



# 8M Option - Installation and Operation

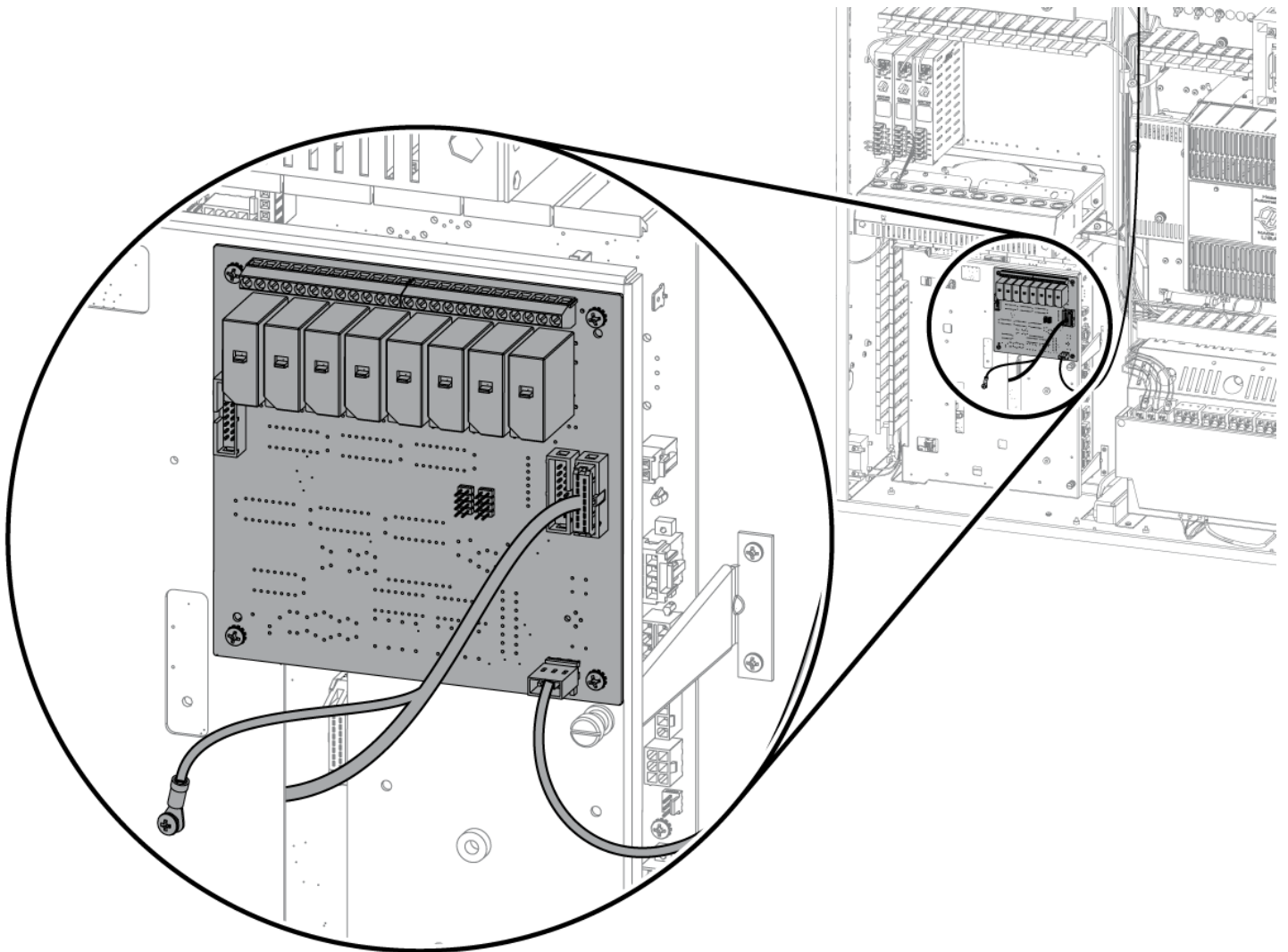
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## 8M Option - Installation - Introduction

This procedure shows you how to install the 8M Option. This option adds (8) more outputs. These outputs start external devices. Some external devices are probes, auxiliary pumps, or clamping devices.




 **Caution:** When you do maintenance or repair on CNC machines and their components, you must always follow basic safety precautions. This decreases the risk of injury and mechanical damage.

Do these steps before you do work in the machine or in the control cabinet:

- Set the main circuit breaker to the **[OFF]** position.
- Use an approved lock with an approved safety tag. Always follow lock-out procedures in accordance to local government rules.
- After turning off the machine, wait at least 5 minutes before working in the control cabinet, to allow power to dissipate. Wait for the voltage indicator LED on the vector drive to go off completely.
- Always turn off the main air supply when you work on any part of the pneumatic system.
- Make sure to rest the spindle head on a block of wood when work is done on a vertical axis. This will prevent any unintended movement that could result in the axis falling.
- Never alter any safety circuits on the machine.

You should not do machine repair or service procedures unless you are qualified and knowledgeable about the processes. Serious damage to the machine components can result in costly repairs. The service technicians at your Haas Factory Outlet (HFO) have the training and experience, and are certified to do these tasks safely and correctly. The repair and service work performed by your HFO is protected with a limited warranty.

 **Danger:** Some service procedures can be dangerous or life-threatening. DO NOT attempt a procedure that you do not fully understand. If you have any doubts about doing a procedure contact your Haas Factory Outlet (HFO) and schedule a service visit.

### Machine Compatibility

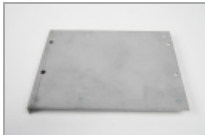
The machine must have mill software version 8.29 or higher.

The kit includes a bracket to install the 8M Option for OL and OM machines.

All other machines must have a door installed over the I/O PCB. If you do not have the hinged door installed over the I/O PCB, you must also install P/N: 93-30-2325B.

### Parts Included

KIT PN: 93-1157A, 8M FIELD INSTALL KIT. QTY: 1



**[A]** 25-7762 QTY: 1  
MOUNTING BRKT, M-CODE PCB 10/  
BOX



**[B]** 33-0540A QTY: 1  
CABLE, 510/520/530/540/540A I/O PCB  
TO MOCON OR MCD PCB (70 IN)



**[C]** 33-8110 QTY: 1  
CABLE, 860 +12VDC MDC RELAY PCB



**[D]** 40-0037 QTY: 4  
BOLT, SHCS 10-32 X 3/8 W/FLAT  
WASHER OD 0.37



**[E]** 41-0023 QTY: 4  
BOLT, PPHS 6-32 X 3/8 W/CPTV LOCK  
& FLAT WSH

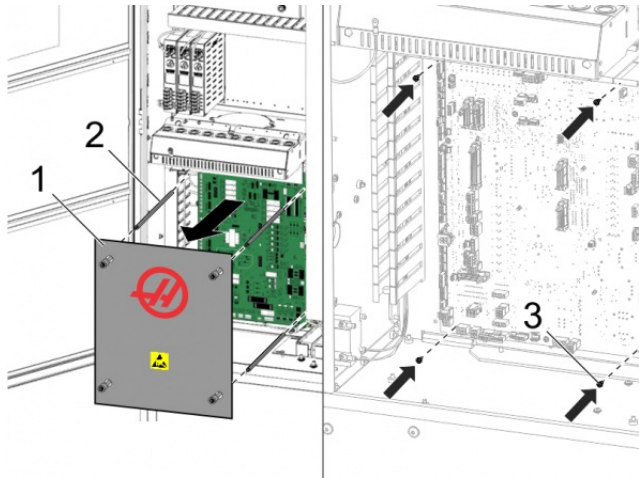


**[F]** 93-1057B QTY: 1  
PCB, MDC RELAY

# 8M Option - Installation

This procedure shows you how to install the 8M Option.

## STEP 1



Push **[POWER OFF]**.

Set the main circuit breaker to the **OFF** position.

Lock the main circuit breaker. Use an approved lock with an approved safety tag.



**Caution:** When you handle a PCB, you must wear an Electrostatic Discharge (ESD) strap.

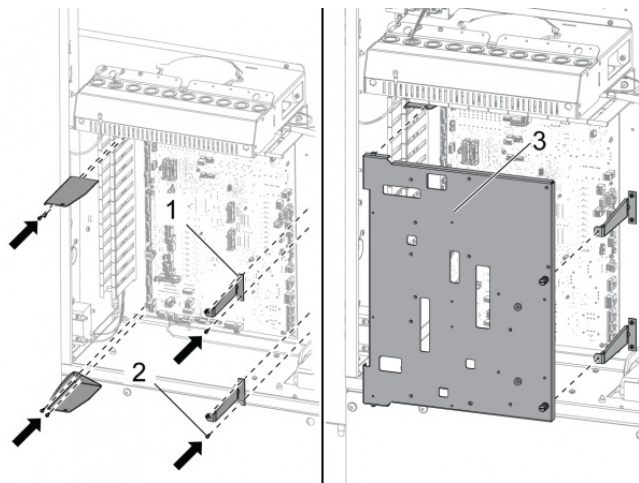
If the cover for the I/O PCB has a hinge, go to **Step 3**.

For installation in an Office Mill or Office Lathe, go to **Step 4**.

Remove the I/O PCB cover [1] and standoffs [2] from the control cabinet.

Install the (4) screws [3] to attach the I/O PCB.

## STEP 2



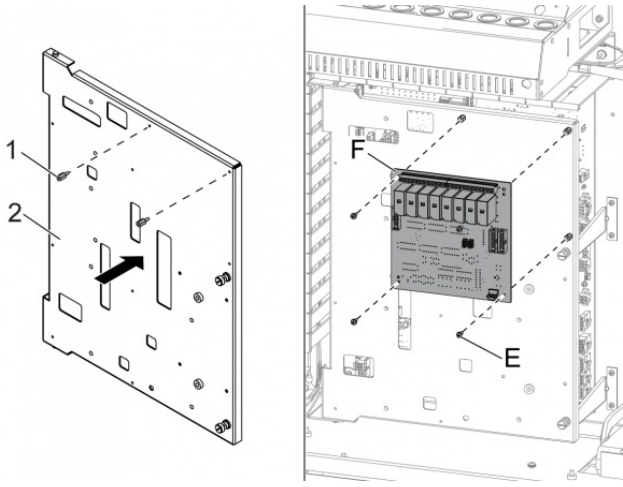
**This step tells you how to install a hinged door in front of the I/O PCB.**

Install the (4) I/O PCB brackets [1].

Install the (8) screws [2] to support the brackets.

Install the cover [3] for the I/O PCB.

### STEP 3

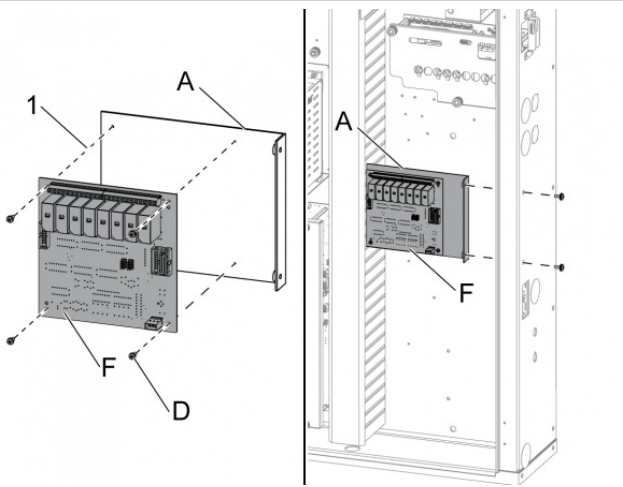


Install the (2) standoffs [1] to the cover [2].

Install the PCB [F].

Use the (4) BOLTS [E].

### STEP 4



**This step tells you how to install the BRACKET [A] and PCB [F] on Office Mill and Office Lathe machines:**

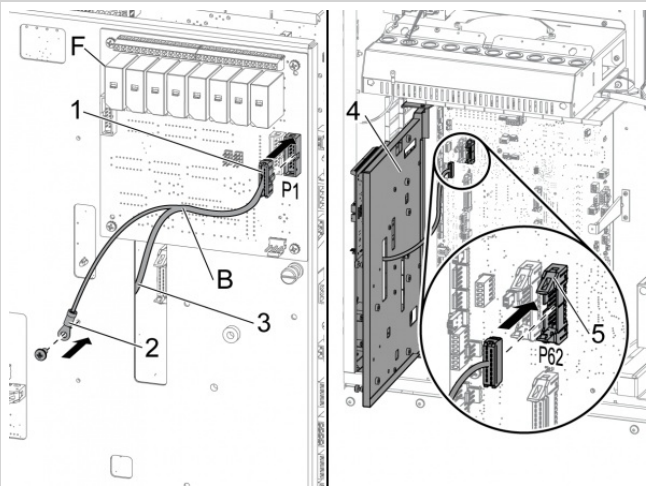
Install the (4) standoffs [1] to the BRACKET [A].

Install the PCB [F].

Use the (4) BOLTS [D].

Install the PCB [F] and BRACKET [A] to the right panel of the control cabinet.

### STEP 5



Find the P1 connector [1] on the PCB [F].

Connect the CABLE [B] to the P1 connector [1].

Connect the ground cable [2] from the CALBE [B] to the I/O PCB cover.

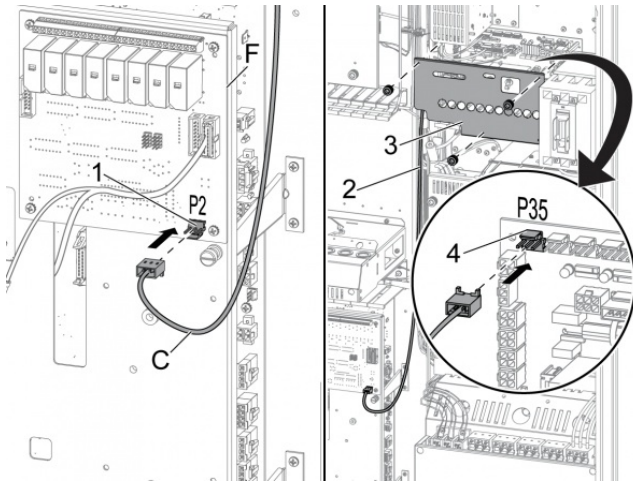
Put the CABLE [B] through the opening [3] on the I/O PCB cover.

Open the I/O PCB cover [4].

Locate the P62 connector [5] on the I/O PCB.

Connect the other end of the CABLE [B] to the P62 connector [5].

## STEP 6



- Find the P2 connector [1] on the PCB [F].
- Connect the CABLE [C] to the P2 connector [1].
- Put the CABLE [C] through the cable channel to the PSUP PCB.
- Remove the cover [3] for the PSUP PCB.
- Locate the P35 connector [4] on the PSUP PCB.
- Connect the other end of the CABLE [C] to the P35 connector [4].
- Install the cover [3] for the PSUP PCB.
- Remove the lockout tag.

## 8M Option - Operation

This procedure shows you how to connect your external device to the 8M PCB.

### Prerequisites

The 8M option adds (8) more outputs. These outputs start external devices. Some external devices are probes, an auxiliary pump, or clamping devices.

## STEP 1

INPUTS 2		OUTPUTS 2	
Spare Input 4A	0 APC Pa] Clamped*	Spare Output 32	0 Spare Output 48
Spare Input 4B	0 UNUSED	Spare Output 33	0 Spare Output 49
Spare Input 5A	0 UNUSED	Spare Output 34	0 Spare Output 50
Spare Input 5B	0 I/O FAULT STATUS	Spare Output 35	0 Spare Output 51
Spare Input 6A	0 DC MOTOR CURRENT*	Spare Output 36	0 Ax Lube Pump 52
Spare Input 6B	0 UNUSED	TC MTR SW	0 Spare Output 53
Spare Input 7A	0 UNUSED	Spare Output 38	0 Spare Output 54
Spare Input 7B	0 UNUSED	Spare Output 39	0 Spare Output 55
Spare Input 8A	0 UNUSED	M21	0
UNUSED	0 UNUSED	M22	0
Motor Stop	0 UNUSED	M23	0
Origin	0 UNUSED	M24	0
Clamp/Unclamp	0 UNUSED	M25	0
UNUSED	0 UNUSED	M26	0
APC Door Closed*	0 UNUSED	M27	0
APC Door Opened*	0 UNUSED	M28	0

SERIAL KEYPAD INPUTS			
UNUSED	UNUSED	UNUSED	UNUSED
UNUSED	UNUSED	UNUSED	UNUSED
AUTO DOOR	UNUSED	KEY LOCK	UNUSED
UNUSED	UNUSED	2ND HOME SWITCH	UNUSED

Use this example for an external device that sends the finish signal back to the I/O PCB.

Set the main circuit breaker to the **ON** position.



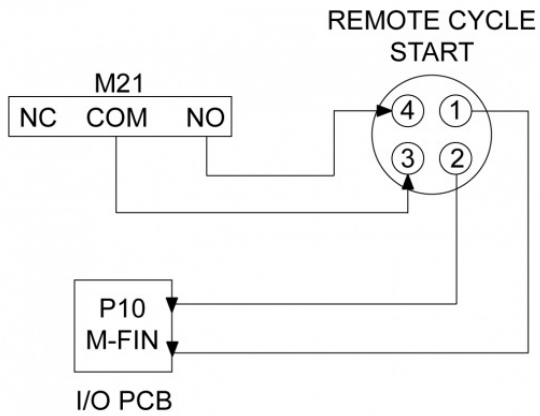
Push **[POWER ON]**.



Change Parameter **352** to 2.

This moves the function of the M21-M28 relays from the I/O PCB to the 8M PCB.

## STEP 2

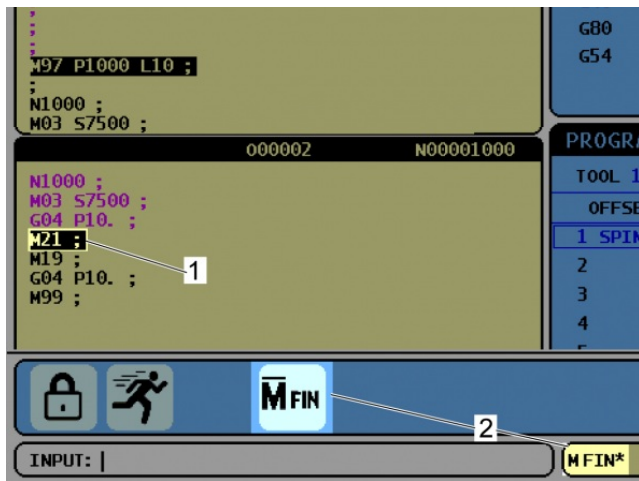


This example shows how to connect an external rotary to the relay.

Pins 3 and 4 receive the start signal when an M21-M28 command is in the program.

Pins 1 and 2 send the finish signal to the control when the external action stops.

## STEP 3



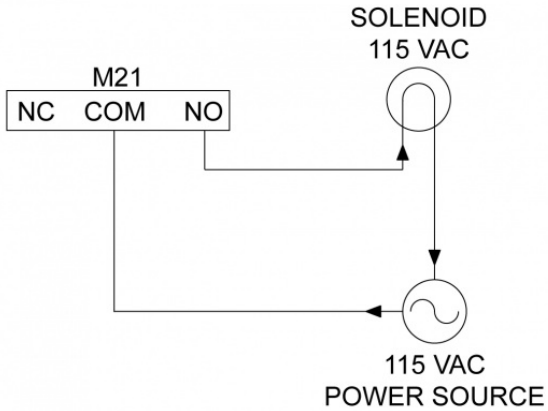
An M21-M28 [1] command stops the program until the external device sends a finish signal.

The control shows MFIN [2] until the I/O PCB receives the finish signal.

In this example, the rotary momentarily makes an electrical connection between pins 2 and 3 on P10. This sends the finish signal.

When the control receives the finish signal, the program continues.

## STEP 4



Use this example for an external device that does not send the finish signal back to the I/O PCB.

This example shows how an external device is connected to the relay.

This example shows a solenoid connected to M21 on the 8M PCB.

The connection changes with the device type:

- Use COM (Common) and NO (Normally Open) for normally open systems.

OR

- Use COM (Common) and NC (Normally Closed) for normally closed systems.

Use these codes to energize or de-energize a relay:

Relay Label	Energize	De-energize
M21	M59 P1140	M69 P1140
M22	M59 P1141	M69 P1141
M23	M59 P1142	M69 P1142
M24	M59 P1143	M69 P1143
M25	M59 P1144	M69 P1144
M26	M59 P1145	M69 P1145
M27	M59 P1146	M69 P1146
M28	M59 P1147	M69 P1147