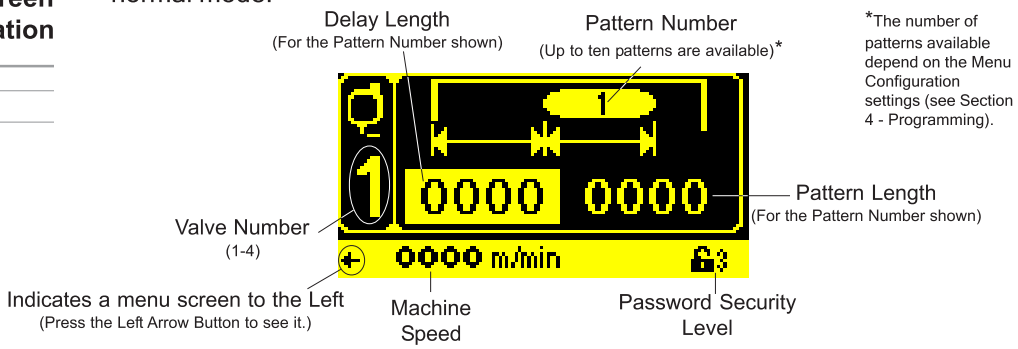
Auto Glue
(Packaging, and Others)

The screens above are unique to each gluing mode. Each screen is designed to show comprehensive information at a glance. The following subsection “Glue Mode Screen Information” explains how.

Glue Mode Screen Information

Pattern Mode

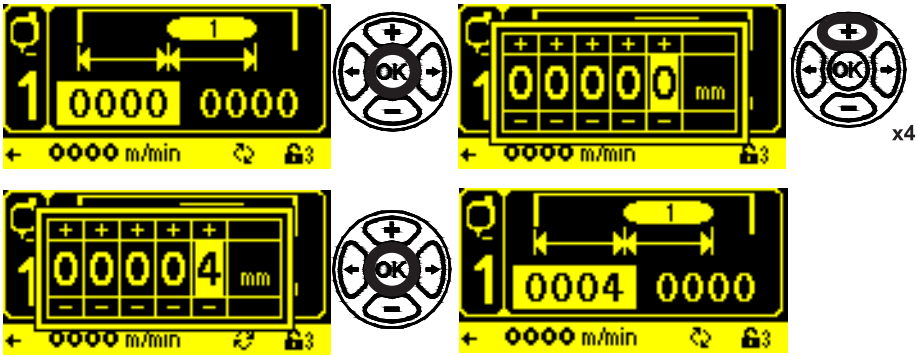
The Pattern Glue Mode can also be called “pattern-skip-pattern” mode or “normal mode.”



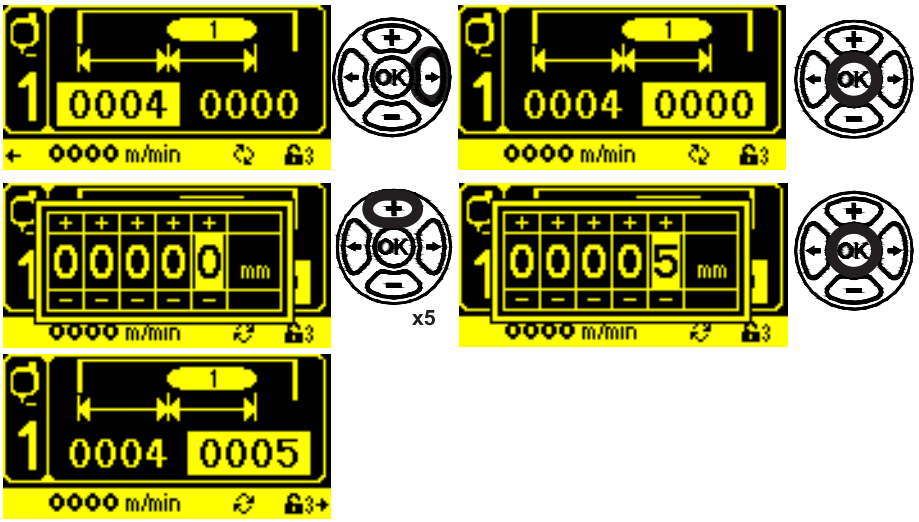
The following is an example of setting up a pattern gluing mode with three patterns for valve one:

1. Set the Delay Length for pattern 1. The Delay Length for pattern 1 is the measurement from the first edge of the product to where you want the first glue line to start.

Pattern Mode - Example

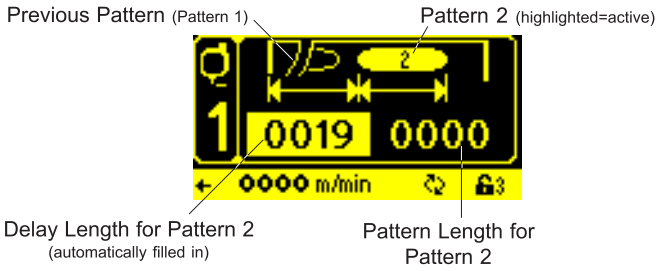


2. Press the Right Arrow Button to view the Pattern Length for pattern 1. The Pattern Length is the length of the glue line (for the pattern number indicated). Press the OK Button to view the thumbwheel, and use the Plus/Minus Buttons to change. Press the OK Button to enter the setting.

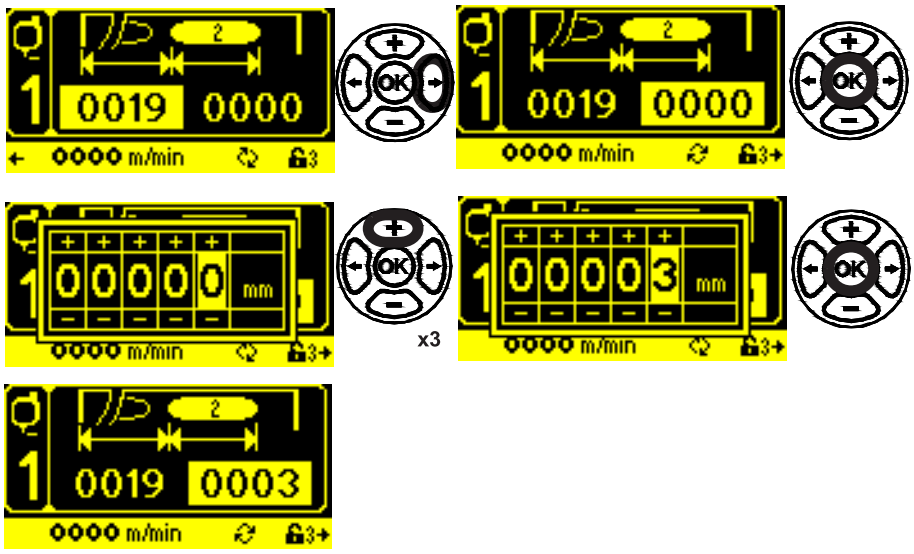


Pattern Mode - Example - Continued

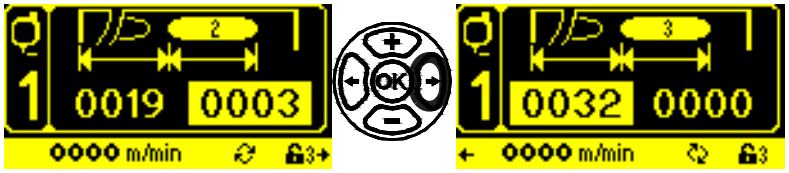
3. Press the Right Arrow Button to view the Delay Length for pattern 2. The control automatically fills in the Delay Length for pattern 2 (so the next pattern does not interfere with the previous pattern). This number can be adjusted if desired.



4. Press the Right Arrow Button to view the Pattern Length for pattern 2. Press the OK Button to view the thumbwheel, and use the Plus/Minus Buttons to change. Press the OK Button to enter the setting.

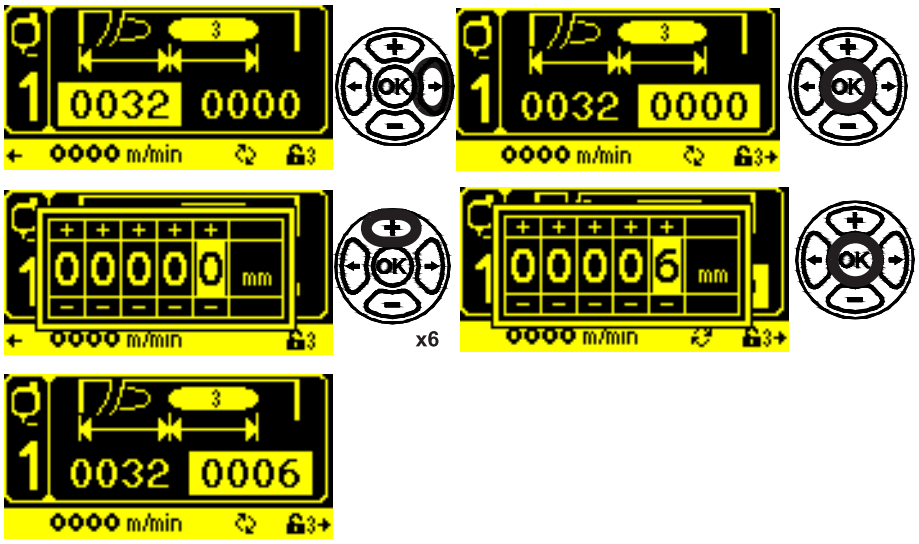


5. Press the Right Arrow Button to view the Delay Length for pattern 3.

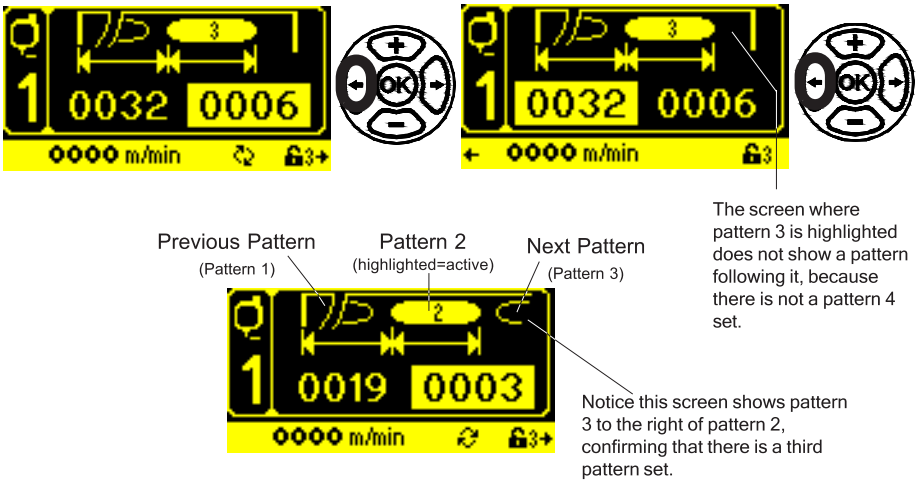


Pattern Mode - Example - Continued

6. If the Delay Length is acceptable, press the Right Arrow Button to view the Pattern Length for pattern 3. Press the OK Button to view the thumbwheel, and use the Plus/Minus Buttons to change. Press the OK Button to enter the setting.



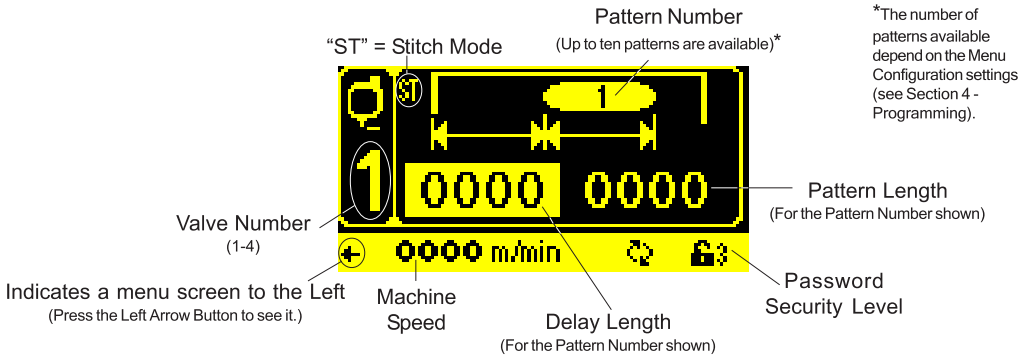
7. All three patterns are now set. To review them, use the Left Arrow Button.



8. Use the Left and Right Arrow Buttons to review all information as desired. All three patterns have been set and the Pattern Glue Mode for Valve 1 is now ready.

Stitch Mode

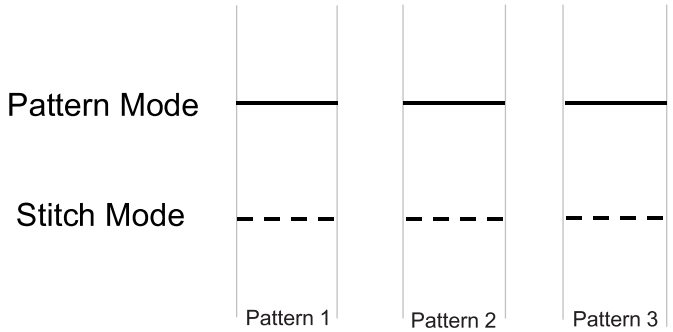
Stitch Mode is very similar to Pattern Mode, with the exception that the glue "patterns" are applied in a stitch-like pattern.



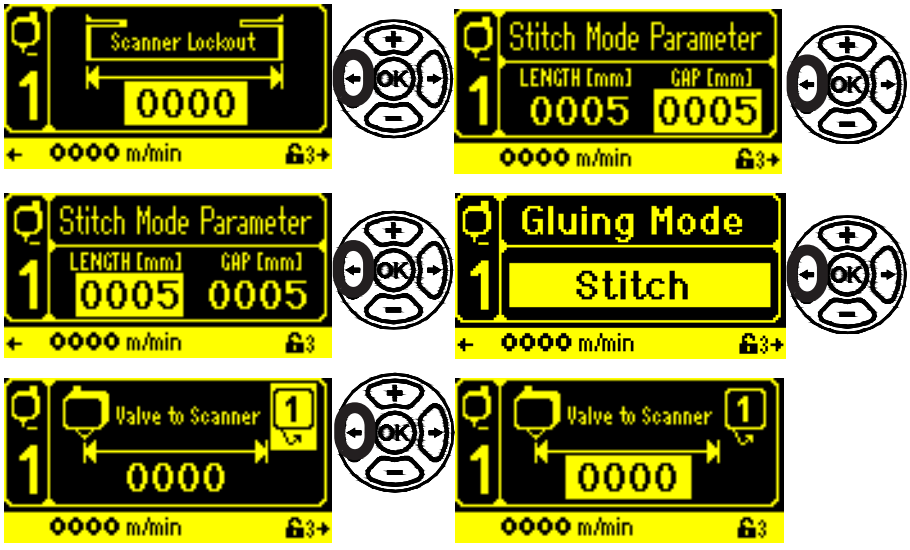
Setting the patterns for Stitch Mode is very similar to setting the patterns for Pattern Mode.

The difference between Pattern Mode and Stitch Mode is the application of the glue. The Pattern Mode applies a continuous strip of glue for the pattern length specified. The Stitch Mode applies the glue in a stitch pattern for the pattern length specified. To illustrate:

The length of patterns 1, 2, and 3 are all 5 mm for both glue modes.



Stitch Mode Menus

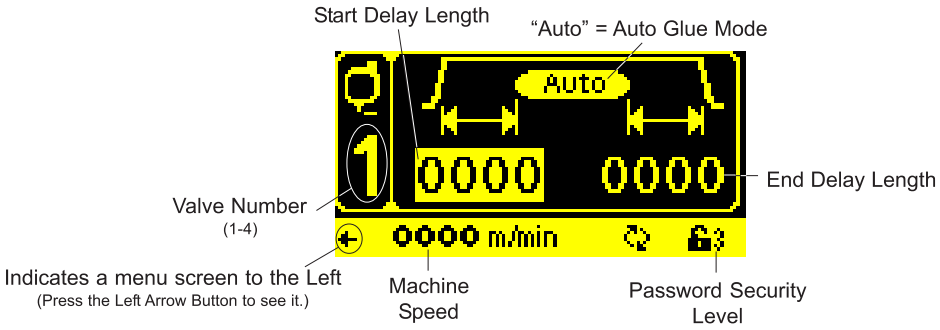


Stitch Mode Menus - Continued

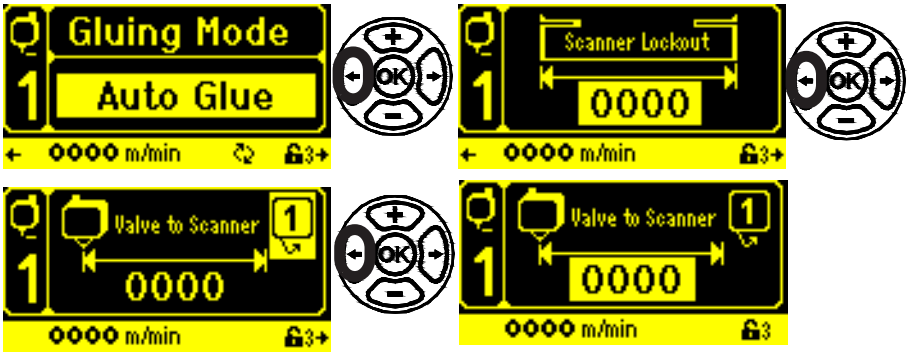
If the Batch Counter is enabled, the *Batch Counter* screen will appear between the *Scanner Lockout* and *Gluing Mode* screens

Auto Glue Mode

In Auto Glue Mode, one **Start Delay Length** (the length from the leading edge of the product to the beginning of the glue line) and one **End Delay Length** (the end of the glue line to the trailing edge of the product) are entered. The glue is applied automatically based on the length of the scanner signal.

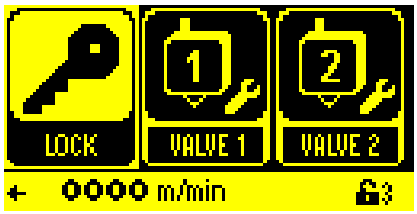


Auto Glue Mode Menus



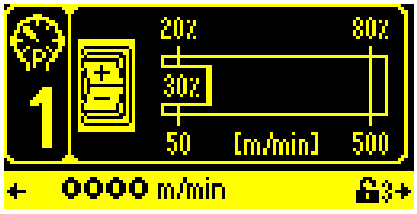
Set the Pressures

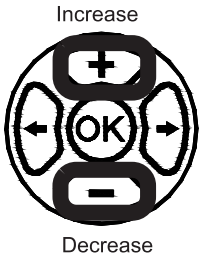
The Pressure Button is used to enter/change the Electronic Pressure Control (EPC) parameter values.

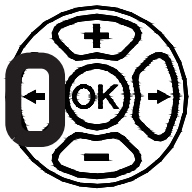


Pressure Offset Value

(All Applications)



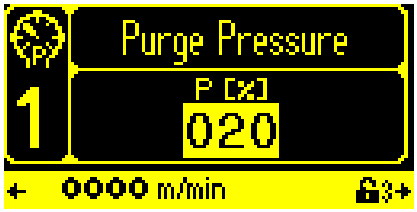


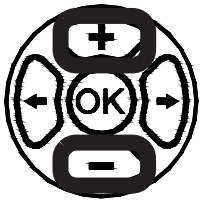


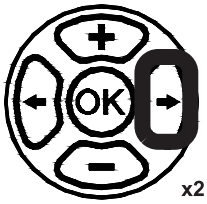
Pressure Offset Value - Used to increase/decrease the current pressure. The Pressure Offset is used to do minor pressure adjustments instantly. It does not change the pressure table profile.

Purge Pressure %

(All Applications)







Purge Pressure - The pressure setting when the machine is at zero speed.

There is currently only one EPC output with 0-10V.

Minimum Speed/ Pressure

(All Applications)

Right Arrow Icon

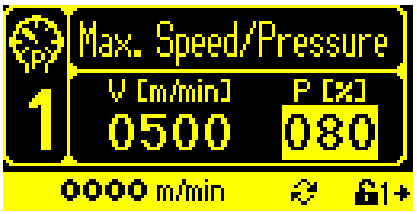
Press the Left/Right Buttons as indicated by Left/Right Arrow Icons on the bottom of the screen (see example at left) to see all available pressure setting menus.

V (m/min) - The machine speed.

P (%) - The percent of pressure.

Maximum Speed/ Pressure

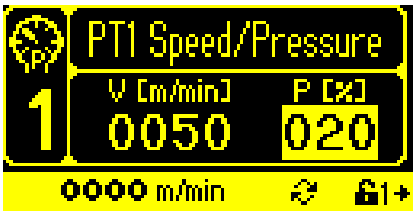
(All Applications)



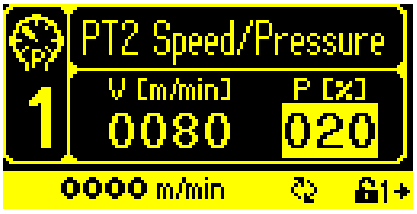
When one/two pressure points are enabled, the two screens will be named “PT1” and “PT2” respectively. These pressure points are set up just like the Maximum and Minimum Pressures.

The number of pressure points on the pressure curve are input during setup. See Section 4 - Programming, “Additional Setup Button Parameters” - *“Menu Configuration”*

Pressure Point 1 (PT1)



Pressure Point 2 (PT2)



Helpful Hints about Pressures

The four pressures/speeds are dependent upon each other. For example, the first speed setting can never be greater than the second speed setting, and the second speed setting can never be greater than the third, and so on. Also, the second speed setting can never be less than the first speed setting, the third speed setting can never be less than the second speed setting, and so on. Therefore, if you cannot set speeds to where you want them (the Plus/Minus Arrow Buttons will not increase or decrease the setting), check all four of the settings. Use the Left Arrow and Right Arrow Buttons to move through all pressures/speeds and check them. Reset them as necessary using the Plus/Minus Arrow Buttons. You can also go back to factory defaults by pressing the Erase Button until the setting will no longer change.

Application-Specific Setup

Labeler Application

Under the configuration Wizard (initializing parameters) select the application: *Labeler*

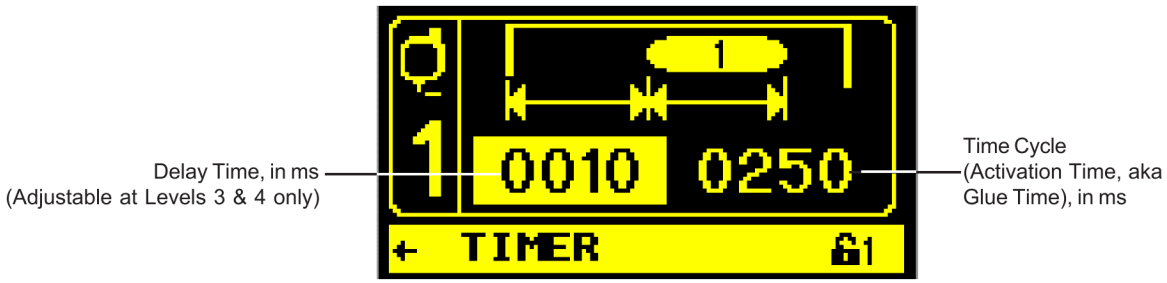
The basic setup for the labeler application is configured for 2 valves. To increase the number of valves see *Section 4 - Programming, Additional Setup Button Parameters, Output Configuration*.

Each channel is preconfigured for 1 pattern selection. To increase the number of patterns see *ection 4 - Programming, Additional Setup Button Parameters, Output Configuration*.

By default, each channel is preconfigured to use MAC24 valves. To change this option see *Section 4 - Programming, First Use Setup (Wizard), Valve Type*.

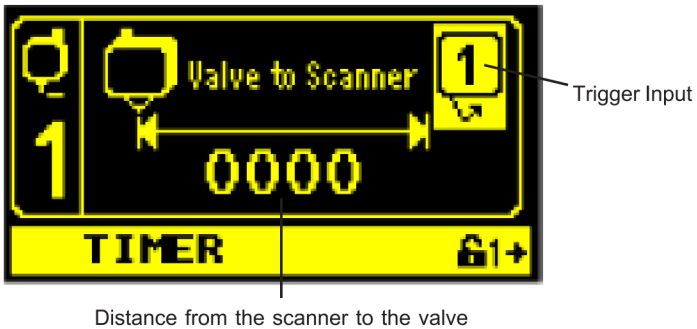
Basic Startup Parameters to Change:

- **Pattern Screen:**



The delay time must be set at a minimum of 1 ms. The glue time can be set to the desired amount necessary for the application

- **Valve to Scanner Screen:**



Adjusting the Time Cycle

Presetting to a setup that corresponds to production flow is possible, but not mandatory. The operator needs only know what the anticipated flow rate is, in pieces per minute, to compute the proper setting. The following formula and example shows how to make the computations.

FORMULA

Step 1 $\frac{\text{Speed (pieces per minute)}}{\text{60 seconds}}$ = pieces per second

Step 2 $\frac{1}{\text{pieces per second}}$ = Time Cycle Setting

EXAMPLE

Assuming a production run of 240 pieces per minute:

Step 1 $\frac{\text{240 pcs/min}}{\text{60 sec.}}$ = 4 pcs./sec.

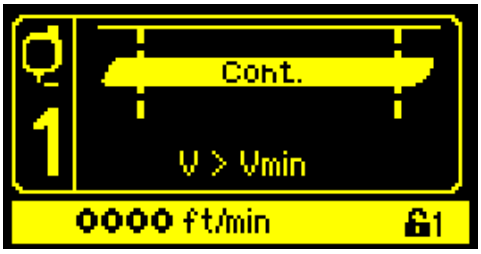
Step 2 $\frac{1}{\text{4 pcs./sec.}}$ = .25 seconds

EPC12 Application

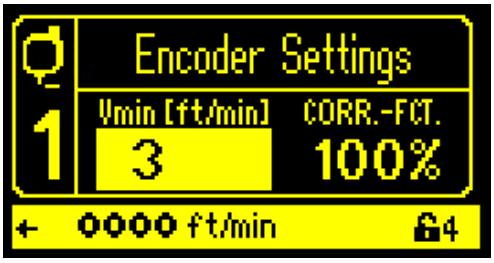
The ECP12 application regulates pressure, and fires the valve when the speed threshold is achieved. The default valve type is *MAC24*.

All valve channels are designed to trigger from the external Enable signal, defaulted to Scanner 4.

Valve setup: Valves 1 - 6 are preset to *Continuous* mode, so that only that pattern screen will be visible .

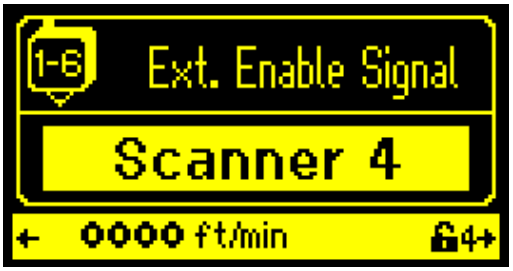


1. For each valve under the settings menu, set the speed threshold.



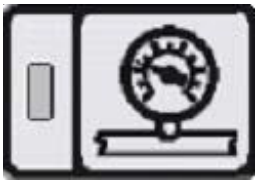
The speed threshold is defaulted to 3 ft/min. This means the valve will only activate when the machine speed is greater than 3 ft per min.

By default, the external Enable signal is set to Scanner 4, under the *System Settings* menu. It should remain set to 4 because of the board circuitry.



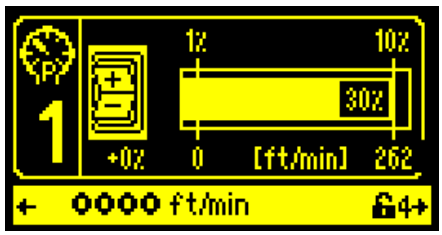
2. To set the minimum and maxaximum pressure percentages:

   a. Press the Pressure key.



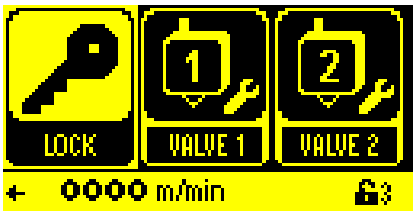
EPC12 Application - Continued

b. Press the Right Arrow key to access the desired menu.



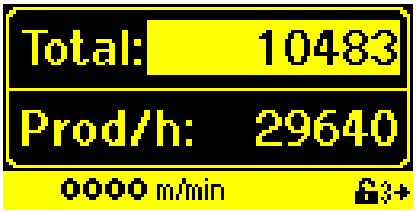
Diagnostic Button

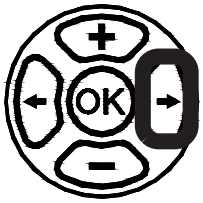
(All Applications)



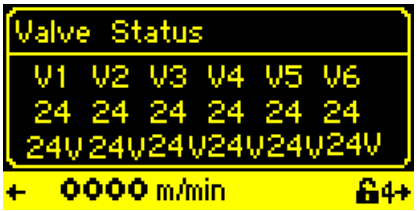
Total Products/ Products per Hour

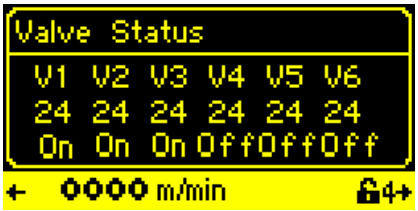
The first diagnostic screen shows the total number of products and the number of products per hour. The total number of products count can be reset to zero by pressing the Erase Button.





Valve Status

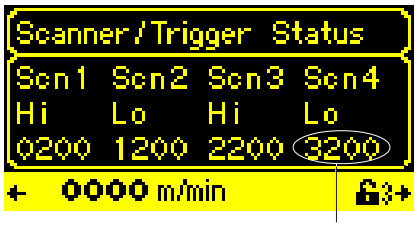


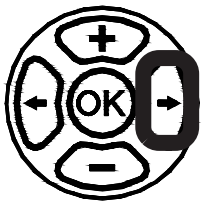


The second diagnostic screen shows the valve status. The top numbers show the valve type. The bottom numbers will switch back and forth from showing the valve voltage to showing the valve status (enabled or disabled).

> A voltage reading of 0.0 could indicate a blown fuse. See Section 8, Parts List, for fuse numbers and placement.

Scanner and Trigger Status

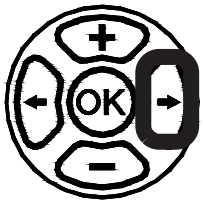




The number of pulses per product length. This number is helpful in setting up the Ratio Compensation.

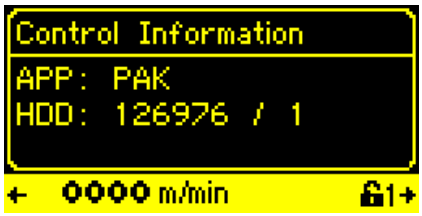
The scanner/trigger information screen displays the scanner and trigger settings.

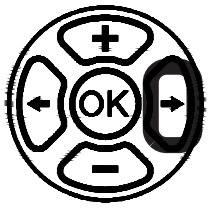
Version Information



The version information screen displays the CPU, the Logic (PLD), and the Timer (TPU) software version information.

Control Information

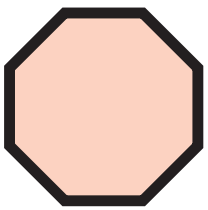




The control information screen displays application (APP) and Hard Drive Disk (HDD) information. HDD indicates:

- How much storage for the 'Job' is left in the Flash Memory (higher number at left) and,
- How many times the software has been written into the Flash Memory (lower number at right).

Event History

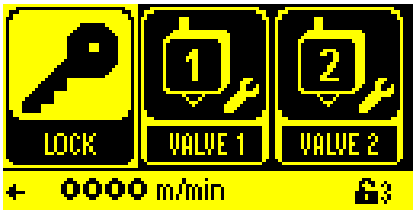


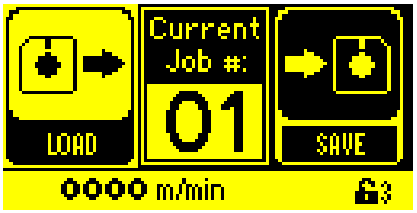
The event history screen displays error messages.

Job Button

(All Applications)

The Job Save/Recall Mode allows the MCP-6 Control Unit to save and recall up to 100 different jobs for fast programming.

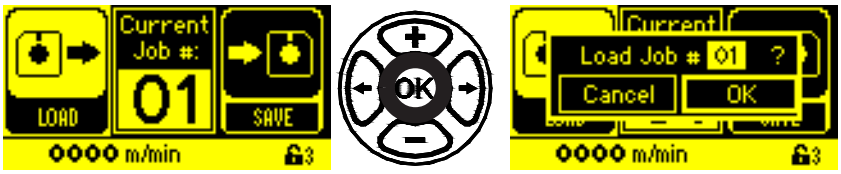




Load - Load a previously saved job.

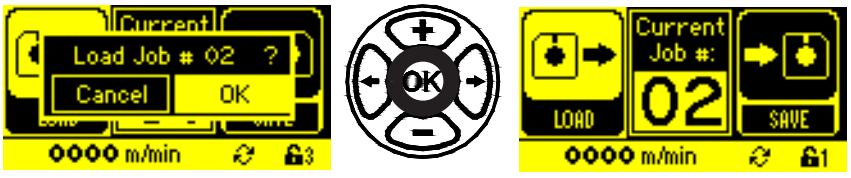
Load a Job

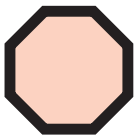
Any level (including 0) can load a job.



When “Load” is highlighted, press the OK Button to enter a job number. Use the Plus/Minus Buttons to change the job number.

When the desired job number has been entered, press the Right Arrow Button to highlight “OK” and press the OK Button. The job is loaded.

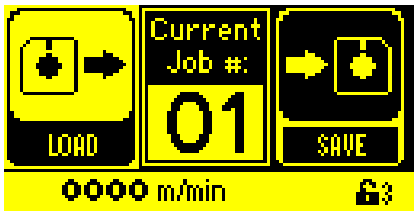




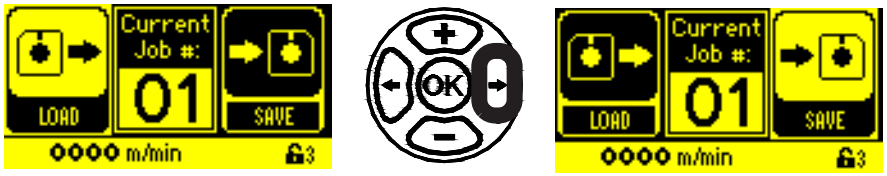
Enter the job number and information in a chart (see Appendix A - Job Charts) for quick job set up. Also, jobs can be overwritten, so it is important to keep track of them.

Save a Job

Only password levels 2 or higher can save a job.

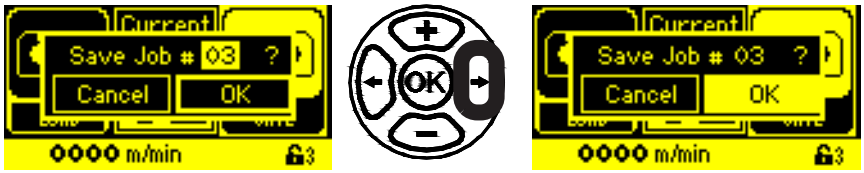


Save - Save all settings under a job number.



Press the Right Arrow Button to highlight “Save” and then press the OK Button.

Use the Plus/Minus Buttons to change the job number.



Press the Right Arrow Button to highlight “OK. ”Press the OK Button to save the job. Be sure to write the job name and job number for reference (see Appendix A - Job Charts).

SECTION 6 - PART NUMBER LIST

How to Order Parts

To order parts, please contact your closest Valco office by mail, phone, or Email:

USA:

Valco Cincinnati, Inc.
497 Circle Freeway Drive
Suite 490
Cincinnati, OH 45246
Tel: (513) 874-6550
Fax: (513) 874-3612
Email: sales@valcomelton.com
Web: http://www.valcocincinnatiinc.com

England:

Valco Cincinnati Limited
Hortonwood 32
Telford, TFI 7YN, England
Tel: (+44) 1952-677911
Fax: (+44) 1952-677945
Email: sales@valco.co.uk
Web: http://www.valco.co.uk

Germany:

Valco Cincinnati GmbH
Bonnerstrasse 349
40589 Dusseldorf-Benrath, Germany
Tel: +49 211 984 798-0
Fax: +49 211 984 798-20

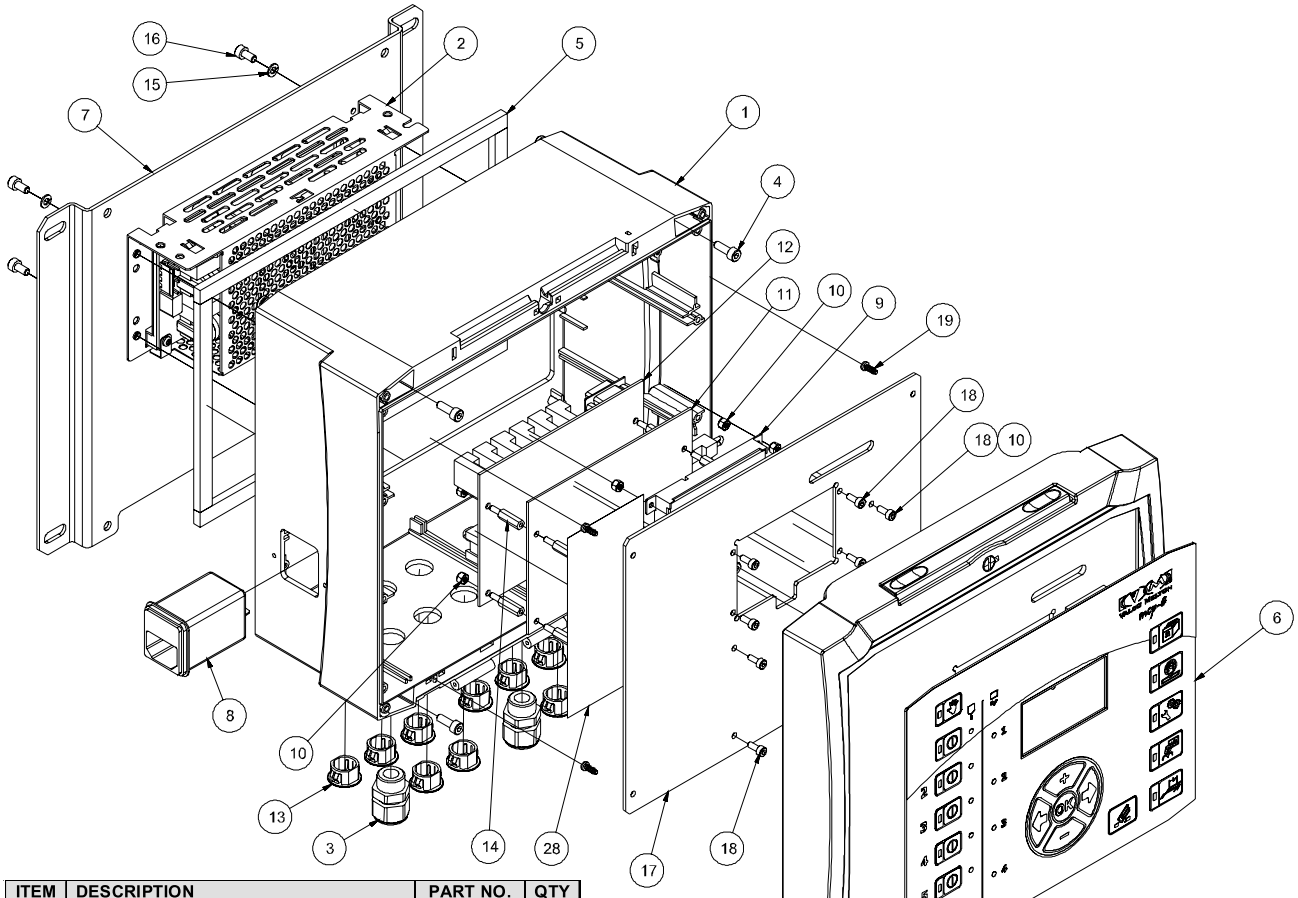
Spain:

Melton S.L.U.
Pol. Industrial Agustinos
calle G, n. 34
31160 Orcoyen, Navarra, Spain
Tel: (34) 948-321-580
Fax: (34) 948-326-584

France:

Valco Melton France
Technoparc des Hautes Faventines
32 Rue Jean Bertin
26000 Valence
Tel: +33 (0)4 75 78 13 73
Fax: +33 (0)4 75 55 74 20

MCP-6 Control Assembly (074XX056)



ITEM	DESCRIPTION	PART NO.	QTY
1	ENCLOSURE; MCP-6	026XX323	1
2	POWER SUPPLY, 24V, LFA	148XX080	1
3	CORD GRIP	066XX160	12
4	SCREW	784XX051	4
5	GASKET	782XX377	30
6	OVERLAY; MCP-6 CONTROL	138XX011	1
7	MOUNTING PLATE; MCP-6 CONTROL	026XX324	1
8	POWER ENTRY MODULE;NO FUSE	086XX075	1
9	DISPLAY,YELLOW LED GRAPHIC L	137XX009	1
10	NUT	884XX219	9
11	PCB,ASSY,PCM6,VALVE	151XX691	1
12	PCB ASSY, VALVE DRIVER TOP, HM	151XX672	1
13	HOLE PLUG	781XX228	10
14	STANDOFF	091XX545	8
15	WASHER	798XX382	4
16	SCREW	798XX188	4
17	MOUNTING PLATE; DISPLAY	026XX322	1
18	SCREW	784XX112	9
19	SCREW	884XX288	6
20	SCREW	784XX047	4
21	SCREW	798XX192	4
22	FLAT WASHER	784XX183	8
23	LOCK NUT	784XX441	4
24	CABLE,ASSY,PAT CONR,COSEL,MCP6	029XX605	1
25	CABLE,ASSY,POWER IN,COSEL,MCP6	029XX606	1
26	CABLE CLAMP	066XX075	2
27	FLAT WASHER	798XX750	2
28	LABEL, MCP-6 WIRING CONNECTION	782XX378	1
29	CABLE, POWER	030XX493	1
30	FUSE	085XX221	1
31	FUSE	085XX239	1
32	MANUAL, MCP-6 CONTROL UNIT, CD	MC090CD	1

SECTION 7 - SPECIFICATIONS

Height	233.7 mm
Width	297.4 mm
Depth	157.5 mm
Valve Capacity	Six (6) valves
Input	90-240 VAC
Output	24 VDC
Maximum Wattage per channel	20W
Maximum Wattage Total of ALL channels	100W

SECTION 8 - WARRANTY

Warranty Information

Valco Cincinnati, Inc. warrants its equipment worldwide against defects in material and workmanship as outlined in this section.

Liability of the company is limited to repair of the product, or replacement of any part shown to be defective, and does not extend to defects caused by accidents, misuse, abuse, neglect, tampering or deterioration by corrosion. This warranty does not cover those items determined by Valco Cincinnati, Inc. to be normal wear items such as seals, O-rings, diaphragms, springs, etc.

Reconditioned equipment, unless specified otherwise at the time of purchase, will be warranted as described above for a period of ninety (90) days from the date of shipment by Valco Cincinnati.

Components purchased by Valco Cincinnati, Inc. from others for inclusion in its products are warranted only to the extent of the original manufacturer's warranty. In no event shall Valco Cincinnati, Inc. be liable for indirect or consequential damages arising out of the use of Valco Cincinnati products.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to Valco Cincinnati, Inc. for examination and verification. If claimed defect is verified, repairs or replacements will be made F.O.B. Cincinnati, Ohio, U.S.A. or ex-works Telford, U.K. If the inspection of the equipment does ***not*** disclose any defect of workmanship or material, any necessary repairs will be made at a reasonable charge and return transportation will be charged.

This is the only authorized Valco Cincinnati, Inc. warranty and is in lieu of all other expressed or implied warranties, representations or any other obligations on the part of Valco Cincinnati, Inc.

Cold Glue Equipment and Electronic Controls

The warranty for cold glue equipment and electronic controls for a period of one (1) year from the date of shipment by Valco Cincinnati, Inc.

Hot Melt Units, Hoses, Valves, Guns, and Related Equipment

All hot melt components except cast-in heating elements are warranted for a period of six (6) months from the date of shipment by Valco Cincinnati. Cast-in heaters carry an additional, pro-rated warranty not to exceed three (3) years from the date of shipment by ValcoMelton, a Valco Cincinnati, Inc. company.

SECTION 9 - SERVICE

If a problem with your system persists, contact a ValcoMelton Technical Support representative. If your need is urgent, we encourage you to contact our corporate office in Cincinnati, Ohio, U.S.A. at (513) 874-6550. If the problem cannot be resolved, Valco Cincinnati, Inc. will promptly arrange to have a technical representative visit your facility. Any charges for a service call will be quoted at that time. Any part that fails during the warranty period shall be returned prepaid to Valco Cincinnati, Inc. by the customer for disposition.

Upon request, ValcoMelton personnel are available to repair or replace such parts at the customer's facility. Charges for this service include travel time and expenses.

If an equipment problem is the result of customer abuse, improper installation or operation, all travel time, labor, parts, and expenses will be charged to the customer.

If the responsibility for a problem cannot be absolutely determined, the customer will be charged for travel time and expenses only. No charge will be made for parts and labor.