MCP-4J Control Unit

w/Jam Detection

Manual Number: MC122

Revision Date: 9/2019

Software Version: C003.0002

This manual written and designed at Valco Melton, 497 Circle Freeway Drive, Suite 490, Cincinnati, Ohio 45246. http://www.valcomelton.com

Part Number: MC122

Written and printed in the 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

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

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

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

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

Declaration of Conformity

(According to EN 45014)

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

Manufacturer:	Valco Melton A division of Valco Cincinnati, Incorporated 411 Circle Freeway Drive Cincinnati, OH 45246 USA	
Authorized Representatives in Europe:	Valco Cincinnati, Ltd. Unit 7-8 Hortonwood 32 Telford TF1 7YN England	Melton S.L.U. Pol. Industrial Agustinos calle G, n. 34 31160 Orcoyen Navarra, Spain

declares that the product:

Product Name:	MCP-4J Control Unit w/Jam Detection

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
EMC Immunity:	EN61000-6-2:2005 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-6 EN61000-4-8 EN61000-4-11
Place and Date:	Cincinnati, Ohio USA CE Mark first fixed 2006
Signature:	Cincinnati, OH USA David H. Swedes, Vice President of Engineering & Manufacturing

This Declaration of Conformity has been generated electronically and is legally binding without signature

Table of Contents

Section 1 - Introduction

System Description

This manual has been prepared by Valco Cincinnati, Inc. to provide assistance in the installation, operation, and servicing of your MCP-4J Control Unit.

The MCP-4J Control Unit from Valco provides operators with a full-featured affordable solution to adhesive system pattern control. The control features 4-channel operation, multiple glue patterns, and an optional flow control capability. The unit allows program changes and adjustments, so you can get desired results immediately. The control has a compact design and features “plug-and-run” connectors for easy installation and quick start up.

Features/Capabilities

The MCP-4J Control Unit works with a variety of Valco’s cold-glue or hot melt adhesive dispensing valves. Features/Capabilities of the MCP-4J Unit include:

- Suited to high-speed converting, such as:

  -folding carton production
  -envelope manufacturing
  -paper-folders
  -book and magazine production
  -bag-making
  -corrugated box making

- Multiple valves, complex glue patterns
- 4 channels, 10 programmable patterns per channel
- Continuous, stitch, and auto glue patterns
- Large storage memory of 100 jobs
- EPC flow control option
- Encoder-based or timer mode
- Web break detection option
- CE Compliant
- Jam Detection
- USB Software Updates
- USB and Micro-SD Backup & Restore
- Automatic Input Voltage Selection

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

Section 2 - Safety and Use

Read Thoroughly Before Handling Equipment

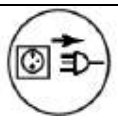
WARNING!

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.
	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.

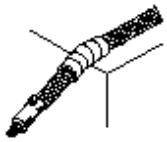
If the hot melt adhesive ignites, promptly perform the following steps:

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		DO	
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.	
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.	

Section 3 - Basic features

MCP-4J Control

Front Panel

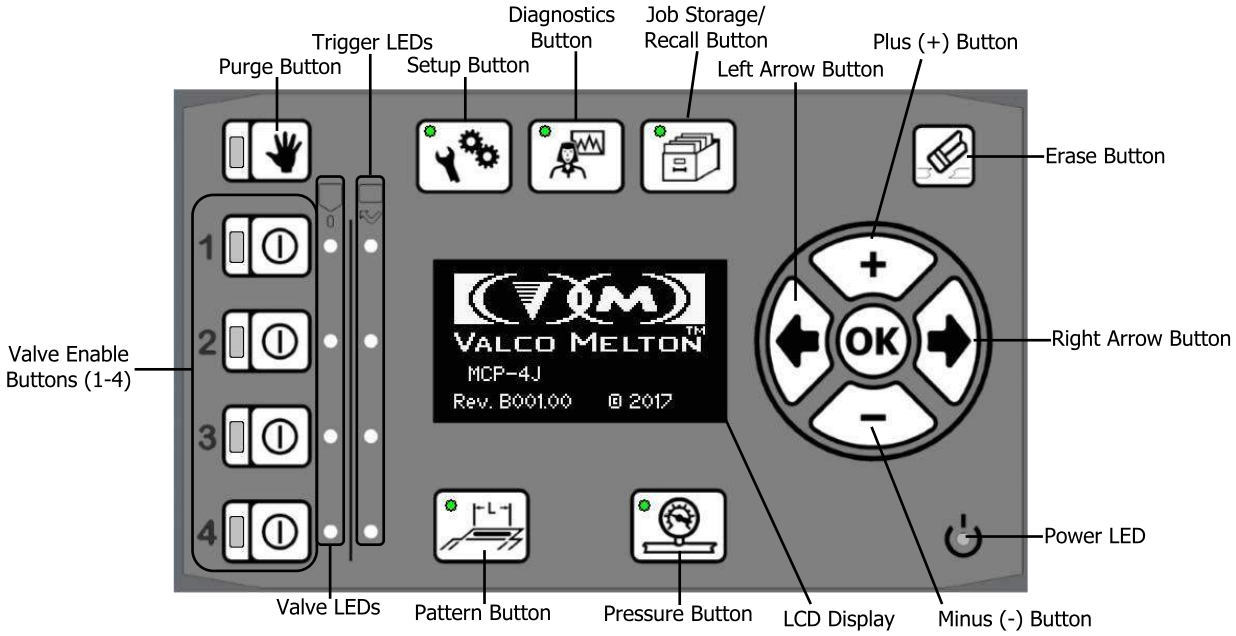


Figure 3-1. MCP-4J Operator Panel

Back Panel

> *For the EPC Air Pressure Input, use an 8mm air line OR use the 1/4" tube adapter that is included in your Installation Kit.

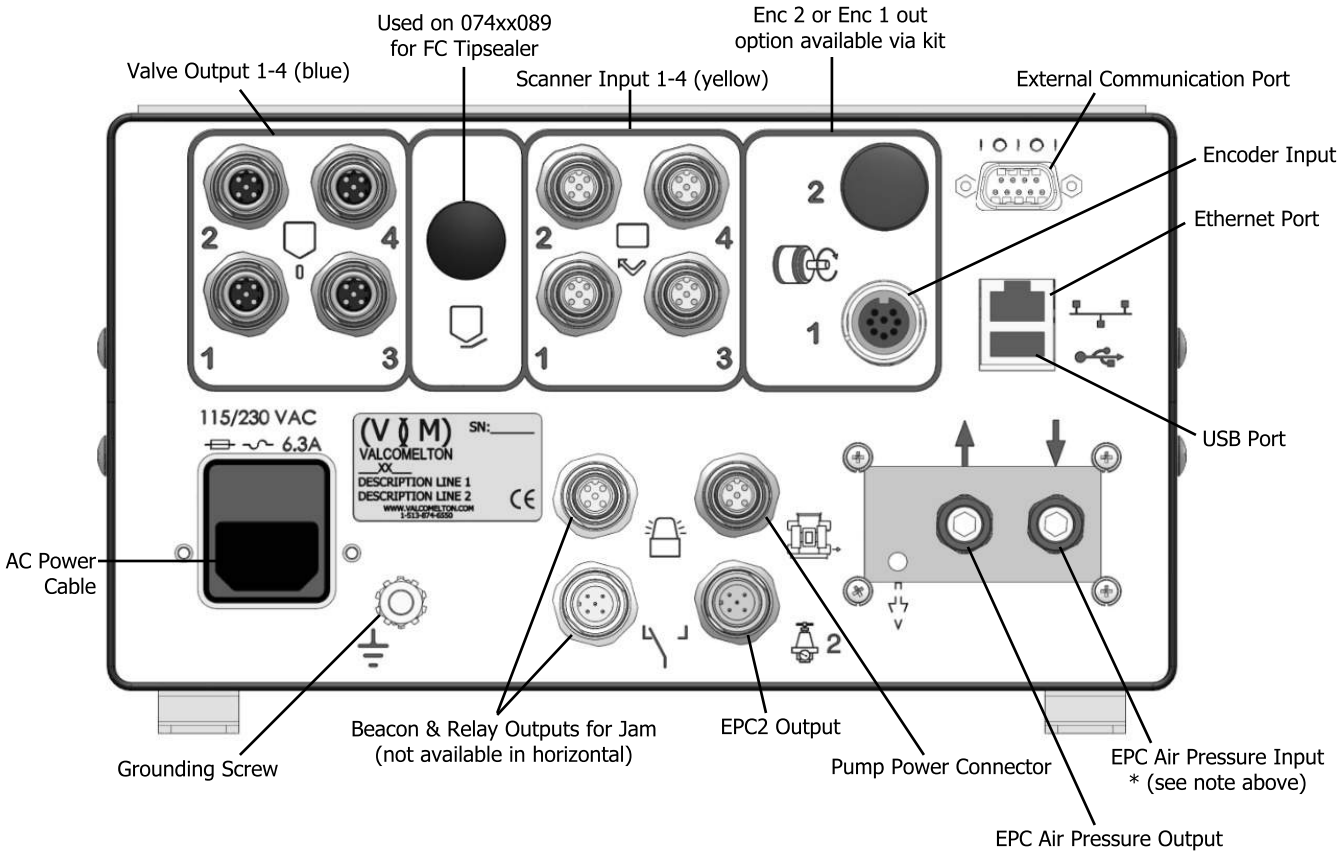
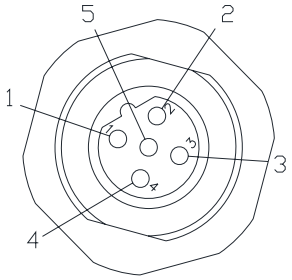


Figure 3-2. MCP-4J Back Panel

Pinouts, Standard

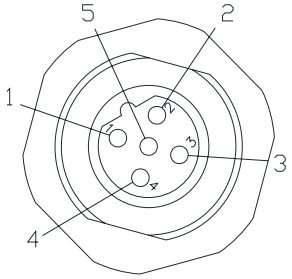
Valve Output

Valve Output		
Pin #	**Description**	**Color**
1	Coil Return	Brown
2	Coil Out	White
3	GND	Blue
4	Purge	Black
5	GNDE	Gray



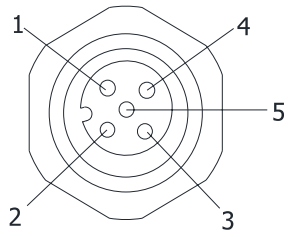
Scanner Input

Valve Output		
Pin #	**Description**	**Color**
1	+24V Fused	Brown
2	PNP Input	White
3	GND	Blue
4	NPN Input	Black
5	GNDE	Gray



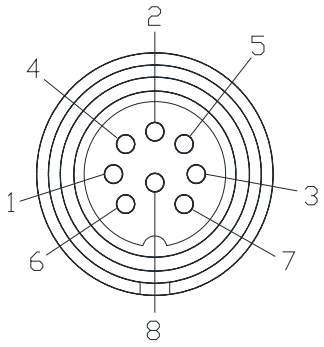
Alarm Beacon

Alarm Beacon		
Pin #	**Description**	**Color**
1	COM	Brown
2		White
3	NO Beacon	Blue
4		Black
5	Beacon Light	Gray
Pinout Drawing		



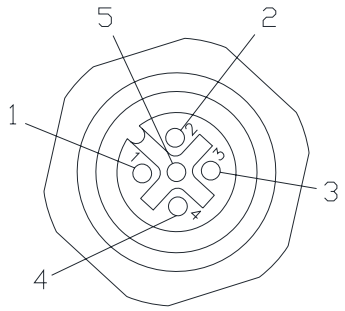
Encoder (Output/Input)

Encoder (Output/Input)	
Pin #	**Description**
1	GND
2	MCP-ENC A+
3	MCP +24V
4	MCP-ENC B+
5	MCP-ENC Z+
6	MCP-ENC Z-
7	MCP-ENC B-
8	MCP-ENC A-
Pinout Drawing	



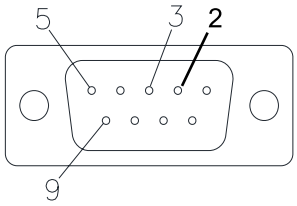
External EPC

External EPC		
Pin #	**Description**	**Color**
1	+24V FUSED	Brown
2	GND	White
3	GND	Blue
4	SIGNAL	Black
5	GND	Gray
Pinout Drawing		



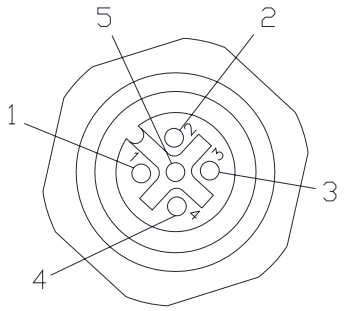
External Communication Port

External Communication Port	
Pin #	**Description**
1	
2	RX IN
3	TX OUT
4	
5	GNDE
6	
7	
8	
9	+5V ISO
Pinout Drawing	



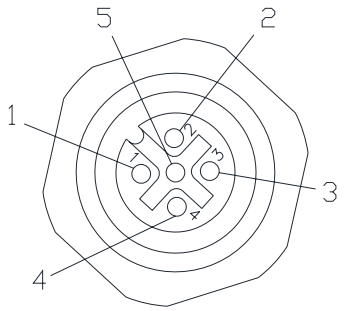
Pump

Pump		
Pin #	**Description**	**Color**
1	+24V FUSED	Brown
2	GND	White
3	GND	Blue
4	RX IN	Black
5		Gray
Pinout Drawing		



Used on 074xx089 for the FC Tipsealer

Tipsealer		
Pin #	**Description**	**Color**
1	Tipsealer Output (+24V)	Brown
2	GND	White
3		Blue
4		Black
5		Gray
Pinout Drawing		

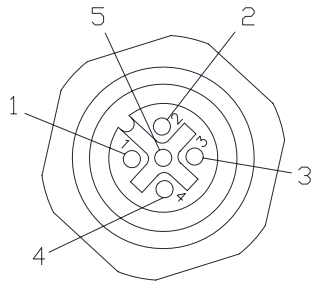


Pinouts, Tri-Valve

Feeder Signal

Feeder Signal					
Pin #	Description				Color
	J5	J6	J7	J8	
1	+24V FUSED				Brown
2	SCAN PNP1	SCAN PNP2	SCAN PNP3	SCAN PNP4	White
3	GND				Blue
4	SCAN NPN1	SCAN NPN2	SCAN NPN3	SCAN NPN4	Black
5	GNDE				Gray

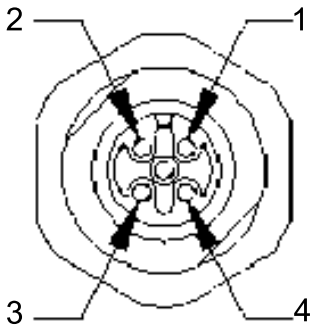
Pinout Drawing



Relay

Relay		
Pin #	Description	Color
1	COM	Brown
2	N.C.	White
3	N.O.	Blue
4	COM	Black

Pinout Drawing



Relay is rated to MAX 250VAC 3A or 30VDC 3A.

Alarm Beacon

Same as Standard

External Communication Port

Same as Standard

Encoder (Output/Input)

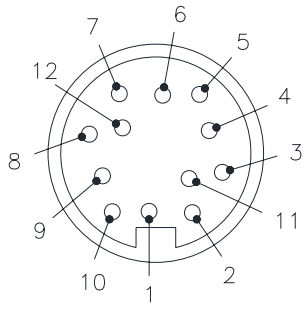
Same as Standard

Relay

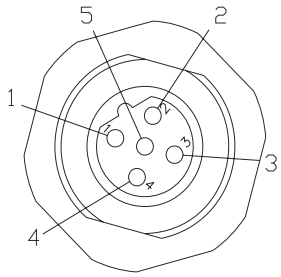
Same as Standard

Valve Connections

Valve Connections			
Pin #	**Description**	**Color**	**Panel Ref.**
Ch. 1-4			
1	V1 RET	Brown	J1-1
2	V1 OUT	Blue	J2-2
3	V2 RET	White	J1-3
4	PE	Green	J1-4
5	V3 RET	Yellow	J1-5
6	V3 OUT	Gray	J1-6
7	V4 RET	Pink	J1-7
8	V4 OUT	Red	J1-8
9	PURGE GND	Black	J1-9
10	PURGE V1	Orange	J1-10
11	PE	Tan	J1-11
12	V2 OUT	Violet	J1-12
Ch. 4 only			
1	V4 RET	Brown	J7-1
2	V4 OUT	White	J7-2
3	NOT CONNECTED	Blue	J7-3
4	PURGE GND	Black	J7-4
5	PURGE V4	Gray	J7-5
Pinout Drawing			
Ch. 1-4 (J1)			



Ch. 4 Only (J7)



MCP-4J Control, Vertical; No EPC (074xx084)

Front Panel

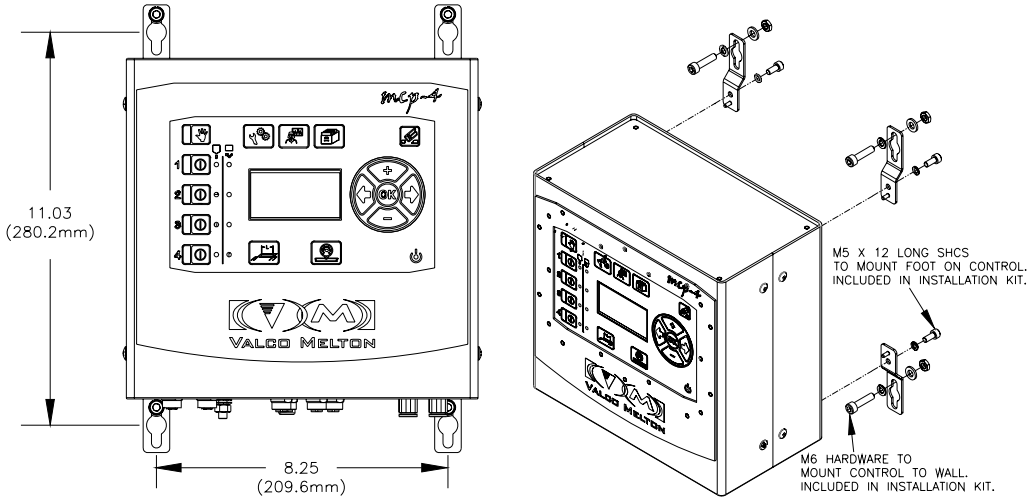


Figure 3-3. MCP-4J Control, Vertical; No EPC - Front View

Bottom Panel

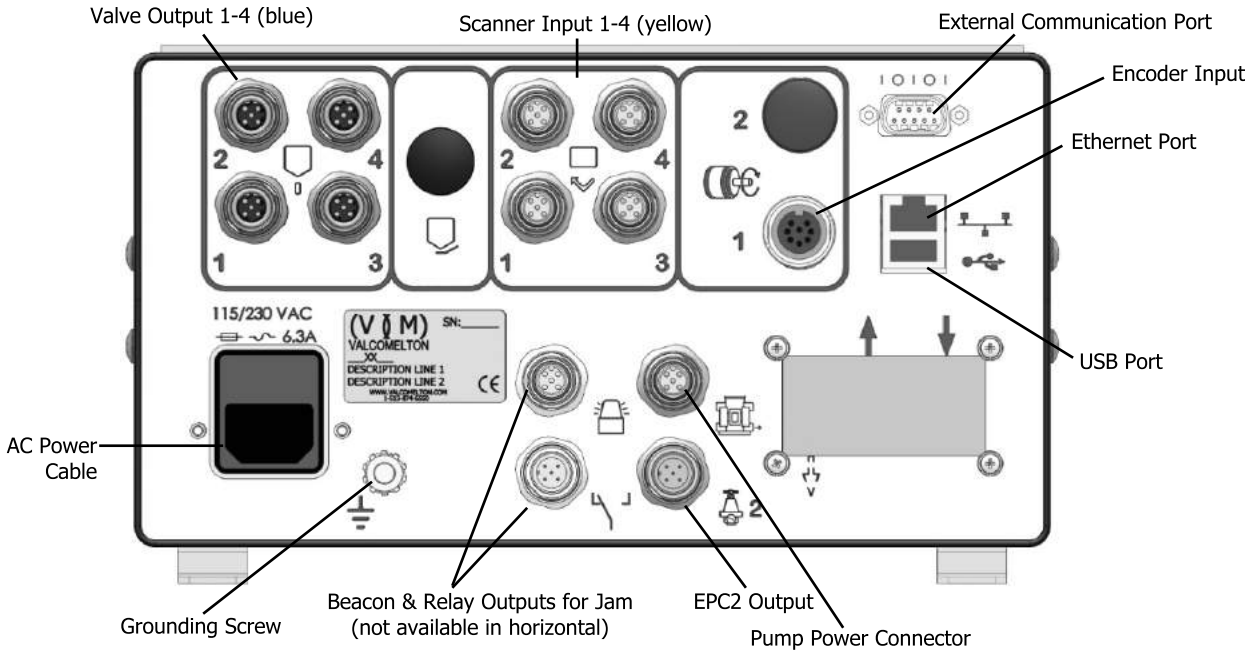


Figure 3-4. MCP-4J Control, Vertical; No EPC - Bottom View

MCP-4J Control, Vertical; with EPC (074xx085)

Front Panel

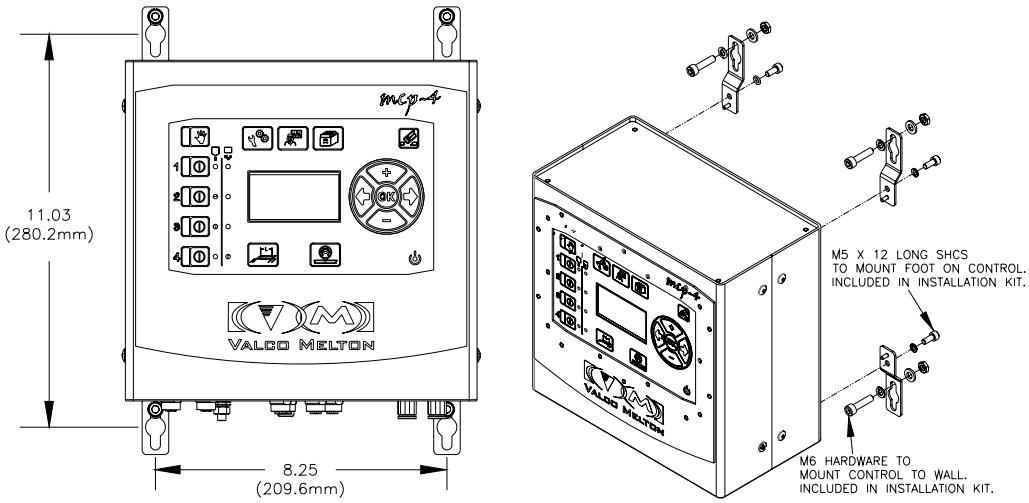


Figure 3-5. MCP-4J Control, Vertical; with EPC - Front View

Bottom Panel

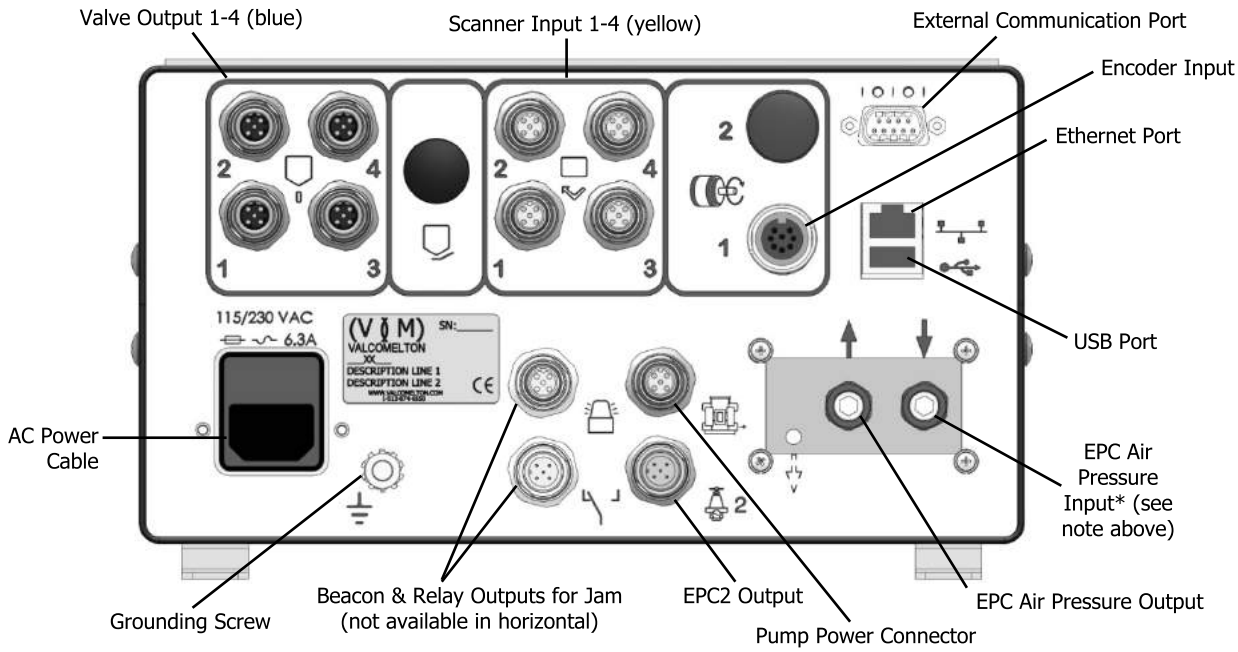


Figure 3-6. MCP-4J Control, Vertical; with EPC - Bottom View

MCP-4J Control, Vertical; 3NC Tipsealer (074xx086)

Front Panel

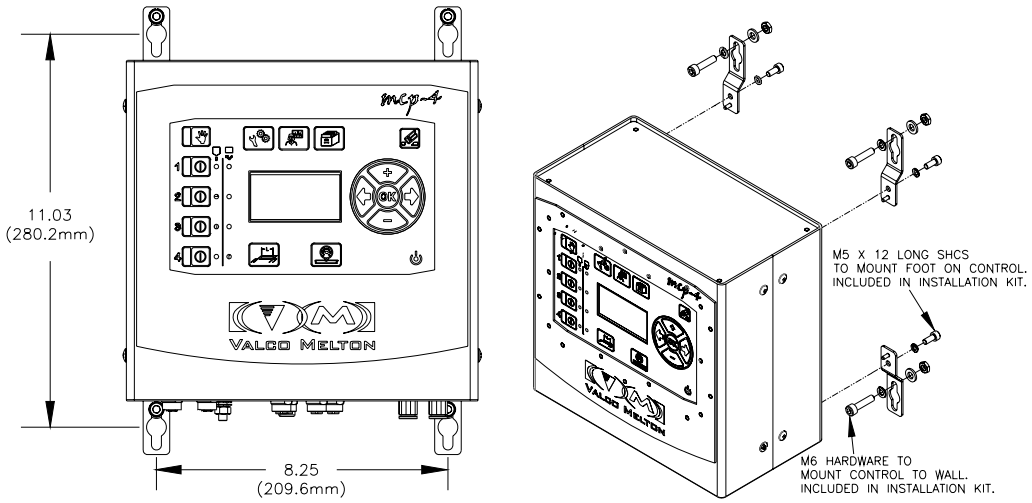


Figure 3-7. MCP-4J Control, Vertical; 3NC Tipsealer - Front View

Bottom Panel

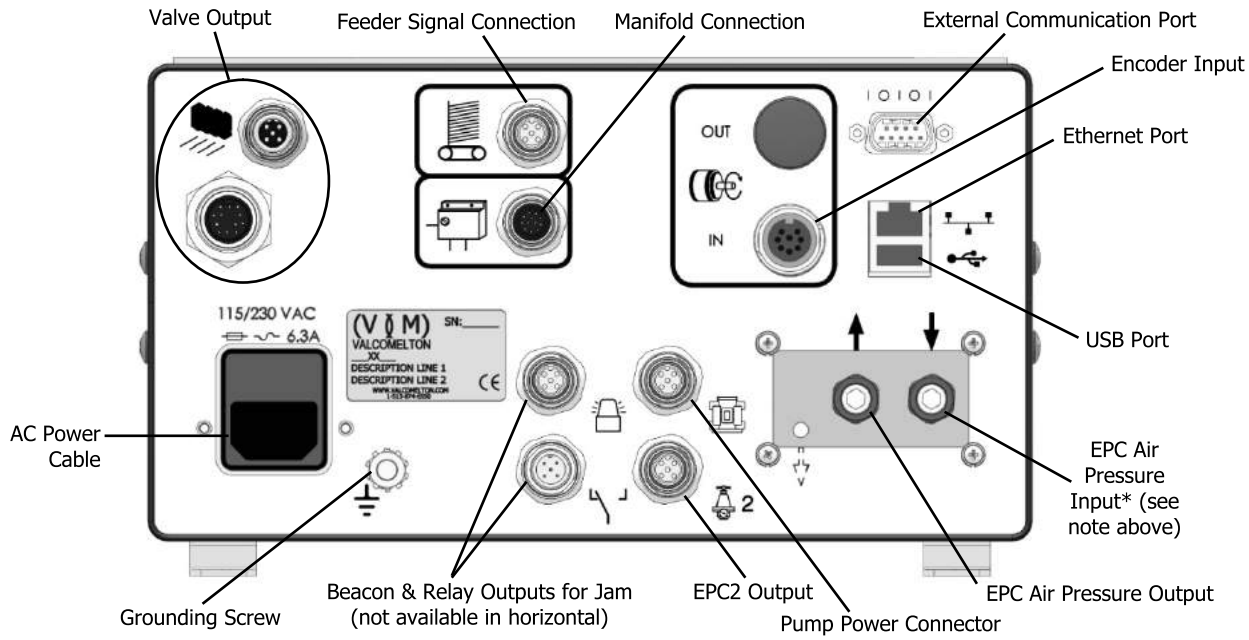


Figure 3-8. MCP-4J Control, Vertical; 3NC Tipsealer - Bottom View

MCP-4J Control, Horizontal; with EPC (074xx087)

Front Panel

Figure 3-9. MCP-4J Control, Horizontal; with EPC - Front View

Back Panel

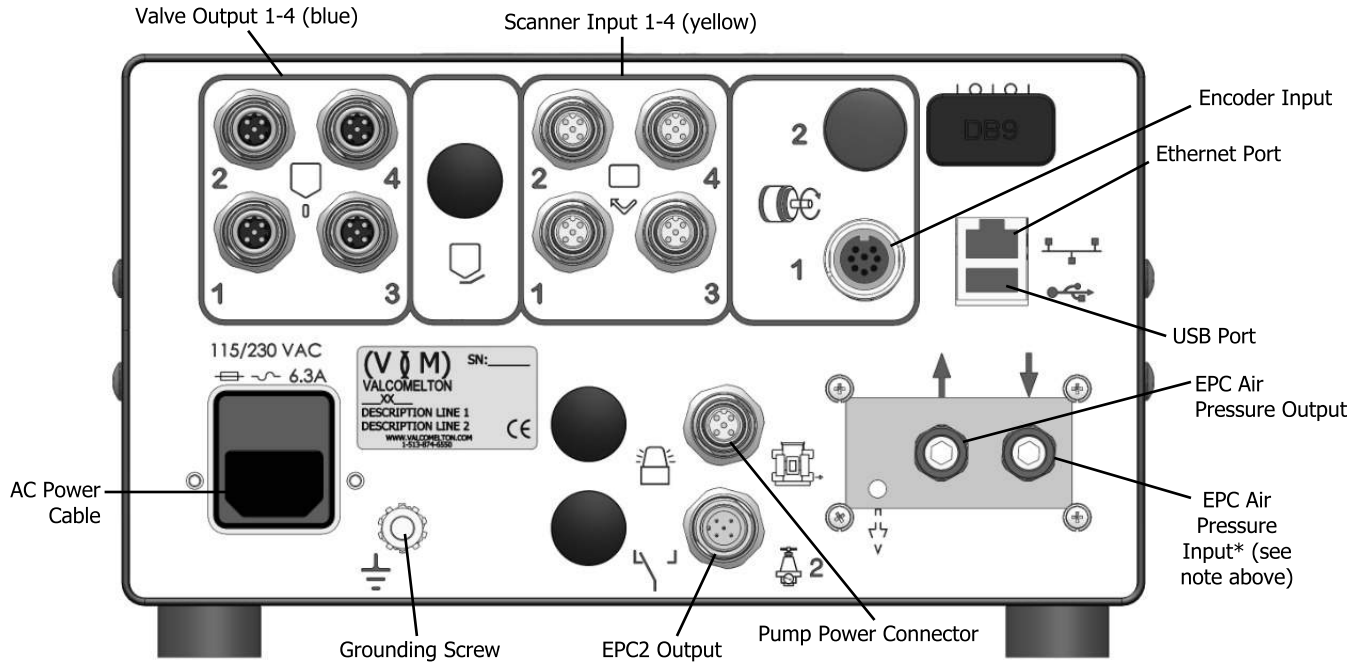


Figure 3-10. MCP-4J Control, Horizontal; with EPC - Bottom View

MCP-4J Control, Horizontal; No EPC (074xx088)

Front Panel

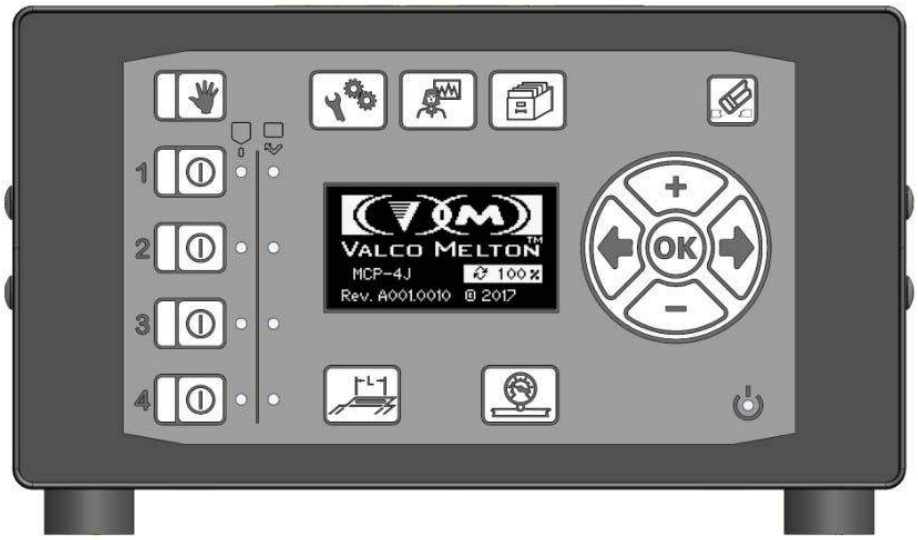


Figure 3-11. MCP-4J Control, Horizontal; No EPC - Front View

Back Panel

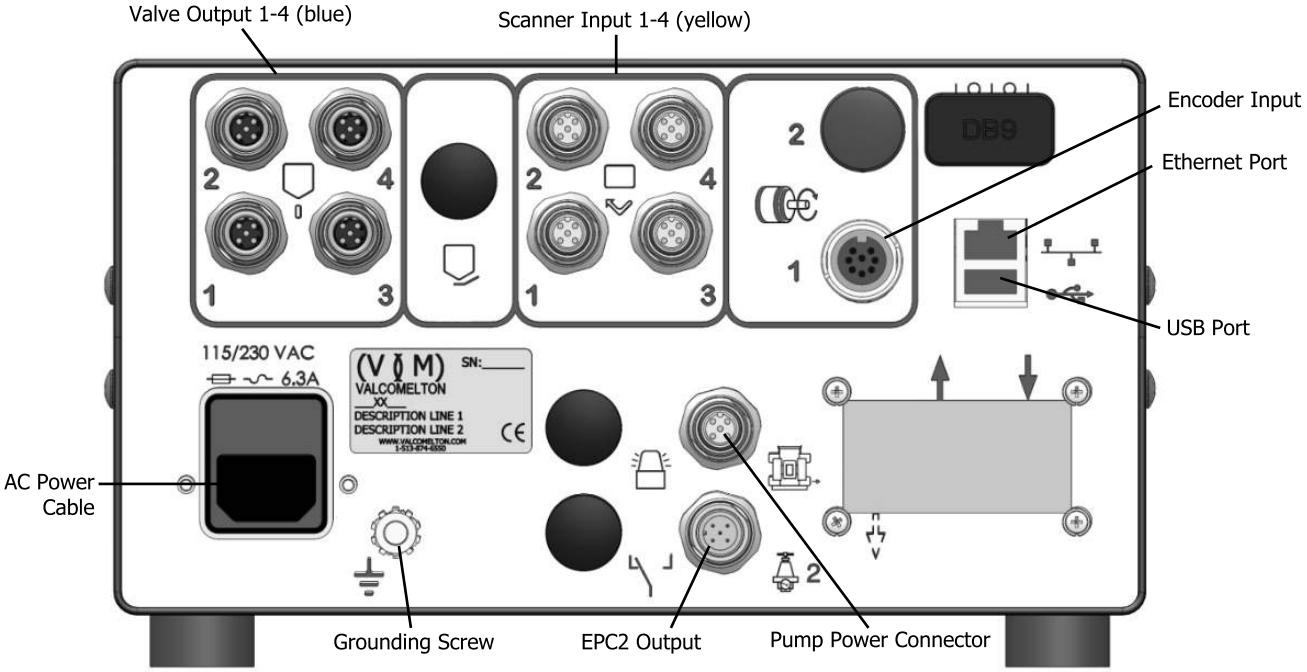


Figure 3-12. MCP-4J Control, Horizontal; No EPC - Bottom View

MCP-4J Control, Horizontal; Folding Carton, Tipsealer (074xx089)

Front Panel

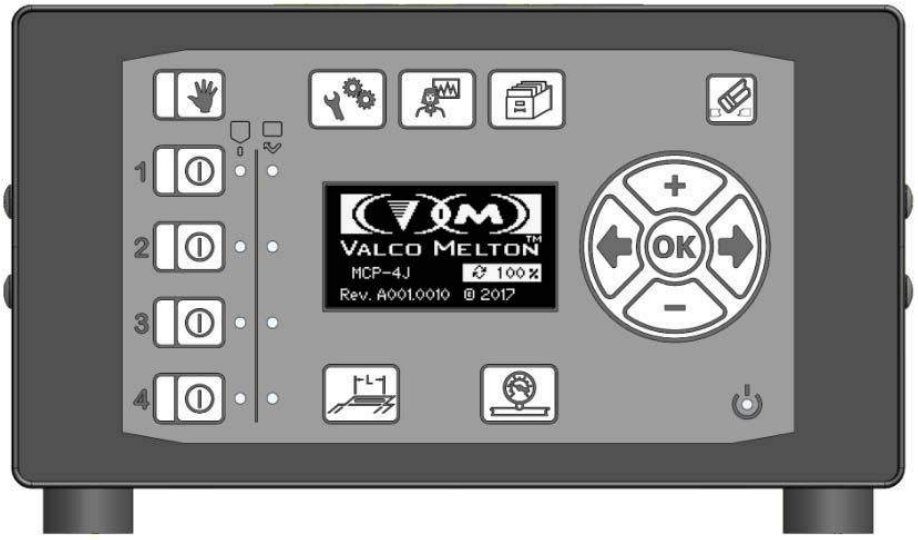


Figure 3-13. MCP-4J Control, Horizontal; Folding Carton, Tipsealer - Front View

Back Panel

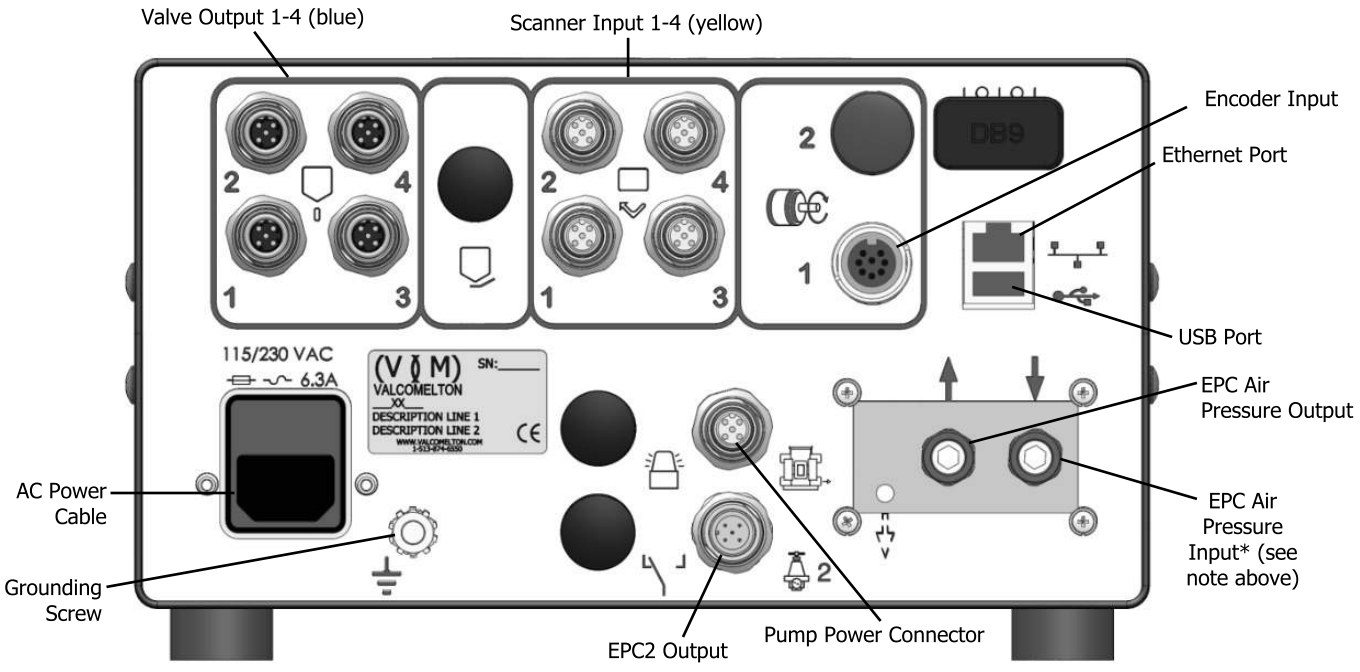


Figure 3-14. MCP-4J Control, Horizontal; Folding Carton, Tipsealer - Bottom View

MCP-4J Control, Horizontal; Dual External EPC (074xx090)

Front Panel

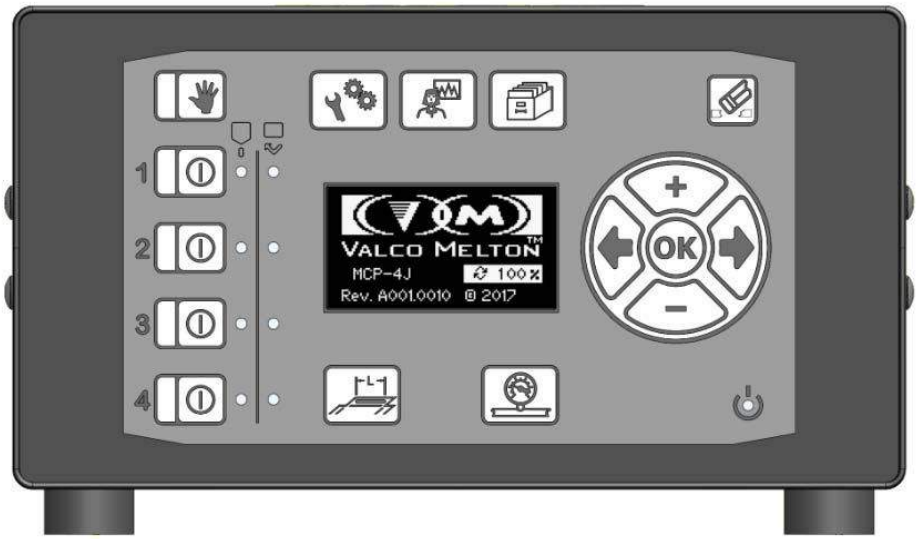


Figure 3-15. MCP-4J Control, Horizontal; Dual External EPC - Front View

Back Panel

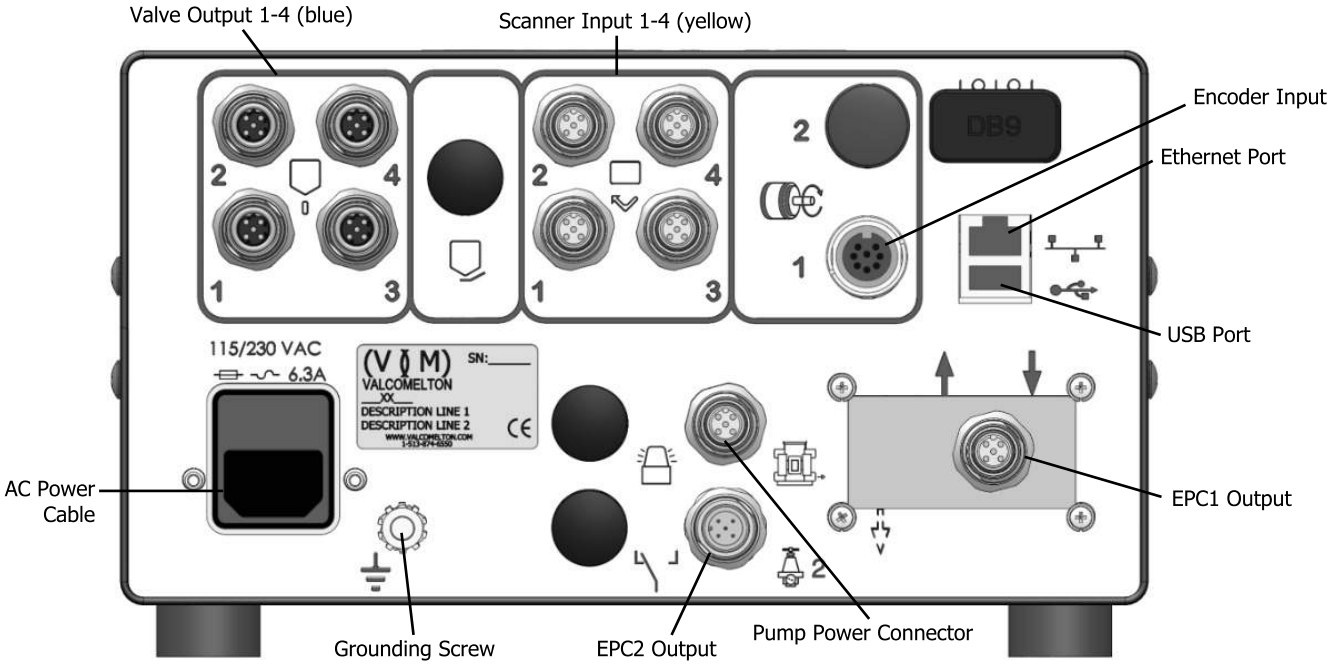


Figure 3-16. MCP-4J Control, Horizontal; Dual External EPC - Bottom View

MCP-4J Valve Driver Instructions

One of three wiring configurations can be used to trigger the valves. Chose the one that best fits the needs of your system. Detailed instructions for each configuration are given in the next section.

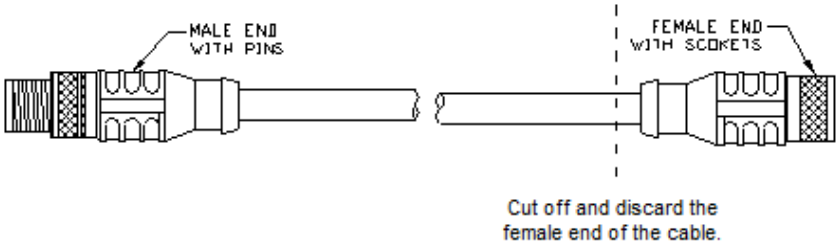
WARNING! The triggering device used must be configured to output only 24VDC. If the control unit has a spike, it will damage the input circuit for the scanner.

Wiring Configurations for Triggering the Valves

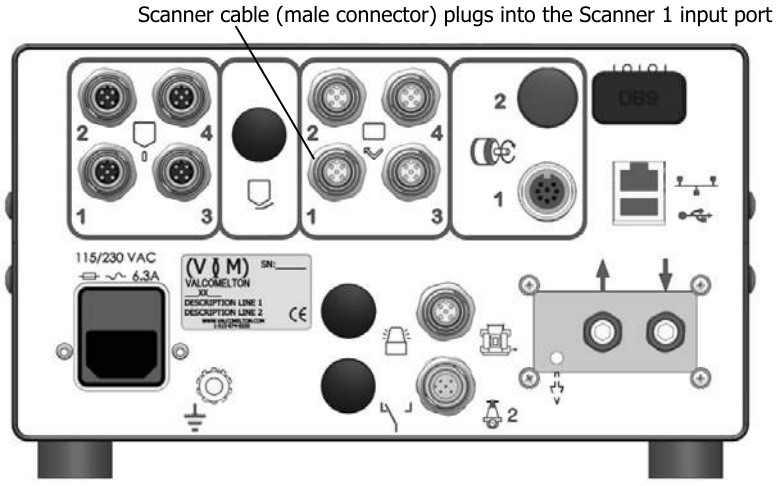
WARNING! Disconnect all power and input signal wiring before attempting to install or replace any part of the glue system. Otherwise, personal injury or death may occur!

Wiring the Scanner Cable

1. Make sure the MCP-4J power switch is OFF and the unit is unplugged.
2. Cut the female connector off of the Scanner 1 cable.

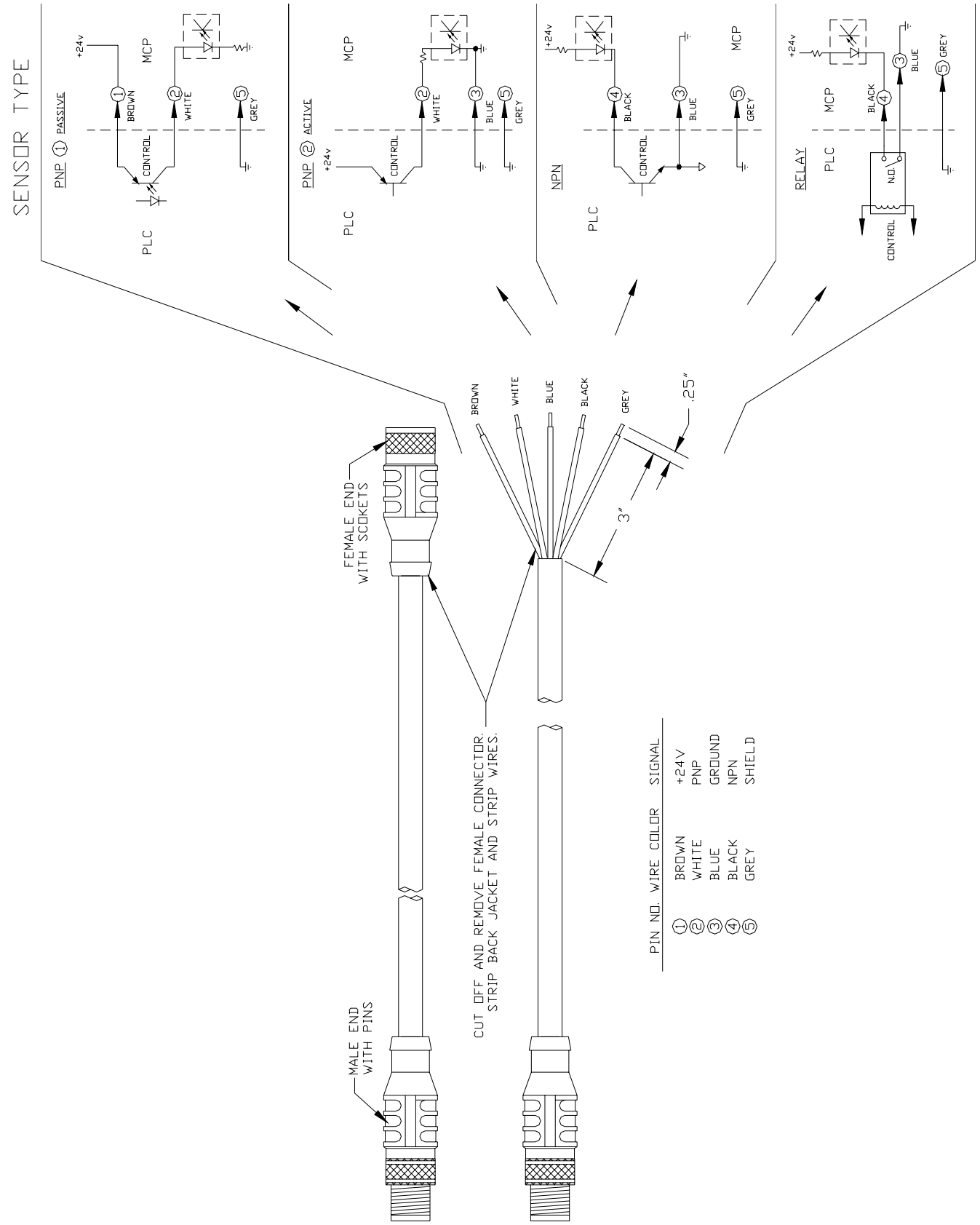


3. Plug the male connector (on the Scanner 1 cable) into the Scanner 1 input port on the back of the MCP-4J Control Unit.



4. Carefully strip the scanner cable jacket back and strip the individual wire insulations about 0.25 inch.
5. Wire the modified scanner cable according to the Wiring Diagram (next page).

Wiring the Scanner Cable - Continued



Encoder Installation

Mechanical Installation of Encoder

An encoder must be installed in order for the control to determine the speed of the parent machine. For best results, 100 pulses per inch (25.4 mm) of product travel should be supplied to the VC3500. If less than 100 pulses per inch (25.4 mm) are supplied, poor resolution may result in pattern placement errors. If more than 100 pulses per inch (25.4 mm) are supplied, the maximum specified speed of 2000 feet/min (610 m/min) must be reduced.

There are two primary types of encoders:

- Wheel-driven encoder
- Gear-driven encoder

Wheel-Driven Encoder

If using a wheel-driven encoder (Figure 5-6), a VDD-1000 encoder with a 10-inch measuring wheel is recommended.

To install a wheel-driven encoder, follow these steps:

1. Mount the encoder's bracket to the frame of the parent machine.
2. Ensure that the wheel of the encoder rides securely against the belt and does not slip.
3. In the level-4 menu screen, set ratio compensation to 100 pulses.

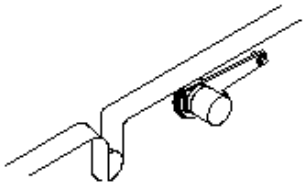


Figure 3-17. Example of a Wheel-Driven Encoder

Gear-Driven Encoder

The following formula can be used to determine the correct combination of gear teeth and encoder for approximately 100 pulse per inch (25.4 mm):

$$\frac{\text{Teeth-S}}{\text{Teeth-E}} \times \frac{\text{Counts}}{\text{Travel}} = \text{Pulses per inch (25.4 mm) of travel}$$

Teeth-S = Number of teeth on the line-shaft driver gear
Teeth-E = Number of teeth on the encoder driven gear
Counts = Number of encoder pulses per revolution
Travel = Product travel in inches (or millimeters divided by 25.4) per revolution of the drive shaft

Example:

Using a 92-tooth split line shaft gear (driver), a 24-tooth encoder driven gear, a 500-pulse encoder, and 18 inches (or 457 millimeters divided by 25.4) of travel per drive shaft revolution.

$$\frac{92}{24} \times \frac{500}{18} = 106.48$$

Therefore, the ratio compensation setting should be 106.5.

Gear-Driven Encoder - Continued

To install a gear-driven encoder (Figure 3-12), follow these steps:

1. Install the driver gear on the line shaft. Tighten the set-screws.
2. Position and install the encoder so that it is square with the driver gear.
3. Raise or lower the encoder to tighten the belt against the driver gear. (Ensure that the two sides of the belt are not pressed together under the wheel.) Due to the low torque required, the belt should not be extremely tight.

> At least 7-9 teeth should engage in the line shaft driver gear. It may be necessary to fabricate an adjustable bracket to connect the encoder base to the parent machine frame.

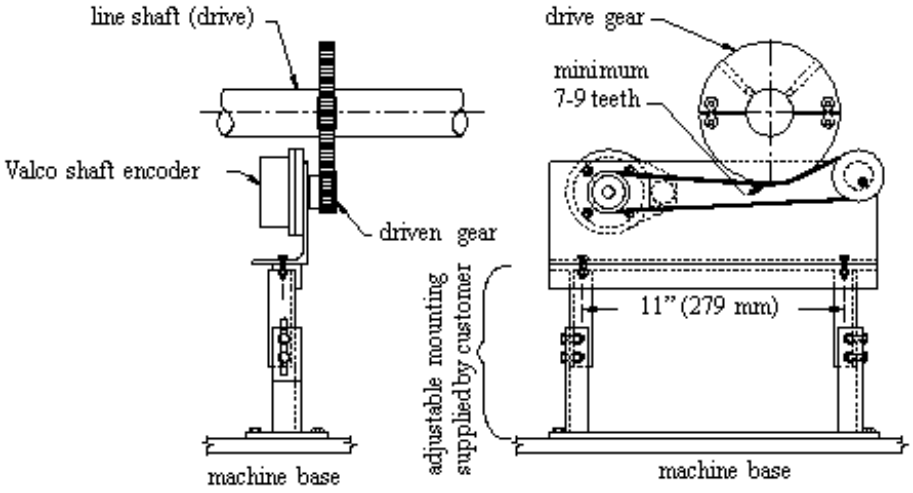


Figure 3-18. Typical Installation of a Gear-Driven Encoder

Section 4 - Programming

Mounting

The Horizontal MCP-4J Control Unit can be mounted on any flat, stable surface close to the machine glue station.

1. Be sure the four (4) rubber feet (horizontal version only) are firmly attached to the unit. The rubber feet reduce vibration to the unit. Do not remove the rubber feet from the unit for any reason.
2. Valco makes a rolling cart (738xx878 Complete System Cart; 579xx322 Control Stand only) that can be used to securely mount the MCP-4J Control Unit. Please contact your Valco sales representative for purchasing information.
3. The Vertical Control Units are vertically mounted. See the mounting footprints in the Parts List Section.
4. A swivel shelf mount (583xx564) is available for horizontal units.

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

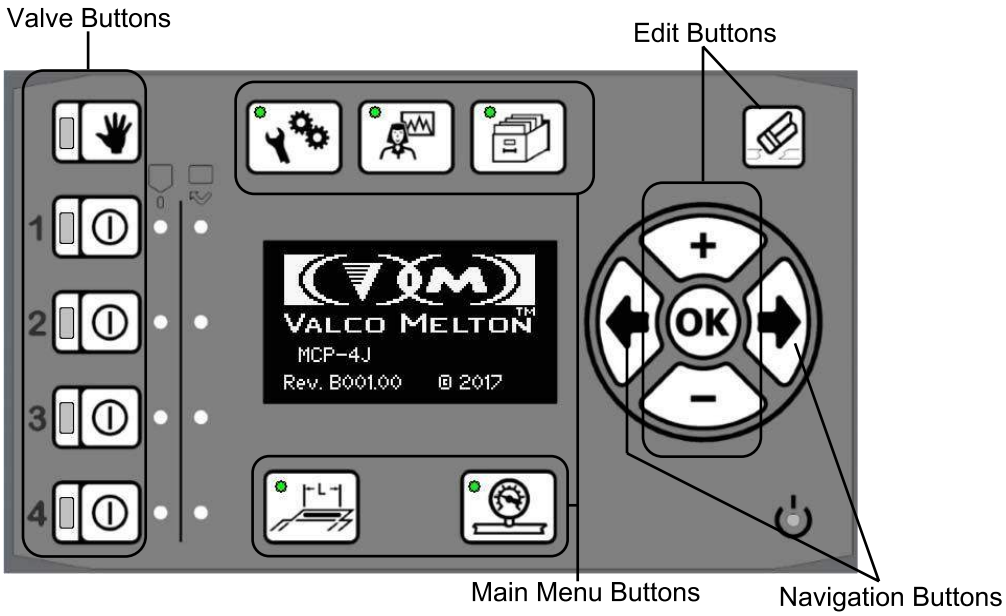


Figure 4-1. The Operator Interface Buttons

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 1-4.

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-4J Control Unit.

Diagnostics Button - Pressing the Diagnostics Button allows you to view the MCP-4J 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 1-4 Buttons - Pressing the individual Valve Button(s) allows you to tell the MCP-4J 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

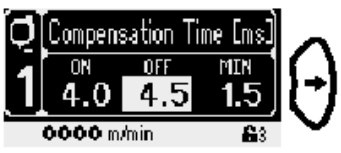


Figure 4-2B

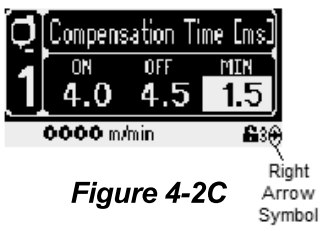


Figure 4-2C

The Navigation Buttons - Continued

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.

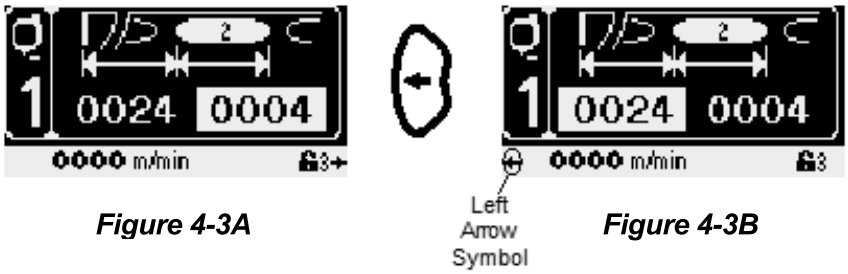


Figure 4-3A ***Figure 4-3B***

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).

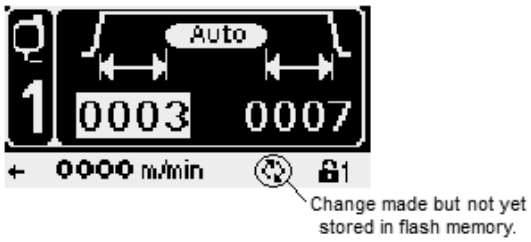


Figure 4-4. The "Storing Information" Symbol

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).

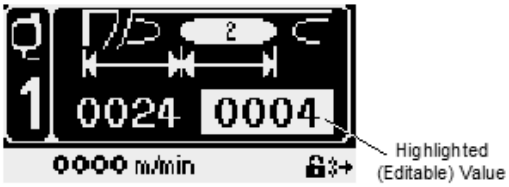


Figure 4-5. Highlighted Value

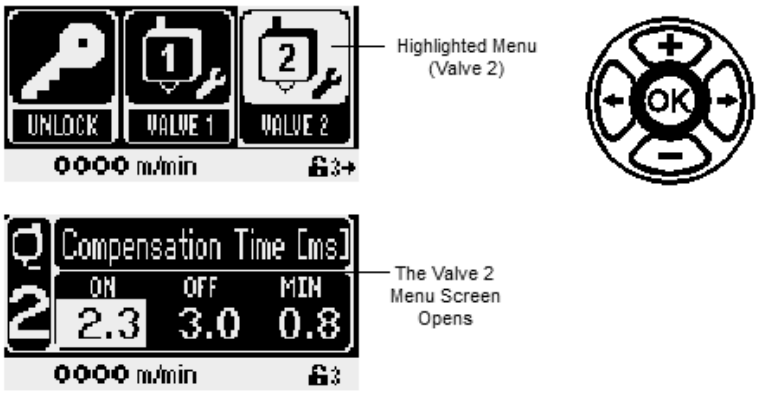
Plus Button - Pressing the Plus Button allows you to increase the value of the input.

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



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-4J 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.

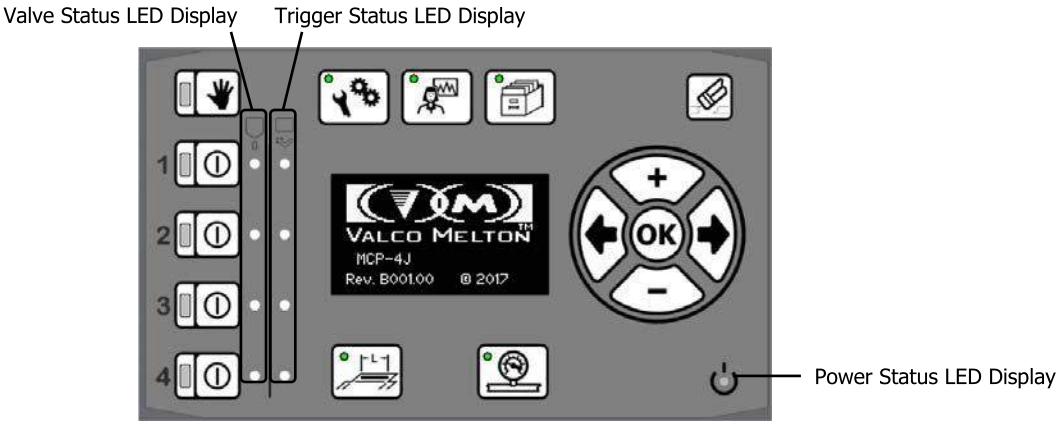


Figure 4-6. Status LEDs

Screen Contrast Adjustment

To adjust image contrast on the LCD Display Screen, press the Setup Button and either the Plus or Minus Button simultaneously.

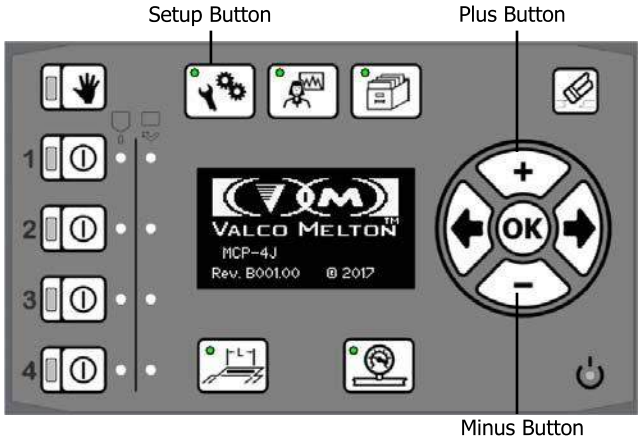


Figure 4-7. Screen Contrast Adjustment

First Use Setup (Wizard)

> 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.

The first time the MCP-4J 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-4J Control Unit is switched on, the following screen will appear:

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)

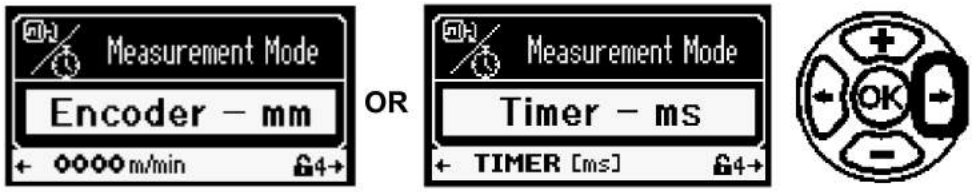
Application - Many applications are available. Each application type has “built in, behind-the-scenes” default settings to assist you in programming the unit for the application type. If your application type is not listed, simply choose “other.” (Use the Plus/Minus Buttons as needed to scroll through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

Actual application options may vary based on the system.

Application	Description
Corrugated	Applying glue to partial-assembly points of corrugated material in a Flexofolder gluing system (end product folded flat).
Folding Carton	Applying glue to folding carton partial-assembly points (end product folded flat)
Envelope	Applying glue to envelope assembly points
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 monitoring product location in system flow
Valve Driver	Mode for controlling valve power levels based on PLC input
Burn-In Test	Test function used ONLY by Valco Melton personnel
Others	Unique applications not listed in standard options

Measurement Mode

(Corrugated, Folding Carton, Envelope, Packaging, Core Winding, and Others)



Measurement Mode - Sets the Encoder measurement to either mm or inch.

Timer Mode - Sets the Encoder measurement to either [ms] or [s].

> To set the mode to Timer, the Application must be set to "Timer" when setting/initializing parameters.

Encoder

(Corrugated, Folding Carton, Envelope, 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

(Folding Carton, Envelope, Packaging, Timer, Valve Driver, Core Winding and Others)

Valve Type - Set the valve type for valves 1-4. If the default valve type that appears is not applicable, use the Plus/Minus Buttons to scroll through the list of valve types available:

- 300E
- 400E/EC
- 524E
- 540E
- 900E
- 9020
- MX
- MAC12
- MAC24

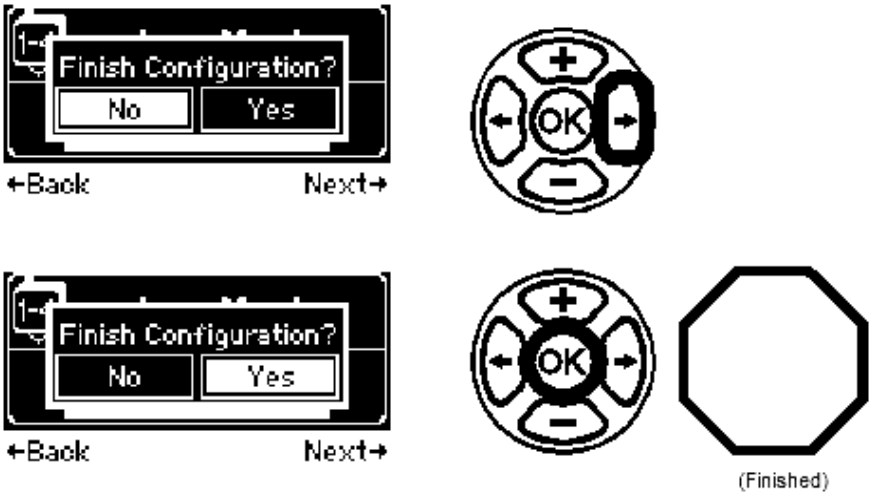
Jog Mode

(Corrugated, Folding Carton, Envelope, Packaging, and Others)

Jog Mode - Adhesive will be applied in a “dot” pattern when the machine is running below a certain speed (V-jog). (Enabling jog mode allows Jog Mode Setup Menus to appear during setup; this is covered later in this manual.)

Finish Configuration

(All Applications)

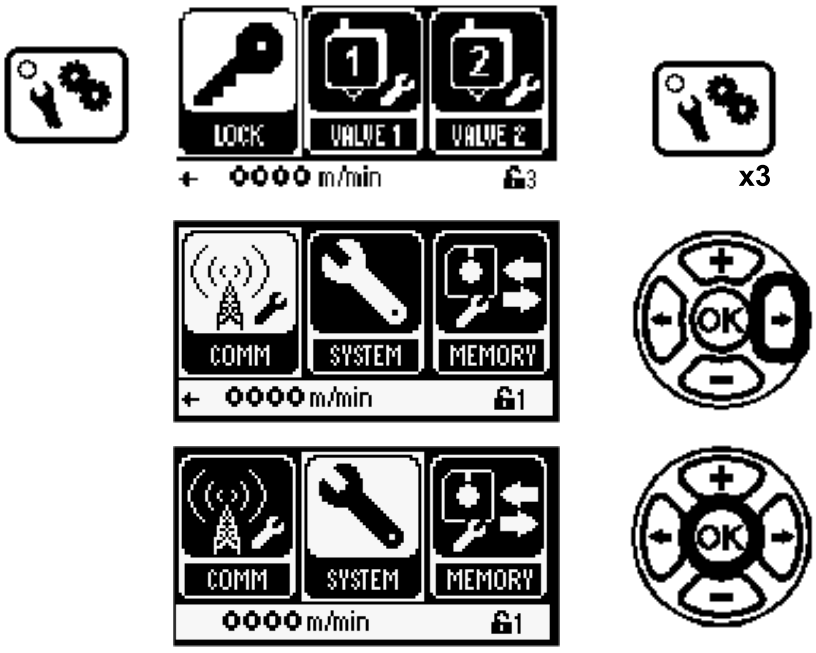


You must answer “Yes” to the “Finish Configuration” prompt and press the OK Button for all changes to take effect. Choosing “No” will return the unit to the wizard application screen.

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.

Pattern Entry Mode

Pattern Entry Mode - Sets the pattern mode to either Delay & Length or Start & End.

Jog Mode

(Corrugated, Folding Carton, and Others)

Jog Mode - Adhesive will be applied in a "dot" pattern when the machine is running below a certain speed. Enabling jog mode allows Jog Mode Setup Menus to appear during setup (see Section 5 - Operation).

Batch Counter

(All Applications)

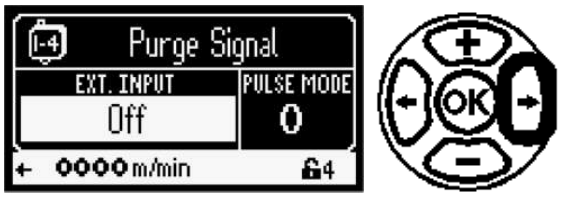
Batch Counter must be enabled in this menu (Pattern Menu) so individual Batch Count Menus will appear during setup (see Section 5 - Operation).

Jam Prevention

Jam Prevention - Enables or disables the Jam Prevention function.

Purge Signal

(All Applications)

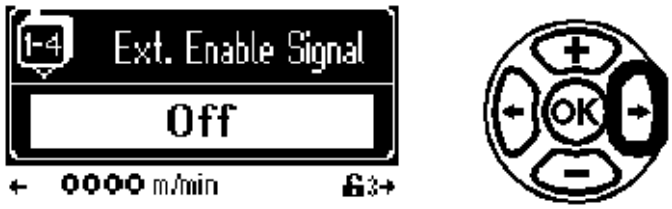


External Input - This is a collective purge. When the External Purge Signal is on, scanner input 3 is used as an external purge input. It cannot be used as a trigger input

Pulse Mode - If this mode is active, and the purge button on the valve or control is pressed, the valve begins 'pulsing' for the adjusted number of cycles before running continuously open. This promotes more reliable flow in case the valve is idle, under high pressure, for a prolonged period.

External Enable Signal

(All Applications)



External Enable Signal - (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. Up to two are 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.

Tipsealer Enable

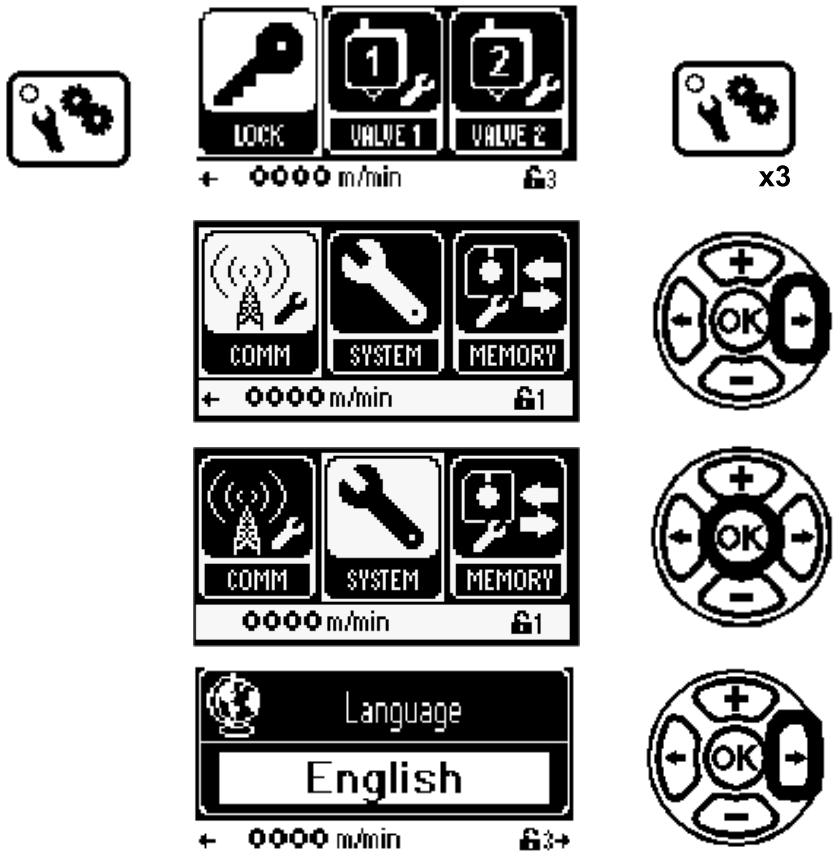
Tipsealer - Enables or disables the Tipsealer function, which prevents valve nozzles from clogging with dried glue when the valves are not dispensing.

COM Interface Option

> This function is an optional feature, and is not included in the standard control unit.

Enable the Interface

1. Select ‘System Setup’ menu, and press OK.



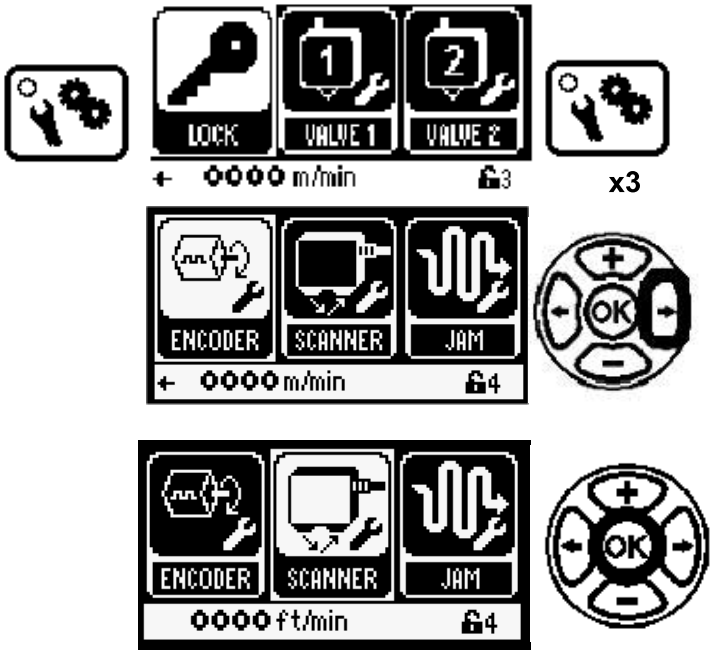
2. Scroll to the ‘COM Interface.’

Enable the Interface - Continued

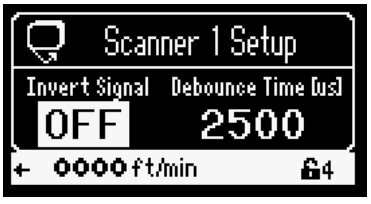
3. Based on how the data is sent, select 'ASCII - Metric,' 'ASCII - Inch,' Extended ASCII, or SDOCOM.

Scanner Menu

The MCP-4J has a unique Setup menu to configure the scanner inputs. There is a debounce time and signal inversion setting for each of the four inputs. Each scanner input has its own screen.



Scanner X Setup

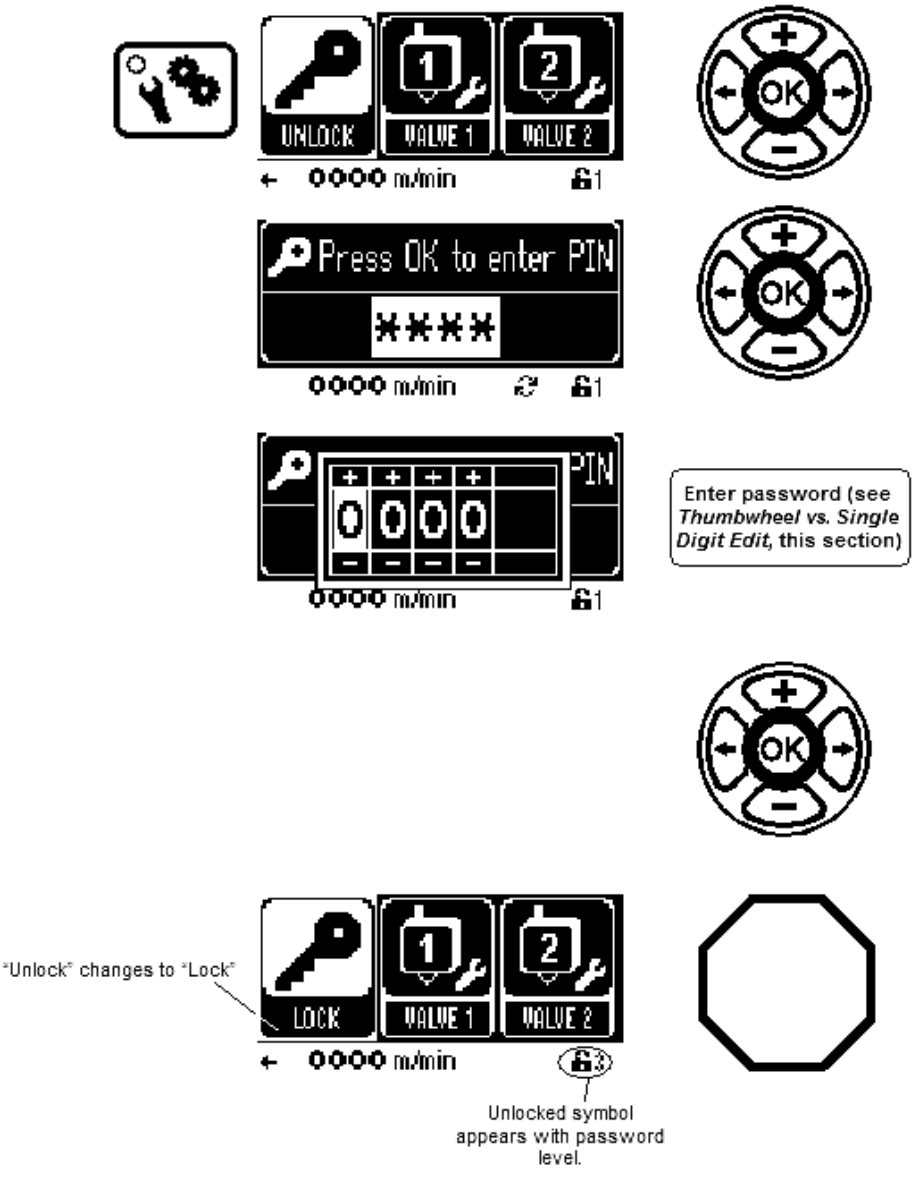


Invert Signal, ON or OFF – If turned "On", the control will treat the scanner input as ON when the scanner signal is OFF and vice versa. If turned "Off", the control will treat the scanner input normally.

Debounce Time [us] – This is the amount of time the scanner input must be triggered before it registers as ON.

Enter Password

To view, setup, and use the various functions of the MCP-4J Control Unit, passwords are used. This ensures safety and security of all settings. To enter a password, do the following:



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.

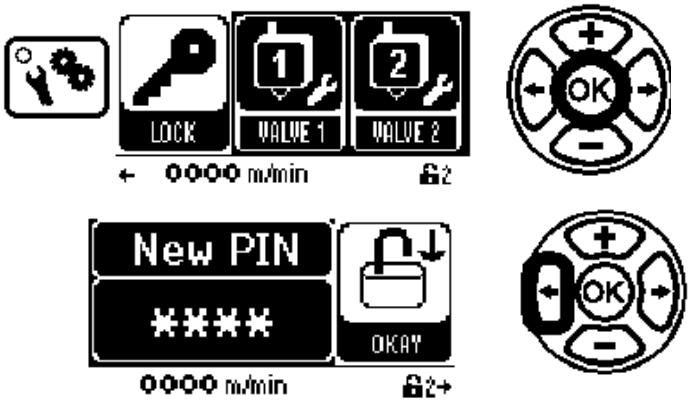
Level 2 Password Options

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.

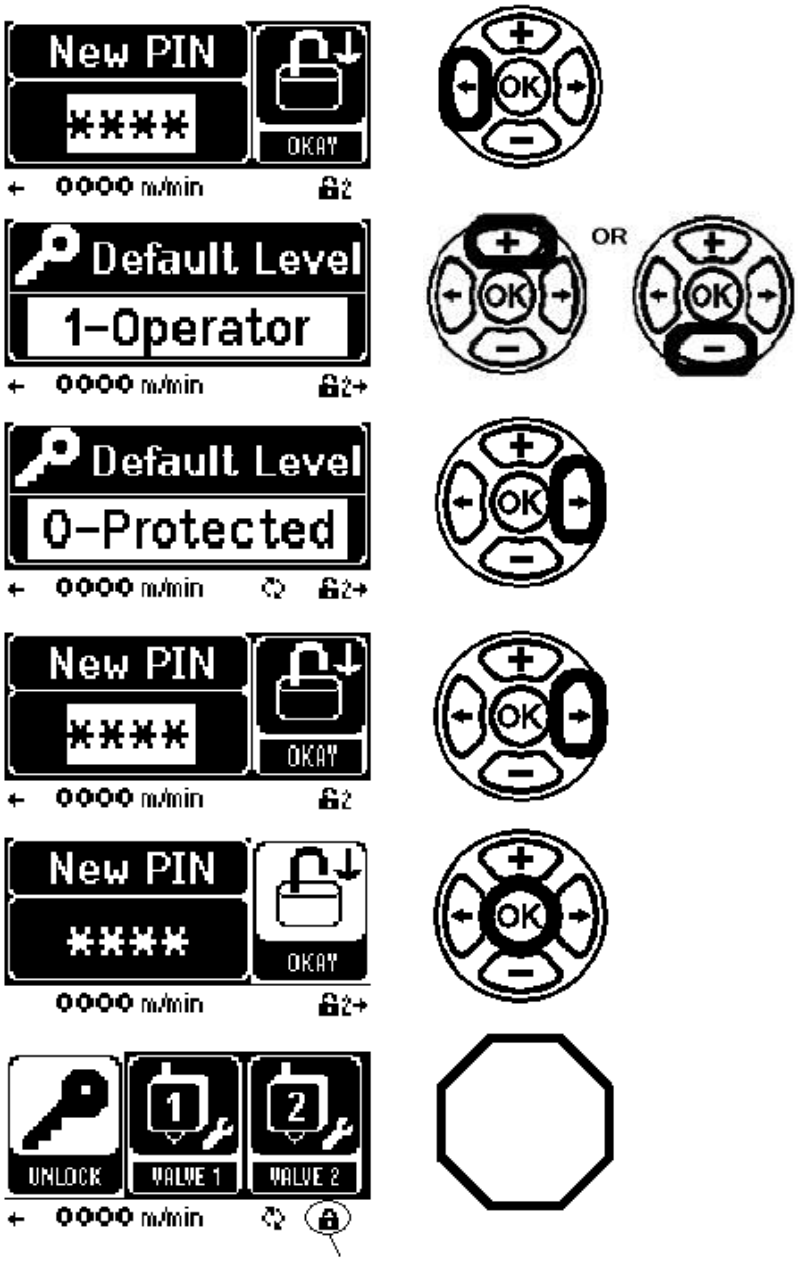
Protected Level Mode

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:



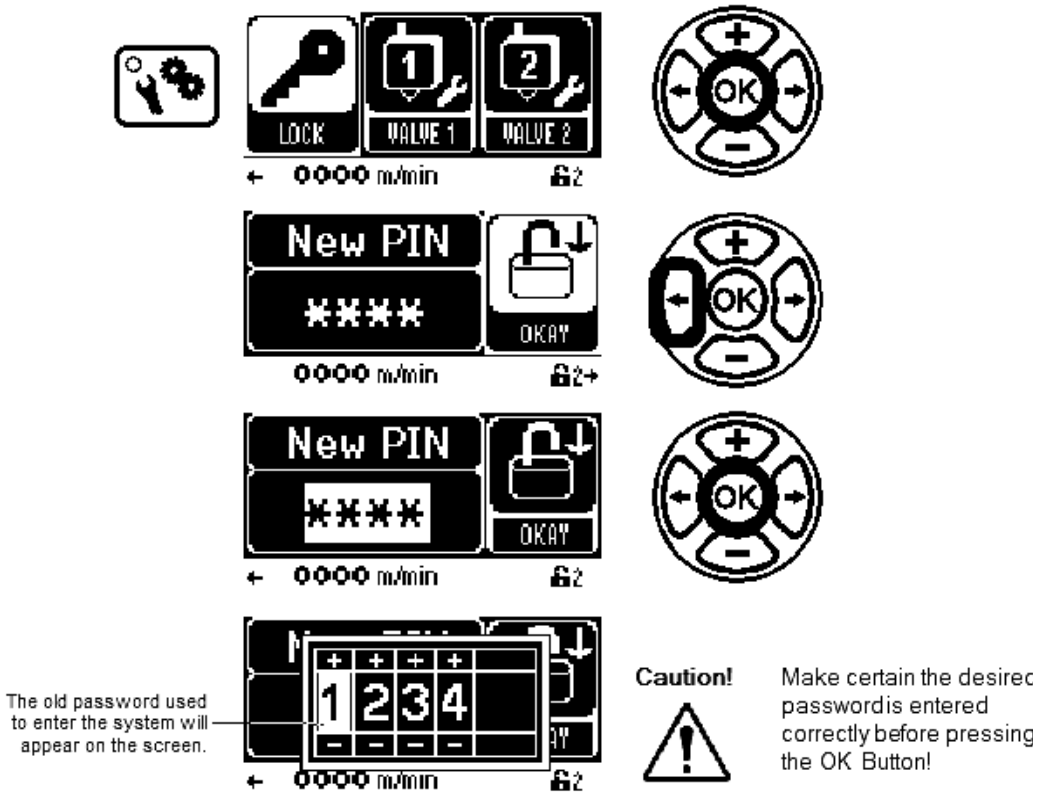
Protected Level Mode - Continued



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:



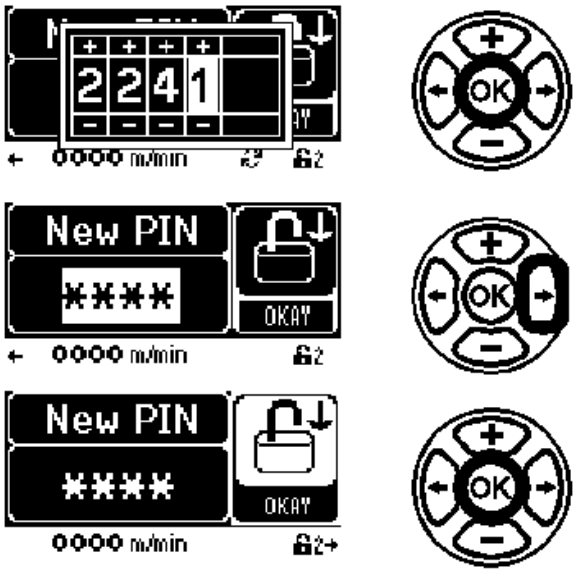
Use the Plus/Minus Buttons to increase/decrease the numbers and the Left/Right Arrow Buttons to move from digit to digit.

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

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

Change the Level 2 Default Password - Continued

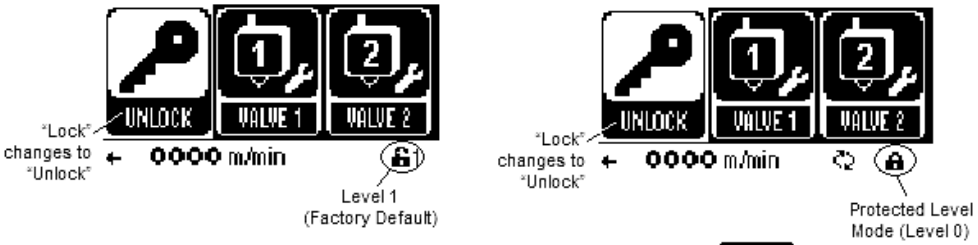
The following is an example only. The password can be changed to any four digit number desired.



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.

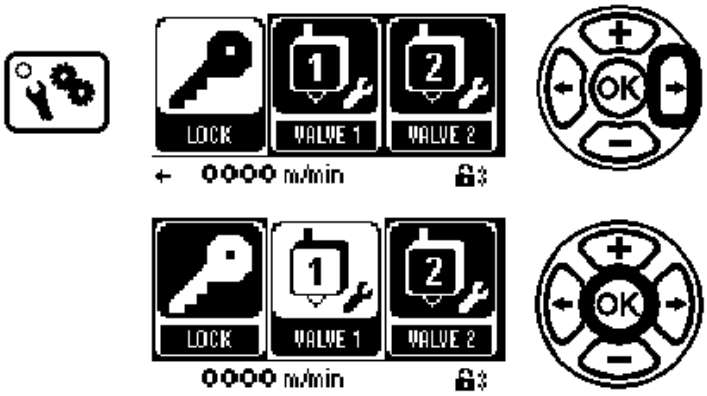
Configure the Valve/Channel Settings

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

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.

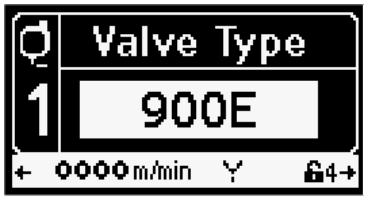
Speed Settings

x2

V-min (Minimum Product Speed) - The minimum speed the machine must reach before glue is applied to the product.

V-jog (Jog Speed) - Between minimum speed and jog speed, a glue line will be separated into dots in order to make the glue volume even more precise, when Jog Mode is enabled.

Valve Type



OR

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

Scanner Settings

x2

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. In Auto Glue, the output will remain on as long as the input is active (start).

Encoder Settings

Based on the selected valve type.

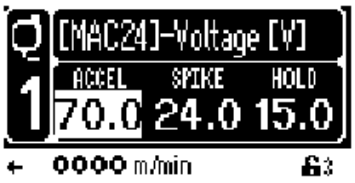
CAUTION! Encoder settings should be made by authorized Valco personnel only!

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 only one encoder is installed and 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.

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

Valve - Voltage Settings

CAUTION! Valve voltage settings should be made by authorized Valco personnel only!



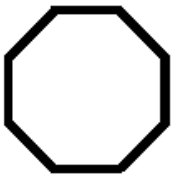
Acceleration Voltage - This is the voltage applied to the valve during the valve acceleration phase.

Spike Voltage - This is the voltage applied to the valve during the spike phase.

Hold Voltage Value - This is the voltage required to hold the valve after the Acceleration Phase and the Spike Phase.

Valve - Timing Settings

CAUTION! Valve timing settings should be made by authorized Valco personnel only!

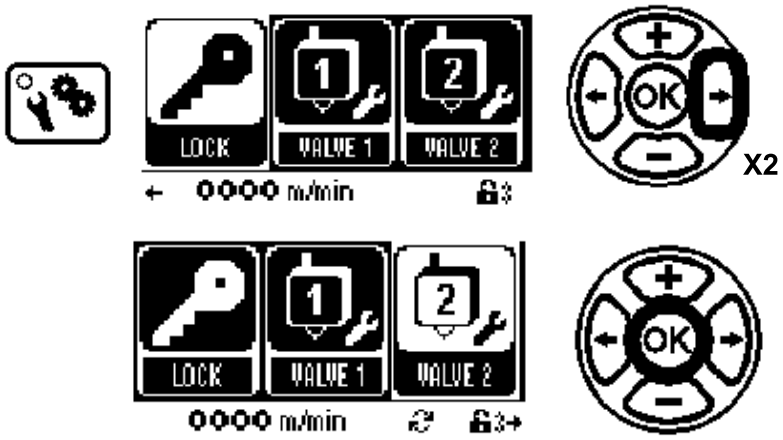


Acceleration Time - This time (in milliseconds) represents the length (duration) of the valve acceleration phase.

Spike Time - This time (in milliseconds) represents the duration of the spike phase.

Boost Mode (On/Off) - To overcome problems when a valve sits idle for a long time under high pressure, the Boost Mode can be enabled for each individual valve (1-4). If the Boost Mode is enabled, it will become active when the machine is idle for a specified amount of time. Then, the standard valve parameters will be overwritten with higher values for a defined number of products.

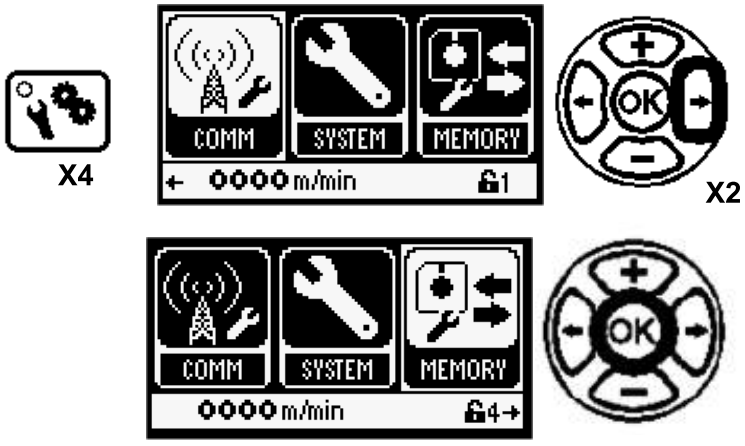
Check Other Valves/Channels



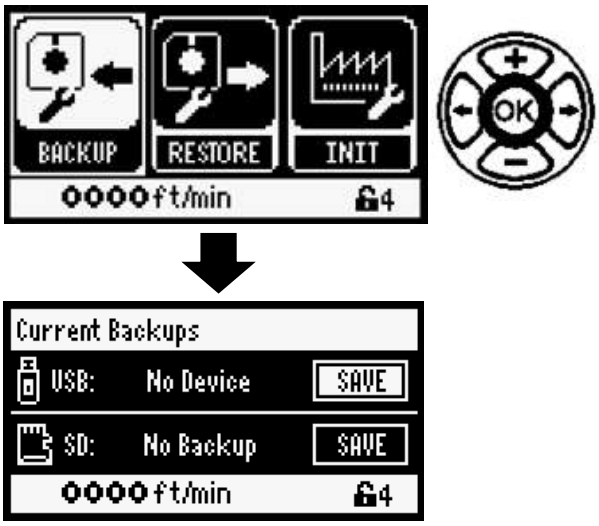
Check the valve/channel 2 settings. Repeat for all valves being used.

Memory

The MCP-4J can store one full system backup on the internal Micro-SD card as well as one on any USB flash drive. If a backup is saved it will overwrite any existing backup. When the system is restored from a backup, it is irreversible.



Backup



USB

If there is no USB flash drive inserted into the USB port, it will show “No Device”. If pressing “Save” with no USB flash drive inserted, the control will display:

If a USB flash drive is inserted, but has no backup saved to it, it will show “No Backup”.

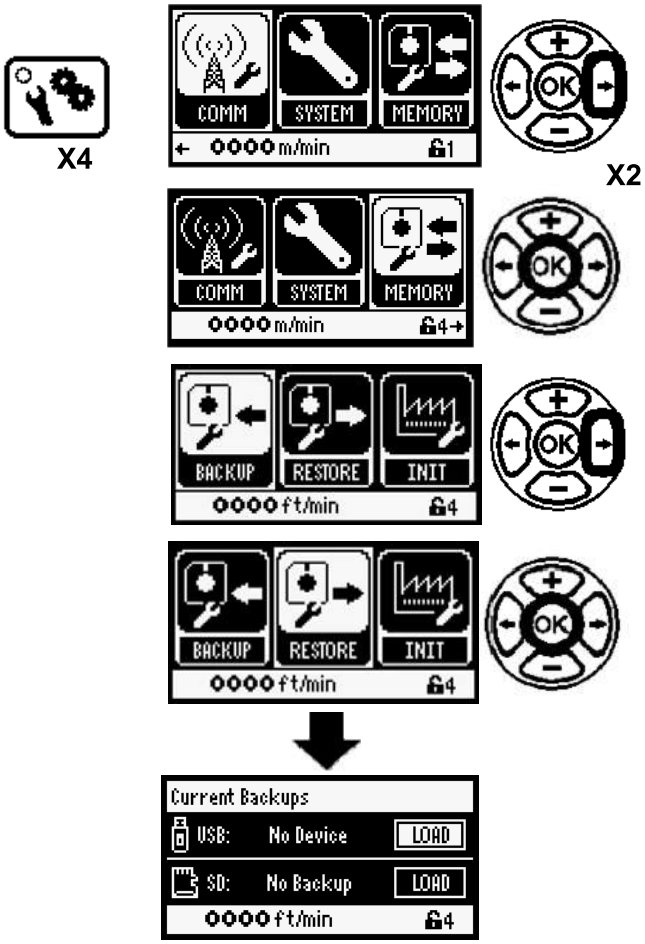
If a USB flash drive is inserted, and has a valid backup saved to it, it will show “Backup Exists”. Pressing Save for either of these options will prompt the user with the following message:

SD

If the Micro-SD card has no backup saved to it, it will show “No Backup”.

If the Micro-SD card has a valid backup saved to it, it will show “Backup Exists”. Pressing Save for either of these options will prompt the user with the following message:

Restore



USB

If there is no USB flash drive inserted into the USB, it will show “No Device”. If pressing “Load” while no USB flash drive is inserted, the control will display:

If a USB flash drive is inserted, but has no backup saved to it, it will show “No Backup”. If pressing “Load” while no USB flash drive is inserted, the control will display:

If a USB flash drive is inserted, and has a valid backup saved to it, it will show “Backup Exists”. Pressing “Load” will prompt the user with the following message:

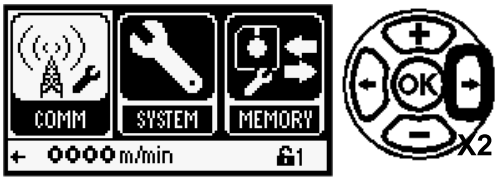
SD

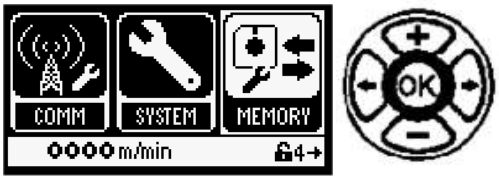
If the Micro-SD card has no backup saved to it, it will show “No Backup”.

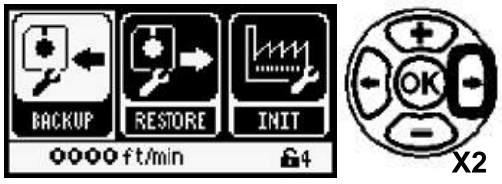
If the Micro-SD card has a valid backup saved to it, it will show “Backup Exists”. Pressing “Load” will prompt the user with the following message:

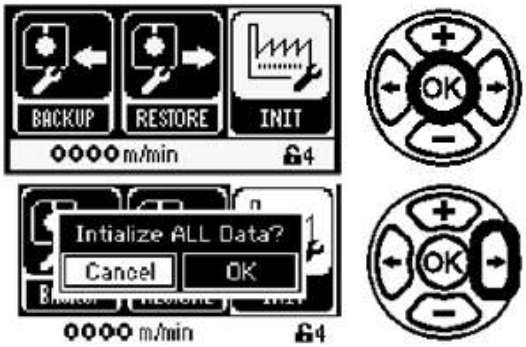
Initialize Settings

The Initialize feature is only available for Level 4 Programmers. Initialization will clear all settings back to the factory defaults; all Job Files and Backup Configurations are lost. Valco Cincinnati, Inc. highly recommends that Initialization is only performed by an authorized Valco Cincinnati Service Technician/Programmer.









Continued Next Page

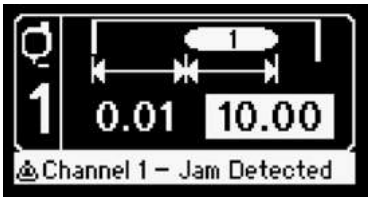
Initialize Settings - Continued

The Wizard appears for "first use set up" (see Section 4 - Programming).

Jam Detection

Does not apply to horizontal units (074xx087, 074xx088, 074xx089 or 074xx090).

Jam Alarm Message

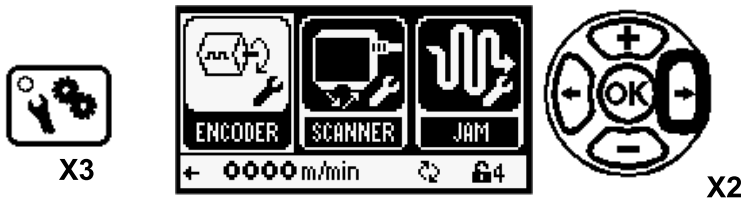


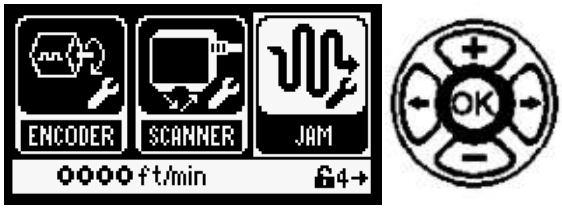
Whenever a jam is detected, the screen will display the above message with the detected "jam channel." This message will not prevent the unit from continuing normal operation or detecting further jams, but serve only as an alert.

The messages will not clear when the detected jam is cleared. They must be cleared with the 'OK' key. Depending on the settings, and because the message is just a notification, it is possible for the control to queue up many of these messages. As a result, when the 'OK' key is pressed to clear a jam message, the control will clear all pending jam messages until it has reached either a different type message (i.e. low voltage alarm) or the end of the queue.

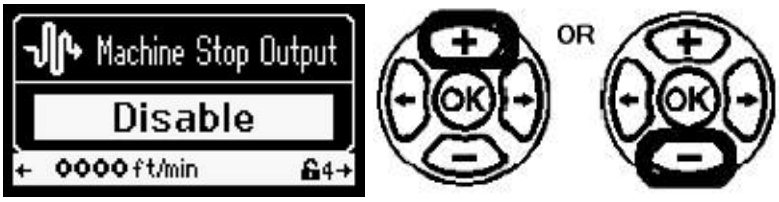
Jam Setup Menus

Enter the Jam Setup Menu in the Settings Menu.





Machine Stop Output:



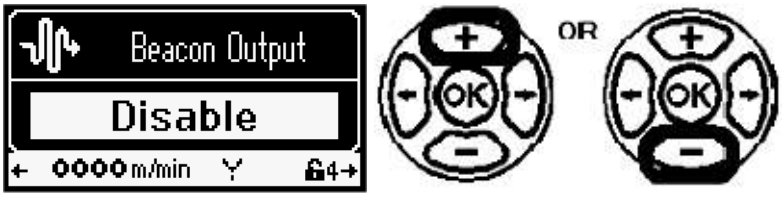
This setting enables or disables the machine stop output. This output uses the relay output on the back of the MCP-4J. There is both a normally-closed contact and a normally-open contact. The Relay output is the male M12 on the back connector panel, with the relay symbol next to it ( ). Brown and Black (Pins 1 & 4) are common, White (Pin 2) is normally CLOSED, and Blue (Pin 3) is normally OPEN.

When enabled:

- If a jam is detected, the relay will turn on.

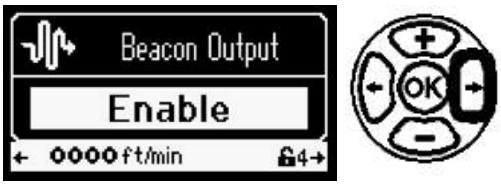
See the *Rearm Mode* section, below, for information on how the relay turns off.

Beacon Output:



This setting enables or disables the beacon output. This will turn on the red beacon output at the standard Valco beacon light (481XX057).

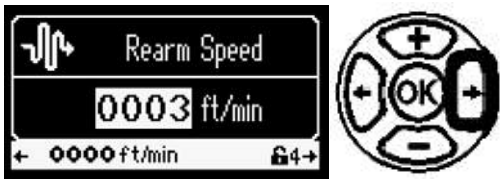
Jam Setup Menus - Continued



When enabled:

- If I jam is detected, the beacon will turn on.
- If Rearm Mode is set to “Rearm” after Timeout, the unit will wait for the duration of the Rearm Timeout setting, and then the beacon will turn off.
- If Rearm Mode is set to “Wait for V=0,” the unit will wait until the encoder drops to 0 ft/min or 0 m/min, and then wait until the encoder rises to at, or above, the Rearm Speed. The beacon will then turn off.

Rearm Speed:



This setting adjusts the minimum speed at which the unit will scan for jams, after a jam has occurred, when the Rearm Mode is set to Wait for V=0. After a jam occurs and the machine stops, the unit will not signal any more jams until the encoder speed is at, or above, this Rearm Speed setting.

Rearm Timeout:

This setting adjusts the forced stop time after a jam is detected. The unit will not turn the Machine Stop Output or Beacon Output off until this time has elapsed.

Rearm Mode:

This setting has two options:

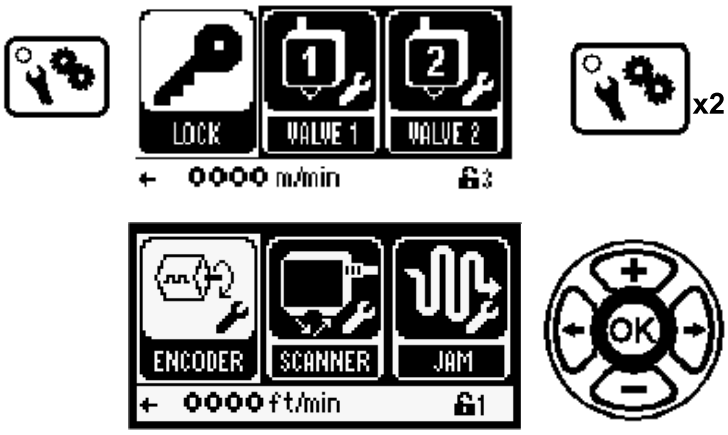
Rearm after Timeout:

In this mode: after a jam is detected, the unit will wait for the Rearm Timeout duration, and will then turn off whatever outputs are enabled.

Wait for V=0:

In this mode: after a jam is detected, the unit will not turn off whatever outputs are enabled until the encoder reaches 0 speed.

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

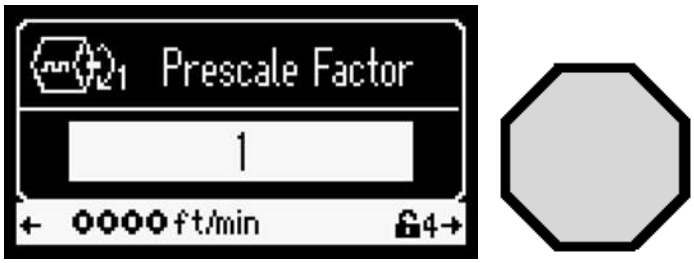
Speed Calculation Immediate/Average - "Average" is the default setting and will work for the majority of jobs. However, if an immediate reaction to a change of the encoder speed is needed, the setting should be changed to "Immediate."

> The MCP-4J can support two encoder inputs, or one encoder input and an output for that encoder input. By default, the control has just one encoder input and no second option installed. If a second encoder input is used, there is a second set of menus to the right that configures that channel.

Direction Detection

Clockwise, Counter Clockwise, Off - When in "Off," the encoder can spin in either direction and the control will register the movement. When in "Clockwise" or "Counter Clockwise," the control will only register encoder movement in the specified direction.

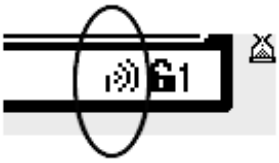
Prescale Factor



1, 2, 4, 8 - The control will scale the number of encoder pulses used in processing by whatever the Prescale Factor is set to. This is typically used when the encoder has a high number of pulses-per-revolution.

Status Bar

Communication status is shown in the bottom right corner of the status bar:



The icon above indicates that the last transmission was successful. If a '!' is displayed, the interface has not yet received data, or the last transmission had errors.

Section 5 - Operation

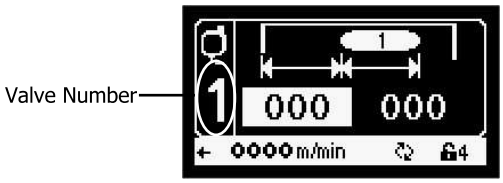
Set the Pattern Menu Information

After completing the mounting and the programming of the MCP-4J 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”).

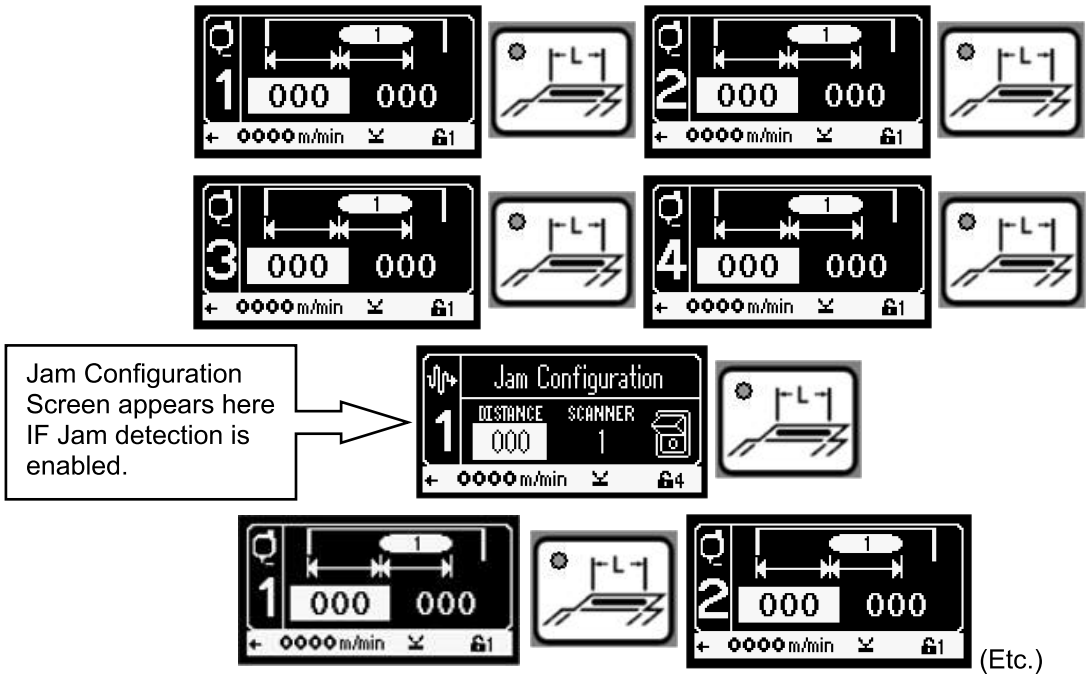
The default screen always shows valve 1. Before entering any data, it is advisable to check the left side of the screen for the valve number. Make certain the desired valve number appears before entering data.

> Depending on the password level, some screens may not be seen and/or available. This is a security feature of the MCP-4.

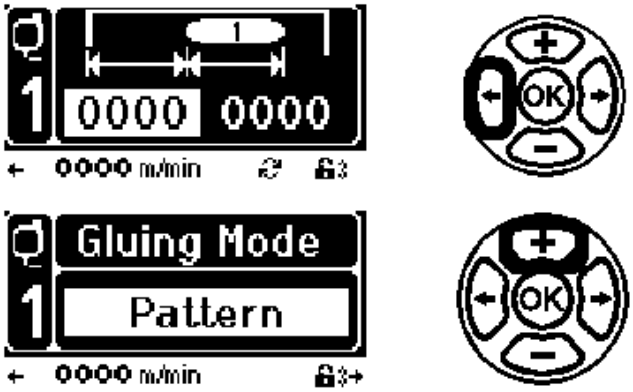


Scrolling Through Valve Numbers with the Pattern Button

Each press of the Pattern Button will increase the valve number by one. When valve 4 is reached, the valve numbers restart at valve 1. For example:



Gluing Mode



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.

> The Pattern Glue Mode is available in the following applications: Corrugated, Folding Carton, Envelope, Timer, Core Winding, Packaging and Others.

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

> The **Stitch** Glue Mode is available in the following applications: Folding Carton, Envelope, Packaging, Timer and Others.

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

> The Continuous Glue Mode is available in the following applications: Core Winding and Others.

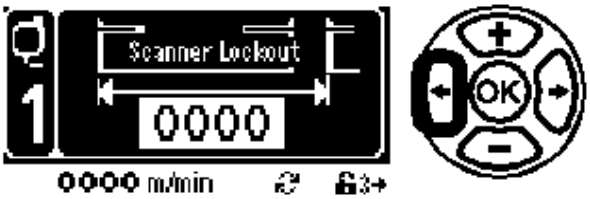
Gluing Mode - Continued

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).

> The **Auto Glue** Glue Mode is available in the following applications: Corrugated, Folding Carton, Packaging, Core Winding, Timer, Valve Driver and Others.

Scanner Lockout

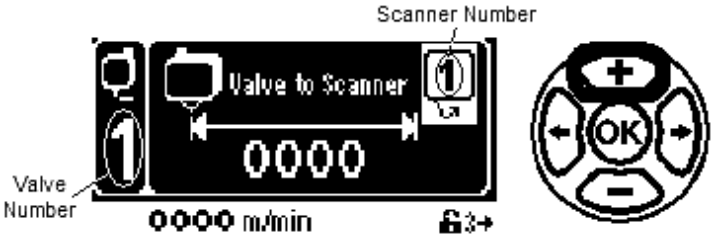
(Available in Corrugated, Folding Carton, Envelope, Packaging, Timer, Core Winding, and Others)



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

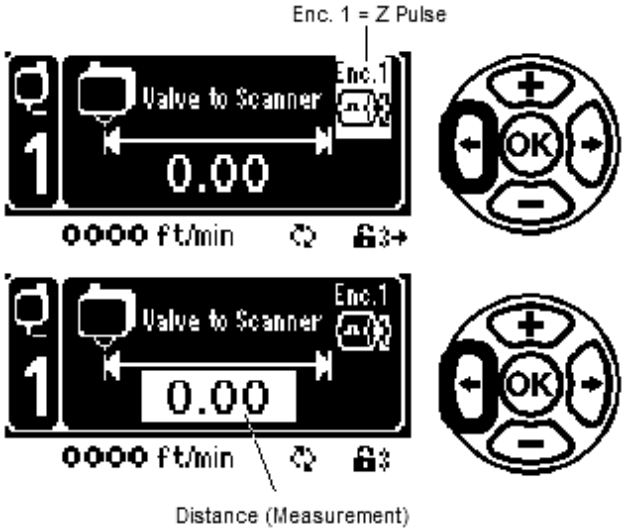
(All Applications)



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

Scanner Number/Z Pulse

To choose a scanner or the Z Pulse, press the Plus Button until the desired scanner number or Z Pulse 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).

Jog Mode Parameter

(Available in Corrugated, Folding Carton, Envelope, Packaging, Core Winding, and Others)

The Jog Mode Parameter is only available when Jog Mode is enabled.

Jog Mode--On/Off - Turn the jog mode on and off with the “switch” using the Plus/Minus Buttons.

Jog Gap Distance - This is the distance between the glue dots while the machine is running below the jogging speed threshold. Increase the distance to decrease the glue volume.

Jog Mode--Dot - The size of the dots of adhesive, from 1 (smallest) to 9 (largest).

Batch Counter

(All Applications)

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

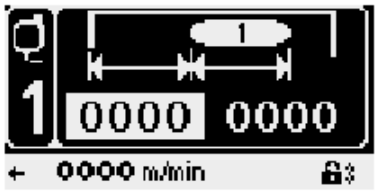
Batch Counter--On/Off - Turn the batch counter on and off with the “switch” using the Plus/Minus Buttons.

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

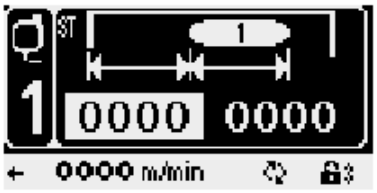
Batch Counter--Glue - The total number of products the adhesive pattern will be applied to, one after the other without skipping any products.

Input Values/Gluing Mode

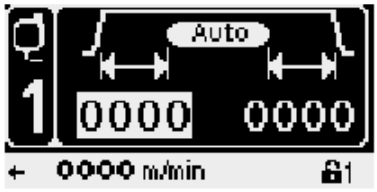
Depending on the application and the gluing mode chosen, input your values:



Pattern Mode
(Corrugated, Folding Carton, Envelope, Timer, Core Winding, Packaging and Others)



Stitch
Folding Carton, Envelope, Timer, Packaging and Others)



Auto Glue
(Corrugated, Folding Carton, Timer, Core Winding, Valve Driver, Packaging and Others)

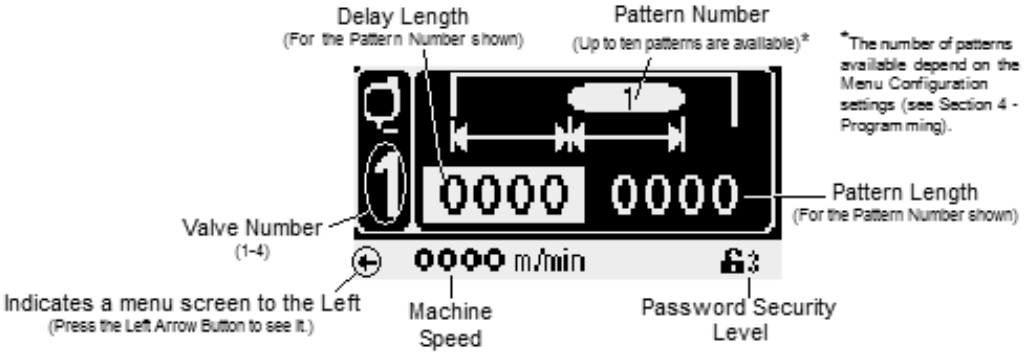
Continuous
(Core Winding and Others

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

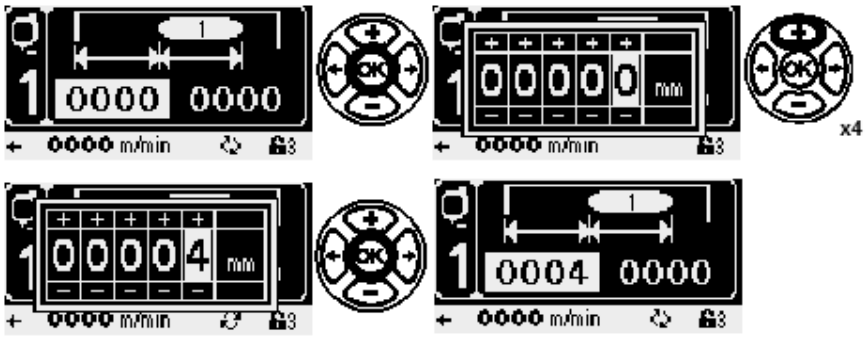
The Pattern Glue Mode can also be called “pattern-skip-pattern” mode or “normal mode.”



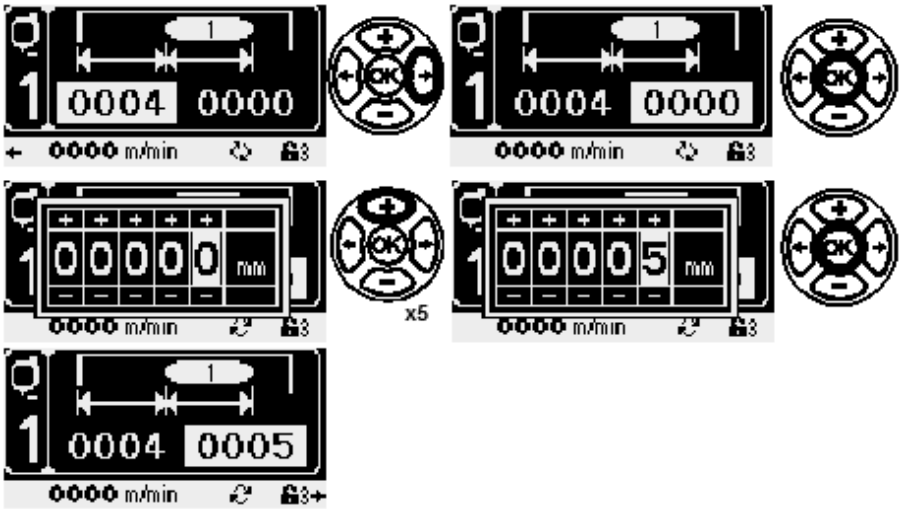
The following is an example of setting up a pattern gluing mode with three patterns for valve one:

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

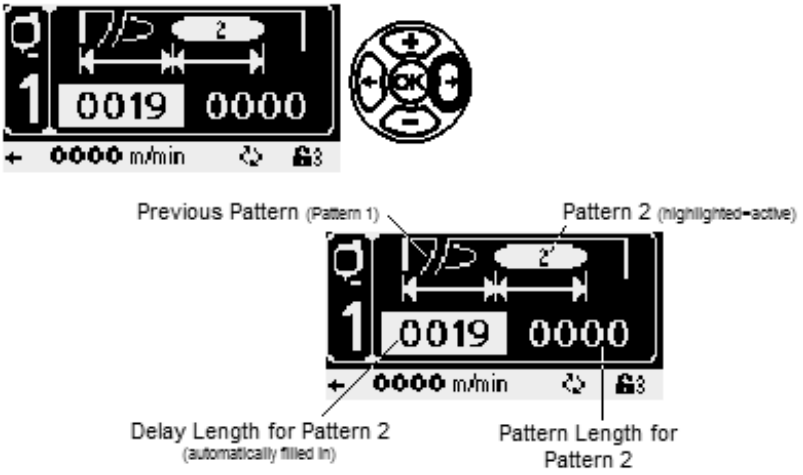


2. Press the Right Arrow Button to view the Pattern Length for pattern 1. The Pattern Length is the length of the glue line (for the pattern number indicated). Press the OK Button to view the thumbwheel, and use the Plus/Minus Buttons to change. Press the OK Button to enter the setting.

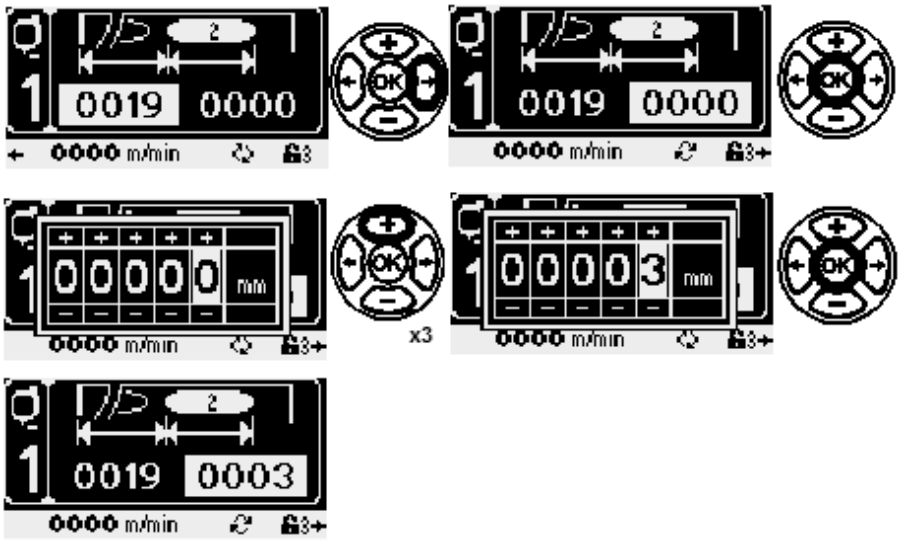


Pattern Mode - Example - Continued

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.



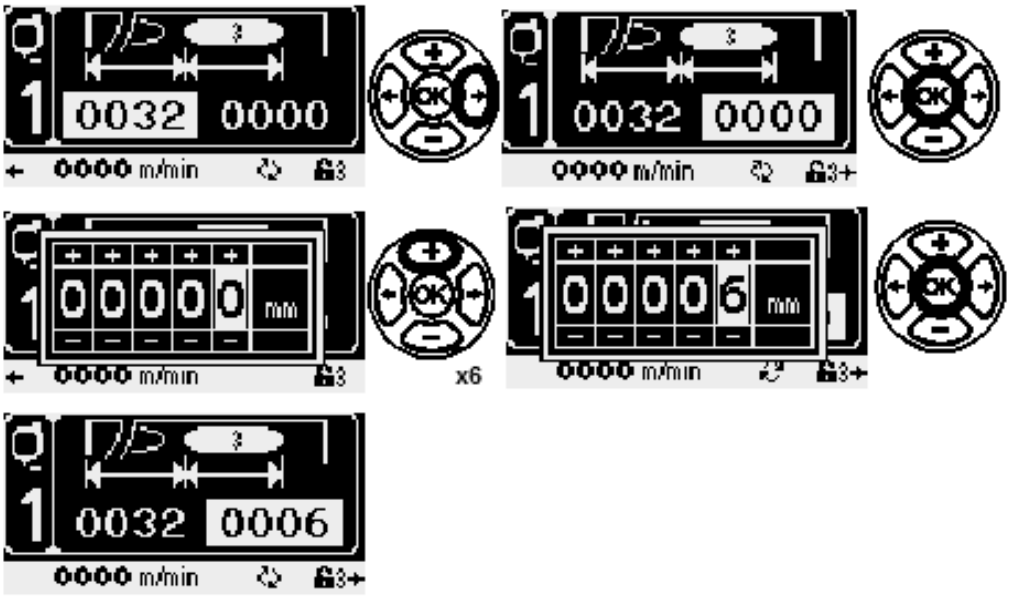
4. Press the Right Arrow Button to view the Pattern Length for pattern 2. Press the OK Button to view the thumbwheel, and use the Plus/Minus Buttons to change. Press the OK Button to enter the setting.



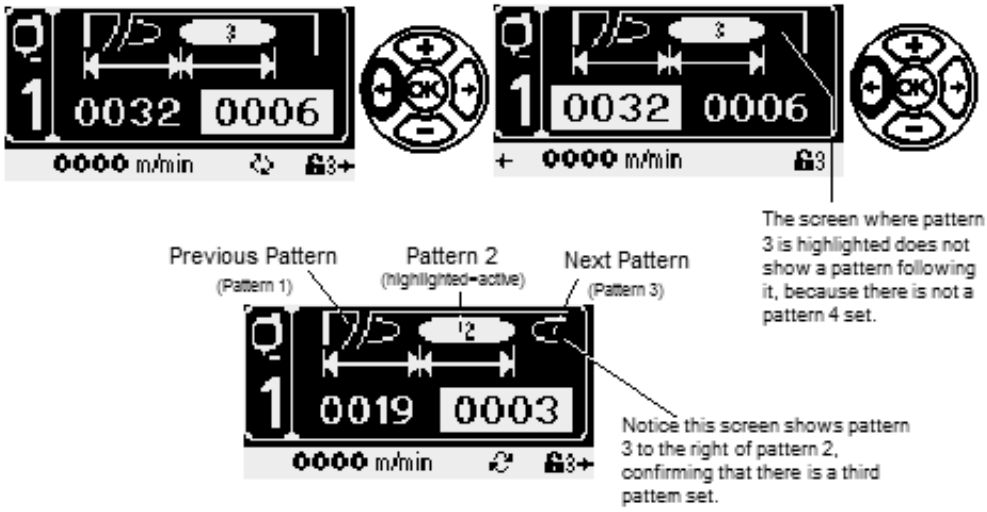
5. Press the Right Arrow Button to view the Delay Length for pattern 3.

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.



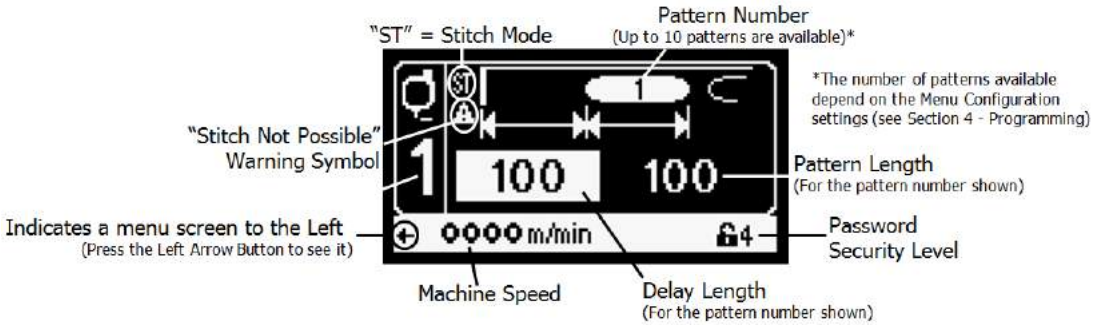
7. All three patterns are now set. To review them, use the Left Arrow Button.



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.

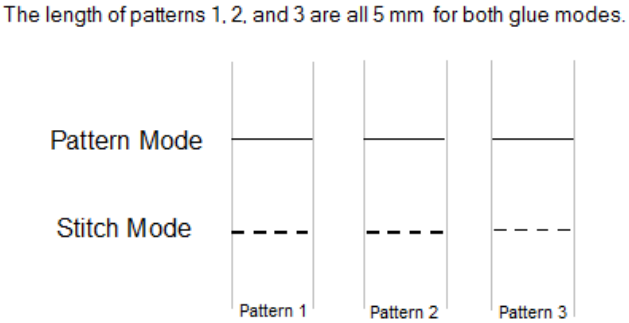
Stitch Mode

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

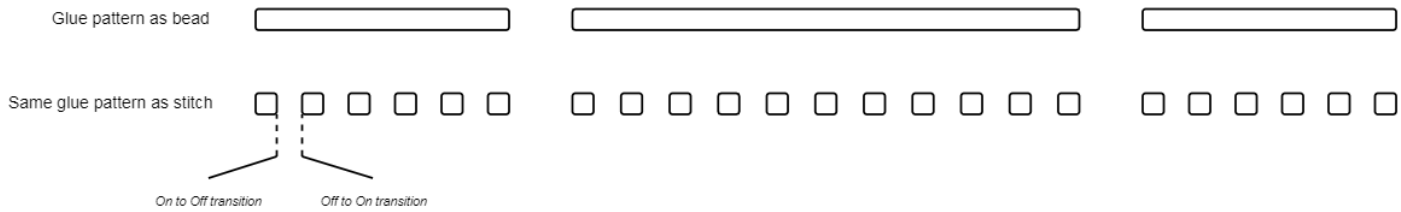


Setting the patterns for Stitch Mode is very similar to setting the patterns for Pattern Mode.

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:



"Stitch Not Possible" Warning: If a valve channel has a long pattern, configured with a small stitch length and stitch gap, it is possible to reach maximum table storage (maximum is 500 positions). If the pattern entered exceeds the maximum, it may be cut short when gluing is attempted.

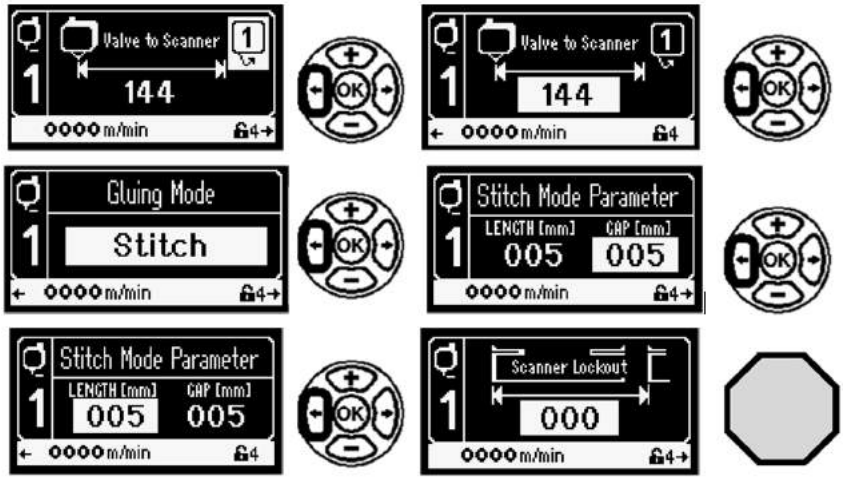


When a pattern is entered, the control calculates each time the valve is turned off or on (each transition between stitches), storing the distances as encoder pulses between each of those transitions. The table has 500 positions maximum.

Example: If a pattern of 100" were entered with stitch gap of 0.1", there would be 1000 transitions. As a result, the system would lay a 50" pattern and then shut off.

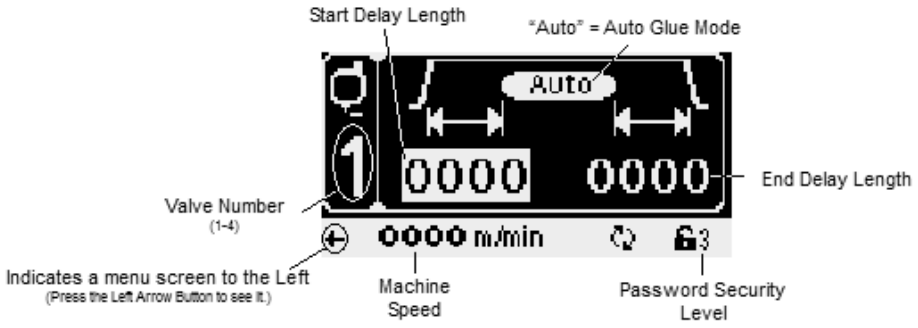
The **"Stitch Not Possible" Warning** symbol will appear if the pattern entered is **not** possible.

Stitch Mode Menus

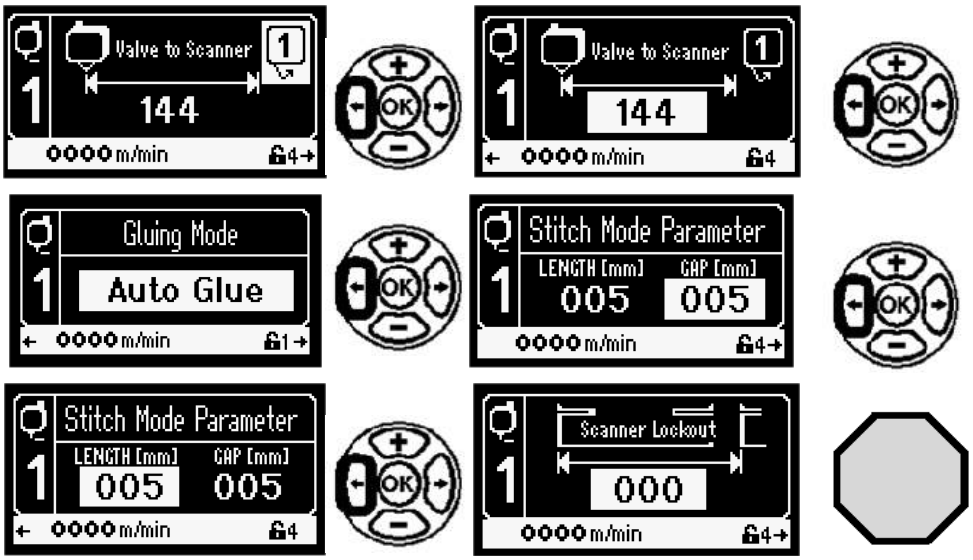


Auto Glue Mode

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.

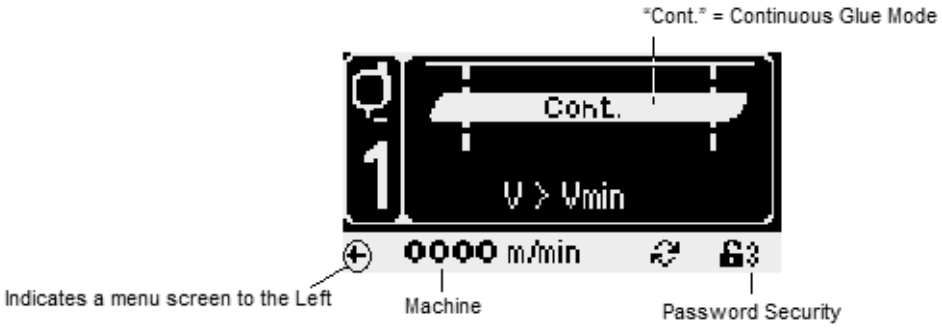


Auto Glue Mode Menus

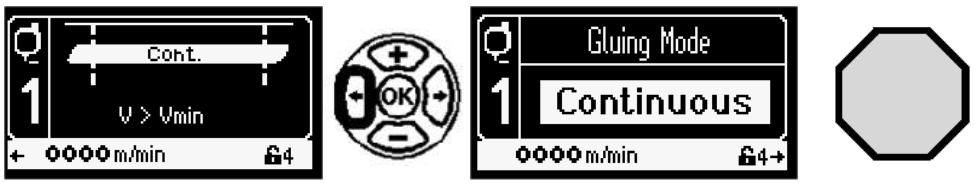


Continuous Glue Mode

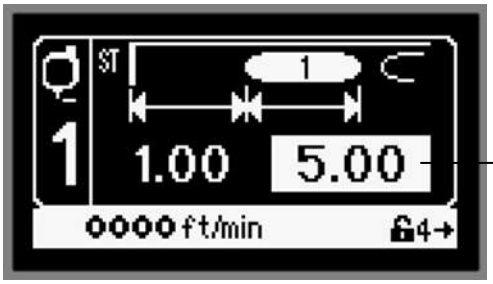
In Continuous Glue Mode, the glue will flow continuously as long as the speed is greater than Vmin.



Continuous Glue Mode Menus



Glue Pattern Length Range



When adjusting the glue pattern length, the limits are:

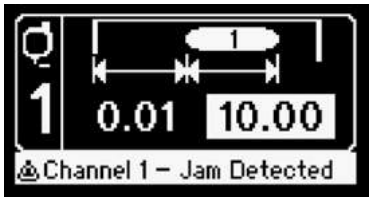
Minimum Length: 0” (0mm)

Maximum Length: 258.01” (6554mm)

Jam Detection

Does not apply to horizontal units (074xx087, 074xx088, 074xx089 or 074xx090).

Jam Alarm Message

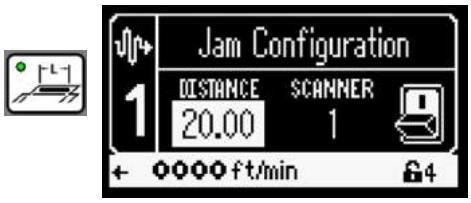


Whenever a jam is detected, the screen will display the above message with the detected “jam channel.” This message will not prevent the unit from continuing normal operation or detecting further jams, but serve only as an alert.

The messages will not clear when the detected jam is cleared. They must be cleared with the ‘OK’ key. Depending on the settings, and because the message is just a notification, it is possible for the control to queue up many of these messages. As a result, when the ‘OK’ key is pressed to clear a jam message, the control will clear all pending jam messages until it has reached either a different type message (i.e. low voltage alarm) or the end of the queue.

Jam Channel Configuration Menus

There are four of these menus, one for each of the scanner inputs. They are located after the pattern screen, for the last valve enabled (i.e. if there are two valves on the unit, these menus will show after the valve 2 pattern screen). They are accessed by pressing the pattern key.



There are four screens (one for each possible jam scanner input), accessed using the left and right arrow keys. All four screens are accessible no matter how many valves are enabled.

There are three settings on each screen:

Distance:

This is the distance (inch or mm) at which the specific scanner must be blocked to detect a jam. This is typically set to the machine repeat length + 10 to 20%

Scanner:

This is the scanner input for the specific jam channel. This same setting appears in the valve 1-4 setup screens.

On/Off:

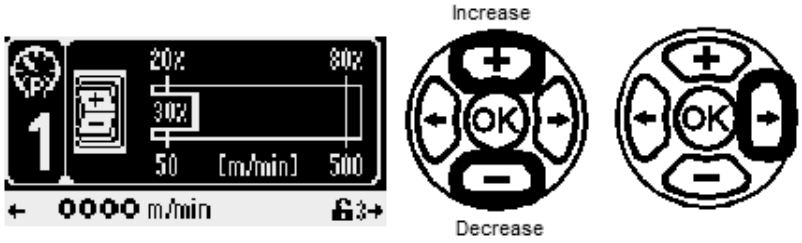
This will turn the specific jam channel on or off. If the channel is on, jams will be detected.

Set the Pressures

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

Pressure Offset Value

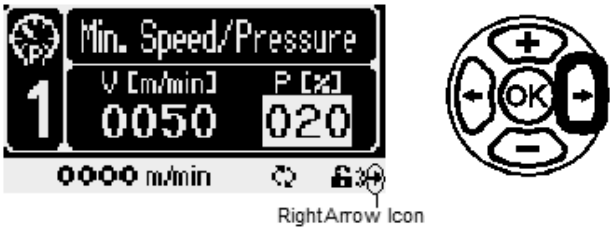
(All Applications)



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.

Minimum Speed/Pressure

(All Applications)



V (m/min) - The machine speed.

P (%) - The percent of pressure.

> 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.

Maximum Speed/Pressure

(All Applications)

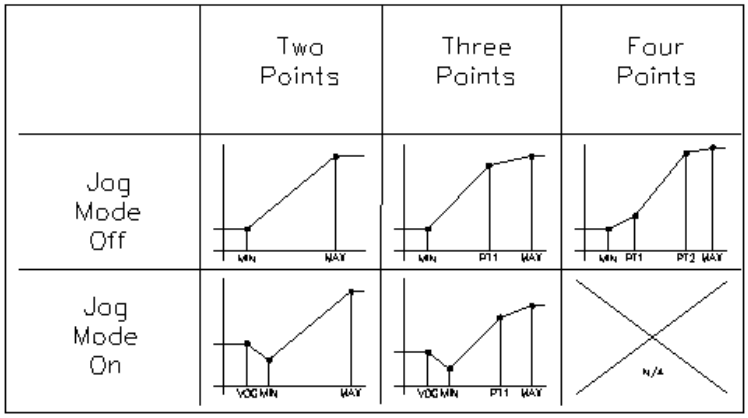
When three pressure points are enabled, screen “PT1” will appear. When four pressure points are enabled, screens “PT1” and “PT2” will appear. These pressure points are set up just like the Maximum and Minimum Pressures.

> 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)

Speed/Pressure Graphs - Examples



The graph above illustrates two, three, and four points on the pressure curve with Jog Mode off and on. The majority of projects will be fine with the Jog Mode off and only two points on the pressure curve. If more control is necessary, try adjusting the number of points on the pressure curve. Also see the tips below.

Purge Pressure

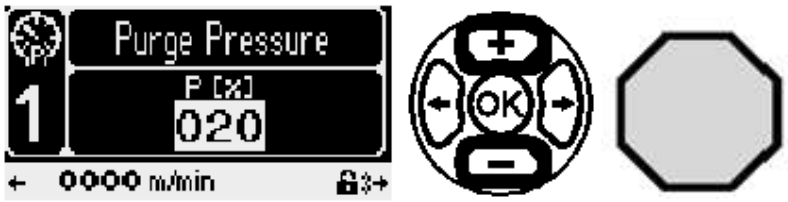
> The MCP-4J can have up to two EPC outputs. EPC 2 is always for an external EPC. EPC 1 can be an internal EPC, external, or no EPC.

Set Purge Pressure

At Machine Stop, On Demand Only - If set to “At Machine Stop”: The control will set the EPC output to the Purge Pressure setting when the encoder speed drops to 0 or if the control is purging. If set to “On Demand Only”: The control will set the EPC output to the Purge Pressure setting only when the control is purging.

Purge Pressure %

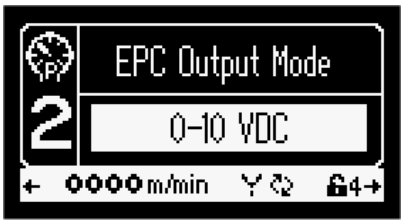
(All Applications)



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

> The number on the left side of the pressure screen refers to the EPC number (two EPCs are available on some models of the MCP-4J Control Unit. See the Parts List Section for details). The second EPC is the 0-10 Volt output for speed tracking. Both EPCs are programmed in the same way; just be certain the desired EPC number appears on the screen before programming. To switch between EPCs, press the Pressure Button until the desired EPC number appears.

EPC Output Mode (EPC2 ONLY)



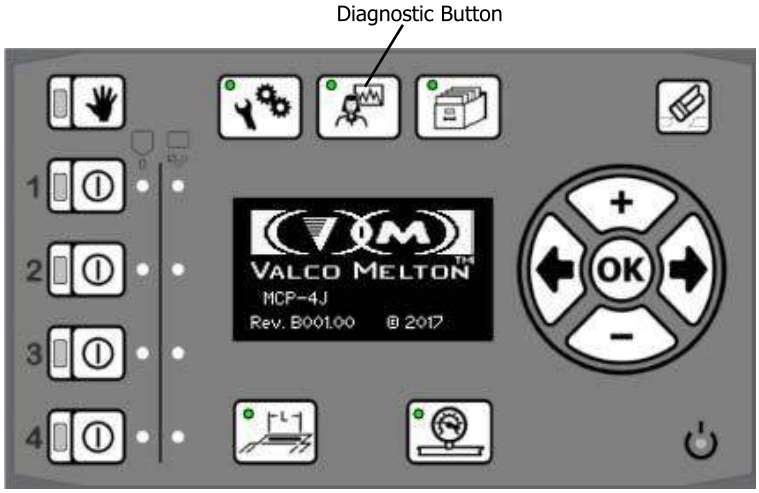
0-10 VDC or 0-20 mA - If EPC 2 is enabled, the user can set the output signal to either 0-10 VDC or 0-20 mA.

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.

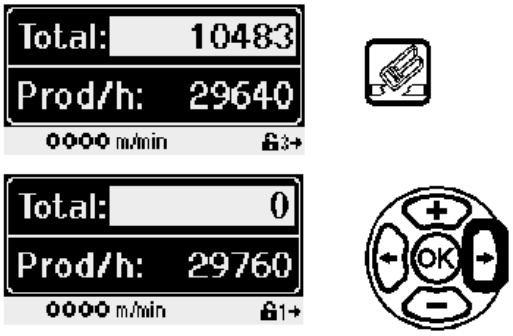
Diagnostic Button

(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.

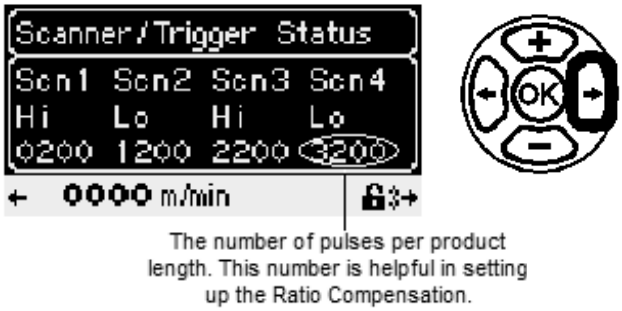


Valve Status

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

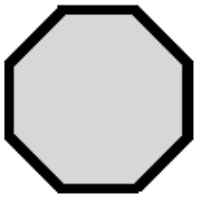
Version Information

The version information screen displays the CPU, the Logic (PLD), and the MCP-4J name.

Control Information

The control information screen displays the current application and glue station, if applicable.

Event History

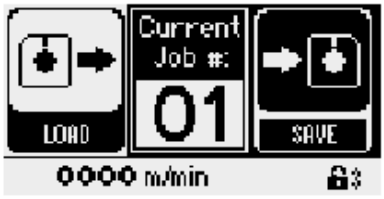


The event history screen displays error messages.

Job Button

(All Applications)

The Job Save/Recall Mode allows the MCP-4J Control Unit to save and recall up to 100 different jobs (via a Micro-SD card) for fast programming.



Load - Load a previously saved job.

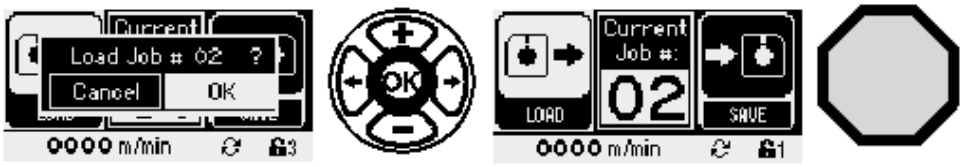
Load a Job

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.

Load a Job - Continued

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.

Save a Job - Continued

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 - Maintenance

This section contains maintenance procedures for the Valco MCP-4J Control. A regular maintenance program helps ensure longer life and efficient operation of your system. A few minutes spent on maintenance greatly reduces downtime.

Purging the Adhesive

The system should be purged of air at every startup or shift change. To purge the system, follow these steps:

1. Install the applicator head onto the contact glue valve.
2. Purge adhesive until no air is present and the glue flows evenly.

> The glue valves can be purged manually using an activator located on the valve itself, by a solenoid-operated air valve, or they can be purged using the touchscreen panel and control.
>
> When using any valve in the top-down position for the first time, it might be necessary to remove the valve and hold it so that the applicator head is at the top. The fluid pressure should then be set to 4 bar, and the solenoid should be fired until all the air is out and a flow of glue is present.

Performing Downtime Maintenance

The type of downtime maintenance that is necessary for the MCP-4J Control Unit depends on the length of time the unit is down.

During short periods of downtime, such as order changeover, follow these steps:

1. Apply lithium grease or petroleum jelly to the orifice of the applicator head (contact extrusion valve) to prevent dried adhesive from clogging the valve.
2. Wipe the valve clean before restarting production.

For longer periods of downtime, follow these steps:

1. Remove the applicator head from the contact glue valve.
2. Install a stopper onto the contact glue valve in place of the applicator head.
3. Flush the applicator head with clean water.

If the system is idle for 30 days or longer, follow these steps:

1. Flush the entire glue supply system (including the pump or tank) with clean water (see Flushing the Glue System in this section).

Flushing the Glue System

To flush the glue system, follow these steps:

> Follow the procedures for your system. These are general guidelines only.

1. Turn on the tank and any hoses or valves that are to be cleaned.
2. Pump out the old hot-melt adhesive, and then fill the tank with hot-melt purge. Allow it to heat to at least 350 degrees F.

> If you use glue that operates at 250 degrees F, the tank only needs to be heated to the standard operating temperature.

3. Once the tank is molten, turn on the pump and engage the valves.
4. Flow the old adhesive and purge through the valves until only purge is extruding from the valves. When you reach this point, turn the system power OFF and remove air from the pump.
5. Next, remove the lid cover screws on the surface of the melt unit. This allows you to remove the pump and heating grid from the tank itself.
6. Once the screws are removed, use gloves to lift the lid and pump assembly out of the molten tank.
7. Place the lid and pump assembly in a vertical position on a clean, solid, flat surface and allow the excessive adhesive to slowly drip off of the fins.
8. Take the pot, lifting from the edges, and pour the molten material into a sealed corrugated box.
9. Use a clean rag to wipe the tank clean thoroughly and dispose of the rag. Now, you can re-insert the lid and pump assembly into the pot and tighten the lid cover screws. This completes the “clean and flush” process.

Lubricating the System

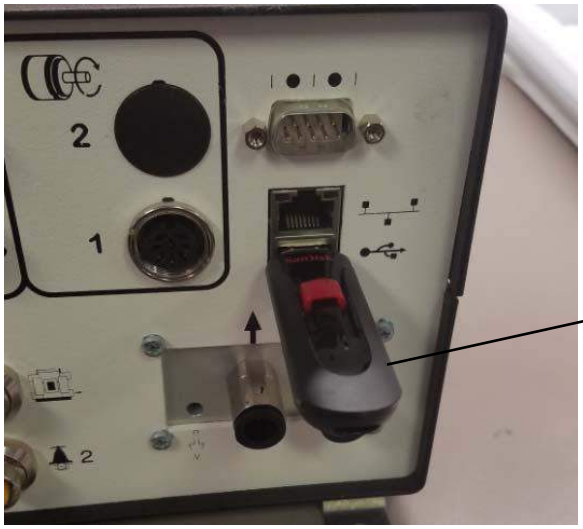
To lubricate the system, follow these steps:

1. Use lithium grease on all machined threads and fittings when servicing the system.
2. Grease quick-disconnect fittings frequently to prevent dried glue from causing excessive wear.

Reprogramming with a USB Flash Drive

1. Turn off power to the control.
2. Insert the programming USB Flash Drive.

> A USB Flash Drive for reprogramming (119xx310) will be found in the installation kit.

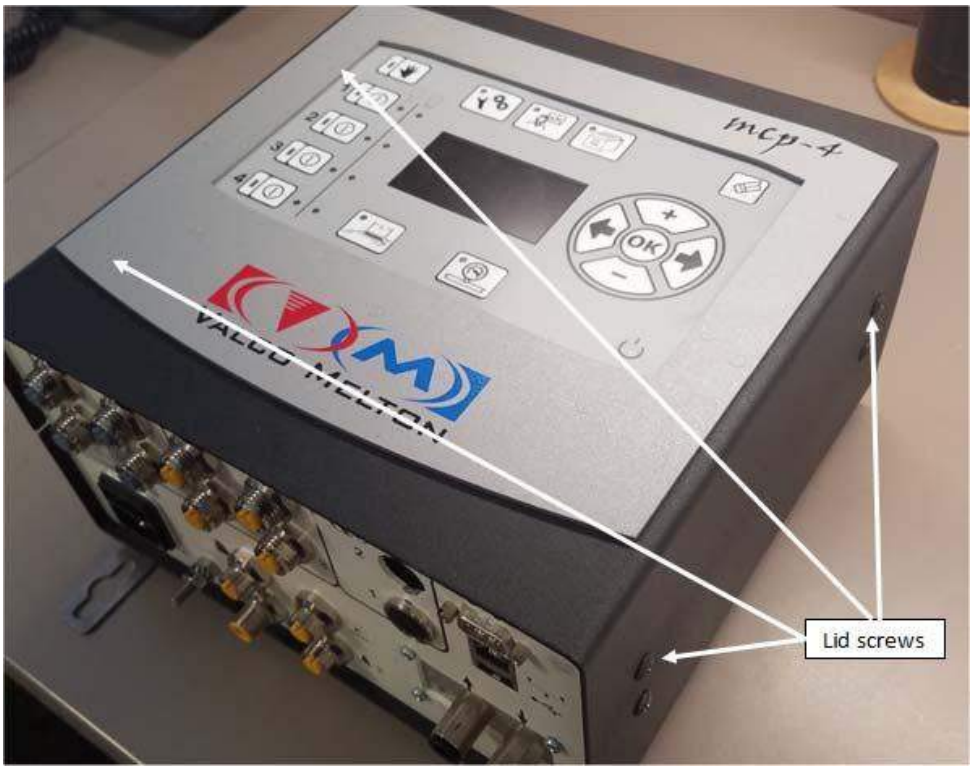


3. Turn on power to the control.
4. Wait approximately 1 minute until the control starts normally.
5. Turn off power to the control.
6. Remove the programming USB Flash Drive.
7. Resume normal use, software has been updated.

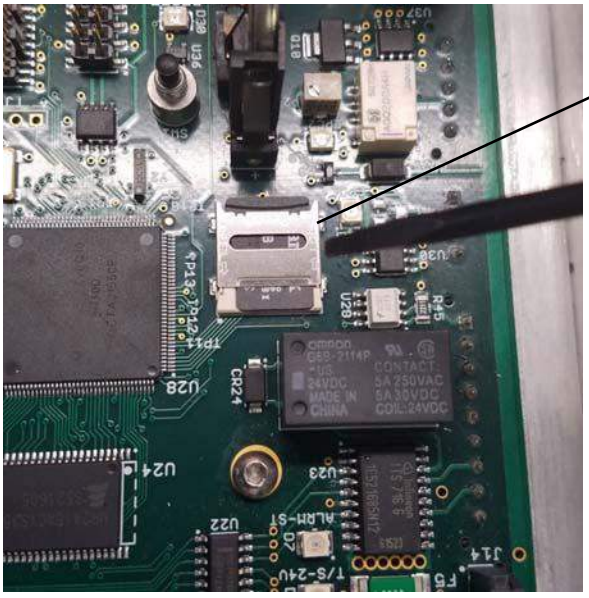
> The software version can be verified by pressing the Diagnostic button, and using the left or right arrow keys to access the “Version Information” screen.

Replacing Micro-SD Card

1. Loosen the four screws holding the control lid. There are two on either side.

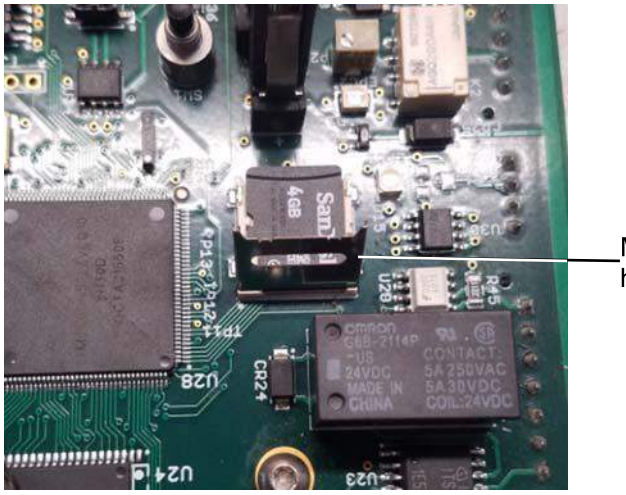


2. Locate the Micro-SD card.



Replacing Micro-SD Card - Continued

3. With a fingertip, slide the card holder in the direction shown by the arrow to release the holder cover.
4. Lift the holder cover.



5. Remove and replace the Micro-SD card.
6. Close the holder cover.

Replace the four (4) screws that hold the control lid.

Section 7 - Specifications

Item	MCP-4J Unit, Horizontal 074xx087 074xx088 074xx089 074xx090	MCP-4J Unit, Vertical 074xx084 074xx085 074xx086
Control dimensions:	**Height:** 5.86" (x mm) **Depth:** 10.11" (x mm) **Width:** 9.95" (x mm) **Approximate weight:** 12.5 lbs. (x)	**Height:** 12.5" (x mm) **Depth:** 5.83" (x mm) **Width:** 9.95" (x mm) **Approximate weight:** 12.5 lbs. (2.49 kg)
Input voltage:	90-130, 200-240 VAC, 50-60 Hz (auto-selected)	90-130, 200-240 VAC, 50-60 Hz (auto-selected)
IP Rating	IP40	
Number of channels:	4-channel operation with up to 10 programmable patterns per channel	
Glue pattern resolution:	0.01 in. or 1 mm	
Minimum Glue Pattern Length	0" (0mm)	
Maximum Glue Pattern Length	258.01" (6554mm)	
Number of scanner inputs:	Up to 4 with scanner lockout	
Glue pattern tolerance:	Less than 1 mm (0.4 inches) at 610 m/min (2000 ft/min)	
Job storage memory:	100 jobs	
Max Operating Ambient Temperature	60° C or 140° F	
Miscellaneous:	Encoder-based or timer mode Multi-valve, complex glue pattern capabilities "Continuous" and "Stitch" pattern gluing Adjustable minimum speed Inch or metric calibration CE compliant Password protection for key system parameters Integral fluid-flow control option (EPC) Web break detection option Batch count/production count Programmable valve output voltages depending upon base unit Jam Detection (not on horizontal units: 074xx087, 074xx088, 074xx089 or 074xx090) USB software update USB and Micro-SD backup and restore	

Max Valve Chart

Valve Type	300E	400E/EC	524E	540E	900E	9020	MX	MAC12	MAC24
Max Per Valve Channel	2	2	1	1	1	1	1	2	2
Max Per Unit	6	6	4	4	4	4	4	6	6

Section 8 - 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.
411 Circle Freeway Drive
Cincinnati, OH 45246
TEL: (513) 874-6550
FAX: (513) 874-3612
Email: sales@valcomelton.com
Web: http://www.valcomelton.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

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

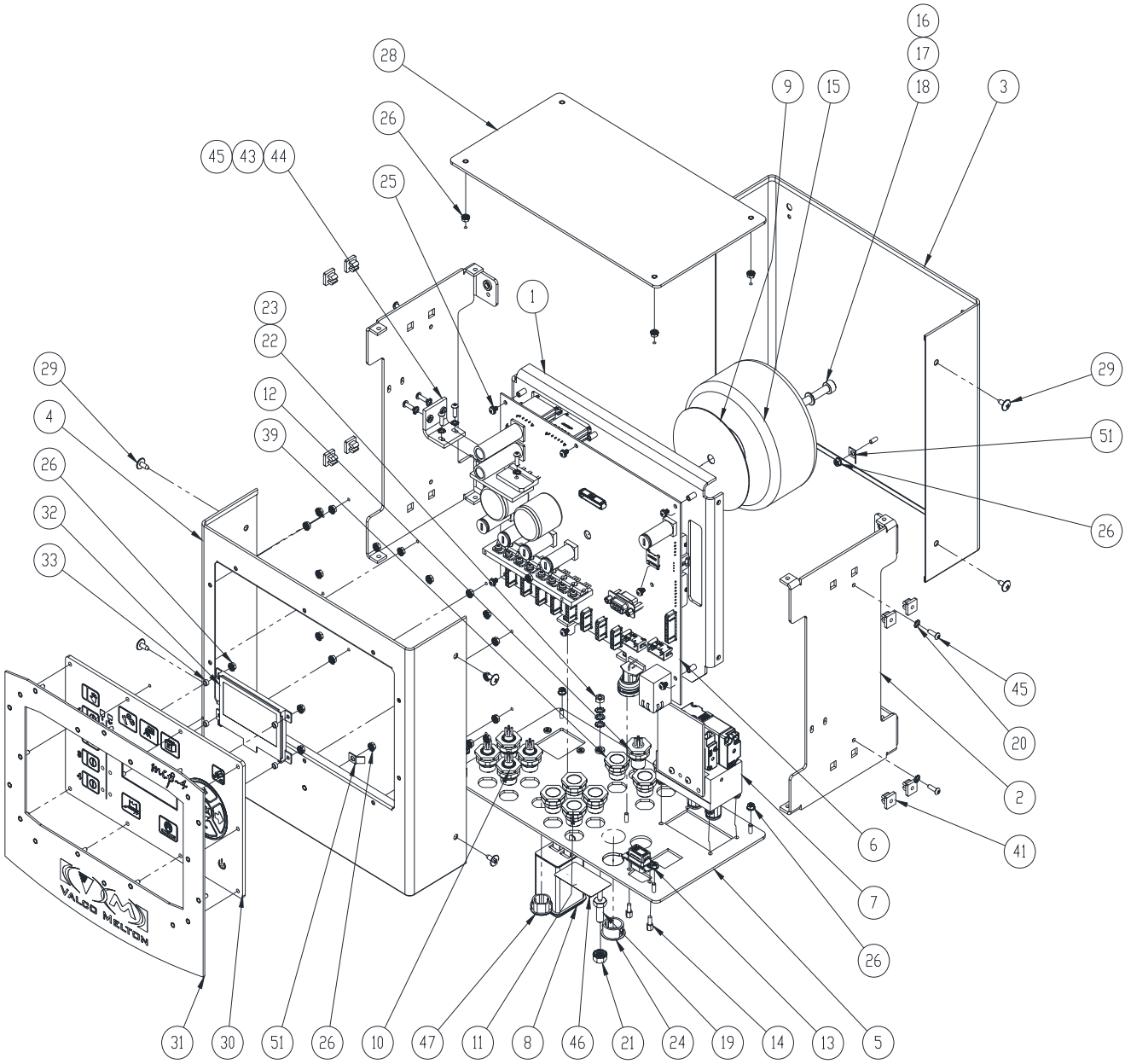
Spain

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-4J, Vertical with EPC (074xx084)



JWT6119.dwg.

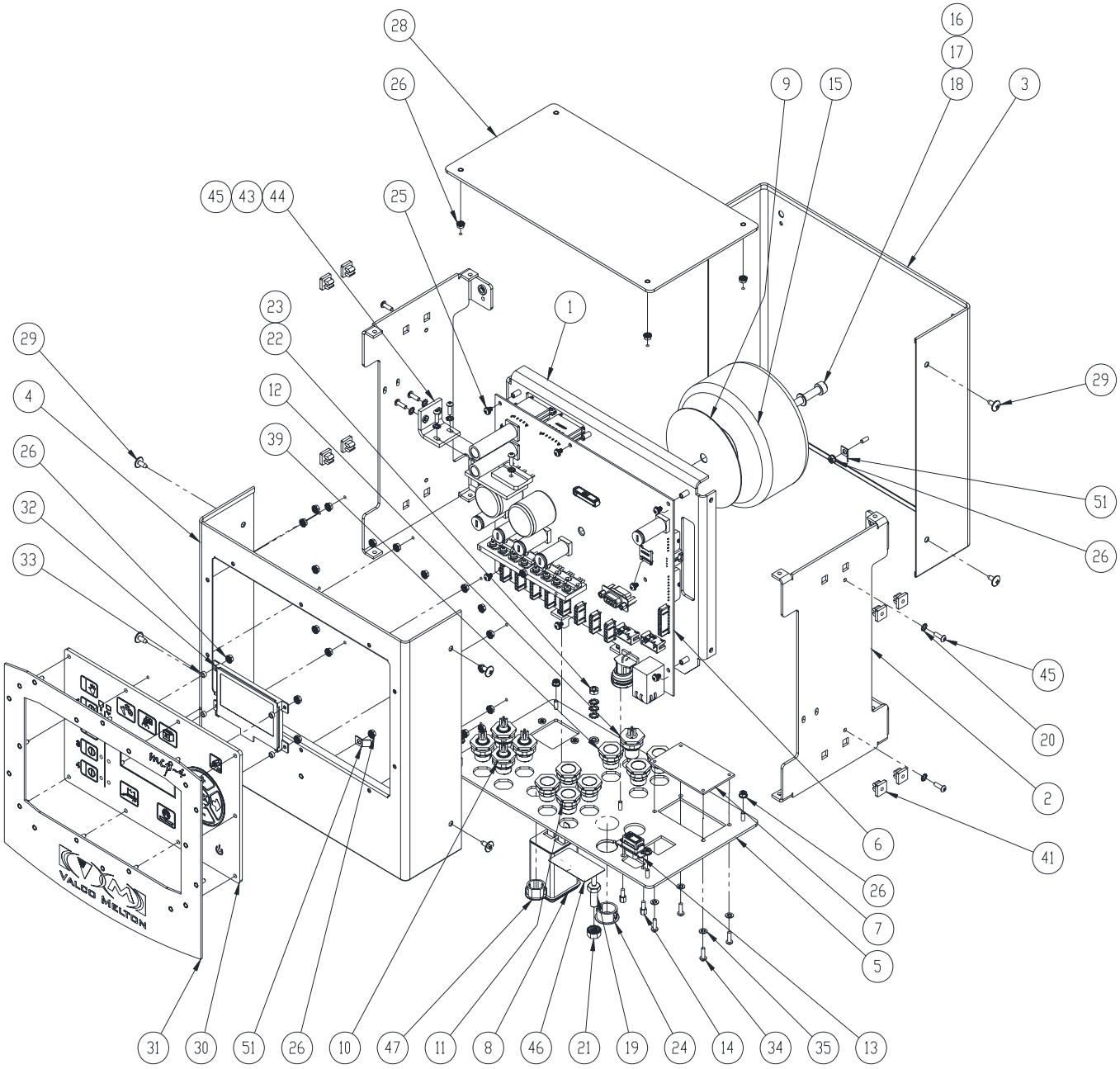
MCP-4J, Vertical with EPC (074xx084) - Continued

Item	Description	Part Number	Quantity
1	PLATE MOUNTING MCP-4	026XX403	1
2	FRAME RAIL SIDE MCP-4	026XX404	2
3	COVER BOTTOM MCP-4	026XX405	1
4	COVER TOP MCP-4 VERTICAL	026XX402	1
5	BACKPLATE MCP-4	026XX406	1
6	PCB ASSY MAIN-CONTROL MCP-4	152XX748	1
7	MANIFOLD ASSY,MCP-4 0-10V	753XX436	1
8	POWER ENTRY MODULE,NO FUSE	086XX075	1
9	GASKET TRANSFORMER	746XX268	1
10	CABLE,ASSY	029XX644	4
11	CABLE,ASSY	029XX645	4
12	CABLE ASSY	029XX821	1
13	RIBBON CABLE ASSY	033XX166	1
14	SCREW	091XX267	2
15	TRANSFORMER	551XX024	1
16	FLAT WASHER	784XX183	1
17	SCREW	798XX593	1
18	SCREW	784XX180	1
19	STUD, GROUND	091XX519	1
20	LOCK WASHER	784XX375	2
21	HEX NUT	798XX301	1
22	HEX NUT	798XX299	1
23	LOCK WASHER	784XX308	3
24	PLUG, ROUND HOLE	782XX667	1
25	SCREW	884XX486	8
26	NUT	884XX219	36
27	SCREW	784XX259	4
28	PLATE COVER MCP-4 VERTICAL	026XX401	1
29	SCREW	784XX660	8
30	PANEL OVERLAY MCP-4	782XX658	1
31	FRAME MCP-4 OVERLAY	026XX407	1
32	DISPLAY	137XX019	1
33	SPACER DISPLAY	091XX690	4
36	BRACKET MOUNTING MCP-4	782XX657	4
37	LOCKWASHER	784XX060	4
38	SCREW	784XX125	4
39	CABLE ASSY	029XX599	1
41	NUT	092XX030	8
42	CABLE ASSY	029XX819	1

MCP-4J, Vertical with EPC (074xx084) - Continued

Item	Description	Part Number	Quantity
43	BRIDGE RECTIFIER HEAT SINK	583XX823	1
44	BRACKET HEAT SINK	583XX824	1
45	SCREW	CV10521	5
46	LABEL STOCK, SILVER	781XX780	1
47	HOLE PLUG	781XX228	1
48	WIRE	540XX090	3
49	WIRE TERMINAL, RING	075XX075	3
50	WIRE TERMINAL	075XX078	3
51	TERMINAL	091XX453	2
52	CABLE ASSY	029XX808	1
53	SOFTWARE, MCP-4J, BOOTLOADER	119XX304	1
54	SOFTWARE, MCP-4J WITH JAM	119XX305	1
55	MEMORY,MICRO SD	118XX187	1
56	INSTALLATION KIT ASSY,MCP-4	091XX586	1
57	BOX, MCP-4/MCP-4P	730XX060	1
58	FOAM FOR, MCP-4/MCP-4P	730XX061	1

MCP-4J, Vertical w/o EPC (074xx085)



KMP0153.dwg

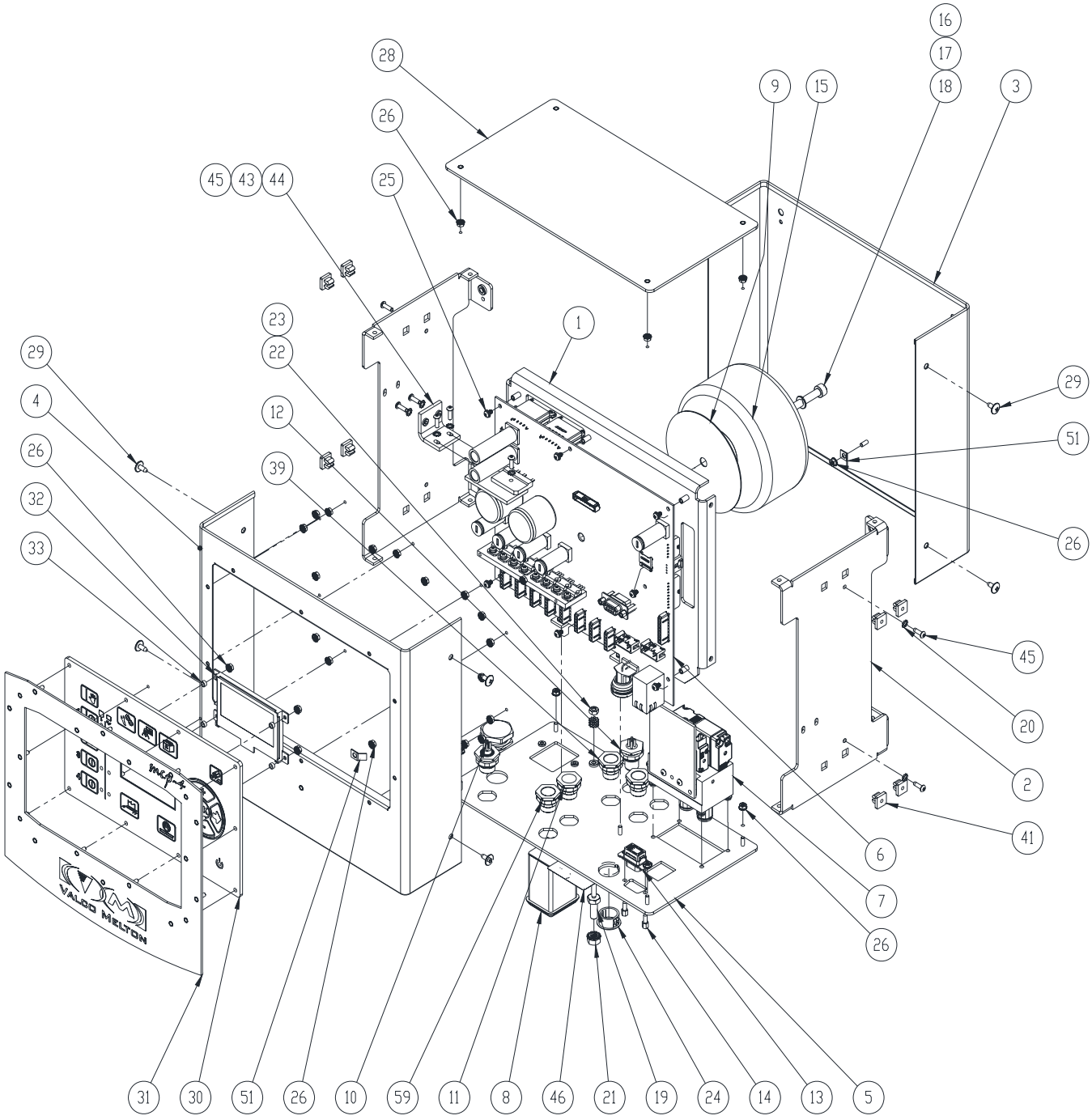
MCP-4J, Vertical w/o EPC (074xx085) - Continued

Item	Description	Part Number	Quantity
1	PLATE MOUNTING MCP-4	026XX403	1
2	FRAME RAIL SIDE MCP-4	026XX404	2
3	COVER BOTTOM MCP-4	026XX405	1
4	COVER TOP MCP-4 VERTICAL	026XX402	1
5	BACKPLATE MCP-4	026XX406	1
6	PCB ASSY MAIN-CONTROL MCP-4	152XX748	1
7	COVER PLATE, NO EPC OPTION	781XX298	1
8	POWER ENTRY MODULE,NO FUSE	086XX075	1
9	GASKET TRANSFORMER	746XX268	1
10	CABLE,ASSY	029XX644	4
11	CABLE,ASSY	029XX645	4
12	CABLE ASSY	029XX821	1
13	RIBBON CABLE ASSY	033XX166	1
14	SCREW	091XX267	2
15	TRANSFORMER TOROID MCP-4X	551XX024	1
16	FLAT WASHER	784XX183	1
17	WASHER	798XX593	1
18	SCREW	784XX180	1
19	STUD, GROUND	091XX519	1
20	LOCK WASHER	784XX375	2
21	HEX NUT	798XX301	1
22	HEX NUT	798XX299	1
23	LOCK WASHER	784XX308	3
24	PLUG, ROUND HOLE	782XX667	1
25	SCREW	884XX486	8
26	NUT	884XX219	36
27	SCREW	784XX259	4
28	PLATE COVER MCP-4 VERTICAL	026XX401	1
29	SCREW	784XX660	8
30	PANEL OVERLAY MCP-4	782XX658	1
31	FRAME MCP-4 OVERLAY	026XX407	1
32	DISPLAY	137XX019	1
33	SPACER DISPLAY	091XX690	4
34	SCREW	784XX661	4
35	LOCK WASHER	798XX772	4
36	BRACKET MOUNTING MCP-4	782XX657	4
37	LOCKWASHER	784XX060	4
38	SCREW	784XX125	4
39	CABLE ASSY	029XX599	1

MCP-4J, Vertical w/o EPC (074xx085) - Continued

Item	Description	Part Number	Quantity
41	NUT	092XX030	8
42	CABLE ASSY	029XX819	1
43	BRIDGE RECTIFIER HEAT SINK	583XX823	1
44	BRACKET HEAT SINK	583XX824	1
45	SCREW	CV10521	5
46	LABEL STOCK, SILVER	781XX780	1
47	HOLE PLUG	781XX228	1
48	WIRE	540XX090	3
49	WIRE TERMINAL	075XX075	3
50	WIRE TERMINAL	075XX078	3
51	TERMINAL	091XX453	2
52	CABLE ASSY. MCP-4 POWER INPUT	029XX808	1
53	SOFTWARE, MCP-4J, BOOTLOADER	119XX304	1
54	SOFTWARE, MCP-4J WITH JAM	119XX305	1
55	MEMORY,MICRO SD	118XX187	1
56	INSTALLATION KIT ASSY,MCP-4	091XX586	1
57	BOX, MCP-4/MCP-4P	730XX060	1
58	FOAM FOR, MCP-4/MCP-4P	730XX061	1

MCP-4J, Vertical 3NC Tipsealer (074xx086)



JWT6546.dwg

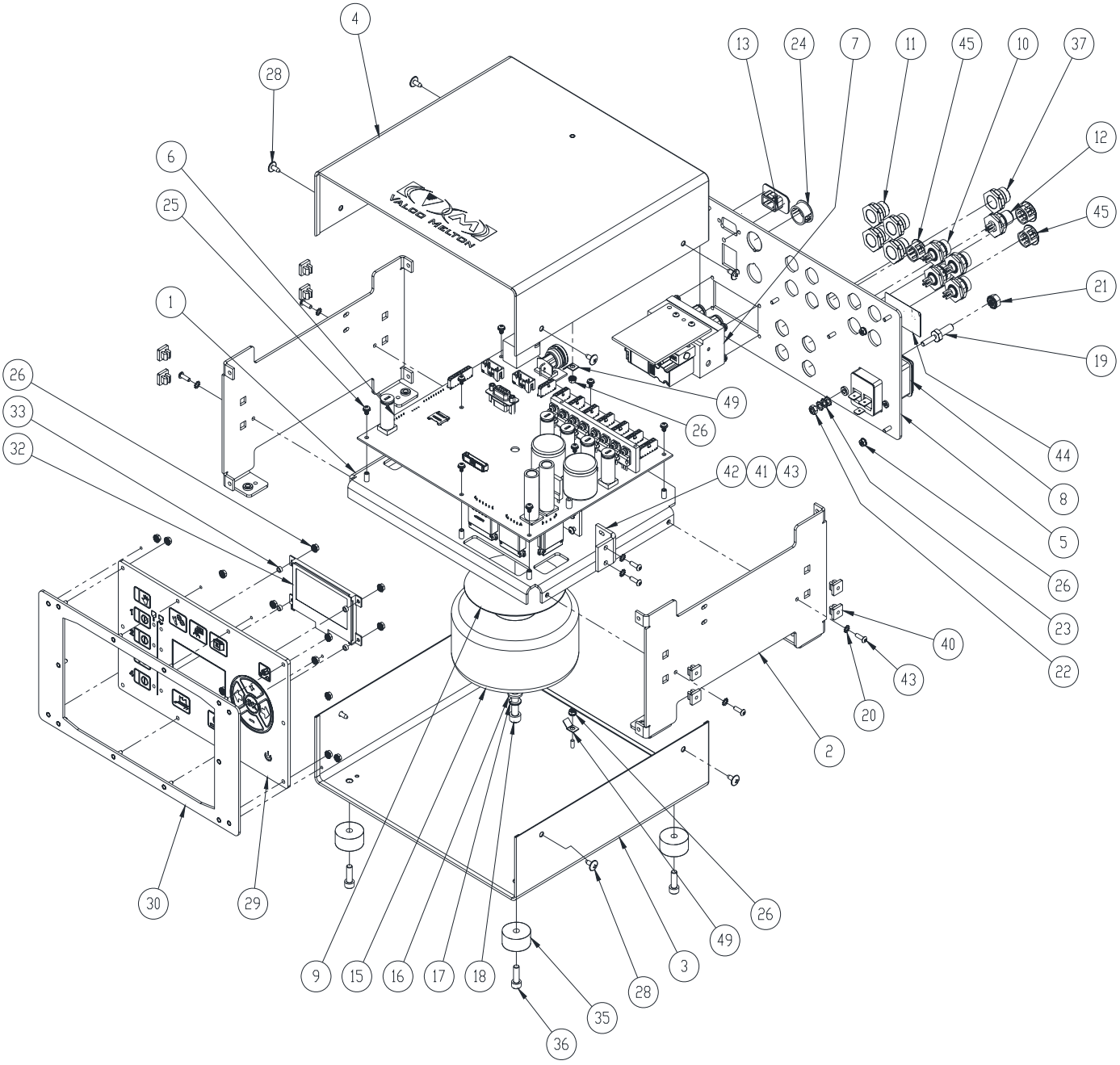
MCP-4J, Vertical 3NC Tipsealer (074xx086) - Continued

Item	Description	Part Number	Quantity
1	PLATE MOUNTING MCP-4	026XX403	1
2	FRAME RAIL SIDE MCP-4	026XX404	2
3	COVER BOTTOM MCP-4	026XX405	1
4	COVER TOP MCP-4 VERTICAL	026XX402	1
5	PLATE BACK MCP-4 TRI-VALVE	026XX420	1
6	PCB ASSY MAIN-CONTROL MCP-4	152XX748	1
7	MANIFOLD ASSY,MCP	753XX436	1
8	POWER ENTRY MODULE,NO FUSE	086XX075	1
9	GASKET TRANSFORMER	746XX268	1
10	CABLE ASSY	029XX639	1
11	CABLE ASSY, MANIFOLD MCP-4J BR	029XX820	1
12	CABLE ASSY	029XX821	1
13	RIBBON CABLE ASSY	033XX166	1
14	SCREW	091XX267	2
15	TRANSFORMER TOROID MCP-4X	551XX024	1
16	FLAT WASHER	784XX183	1
17	WASHER	798XX593	1
18	SCREW	784XX180	1
19	STUD, GROUND	091XX519	1
20	LOCK WASHER	784XX375	2
21	HEX NUT	798XX301	1
22	HEX NUT	798XX299	1
23	LOCK WASHER	784XX308	3
24	PLUG, ROUND HOLE	782XX667	1
25	SCREW	884XX486	8
26	NUT	884XX219	36
27	SCREW	784XX259	4
28	PLATE COVER MCP-4 VERTICAL	026XX401	1
29	SCREW	784XX660	8
30	PANEL OVERLAY MCP-4	782XX658	1
31	FRAME MCP-4 OVERLAY	026XX407	1
32	DISPLAY	137XX019	1
33	SPACER DISPLAY	091XX690	4
36	BRACKET MOUNTING MCP-4	782XX657	4
37	LOCKWASHER	784XX060	4
38	SCREW	784XX125	4
39	CABLE ASSY	029XX599	1

MCP-4J, Vertical 3NC Tipsealer (074xx086) - Continued

Item	Description	Part Number	Quantity
41	NUT	092XX030	8
42	CABLE ASSY	029XX819	1
43	BRIDGE RECTIFIER HEAT SINK	583XX823	1
44	BRACKET HEAT SINK	583XX824	1
45	SCREW	CV10521	5
46	LABEL STOCK, SILVER	781XX780	1
48	WIRE	540XX090	3
49	WIRE TERMINAL	075XX075	3
50	WIRE TERMINAL	075XX078	3
51	TERMINAL	091XX453	2
52	CABLE ASSY. MCP-4 POWER INPUT	029XX808	1
53	SOFTWARE, MCP-4J, BOOTLOADER	119XX304	1
54	SOFTWARE, MCP-4J WITH JAM	119XX305	1
55	MEMORY,MICRO SD	118XX187	1
56	INSTALLATION KIT ASSY,MCP-4	091XX586	1
57	BOX, MCP-4/MCP-4P	730XX060	1
58	FOAM FOR, MCP-4/MCP-4P	730XX061	1
59	CABLE ASSY	029XX397	1

MCP-4J, Horizontal, with EPC (074xx087)



JWT6113.dwg

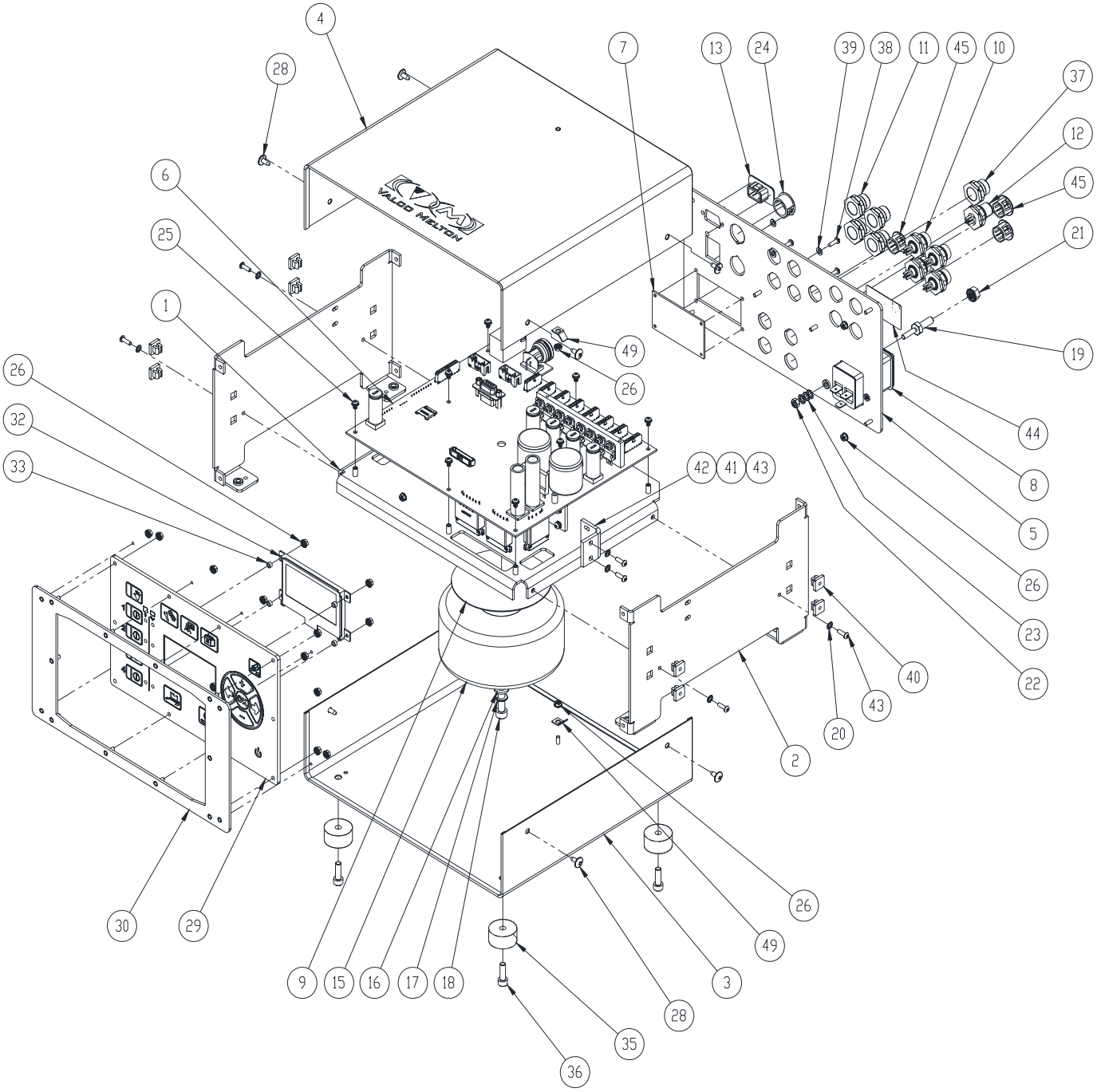
MCP-4J, Horizontal, with EPC (074xx087) - Continued

Item	Description	Part Number	Quantity
1	PLATE MOUNTING MCP-4	026XX403	1
2	FRAME RAIL SIDE MCP-4	026XX404	2
3	COVER BOTTOM MCP-4	026XX405	1
4	COVER TOP MCP-4	026XX408	1
5	BACKPLATE MCP-4	026XX406	1
6	PCB ASSY MAIN-CONTROL MCP-4	152XX748	1
7	MANIFOLD ASSY	753XX436	1
8	POWER ENTRY MODULE,NO FUSE	086XX075	1
9	GASKET TRANSFORMER	746XX268	1
10	CABLE,ASSY	029XX644	4
11	CABLE,ASSY	029XX645	4
12	CABLE ASSY	029XX821	1
13	HOLE PLUG	782XX675	1
15	TRANSFORMER	551XX024	1
16	FLAT WASHER	784XX183	1
17	WASHER	798XX593	1
18	SCREW	784XX180	1
19	STUD, GROUND	091XX519	1
20	LOCK WASHER	784XX375	2
21	HEX NUT	798XX301	1
22	HEX NUT	798XX299	1
23	LOCK WASHER	784XX308	3
24	PLUG, ROUND HOLE	782XX667	1
25	SCREW	884XX486	8
26	NUT	884XX219	26
27	SCREW	784XX259	4
28	SCREW	784XX660	8
29	PANEL OVERLAY MCP-4	782XX658	1
30	BEZEL, MCP-4, HORIZONTAL	026XX409	1
32	DISPLAY	137XX019	1
33	SPACER DISPLAY	091XX690	4
35	FOOT, RUBBER MOUNTING	091XX759	4
36	SCREW	784XX410	4
37	CABLE ASSY,MCP-4J PUMP W/O JAM	029XX829	1
40	NUT	092XX030	8
41	BRIDGE RECTIFIER HEAT SINK	583XX823	1
42	BRACKET HEAT SINK	583XX824	1
43	SCREW	CV10521	5
44	LABEL STOCK, SILVER	781XX780	1

MCP-4J, Horizontal, with EPC (074xx087) - Continued

Item	Description	Part Number	Quantity
45	HOLE PLUG	781XX228	3
46	WIRE	540XX090	3
47	WIRE TERMINAL	075XX075	3
48	WIRE TERMINAL	075XX078	3
49	TERMINAL,TAB	091XX453	2
50	CABLE ASSY	029XX819	1
51	CABLE ASSY	029XX808	1
52	SOFTWARE, MCP-4J, BOOTLOADER	119XX304	1
53	SOFTWARE, MCP-4J WITH JAM	119XX305	1
54	MEMORY,MICRO SD	118XX187	1
55	INSTALLATION KIT ASSY,MCP-4	091XX586	1
56	BOX, MCP-4/MCP-4P	730XX060	1
57	FOAM FOR, MCP-4/MCP-4P	730XX061	1

MCP-4J, Horizontal, w/o EPC (074xx088)



KMP0154.dwg

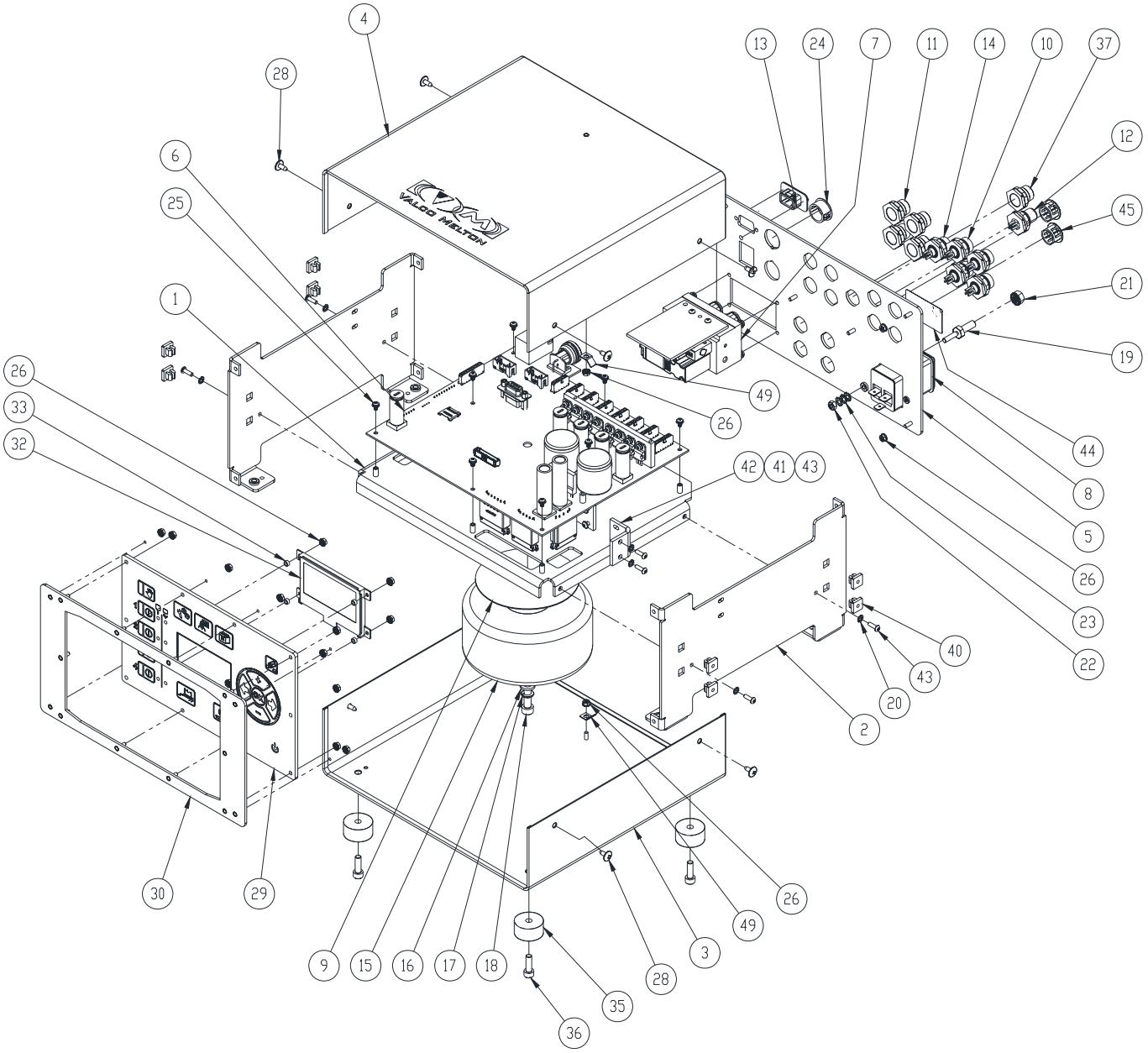
MCP-4J, Horizontal, w/o EPC (074xx088) - Continued

Item	Description	Part Number	Quantity
1	PLATE MOUNTING MCP-4	026XX403	1
2	FRAME RAIL SIDE MCP-4	026XX404	2
3	COVER BOTTOM MCP-4	026XX405	1
4	COVER TOP MCP-4	026XX408	1
5	BACKPLATE MCP-4	026XX406	1
6	PCB ASSY MAIN-CONTROL MCP-4	152XX748	1
7	COVER PLATE, NO EPC OPTION	781XX298	1
8	POWER ENTRY MODULE,NO FUSE	086XX075	1
9	GASKET TRANSFORMER	746XX268	1
10	CABLE,ASSY	029XX644	4
11	CABLE,ASSY	029XX645	4
12	CABLE ASSY	029XX821	1
13	HOLE PLUG	782XX675	1
15	TRANSFORMER	551XX024	1
16	FLAT WASHER	784XX183	1
17	WASHER	798XX593	1
18	SCREW	784XX180	1
19	STUD, GROUND	091XX519	1
20	LOCK WASHER	784XX375	2
21	HEX NUT	798XX301	1
22	HEX NUT	798XX299	1
23	LOCK WASHER	784XX308	3
24	PLUG, ROUND HOLE	782XX667	1
25	SCREW	884XX486	8
26	NUT	884XX219	26
27	SCREW	784XX259	4
28	SCREW	784XX660	8
29	PANEL OVERLAY MCP-4	782XX658	1
30	BEZEL, MCP-4, HORIZONTAL	026XX409	1
32	DISPLAY	137XX019	1
33	SPACER, DISPLAY	091XX690	4
35	FOOT, RUBBER MOUNTING	091XX759	4
36	SCREW	784XX410	4
37	CABLE ASSY	029XX829	1
38	SCREW	784XX661	4
39	LOCK WASHER	798XX772	4
40	NUT	092XX030	8
41	BRIDGE RECTIFIER HEAT SINK	583XX823	1
42	BRACKET HEAT SINK	583XX824	1

MCP-4J, Horizontal, w/o EPC (074xx088) - Continued

Item	Description	Part Number	Quantity
43	SCREW	CV10521	5
44	LABEL STOCK, SILVER	781XX780	1
45	HOLE PLUG	781XX228	3
46	WIRE	540XX090	3
47	WIRE TERMINAL	075XX075	3
48	WIRE TERMINAL	075XX078	3
49	TERMINAL,TAB	091XX453	2
50	CABLE ASSY	029XX819	1
51	CABLE ASSY	029XX808	1
52	SOFTWARE, MCP-4J, BOOTLOADER	119XX304	1
53	SOFTWARE, MCP-4J WITH JAM	119XX305	1
54	MEMORY,MICRO SD	118XX187	1
55	INSTALLATION KIT ASSY,MCP-4	091XX586	1
56	BOX, MCP-4/MCP-4P	730XX060	1
57	FOAM FOR, MCP-4/MCP-4P	730XX061	1

MCP-4J, Horizontal, Folding Carton Tipsealer (074xx089)



BAW 3667.dwg

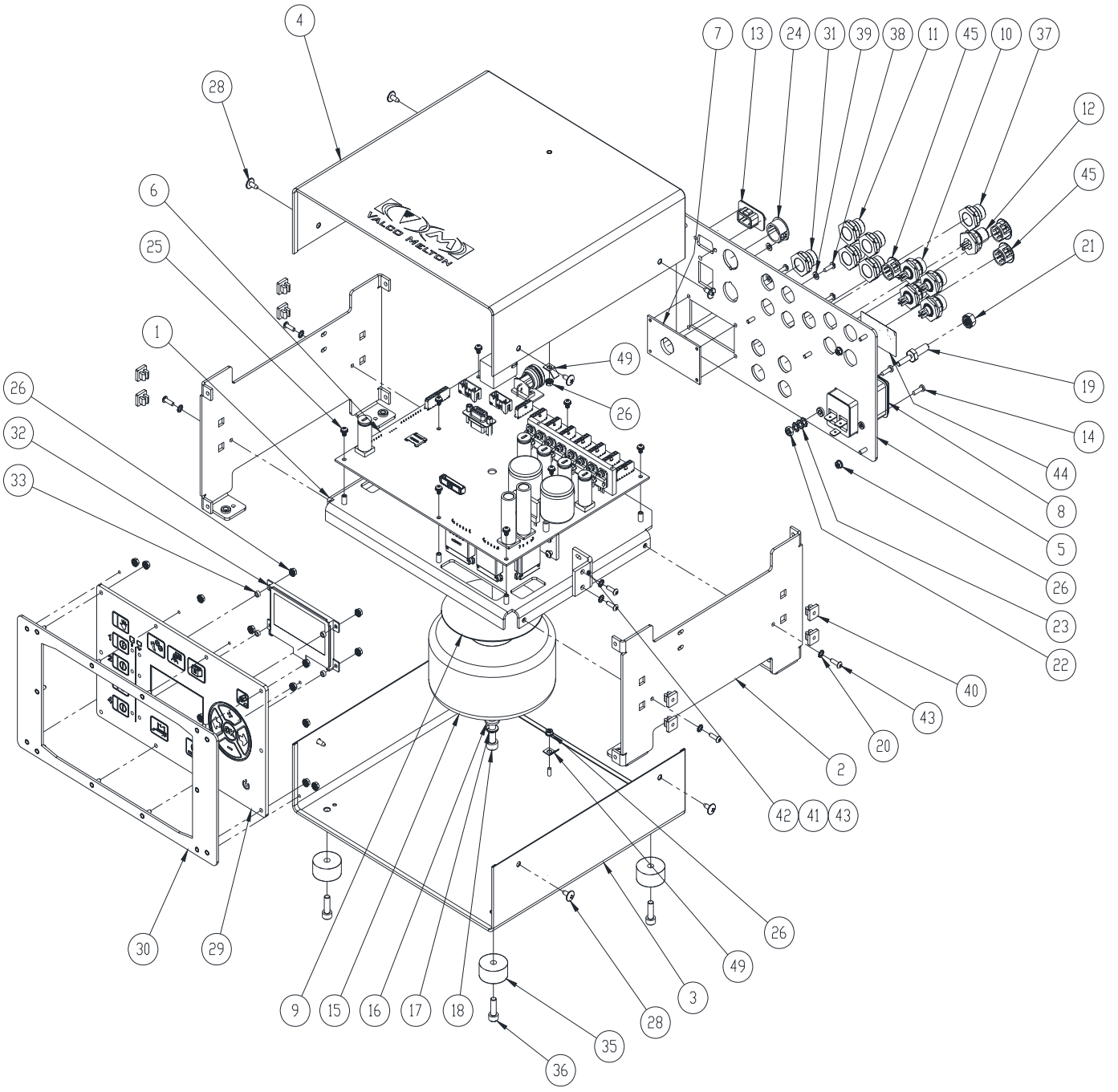
MCP-4J, Horizontal, Folding Carton Tipsealer (074xx089) - Continued

Item	Description	Part Number	Quantity
1	PLATE MOUNTING MCP-4	026XX403	1
2	FRAME RAIL SIDE MCP-4	026XX404	2
3	COVER BOTTOM MCP-4	026XX405	1
4	COVER TOP MCP-4	026XX408	1
5	BACKPLATE MCP-4	026XX406	1
6	PCB ASSY MAIN-CONTROL MCP-4	152XX748	1
7	MANIFOLD ASSY	753XX436	1
8	POWER ENTRY MODULE,NO FUSE	086XX075	1
9	GASKET TRANSFORMER	746XX268	1
10	CABLE,ASSY	029XX644	4
11	CABLE,ASSY	029XX645	4
12	CABLE ASSY	029XX821	1
13	HOLE PLUG	782XX675	1
14	CABLE ASSY	029XX825	1
15	TRANSFORMER	551XX024	1
16	FLAT WASHER	784XX183	1
17	SCREW	798XX593	1
18	SCREW	784XX180	1
19	STUD, GROUND	091XX519	1
20	LOCK WASHER	784XX375	2
21	HEX NUT	798XX301	1
22	HEX NUT	798XX299	1
23	LOCK WASHER	784XX308	3
24	PLUG, ROUND HOLE	782XX667	1
25	SCREW	884XX486	8
26	NUT	884XX219	26
27	SCREW	784XX259	4
28	SCREW	784XX660	8
29	PANEL OVERLAY MCP-4	782XX658	1
30	BEZEL, MCP-4, HORIZONTAL	026XX409	1
32	DISPLAY	137XX019	1
33	SPACER, DISPLAY	091XX690	4
35	FOOT, RUBBER MOUNTING	091XX759	4
36	SCREW	784XX410	4
37	CABLE ASSY	029XX829	1
40	NUT	092XX030	8
41	BRIDGE RECTIFIER HEAT SINK	583XX823	1
42	BRACKET HEAT SINK	583XX824	1
43	SCREW	CV10521	5

MCP-4J, Horizontal, Folding Carton Tipsealer (074xx089) - Continued

Item	Description	Part Number	Quantity
44	LABEL STOCK, SILVER	781XX780	1
45	HOLE PLUG	781XX228	2
46	WIRE	540XX090	3
47	WIRE TERMINAL	075XX075	3
48	WIRE TERMINAL	075XX078	3
49	TERMINAL,TAB	091XX453	2
50	CABLE ASSY	029XX819	1
51	CABLE ASSY	029XX808	1
52	SOFTWARE, MCP-4J, BOOTLOADER	119XX304	1
53	SOFTWARE, MCP-4J WITH JAM	119XX305	1
54	MEMORY,MICRO SD	118XX187	1
55	INSTALLATION KIT ASSY,MCP-4	091XX586	1
56	BOX, MCP-4/MCP-4P	730XX060	1
57	FOAM FOR, MCP-4/MCP-4P	730XX061	1
53	SOFTWARE, MCP-4J WITH JAM	119XX305	1
54	MEMORY,MICRO SD	118XX187	1

MCP-4J, Horizontal, Dual External EPC (074xx090)



KMP0159.dwg

MCP-4J, Horizontal, Dual External EPC (074xx090) - Continued

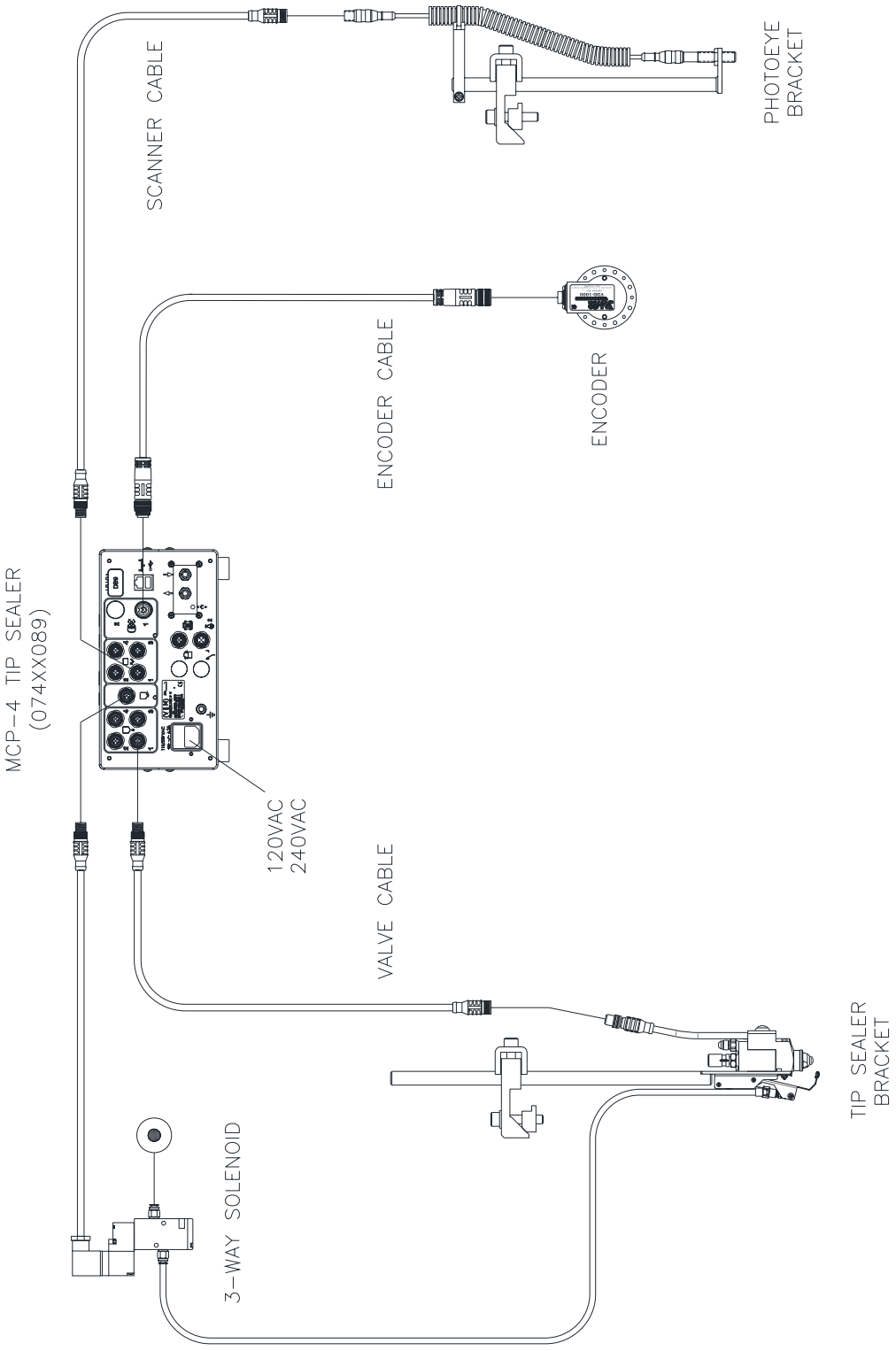
Item	Description	Part Number	Quantity
1	PLATE MOUNTING MCP-4	026XX403	1
2	FRAME RAIL SIDE MCP-4	026XX404	2
3	COVER BOTTOM MCP-4	026XX405	1
4	COVER TOP MCP-4	026XX408	1
5	BACKPLATE MCP-4	026XX406	1
6	PCB ASSY MAIN-CONTROL MCP-4	152XX748	1
7	PLATE EPC EXTERNAL	026XX416	1
8	POWER ENTRY MODULE;NO FUSE	086XX075	1
9	GASKET TRANSFORMER	746XX268	1
10	CABLE,ASSY	029XX644	4
11	CABLE,ASSY	029XX645	4
12	CABLE ASSY	029XX821	1
13	HOLE PLUG	782XX675	1
14	SCREW	784XX263	2
15	TRANSFORMER	551XX024	1
16	FLAT WASHER	784XX183	1
17	SCREW	798XX593	1
18	SCREW	784XX180	1
19	STUD, GROUND	091XX519	1
20	LOCK WASHER	784XX375	2
21	HEX NUT	798XX301	1
22	HEX NUT	798XX299	1
23	LOCK WASHER	784XX308	3
24	PLUG, ROUND HOLE	782XX667	1
25	SCREW	884XX486	8
26	NUT	884XX219	26
27	SCREW	784XX259	4
28	SCREW	784XX660	8
29	PANEL OVERLAY MCP-4	782XX658	1
30	BEZEL, MCP-4, HORIZONTAL	026XX409	1
31	CABLE ASSY	029XX743	1
32	DISPLAY	137XX019	1
33	SPACER, DISPLAY	091XX690	4
35	FOOT, RUBBER MOUNTING	091XX759	4
36	SCREW	784XX410	4
37	CABLE ASSY	029XX829	1
38	SCREW	784XX661	4
39	LOCK WASHER	798XX772	4
40	NUT	092XX030	8

MCP-4J, Horizontal, Dual External EPC (074xx090) - Continued

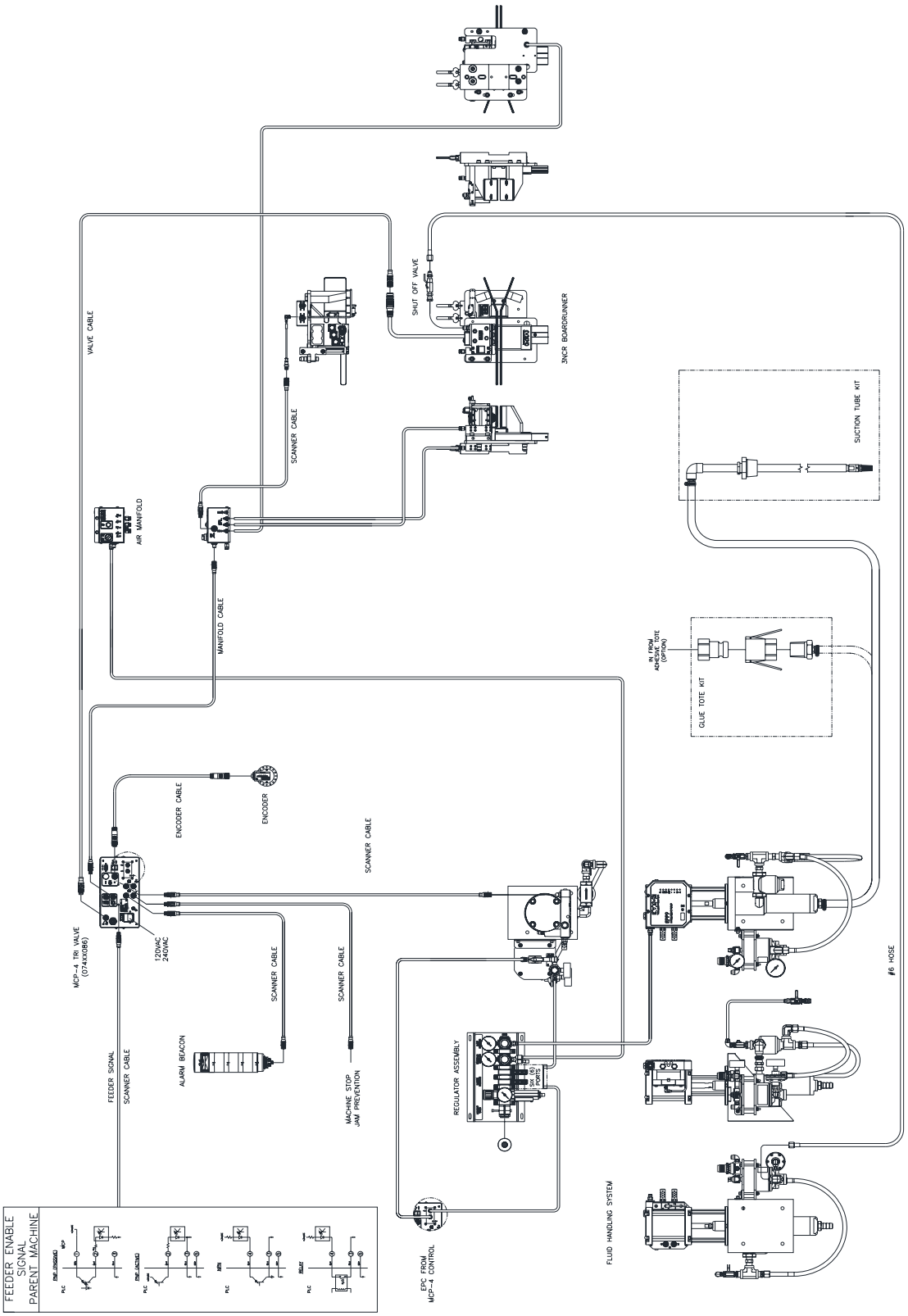
Item	Description	Part Number	Quantity
41	BRIDGE RECTIFIER HEAT SINK	583XX823	1
42	BRACKET HEAT SINK	583XX824	1
43	SCREW	CV10521	5
44	LABEL STOCK, SILVER	781XX780	1
45	HOLE PLUG	781XX228	3
46	WIRE	540XX090	3
47	WIRE TERMINAL	075XX075	3
48	WIRE TERMINAL	075XX078	3
49	TERMINAL,TAB	091XX453	2
50	CABLE ASSY	029XX819	1
51	CABLE ASSY	029XX808	1
52	SOFTWARE, MCP-4J, BOOTLOADER	119XX304	1
53	SOFTWARE, MCP-4J WITH JAM	119XX305	1
54	MEMORY, MICRO SD	118XX187	1
55	INSTALLATION KIT ASSY,MCP-4	091XX586	1
56	BOX, MCP-4/MCP-4P	730XX060	1
57	FOAM FOR, MCP-4/MCP-4P	730XX061	1

Glue System Layouts with the MCP-4J

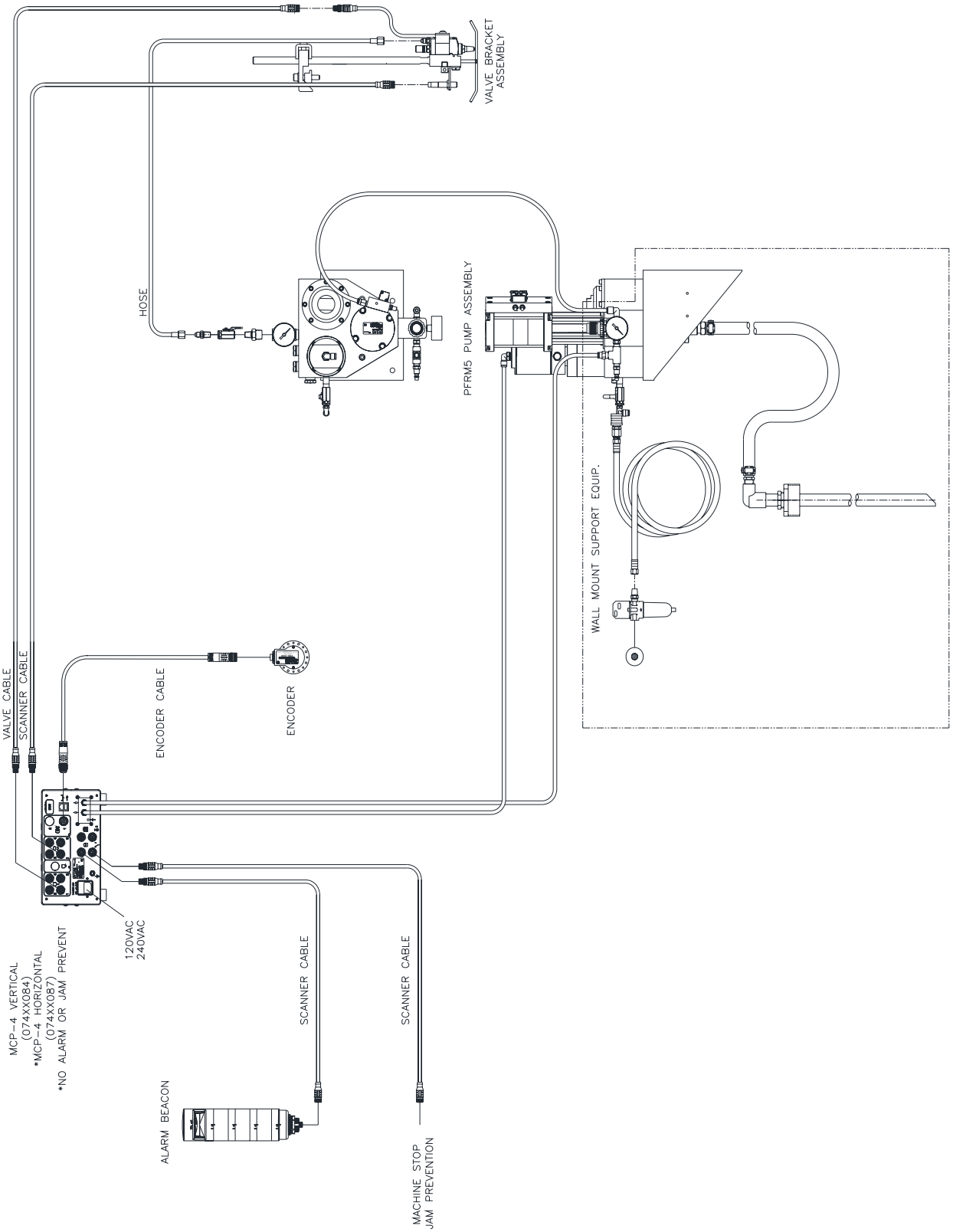
Layout using FC Tipsealer Unit 074xx089



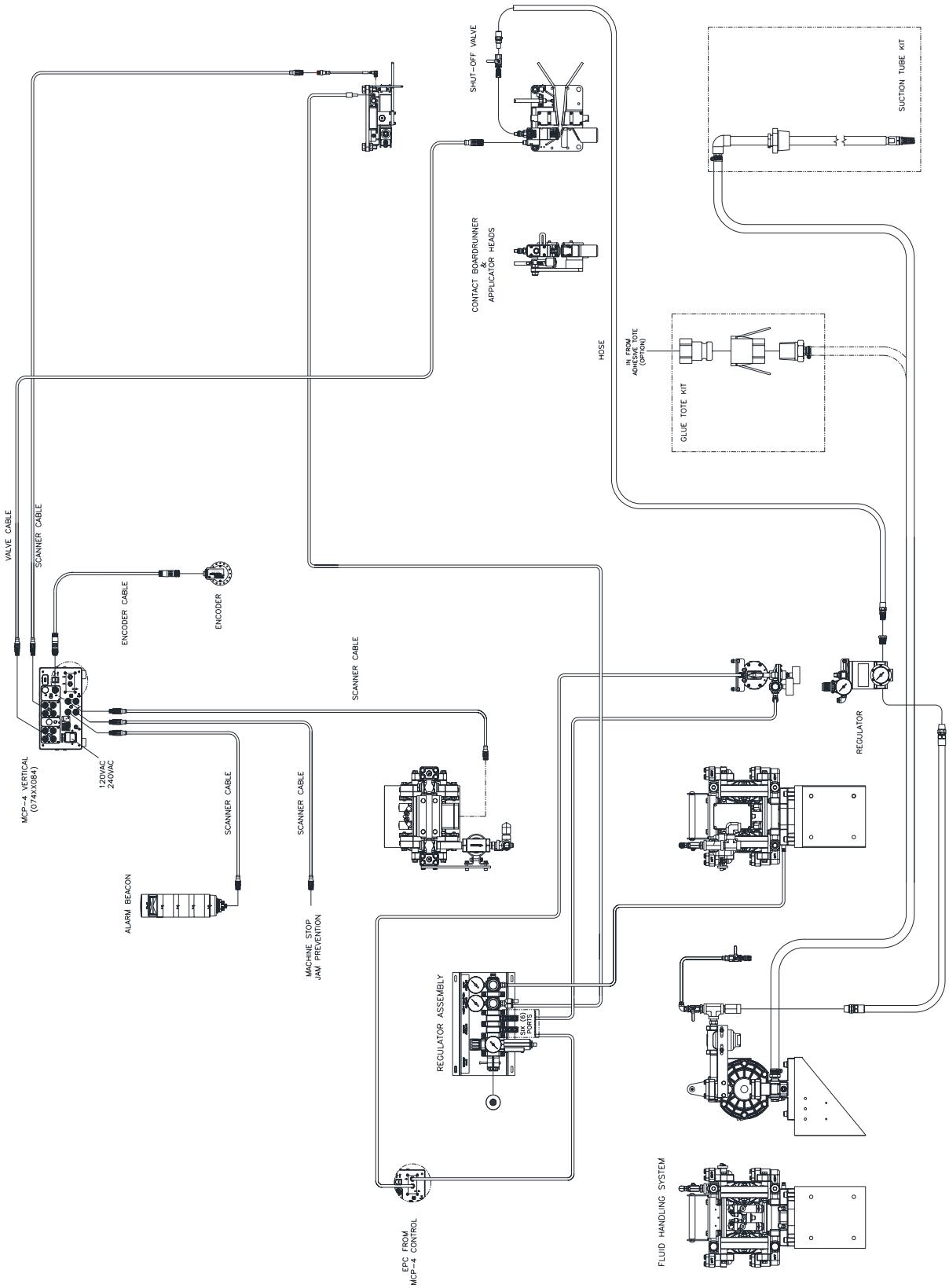
Layout using 3NC Tipsealer Unit 074xx086



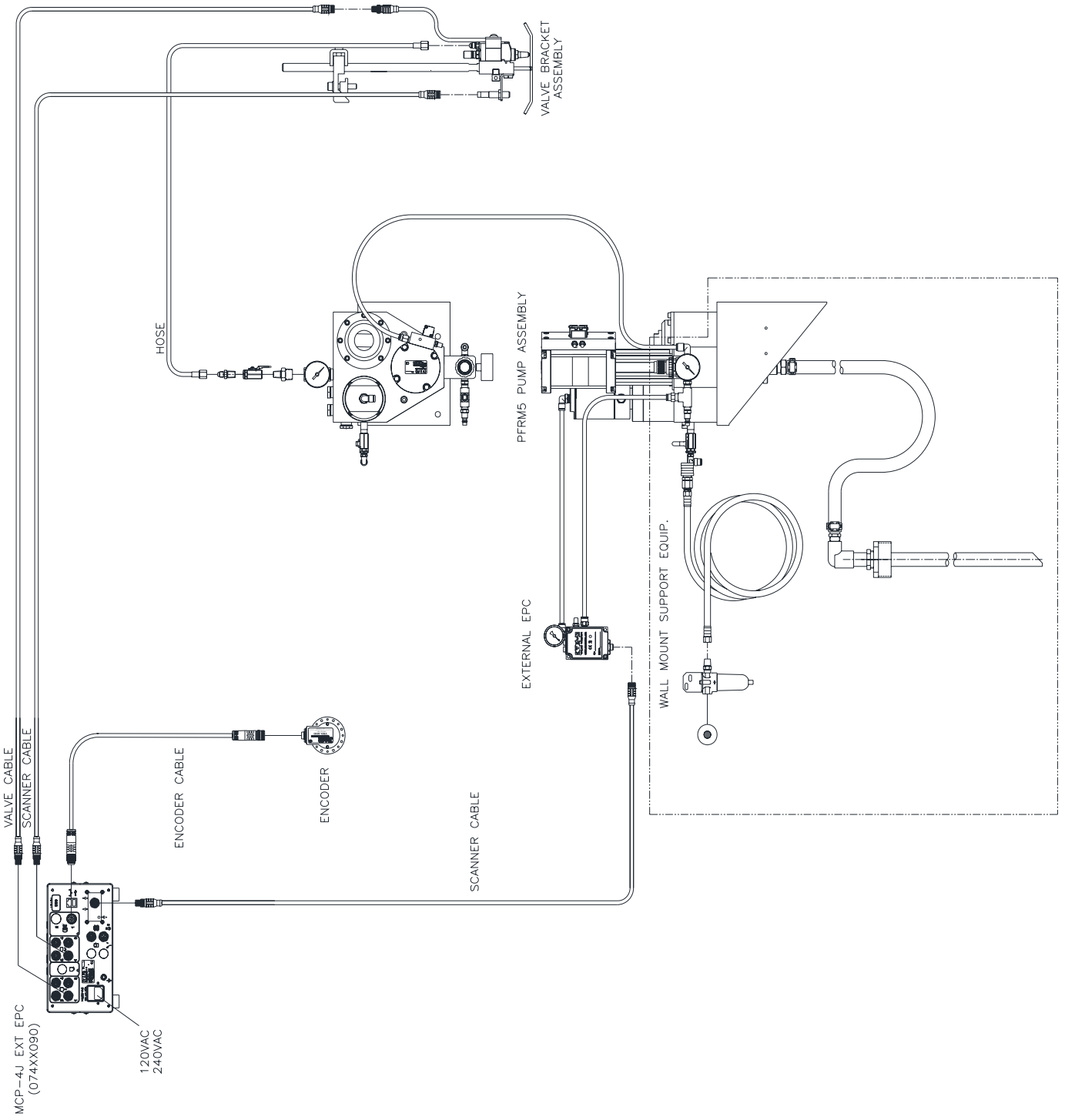
General Layout with one Valve and Scanner, using the Vertical w/EPC Unit 074xx084, or Horizontal w/EPC Unit 074xx087



Layout for a Contact Boardrunner Setup using the Vertical w/EPC Unit 074xx084



Layout where an External EPC is used on the External EPC Unit 074xx090



Section 9 - 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 10 - 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.

Appendix A - Job Charts

Use the following tables to record saved jobs for quick reference and to prevent duplication/erasure of important job information. The tables may be copied for use.

Job Number	Job Name	Description

Job Number	Job Name	Description

Appendix B - System Connectivity (Clearvision)

MCP-8

1. Go to MCP-8 System and unlock the control to access level 4
2. Select the Setup Menu

3. Select option Ethernet Interface

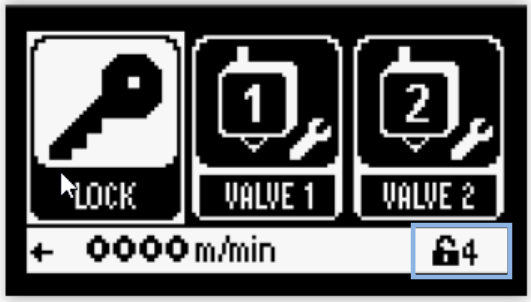
4. Select the option “192.168.30.91” and apply changes.

MCP-8 - Continued

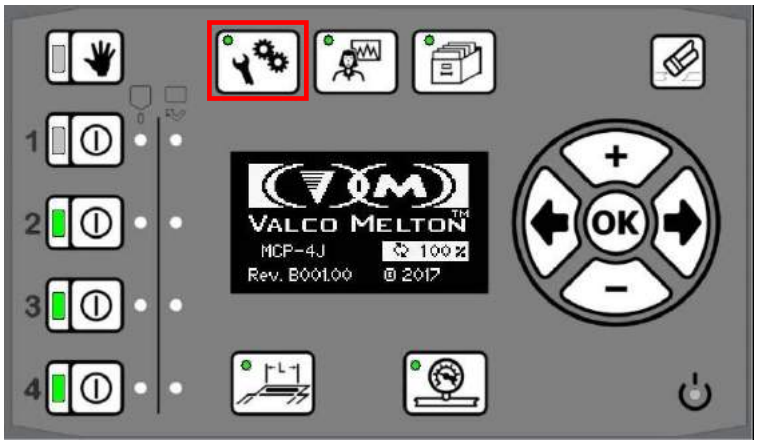
5. Reset the system using the main power switch.

MCP-4

1. Go to MCP-4 System and unlock the control to access level 4



2. Select the Setup Menu



3. Select the Communication (“COMM”) icon

MCP-4 - Continued

4. Change the IP Address option to '192.168.30.91'

5. Restart the system using the main power switch.

Plugging the Control Gluer System in the BC7 Cabinet

The control gluer system needs to be connected into the B7 Cabinet by plugging an Ethernet cable into a network port. The BoxChek7 Cabinet can support up to 2 x 4-port network camera cards. Depending on how many devices are connected to the Cabinet, the system may have one or two 4-port network camera cards.

If BC7 Cabinet has one network card, the Control Gluer System should be connected through the port "NIC3". If BC7 Cabinet has a second network card, the Control Gluer System should be connected through the port "NIC7". Login in BC7 System as Level 4 user, select the required option, and follow its instructions.

Gluer Connection Setup with 1 Network Card

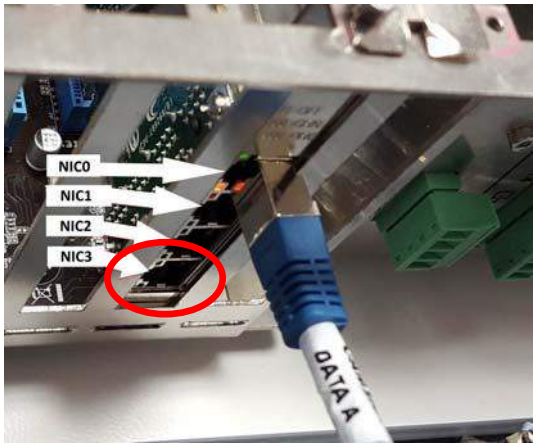
1. Exit the BC7 Application and access the Windows Desktop environment.
2. Navigate to Control Panel → Network and Internet → Network and Sharing Center → Change Adapter Settings.

Gluer Connection Setup with 1 Network Card - Continued

3. Right click on the device labeled ‘NIC3’ and select properties.
4. Next, click on ‘Internet Protocol Version 4’.
5. Then click on the ‘Properties’ button.
6. Select the ‘Use the following IP address’ option. As above, set the following:

   IP address to 192.168.30.1
   Subnet mask to 255.255.255.0

7. Click the ‘OK’ button, and “close”.
8. Plug the Gluer Ethernet cable into the port “NIC3”.

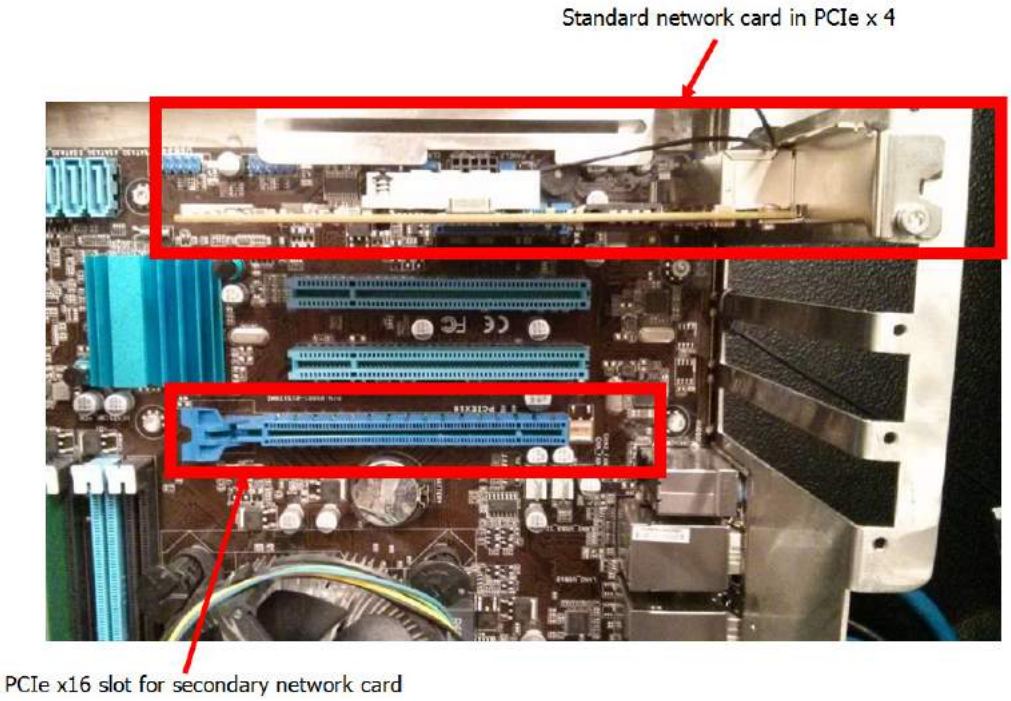


Gluer Connection Setup with 2 Network Cards

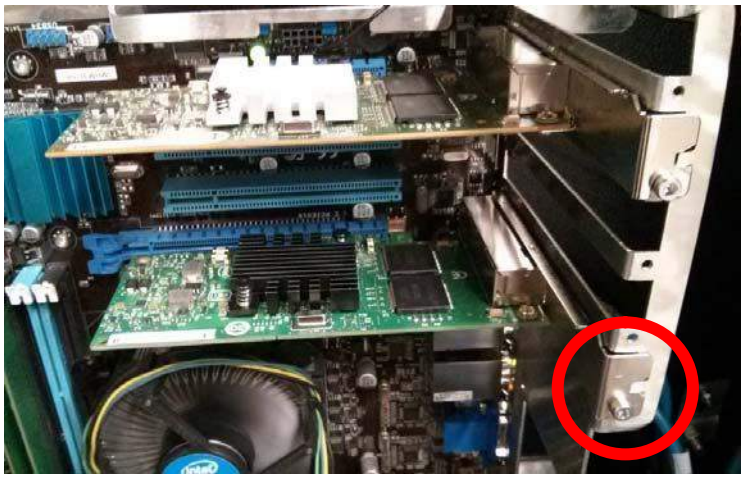
Hardware Installation

If a second network card needs installation, follow the next steps. If the network card is already placed in the Cabinet, skip them and go directly to Windows Configuration.

1. With the cabinet powered OFF, insert the new network card into the MBM bottom expansion slot (PCIe x16) shown here:



2. Fasten the card to the chassis with an M3 screw (eg. 784XX433 – M3 x 4 SS).

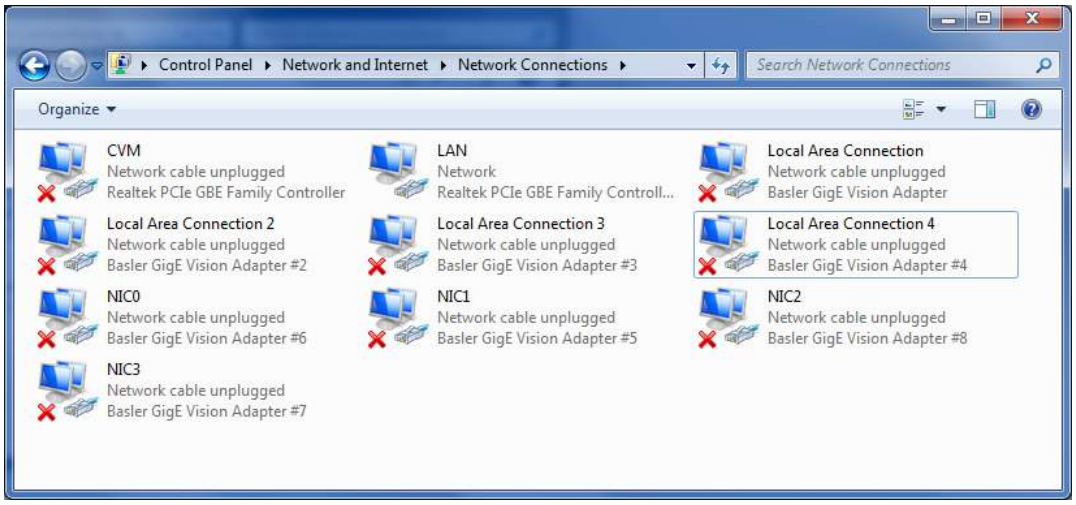


3. Power on the BoxChek7 cabinet.

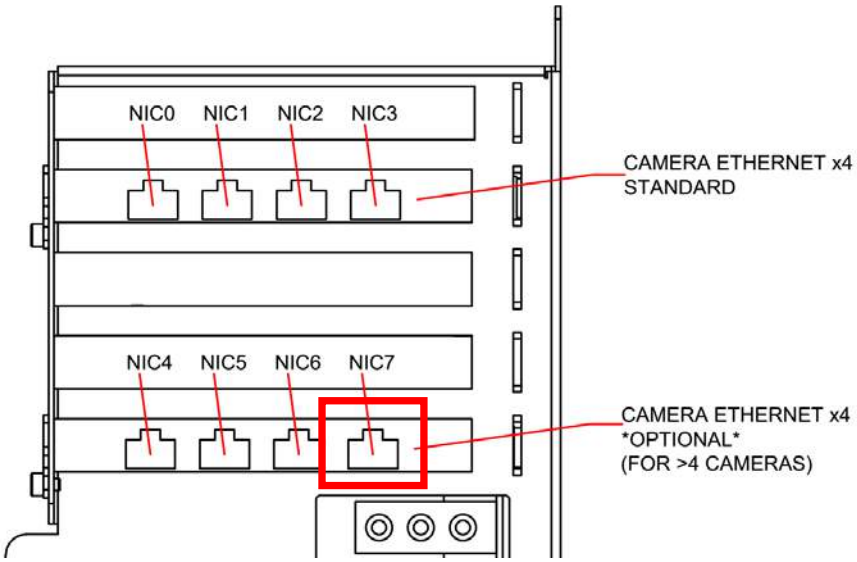
Windows Configuration

1. Enter the Windows desktop environment
2. Navigate to Control Panel → Network and Internet → Network and Sharing Center → Change Adapter Settings.
3. In case you are installing the second network card, verify that you see four new connections named “Local Area Connection <#>“. If you do not see new network interfaces the card may not be seated properly.

In case the network card was installed previously, the connection appears as “NCI7” and with network cable unplugged.



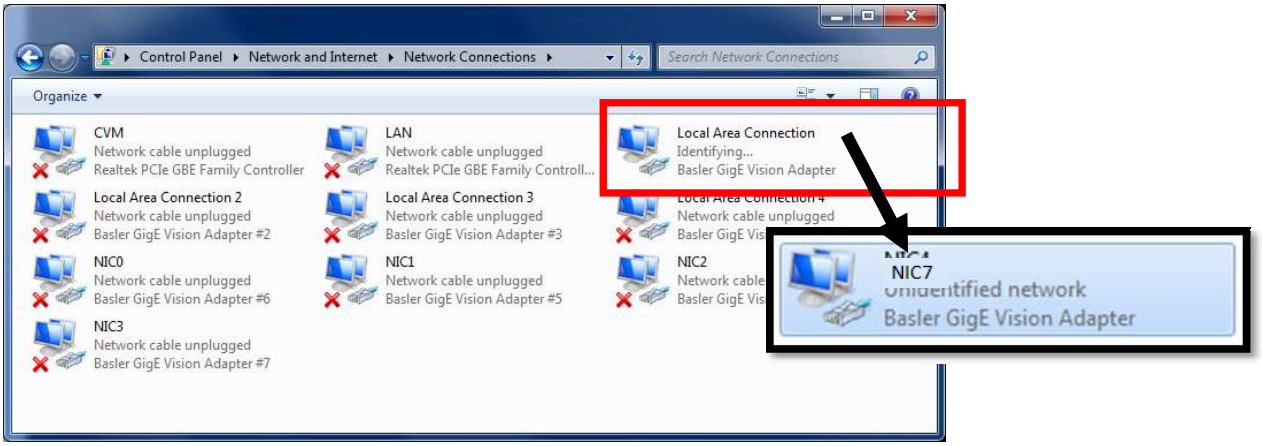
4. Connect the Gluer Ethernet cable to the NIC7.



5. In case you are installing the second network card, look for the network connection in Windows that changes state when the cable is plugged in. This could say “Identifying...“or “Connected“or anything except “Network cable unplugged“. This tells you what connection is associated with the port where you just plugged in the cable. Rename the connection in Windows to NIC7.

Windows Configuration - Continued

In case the network card was installed previously, the connection is already named “NIC7”, notice that the status changed to “Identifying...“ or “Connected“ or anything except “Network cable unplugged“.



6. Right click on the device and select properties.
7. Next, click on ‘Internet Protocol Version 4’.
8. Then click on the ‘Properties’ button.
9. Select the ‘Use the following IP address’ option. As above, set the following:

   IP address to 192.168.30.1
   Subnet mask to 255.255.255.0

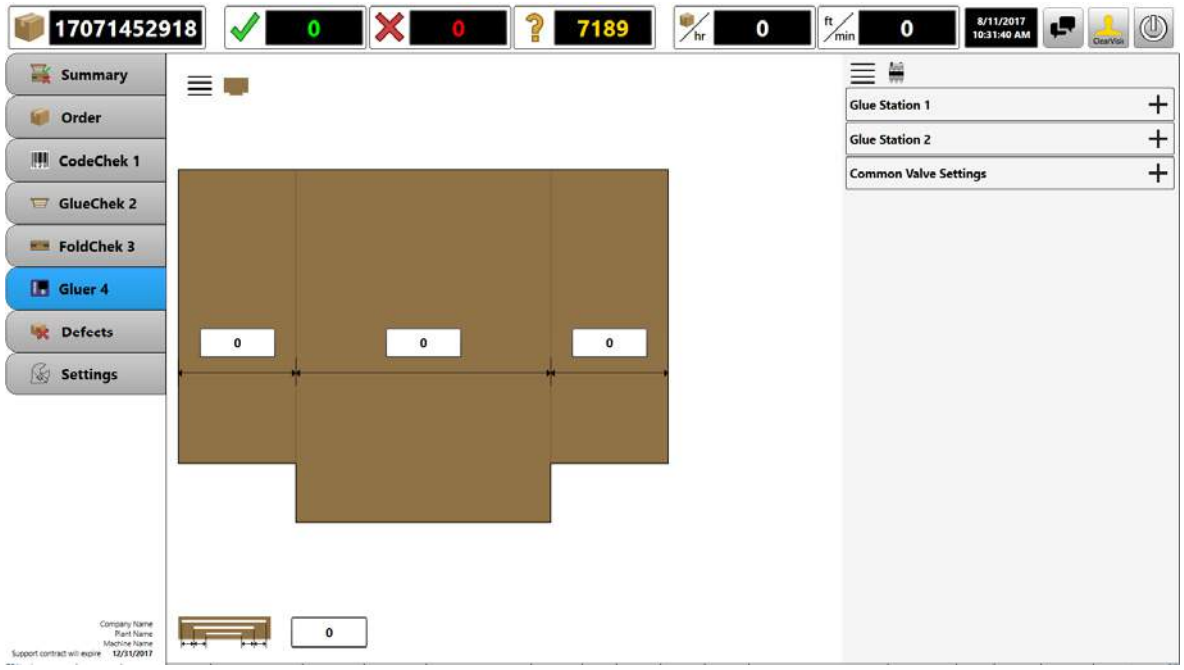
10. Click the ‘OK’ button, and “close”.

Adding the Gluer Tab in BC7 system

To complete the connection between the Glue Controller and the BC7 System, the BC7 System needs to read the Glue Controller. Follow the next steps in order to add the Gluer Tab (a level 4 user login is required):

1. Navigate to the Settings → General
2. Locate the next available System (System 2, 3, 4) and select Gluer.

3. Use the upper left power button to restart the system.
4. Once the system restarts, the new Gluer tab is now available.



Appendix C - Instruction Sheets for the MCP-4J

The attached Instruction Sheets apply to the assemblies, kits and functions associated with the MCP-4J control system.

Document Number	Title
IS0368	MCP-4J Control Unit Quick Start Guide
IS0369	MCP-4J Encoder Option Kit Instructions
IS0371	Adding External Comm Port to Horizontal MCP-4J Units
IS0372	Adding Beacon and Relay Outputs for Jam Detection to Horizontal MCP-4J Units
IS0373	Adding the Folding Carton Tipsealer to MCP-4J Units

MCP-4J
Quick Start Guide

IS0368
1/2018

The MCP-4J Control Unit

Congratulations on purchasing the Valco MCP-4J Control System with jam detection. This Quick Start Guide provides step-by-step system setup instructions. Your MCP-4J programmable unit is designed to operate with any Valco Glue Station or other compatible scanner/valve combinations.

Unpacking

Carefully remove the box contents. The contents include the following items:

- MCP-4J Control
- Installation Kit - includes Manual, Quick Start Guide, power cable, 1/4-inch tube adapter fitting, and spare fuses. Vertical Unit kits also include mounting hardware.

Look carefully for small items inside the box! The adapters and fuses are in a small bag. Put them in a safe place for future use.

Important!

When the display states, “Please Wait...” **do not touch any buttons and do not turn off the unit**! Information is being retrieved or stored -- and any interruption will corrupt the data.

Follow all safety information carefully. Only qualified personnel should install and service the equipment. Read all safety information in all manuals before working with any equipment.

Mounting the Control Unit

The Horizontal MCP-4J Control Unit can be mounted on any flat, stable surface close to the machine glue station.

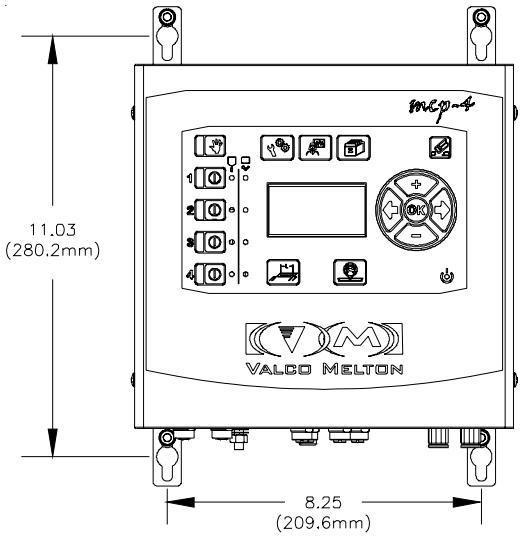
1. Be sure the four (4) rubber feet (horizontal version only) are firmly attached to the unit. The rubber feet reduce vibration to the unit. Do not remove the rubber feet from the unit for any reason.

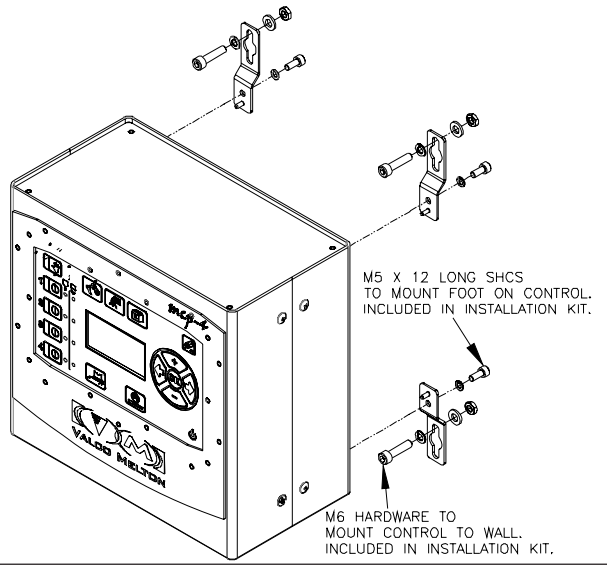
Mounting the Control Unit - Continued

2. Valco makes a rolling cart (738xx878 Complete System Cart; 579xx322 Control Stand only) that can be used to securely mount the MCP-4J Control Unit. Please contact your Valco sales representative for purchasing information.

3. The Vertical Control Units are vertically mounted. See the mounting footprints, below.

4. A swivel shelf mount (583xx564) is available for horizontal units.





Mounting the Encoder

An encoder must be installed in order for the control to determine the speed of the parent machine. For best results, 100 pulses per inch (25.4 mm) of product travel should be supplied to the VC3500. If less than 100 pulses per inch (25.4 mm) are supplied, poor resolution may result in pattern placement errors. If more than 100 pulses per inch (25.4 mm) are supplied, the maximum specified speed of 2000 feet/min (610 m/min) must be reduced.

There are two primary types of encoders:

- Wheel-driven encoder
- Gear-driven encoder

To install a wheel-driven encoder:

1. Mount the encoder's bracket to the frame of the parent machine.
2. Ensure that the wheel of the encoder rides securely against the belt and does not slip.
3. In the level-4 menu screen, set ratio compensation to 100 pulses.

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

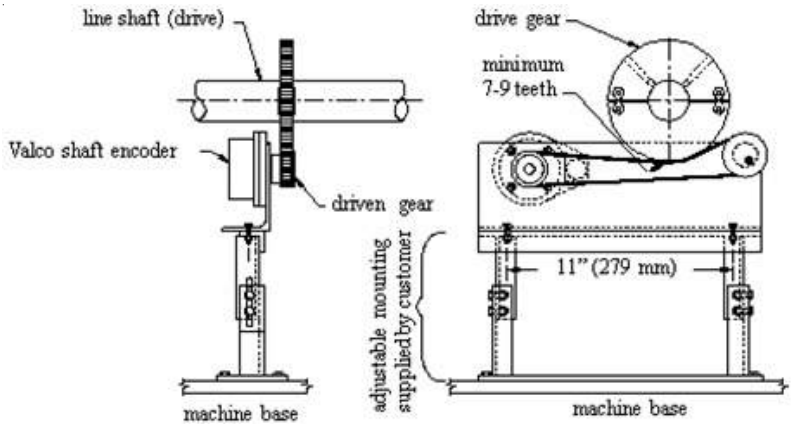
Black Encoder Wheel		
Pulses	**Setup**	**Circumference**
1000	Metric	254 mm
	Imperial	10.0 inches
500	Metric	254 mm
	Imperial	10.0 inches

Mounting the Encoder - Continued

To install a gear-driven encoder:

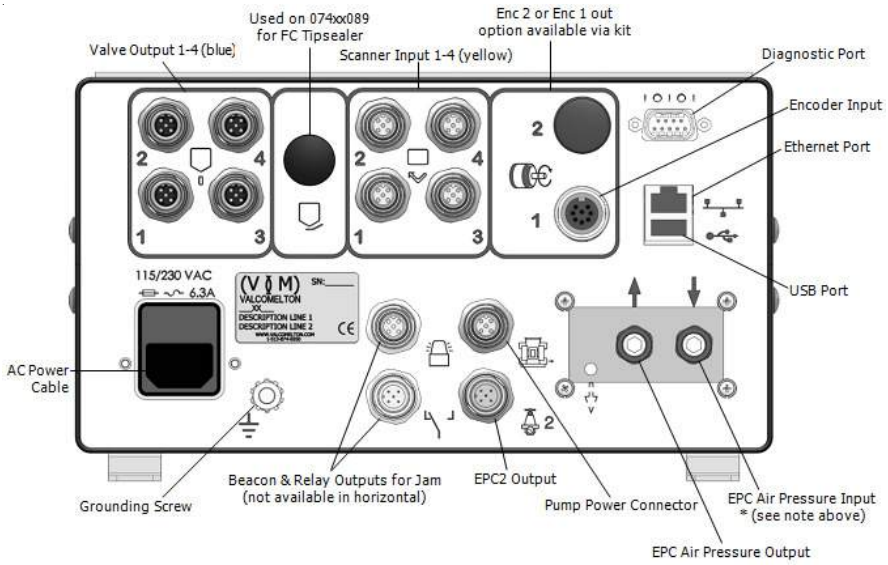
1. Install the driver gear on the line shaft. Tighten the set-screws.
2. Position and install the encoder so that it is square with the driver gear.
3. Raise or lower the encoder to tighten the belt against the driver gear. (Ensure that the two sides of the belt are not pressed together under the wheel.) Due to the low torque required, the belt should not be extremely tight.

> At least 7-9 teeth should engage in the line shaft driver gear. It may be necessary to fabricate an adjustable bracket to connect the encoder base to the parent machine frame.



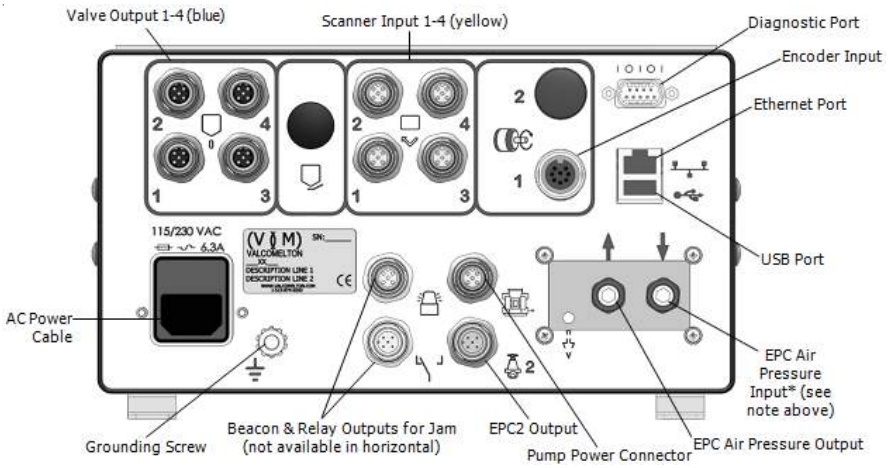
Connecting the Cables and Air Lines

MCP-4J Control

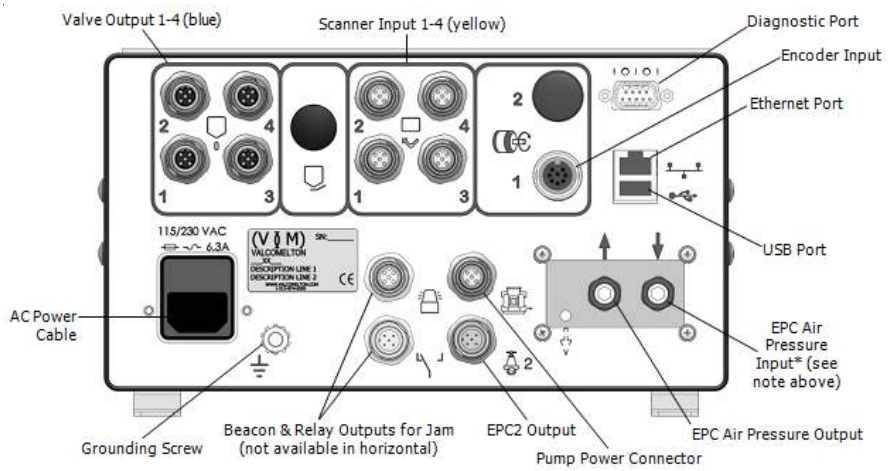


*For the EPC Air Pressure Input, use an 8mm air line OR use the 1/4" tube adapter that is included in your Installation Kit.

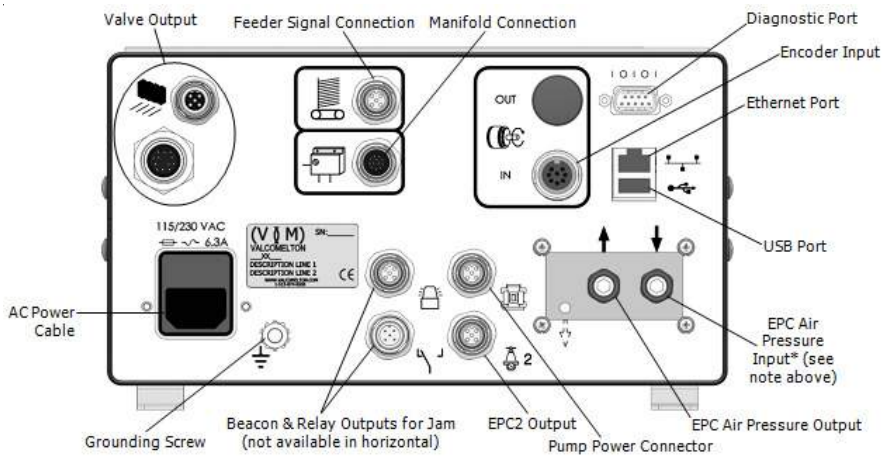
MCP-4J Control, Vertical; No EPC (074xx084)



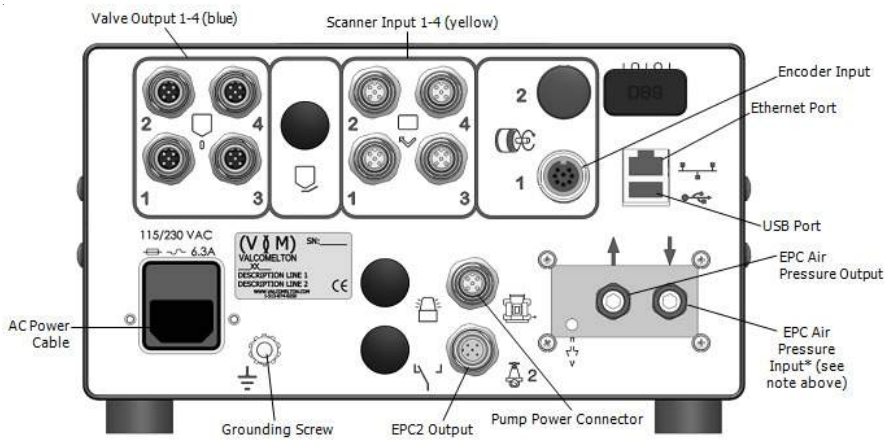
MCP-4J Control, Vertical; with EPC (074xx085)



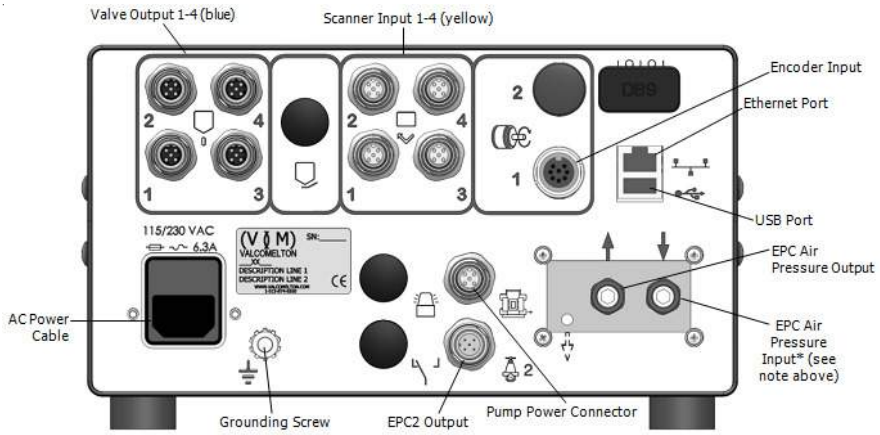
MCP-4J Control, Vertical; 3NC Tipsealer (074xx086)



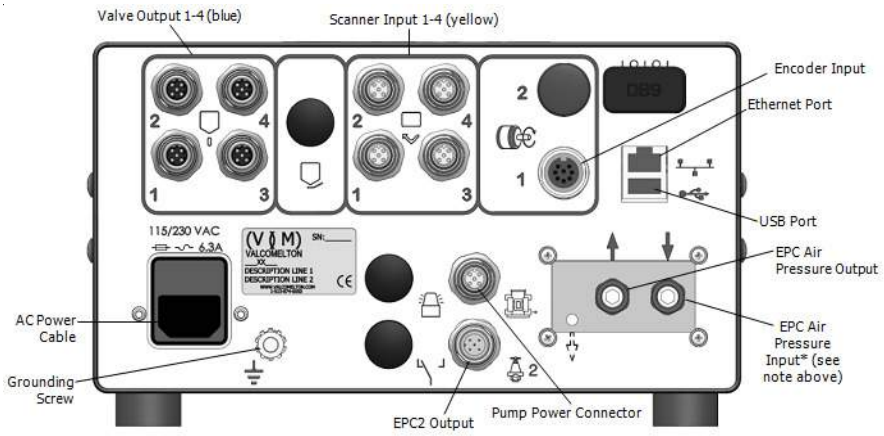
MCP-4J Control, Horizontal; with EPC (074xx087)



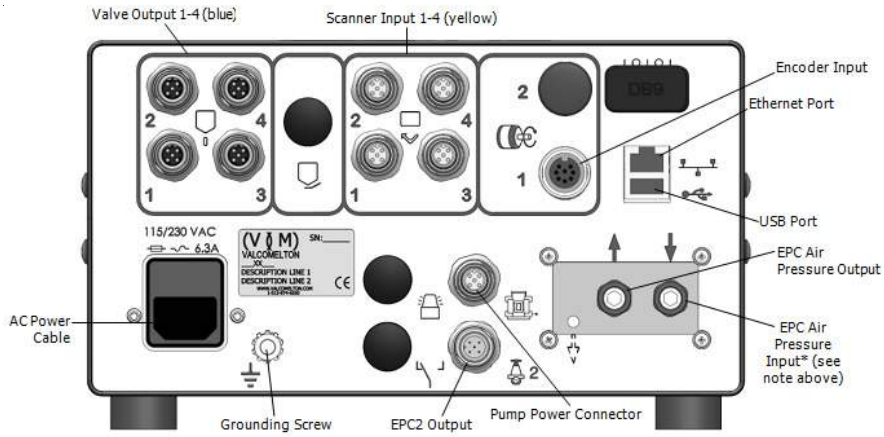
MCP-4J Control, Horizontal; No EPC (074xx088)



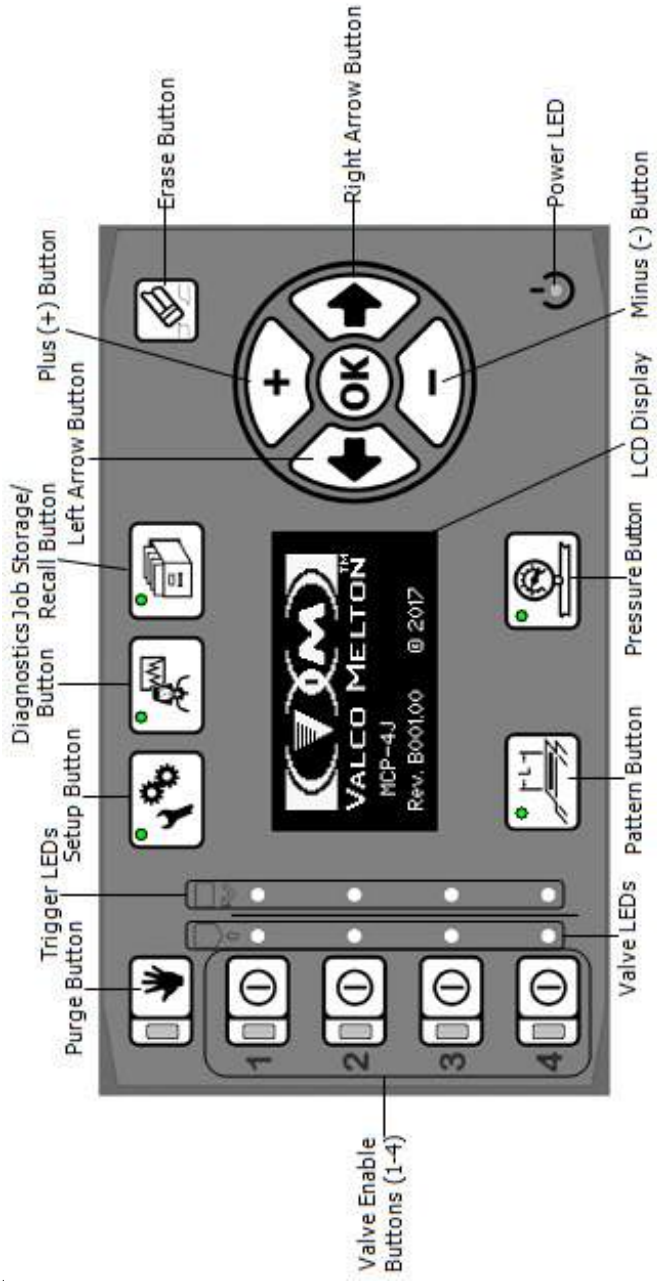
MCP-4J Control, Horizontal; Folding Carton, Tipsealer (074xx089)



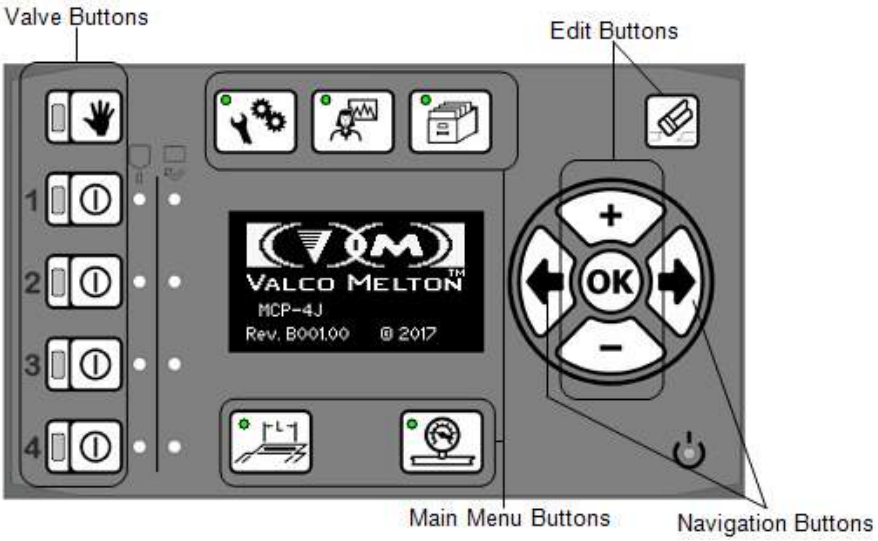
MCP-4J Control, Horizontal; Dual External EPC (074xx090)



Operator Panel



Programming



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 1-4.

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-4J Control Unit.

Diagnostics Button - Pressing the Diagnostics Button allows you to view the MCP-4J Control Unit diagnostics.

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

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 1-4 Buttons - Pressing the individual Valve Button(s) allows you to tell the MCP-4J 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.

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 A through C).

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 C). 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.

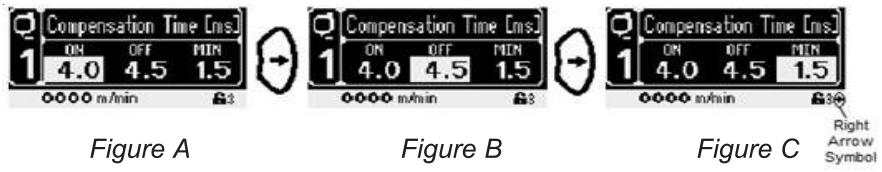


Figure A *Figure B* *Figure C*

Navigation Buttons - Continued

Left Arrow Button - Pressing the Left Arrow Button moves the cursor to the left, highlighting each editable field (see Figure D and E).

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 E). Press the Left Arrow Button to view the menu screen to the left of the current display.

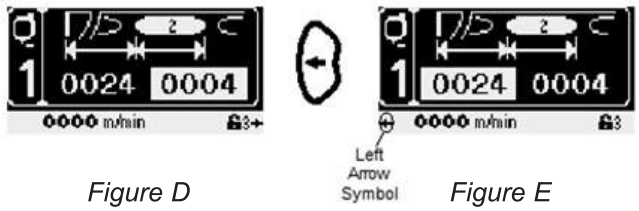
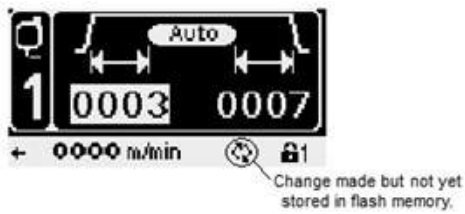


Figure D *Figure E*

Flash Memory Storage

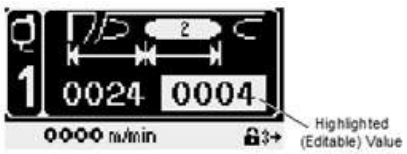
The symbol consisting of two arrows in a circular pattern indicates that a value has been changed but the change is not yet stored in the flash memory.



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.



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.

> 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

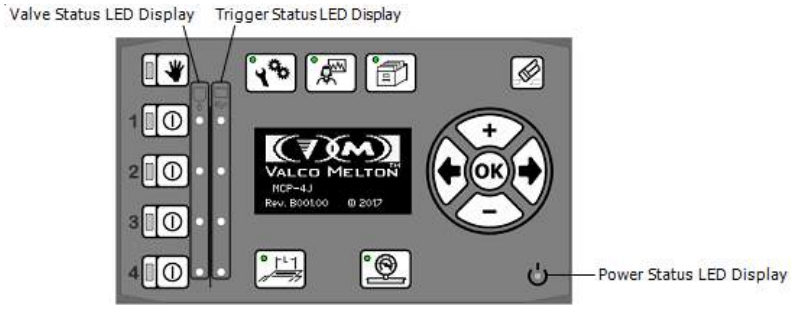
Thumbwheel Editing

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

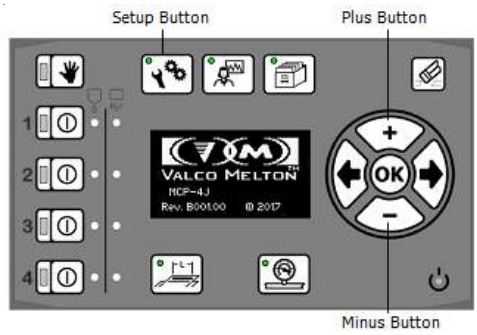
Status LEDs - The Status Display LEDs show on/off status. When an LED is on (lit up), the corresponding input or output is activated.

> Be sure the encoder, scanners, valves, and the MCP-4J 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.



Screen Contrast Adjustment

To adjust image contrast on the LCD Display Screen, press the Setup Button and either the Plus or Minus Button simultaneously.



First Use Setup (Wizard)

> 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.

The first time the MCP-4J 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-4J Control Unit is switched on, the following screen will appear:

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

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

First Use Setup (Wizard) - Continued

Application

(All Applications)

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.)

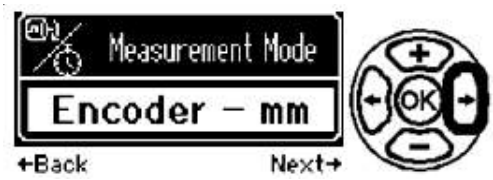
Actual application options may vary based on the system.

Application	Description
Corrugated	Applying glue to partial-assembly points of corrugated material in a Flexofolder gluing system (end product folded flat).
Folding Carton	Applying glue to folding carton partial-assembly points (end product folded flat)
Envelope	Applying glue to envelope assembly points
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 monitoring product location in system flow
Valve Driver	Mode for controlling valve power levels based on PLC input
Burn-In Test	Test function used ONLY by Valco Melton personnel
Others	Unique applications not listed in standard options

First Use Setup (Wizard) - Continued

Measurement Mode

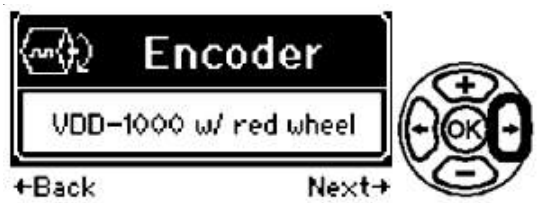
(Corrugated, Folding Carton, Envelope, Packaging, Core Winding, and Others).



Measurement Mode - Set the units to Inch or Millimeter.

Encoder

(Corrugated, Folding Carton, Envelope, 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.

First Use Setup (Wizard) - Continued

Valve Type

(Folding Carton, Envelope, Packaging, Timer, Valve Driver, Core Winding and Others)

Valve Type - Set the valve type for valves 1-4. If the default valve type that appears is not applicable, use the Plus/Minus Buttons to scroll through the list of valve types available.

Jog Mode

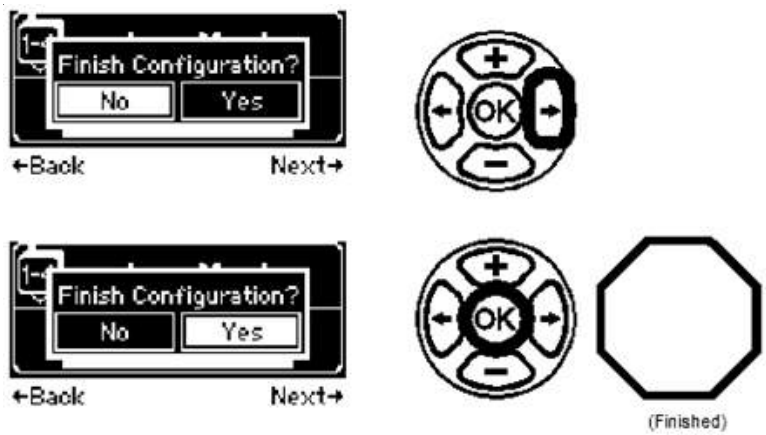
(Corrugated, Folding Carton, Envelope, Packaging, and Others)

Jog Mode - Adhesive will be applied in a “dot” pattern when the machine is running below a certain speed (V-jog). (Enabling jog mode allows Jog Mode Setup Menus to appear during setup; this is covered later in this manual.)

First Use Setup (Wizard) - Continued

Finish Configuration

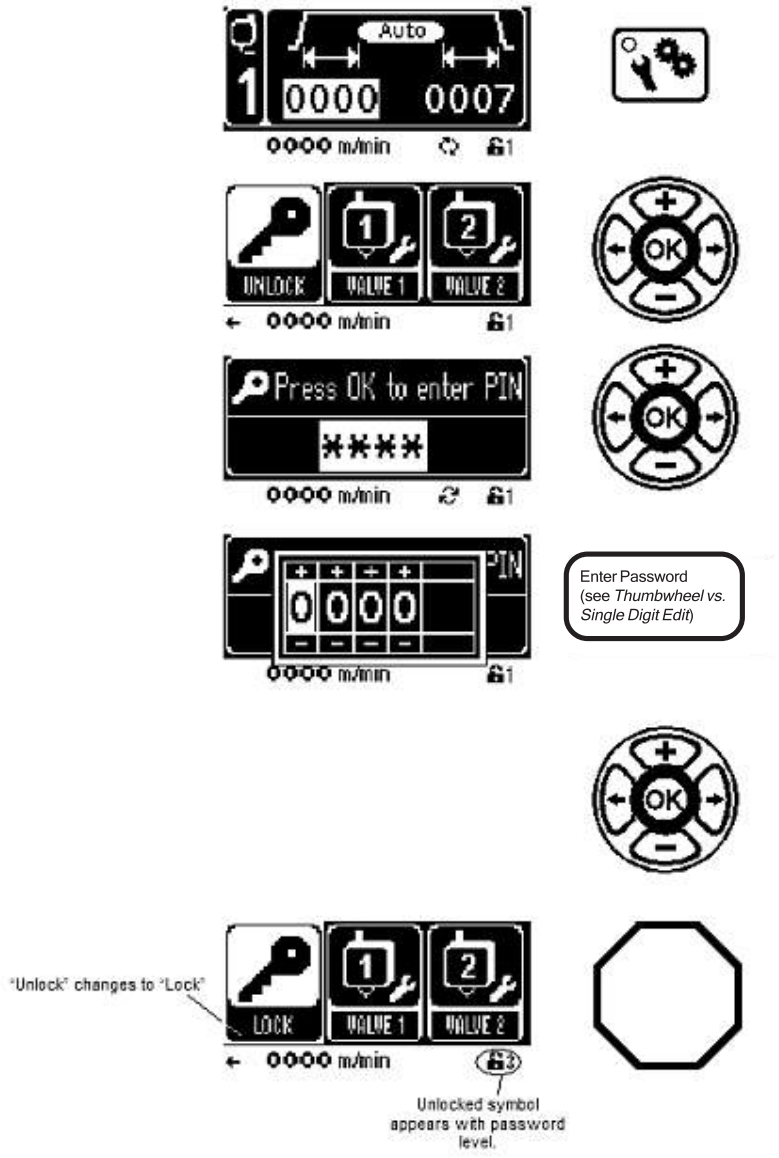
(All Applications)



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 wizard application screen.

Enter Password

To view, setup, and use the various functions of the MCP-4J Control Unit, passwords are used. This ensures safety and security of all settings. To enter a password:



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.

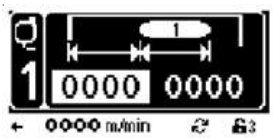
Level 2 Password Options

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.

Operation

After completing the mounting and the programming of the MCP-4 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 (Wizard). If you do not see a particular setting you need, be sure to check programming parameters in Section 4 of the MC117 Manual. The desired option may not be enabled, and that option's menu screens are hidden.

Gluing Mode



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.

> The Pattern Glue Mode is available in the following applications: Corrugated, Folding Carton, Envelope, Timer, Core Winding, Packaging and Others.

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

> The **Stitch** Glue Mode is available in the following applications: Folding Carton, Envelope, Packaging, Timer and Others.

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

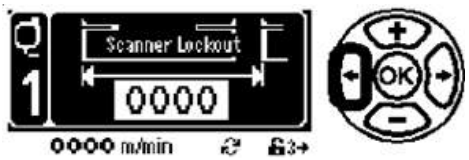
> The Continuous Glue Mode is available in the following applications: Core Winding and Others.

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).

> The **Auto Glue** Glue Mode is available in the following applications: Corrugated, Folding Carton, Packaging, Core Winding, Timer, Valve Driver and Others.

Scanner Lockout

(Available in Corrugated, Folding Carton, Envelope, Packaging, Timer, Core Winding, and Others)

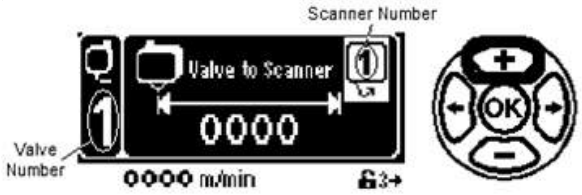


Scanner Lockout - Enter a product length to act as a scanner lockout when holes, writing, or other items produce a false trigger by the scanner.

Operation - Continued

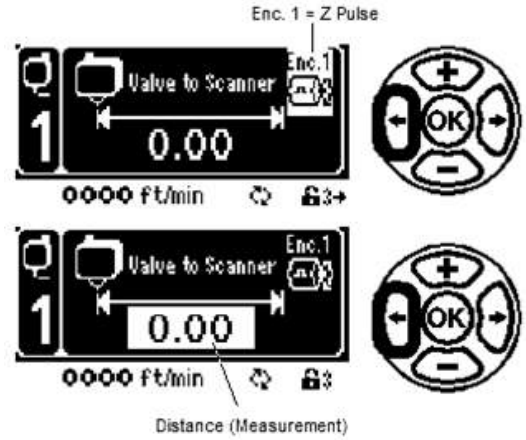
Valve to Scanner Distance

(All Applications)



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

Scanner Number/Z Pulse



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).

Operation - Continued

Jog Mode Parameter

(Available in Corrugated, Folding Carton, Envelope, Packaging, Core Winding, and Others)

The Jog Mode Parameter is only available when Jog Mode is enabled.

Jog Mode–On/Off - Turn the jog mode on and off with the "switch" using the Plus/Minus Buttons.

Jog Gap Distance - This is the distance between the glue dots while the machine is running below the jogging speed threshold. Increase the distance to decrease the glue volume.

Jog Mode–Dot - The size of the dots of adhesive, from 1 (smallest) to 9 (largest).

Batch Counter

(All Applications)

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

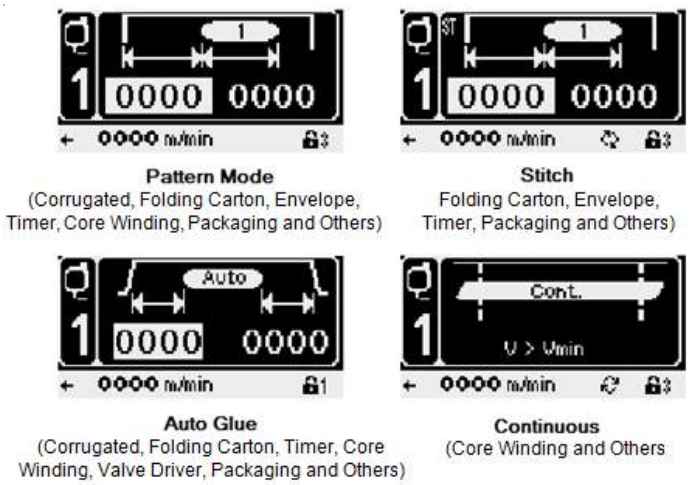
Batch Counter–On/Off - Turn the batch counter on and off with the "switch" using the Plus/Minus Buttons.

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.

Input Values/Gluing Mode

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

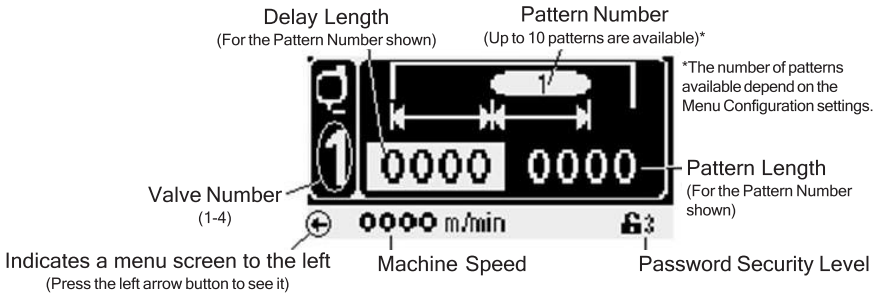


The screens above are unique to each gluing mode. Each screen is designed to show comprehensive information at a glance. The following subsection “Glue Mode Screen Information” explains how.

Glue Mode Screen Information

Pattern Mode

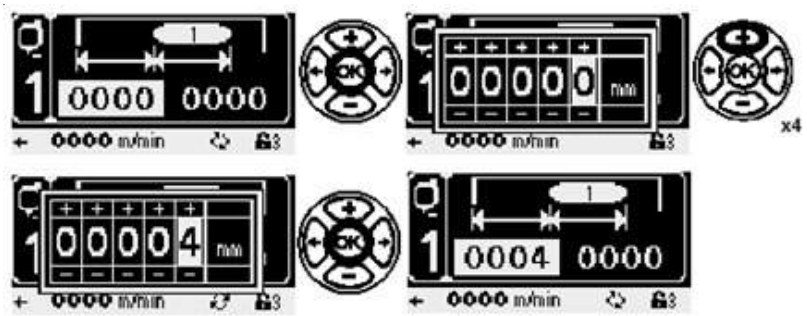
The Pattern Glue Mode can also be called “pattern-skip-pattern” mode or “normal mode.”



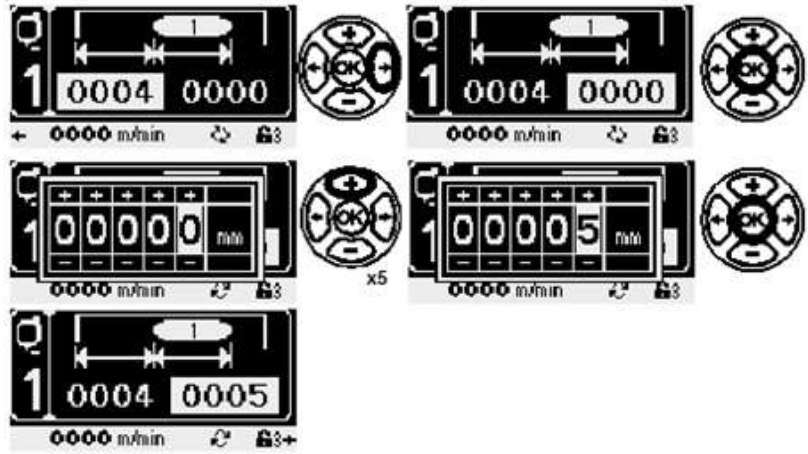
The following is an example of setting up a pattern gluing mode with three patterns for valve one:

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.

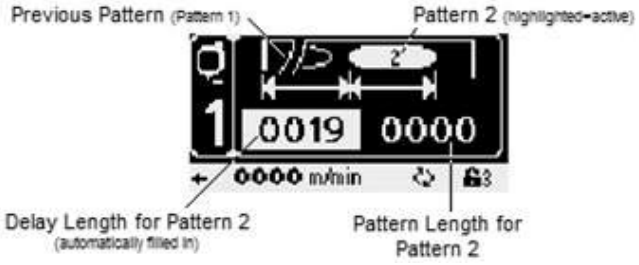
Pattern Mode - Example



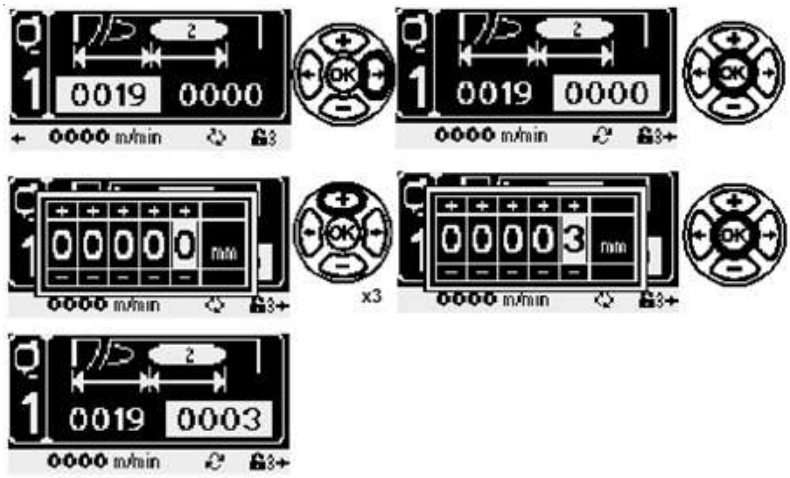
2. Press the Right Arrow Button to view the Pattern Length for pattern 1. The Pattern Length is the length of the glue line (for the pattern number indicated). Press the OK Button to view the thumbwheel, and use the Plus/Minus Buttons to change. Press the OK Button to enter the setting.



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.



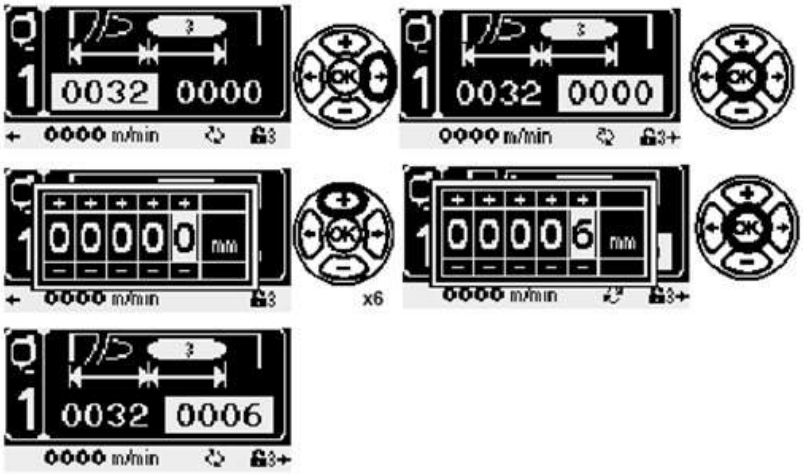
4. Press the Right Arrow Button to view the Pattern Length for pattern 2. Press the OK Button to view the thumbwheel, and use the Plus/Minus Buttons to change. Press the OK Button to enter the setting.



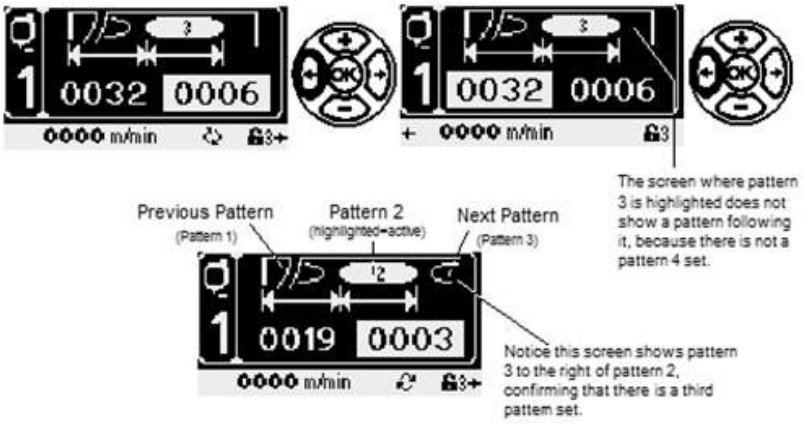
Operation: Pattern Mode - Continued

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

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.

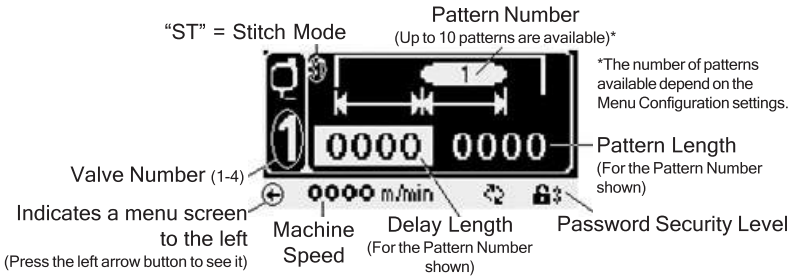


7. All three patterns are now set. To review them, use the Left Arrow Button.



Stitch Mode

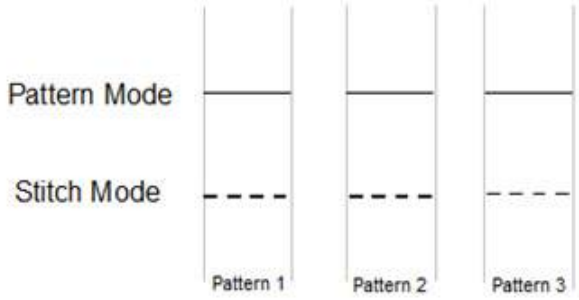
Stitch Mode is very similar to Pattern Mode, with the exception that the glue “patterns” are applied in a stitch-like pattern.



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

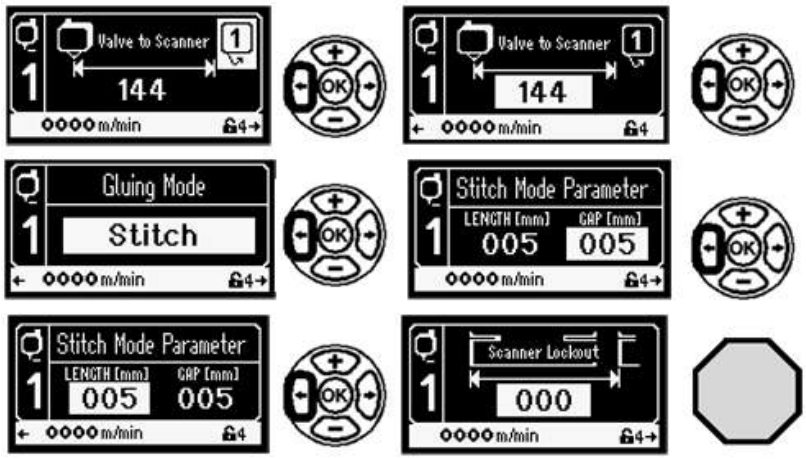
The difference between Pattern Mode and Stitch Mode is the application of the glue. The Pattern Mode applies a continuous strip of glue for the pattern length specified. The Stitch Mode applies the glue in a stitch pattern for the pattern length specified. To illustrate:

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



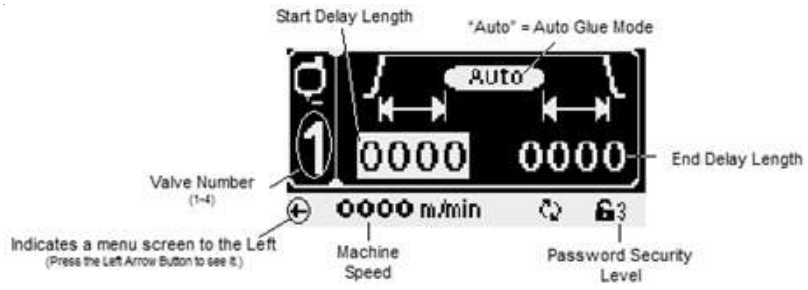
Operation - Continued

Stitch Mode Menus

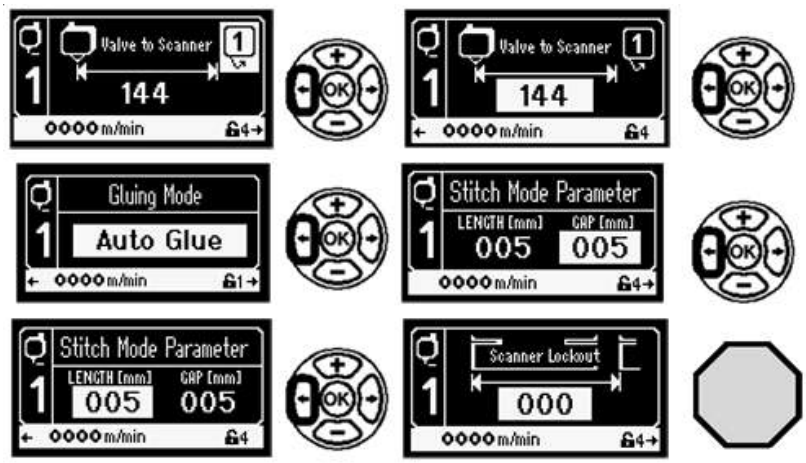


Auto Glue Mode

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.

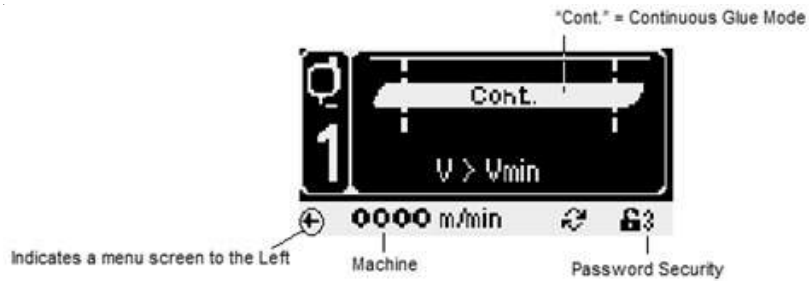


Auto Glue Mode Menus

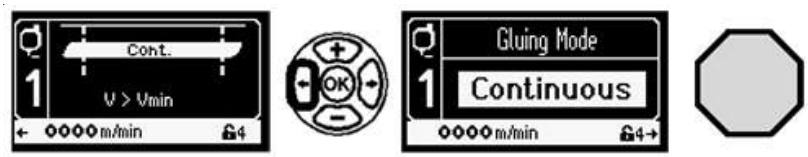


Continuous Glue Mode

In Continuous Glue Mode, the glue will flow continuously as long as the speed is greater than Vmin.



Continuous Glue Mode Menus

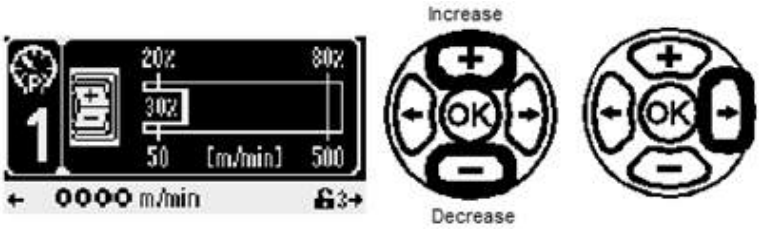


Set the Pressures

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.

Minimum Speed/Pressure

(All Applications)

V (m/min) - The machine speed.

P (%) - The percent of pressure.

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.

Set the Pressures - Continued

Maximum Speed/Pressure

(All Applications)

When three pressure points are enabled, screen “PT1” will appear. When four pressure points are enabled, screens “PT1” and “PT2” will appear. These pressure points are set up just like the Maximum and Minimum Pressures.

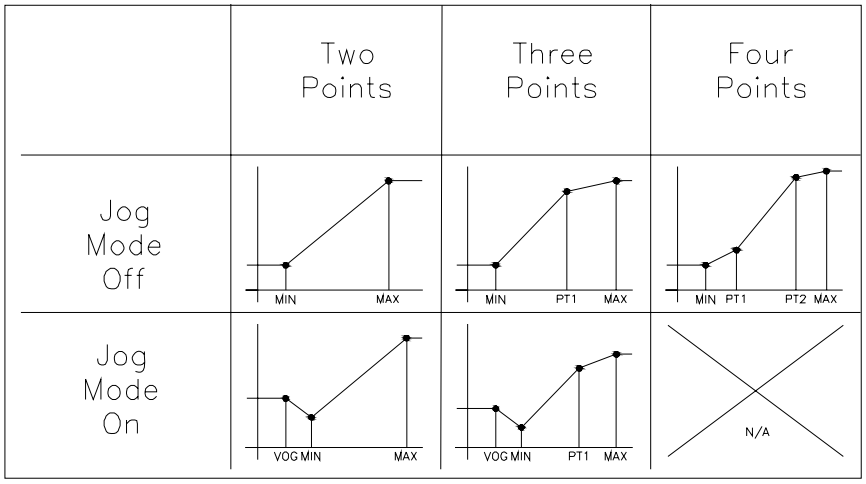
> The number of pressure points on the pressure curve are input during setup. See Section 4 - Programming, “Additional Setup Button Parameters” - “Menu Configuration.”

Pressure Point 1 (PT1)

Pressure Point 2 (PT2)

Set the Pressures - Continued

Speed/Pressure Graphs - Examples



The graph above illustrates two, three, and four points on the pressure curve with Jog Mode off and on. The majority of projects will be fine with the Jog Mode off and only two points on the pressure curve. If more control is necessary, try adjusting the number of points on the pressure curve. Also see the tips below.

Purge Pressure

The MCP-4J can have up to two EPC outputs. EPC 2 is always for an external EPC. EPC 1 can be an internal EPC, external, or no EPC.

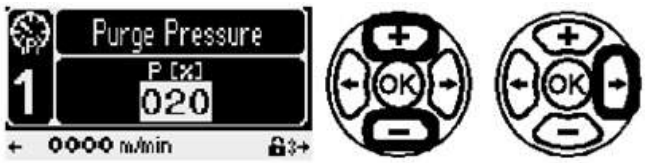
Set Purge Pressure

At Machine Stop, On Demand Only - If set to “At Machine Stop”: The control will set the EPC output to the Purge Pressure setting when the encoder speed drops to 0 or if the control is purging. If set to “On Demand Only”: The control will set the EPC output to the Purge Pressure setting only when the control is purging.

Set the Pressures - Continued

Purge Pressure %

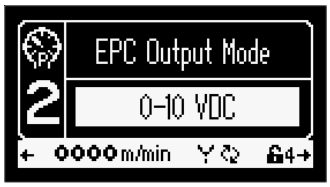
(All Applications)



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

> The number on the left side of the pressure screen refers to the EPC number (two EPCs are available on some models of the MCP-4J Control Unit. The second EPC is the 0-10 Volt output for speed tracking. Both EPCs are programmed in the same way; just be certain the desired EPC number appears on the screen before programming. To switch between EPCs, press the Pressure Button until the desired EPC number appears.

EPC Output Mode (EPC2 ONLY)



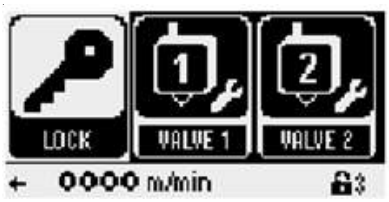
0-10 VDC or 0-20 mA - If EPC 2 is enabled, the user can set the output signal to either 0-10 VDC or 0-20 mA.

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.

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.

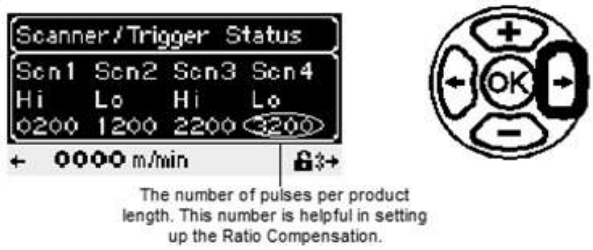
Diagnostic Button - Continued

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.

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

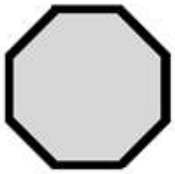
The version information screen displays the CPU, the Logic (PLD), and the MCP-4J name.

Diagnostic Button - Continued

Control Information

The control information screen displays the current application and glue station, if applicable.

Event History



The event history screen displays error messages.

Job Button

(All Applications)

The Job Save/Recall Mode allows the MCP-4J Control Unit to save and recall up to 100 different jobs (via a Micro-SD card) for fast programming.

Load - Load a previously saved job.

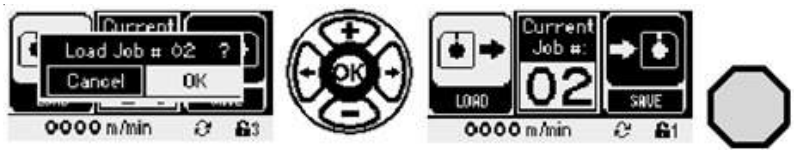
Job Button - Continued

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.

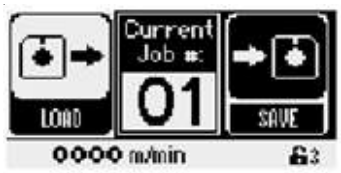


Enter the job number and information in a chart (see Appendix A - Job Charts) for quick job set up. Also, jobs can be overwritten, so it is important to keep track of them.

Job Button - Continued

Save a Job

> Only password levels 2 or higher can save a job.

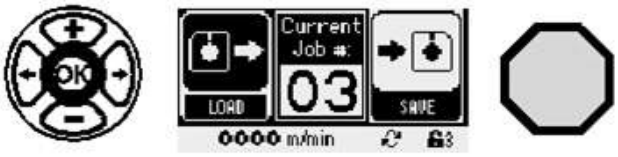


Save - Save all settings under a job number.

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).



Purge and Test Run

1. Purge all air from the glue line, and then connect to the valve. Purge the valve by activating the push button switch on the valve.

   > Scanner and valve cables must be connected before any purging can take place. Be certain all cables and lines are connected.

2. Run adhesive through the valve(s) until no air is present in the line.
3. Run the parent machine and stop it when the product reaches the glue station.
4. Adjust the glue station vertically to ensure the product is level.
5. Slowly jog the product through the glue station making any needed adjustments to the glue station guides and brackets as you go.
6. Start up the parent machine and run 2-4 products through the glue station.
7. Measure the glue line with a tape measure. Make certain the glue line is in the correct place on the products tested.

   > If the glue is not in the proper place on the products, refer to the MCP-4J Manual (MC122) for fine tune adjustment procedures.

8. If the glue is in the proper place on the products tested, you can run the machine at normal operating speed!

Congratulations! You have just set and tested the MCP-4J Control. For more information, please see the MCP-4J Manual (MC122).

www.valcomelton.com

IS0368

IS0369 - MCP-4J Encoder Option Kit Instructions

2/18

This Instruction sheet describes how to install either the Encoder 2 input or Encoder 1 output to an MCP-4J unit, using either kit 091XX763 or 091XX764.

Required Materials

Encoder Kit 091XX763 (MCP-4J Encoder 2 Input Option)

Consisting of:

Item	Description	Part Number	Qty
1	PCB, ASSY, ADAPTER, RIBBON TO 8-PIN	151XX688	1
2	Wrench, Receptacle Spanner, Am	CV10902	1
3	IS; MCP-4J ENC1 OUT OR ENC2 IN	IS0369	1

Or

Encoder Kit 091XX764 (MCP-4J Encoder 1 Output Option)

Consisting of:

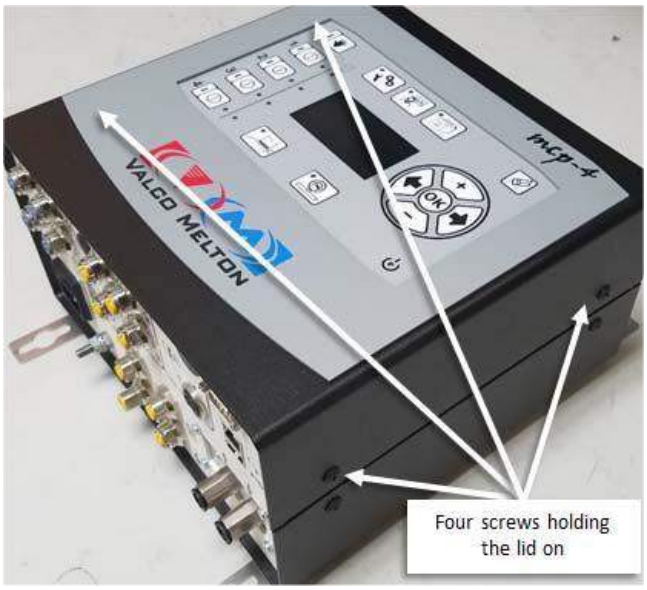
Item	Description	Part Number	Qty
1	PCB SUBASSY ENCODER-OUT MCP-8	152XX722	1
2	Wrench, Receptacle Spanner, Am	CV10902	1
3	IS; MCP-4J ENC1 OUT OR ENC2 IN	IS0369	1

Required Tools

- Phillips Screwdriver

Vertical Units (074XX084, 074XX085, 074XX086)

1. Remove the four screws holding the lid on.



2. Remove the hole plug.

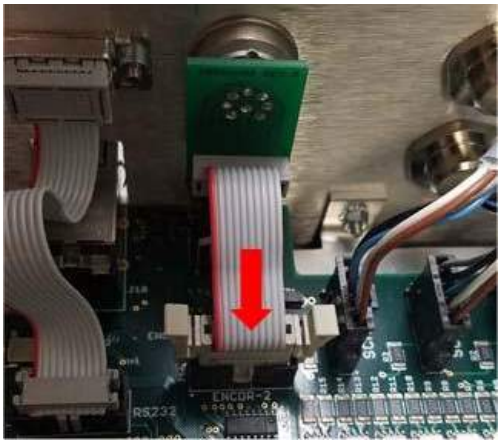
3. Prep the Encoder 2 IN Connector (for the Enc 2 IN kit).

> For the Encoder 1 OUT kit, skip to step 7.

   a. Remove the retaining ring from the connector.

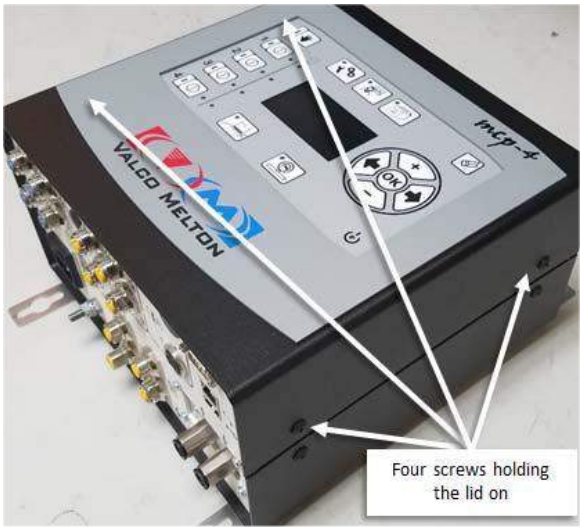
Vertical Units (074XX084, 074XX085, 074XX086) - Continued

4. Align and plug Encoder 2 IN Connector (for Enc 2 IN kit).
   a. Insert the connector to the backplate in the orientation shown.
   b. Plug in the connector as shown.



5. Tighten the Encoder 2 IN Connector (for Enc 2 IN kit), using the included tool.

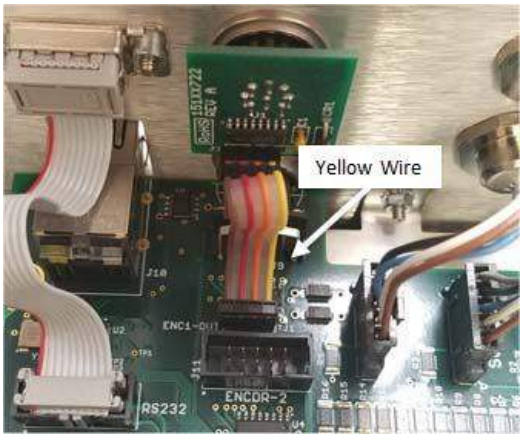
6. Replace the lid.
   a. Replace and tighten the four screws holding the lid on.



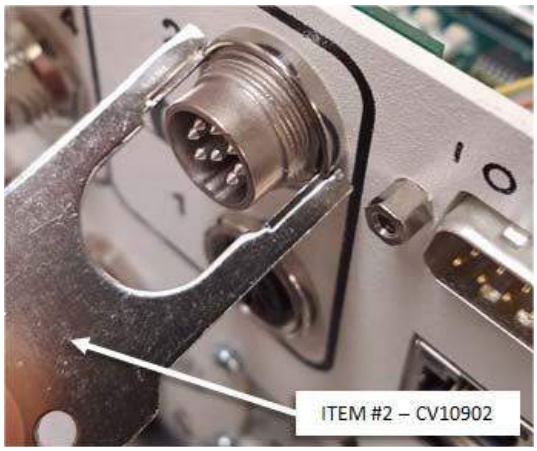
Vertical Units (074XX084, 074XX085, 074XX086) - Continued

7. Prep the Encoder 1 OUT Connector (for Enc 1 OUT kit).
   a. Remove the retaining ring from the connector.

8. Align and plug the Encoder 1 OUT Connector (for Enc 1 OUT kit).
   a. Insert the connector to the backplate in the orientation shown.
   b. Plug the connector in as shown.

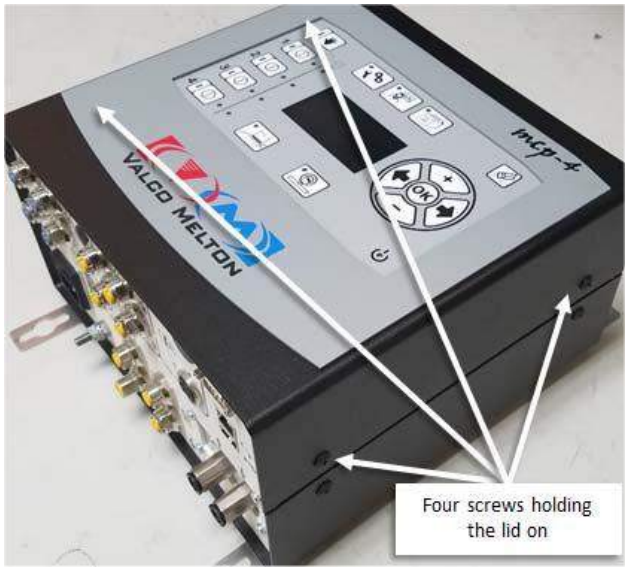


9. Tighten the Encoder 1 OUT Connector (for Enc 1 OUT kit), using the included tool (item #2).



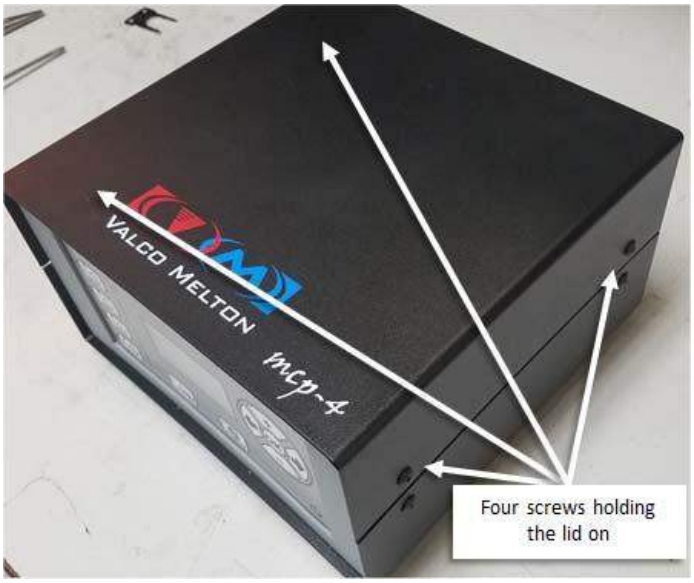
Vertical Units (074XX084, 074XX085, 074XX086) - Continued

10. Replace the lid.
    a. Replace and tighten the four screws holding the lid on.



Horizontal Units (074XX087, 074XX088, 074XX090, 074XX089)

1. Remove the four screws holding the lid on.



2. Remove the hole plug.

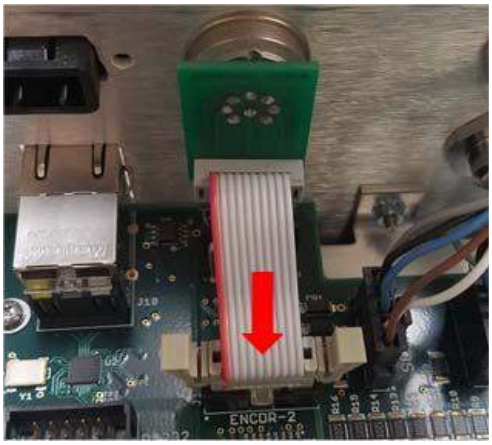
3. Prep the Encoder 2 IN Connector (for the Enc 2 IN kit).

> For the Encoder 1 OUT kit, skip to step 7.

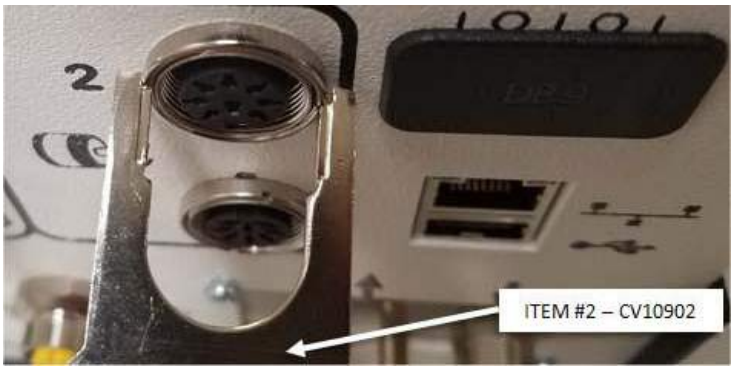
   a. Remove the retaining ring from the connector.

Horizontal Units (074XX087, 074XX088, 074XX090, 074XX089) - Continued

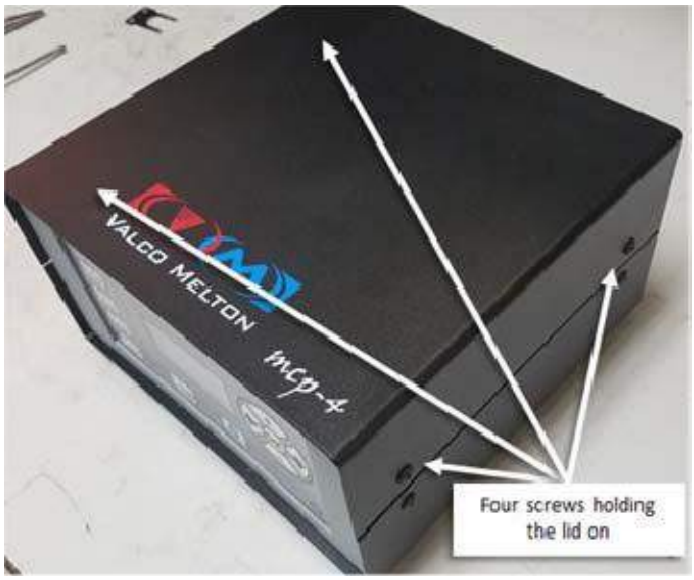
4. Align and plug Encoder 2 IN Connector (for Enc 2 IN kit).
   a. Insert the connector to the backplate in the orientation shown.
   b. Plug in the connector as shown.



5. Tighten the Encoder 2 IN Connector (for Enc 2 IN kit), using the included tool.



6. Replace the lid.
   a. Replace and tighten the four screws holding the lid on.



Horizontal Units (074XX087, 074XX088, 074XX090, 074XX089) - Continued

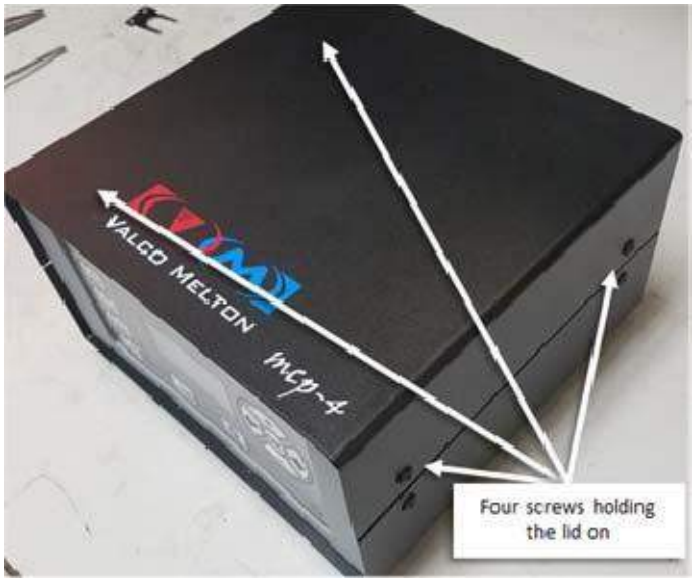
7. Prep the Encoder 1 OUT Connector (for Enc 1 OUT kit).
   a. Remove the retaining ring from the connector.

8. Align and plug the Encoder 1 OUT Connector (for Enc 1 OUT kit).
   a. Insert the connector to the backplate in the orientation shown.
   b. Plug the connector in as shown.

9. Tighten the Encoder 1 OUT Connector (for Enc 1 OUT kit), using the included tool (item #2).

Horizontal Units (074XX087, 074XX088, 074XX090, 074XX089) - Continued

10. Replace the lid.
    a. Replace and tighten the four screws holding the lid on.



Valco Cincinnati Incorporated
411 Circle Freeway Drive
Cincinnati, Ohio 45246, USA
TEL: (1) 513-874-6550
FAX: (1) 513-874-3612

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

Valco Cincinnati, Ltd.
Unit 7-8
Hortonwood 32
Telford TF1 7YN England
TEL: (44) 1952-677911
FAX: (44) 1952-677945

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

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

IS0371 - Adding External Comm Port to Horizontal MCP-4J Units

2/18

Required Materials

- KIT # 091XX766

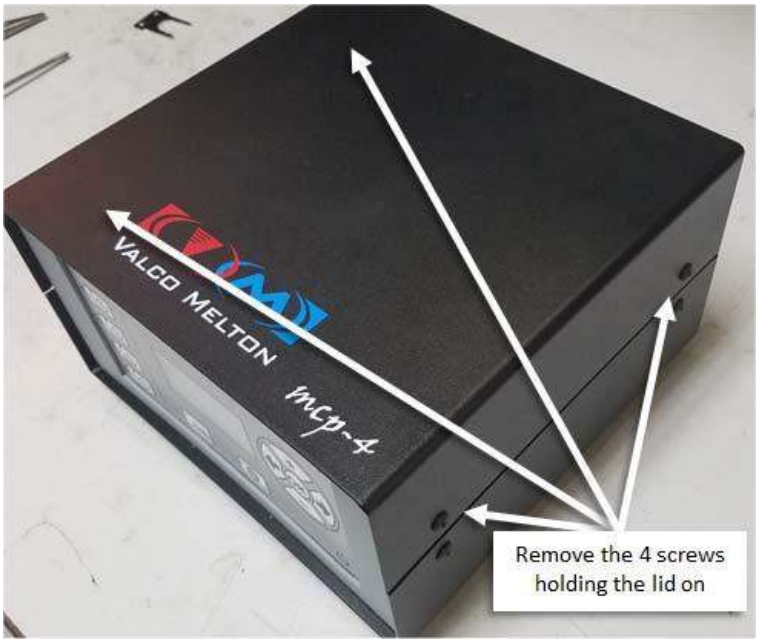
ITEM	PART #	ITEM DESCRIPTION	QTY
1	033XX166	RIBBON CABLE ASSY	1
2	091XX267	SCREW	2

Required Tools

- Phillips screwdriver
- 3/16” Nut driver

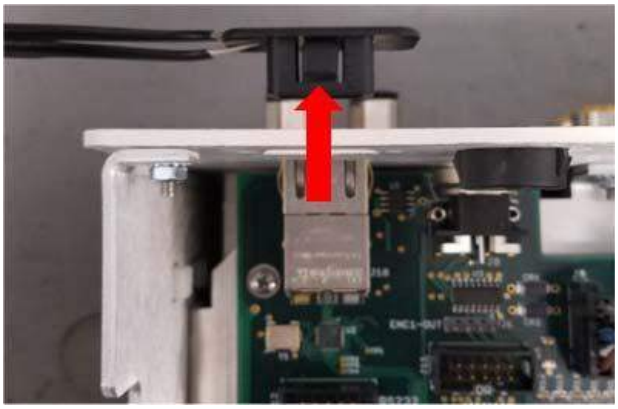
Procedure

1. Remove the four (4) screws holding the lid on using, using a Phillips screwdriver.



Procedure - Continued

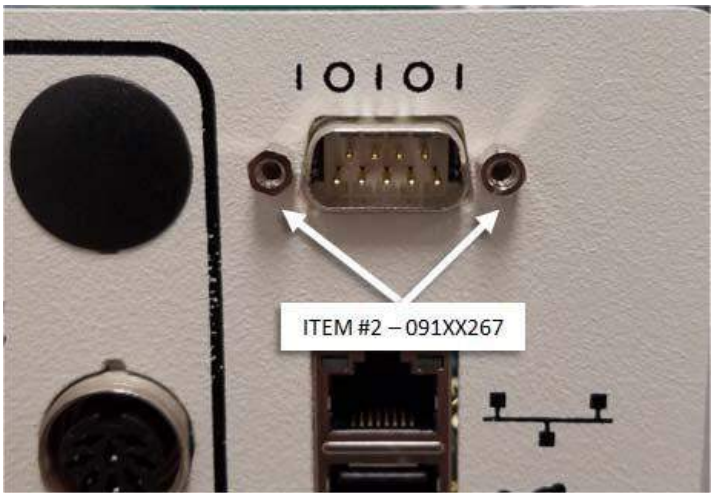
2. Remove the hole plug.



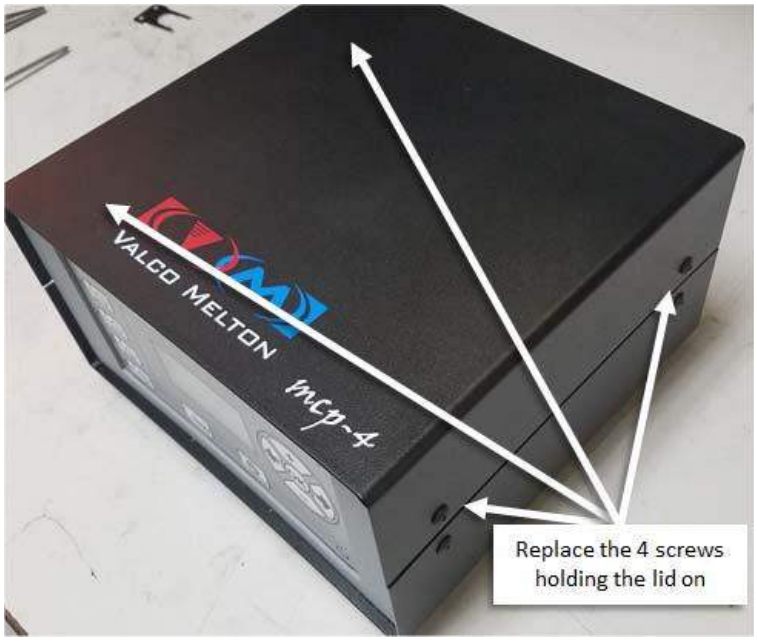
3. Align and plug in the external comm port.
   a. Insert the DB9 connector (ref. 033xx166) to the backplate, in the orientation shown.
   b. Plug the connector into J12 on the board, as shown.

Procedure - Continued

4. Attach the connector to the backplate with the included screws (item #2 - 091xx267), using a 3/16” nut driver.



5. Replace the lid and tighten the four (4) screws holding it on.



Valco Cincinnati Incorporated
411 Circle Freeway Drive
Cincinnati, Ohio 45246, USA
TEL: (1) 513-874-6550
FAX: (1) 513-874-3612

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

Valco Cincinnati, Ltd.
Unit 7-8
Hortonwood 32
Telford TF1 7YN England
TEL: (44) 1952-677911
FAX: (44) 1952-677945

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

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

IS0372 - Adding Beacon and Relay Outputs for Jam Detection to Horizontal MCP-4J Units

2/18

Required Materials

- Kit # 091XX767

ITEM	ITEM DESCRIPTION	PART #	QTY
1	CABLE ASSY	029XX599	1
2	CABLE TIE	067XX154	2

Required Tools

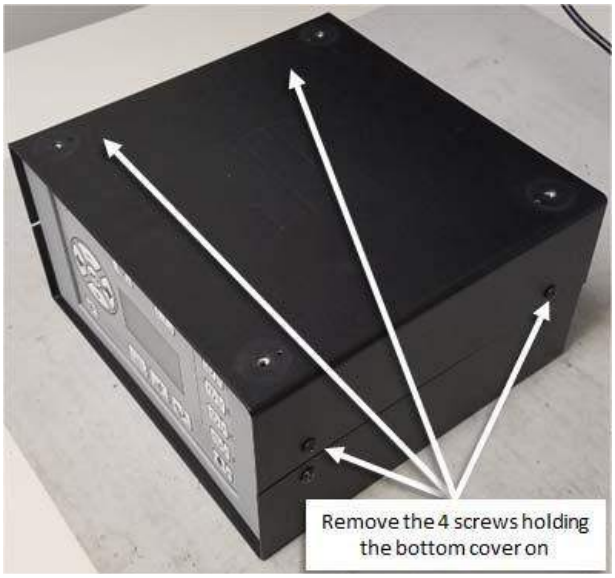
- Phillips screwdriver
- 4MM Allen wrench
- 19MM Socket or Wrench
- Cutting tool (to remove cable ties)

Procedure

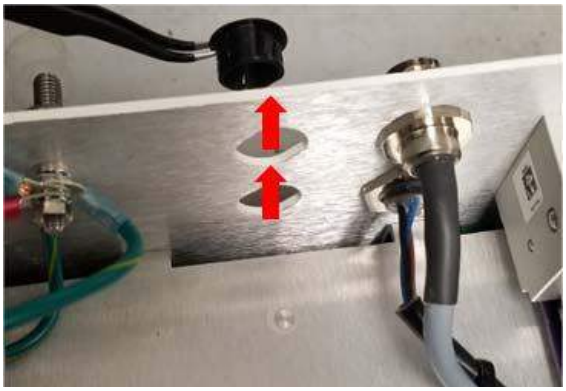
1. Remove the four (4) feet from the bottom of the unit, using a 4mm Allen wrench.

Procedure - Continued

2. Remove the four (4) screws holding the bottom cover, using a Phillips screwdriver.



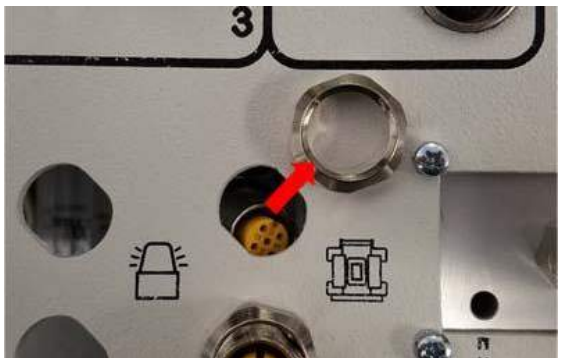
3. Remove the hole plugs, on the back plate, for the beacon and relay holes.



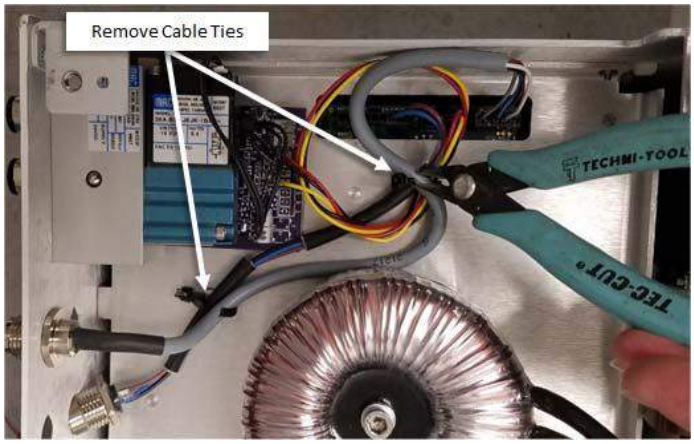
Procedure - Continued

4. Remove the existing pump cable.

a. Remove the nut holding the pump connector in place on the back plate, using a 19mm socket or wrench.



b. Carefully cut and remove the cable ties holding the pump cable in place, inside the unit.



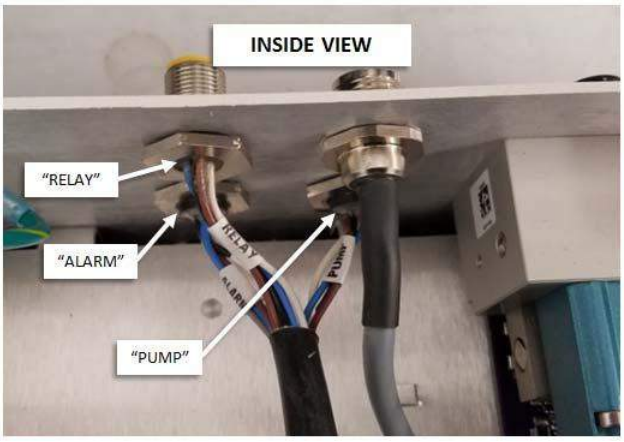
c. Unplug the pump cable from the board inside the unit.

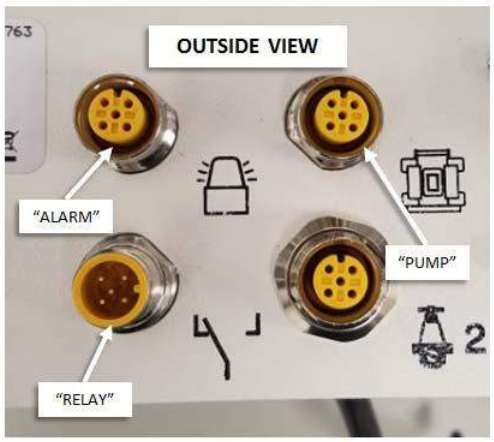
d. Remove the cable from the unit.

Procedure - Continued

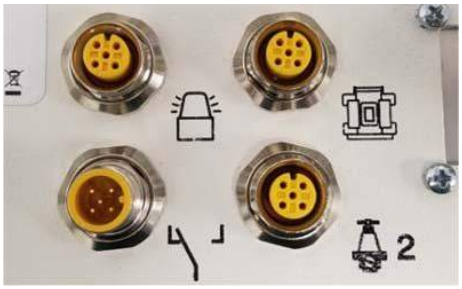
5. Prepare the beacon/relay/pump cable.
   a. Remove the nut from each connector on the 029xx599 cable and set them aside.
      1) Verify the O-ring stays in place on each connector.

6. Align and plug in the beacon/relay/pump cable.
   a. Insert the connectors to the backplate, in the orientation and locations shown.



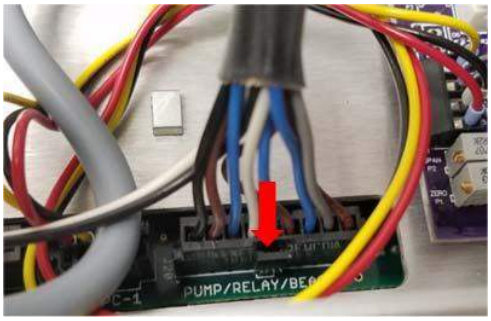


7. Use the 19mm socket or wrench to tighten each nut back onto the connectors, securing them to the back plate.

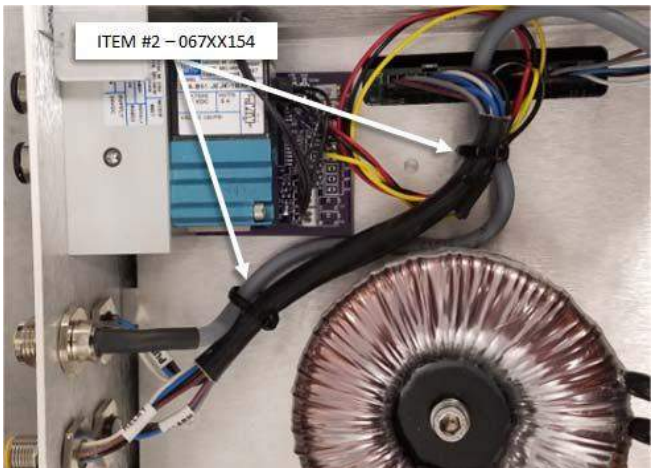


Procedure - Continued

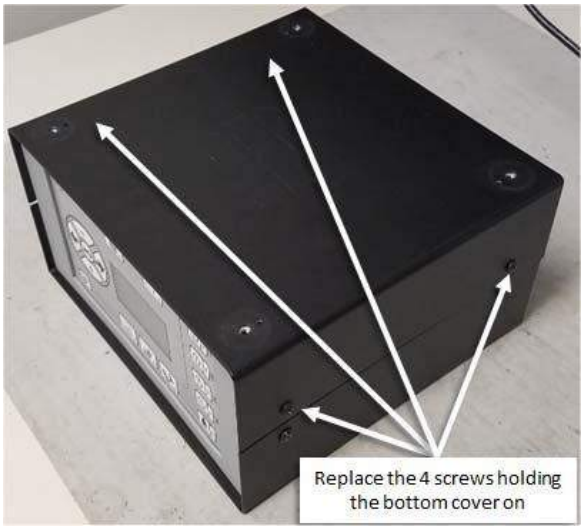
8. Plug the 9-pin connector (029xx599 cable) into J20 on the board, inside the unit.



9. Secure the cable to the inside of the unit, using the included cable ties (067xx154), as shown.

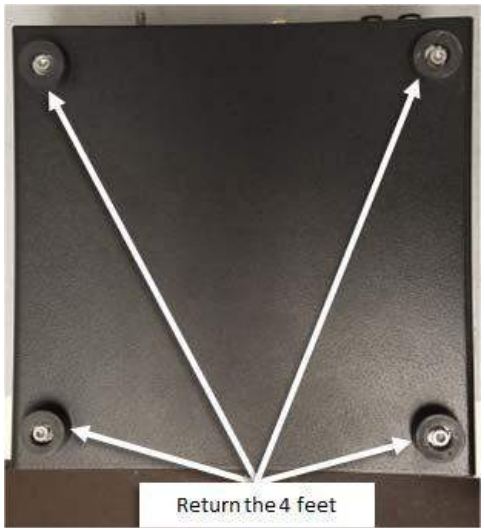


10. Carefully cut off excess cable tie length.
11. Replace the bottom cover.
12. Tighten the four (4) screws holding the cover in place, using a Phillips screwdriver.



Procedure - Continued

13. Return the four (4) feet on the bottom of the unit, using 4mm Allen wrench.



ERROR: undefined
OFFENDING COMMAND: ~

STACK:

-savelevel-