Allen-Bradley

Pro-Set ™ 700 Co-injection Software

(Cat. No. 6500-PS7COINJ)

User Manual

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. “Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls” (Publication SGI-1.1) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will the Allen-Bradley Company be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, the Allen-Bradley Company cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Allen-Bradley Company with respect to use of information, circuits, equipment, or software described in this manual.

Throughout this manual we use notes to make you aware of safety considerations.

ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

Attentions help you

- identify a hazard
- avoid the hazard
- recognize the consequences

Important: Identifies information that is especially important for successful application and understanding of the product.

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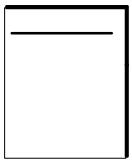
Using This Manual

What's in This Preface?



This preface describes how to use this manual to install and configure co-injection modules and software in an injection molding control system.

Who Should Use This Manual?

Use this manual if you are an application engineer, technician, or installer to

- install the co-injection modules
- determine module operating modes
- set up inputs
- write custom ladder logic for the modules
- enter information on screens
- set up co-injection profiles

What Should I Already Know?

We assume you are familiar with

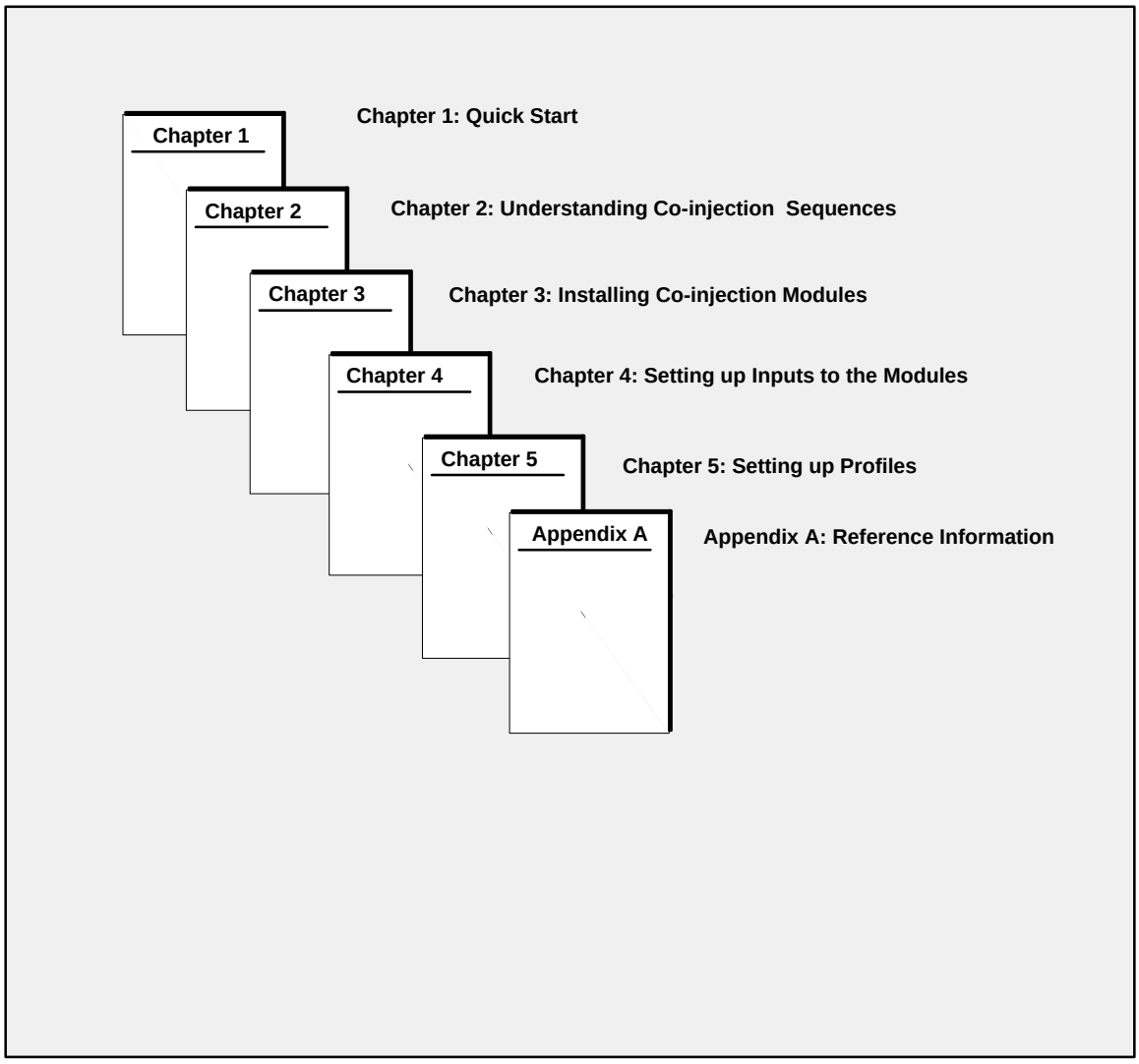
- injection molding technology
- Pro-Set 700 injection molding software
- programmable controllers (specifically, Allen-Bradley's PLC®-5)
- Allen-Bradley's QDC plastic molding module

If you need more information or training on any of these items, contact your local Allen-Bradley representative.

ATTENTION: To use the Pro-Set co-injection package, you must first install the basic Pro-Set 700 system (catalog number 6500-PS700). Contact your Allen-Bradley sales representative for more information.

How Do I Use This Manual?

We designed this manual according to the tasks you perform to install and use co-injection modules and software.



What Conventions Are Used in This Manual?

In this manual, we use these conventions:

This symbol calls your attention to helpful information.

Example:

This convention presents an example.

We show pathnames, commands and filenames like this:

```
/ABPS700/CTK/TSK
```

We show variable text that you type like this:

filename.tdb
or
FILENAME.TDB

What Other Publications Are Available?

This table shows you some other publications you might need if you have other questions about Pro-Set 700 software.

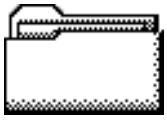
Publication	Publication Number
Pro-Set 700 Jobsetting Guide	6500-6.9.3
Pro-Set 700 Operator Interface Installation Manual	6500-6.2.1
Pro-Set 700 Reference Manual	6500-6.4.3
Pro-Set 700 User Manual	6500-6.5.18
ControlView Runtime Reference Manual	6195-6.5.4
ControlView Statistical Process Control User Manual	6190-6.5.20
Plastic Molding Module Reference Manual	1771-6.6.88

To install Pro-Set 700 co-injection software, refer to the Pro-Set 700 Co-injection Software Release Note, Pub. 6500-

What Is the Pro-Set 700 Co-injection Software Directory Structure?

Here is a visual directory tree for all the files in the `\ABPS700\` directory.

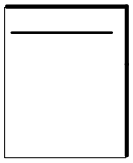
Important: Files highligted with a gray bar have been added to the core Pro-Set 700 software package.



C:\ABPS700

- ALARM — Alarm message files
- CFG — ControlView/Pro-Set 700 configuration files
- CTK — Pro-Set 700 tasks
  - TSK — Pro-Set 700 tasks
- DB — Pro-Set 700 database
  - PS700 — Pro-Set 700 application database
  - ALM — Alarm files
  - DAT — Data files
  - LST — Temporary files
  - TIDX — Temporary files
- ERR — Error message files
- INI — Initialization files
- KEY — Key definition files
- LOG — Activity and alarm logger
- MACHINE — Machine setups
- MCR — Pro-Set 700/ControlView macros
- MENU — ControlView menu files
- MGX — Mouse GRAFIX files
  - MGX — Mouse GRAFIX files
    - WORK — Mouse GRAFIX files
- MOLDPART — Mold/part configuration files
- PART — Part setups
- SCRNTEXT — Screen Text files
  - USER — User-created or modified Screen Text files
- SECURITY — Security and password files
- SPC — Statistical Process Control configuration files
- SPI — SPI device definition text and binary fles
- TD — Task Definiton files
  - BITMAPS — Bitmap graphic files for Task Definition screens
  - USER — User-created or modified Task Definition files
- UTIL — Utility programs

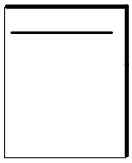
What 's Next?



In Chapter 1, you see at a glance how to set up your system.

Understanding Co-injection Sequences

What's in This Chapter?



In this chapter, we describe the modules' various operation sequences. You will learn about

- how the module coordinates co-injection sequences
- typical applications for each operation sequences

Important: This chapter describes only the sequences the co-injection modules control. For setup information, read the chapters that follow.

What Are the Injection Sequences?

Co-injection modules are used in molding machines with two injection heads. One module controls each head. You can coordinate the injection cycles of the two heads to do the following:

- inject two colors of material in the same part, keeping the colors separate
- begin injecting material that will form the skin of a part, maintain low flow on that injection head, begin filling the core of the part, then finish injecting the skin (for example, injecting unused [virgin] and regrind material in the same part, keeping the two materials separate)
- inject two different material types

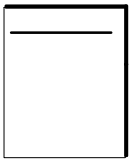
We show you the co-injection sequences in the table on the following page.

Important: We refer to the co-injection modules as modules A and B.

Table 1.ATable 1.B Co-injection Sequences

In This Sequence	The Co-injection Module Does This
A only	Commands the machine to inject a single material from injection head A
B only	Commands the machine to inject a single material from injection head B
A then B	Module A completely injects all material. Then module B completely injects all material.
A and B	Both modules begin the cycle at the same time.
A B A	Module A begins the cycle, moving screw A to a pre-determined position, then holding the screw in position. Module B begins moving screw B to its setpoint. Then module A starts again at some pre-determined position of screw B and continues until screw A reaches its end-of-profile setpoint.
B then A	Module B completely injects all material. Then module A completely injects all material.
B A B	Module B begins the cycle, moving screw B to a pre-determined position, then holding the screw in position. Module A begins moving screw A to its setpoint. Then module B starts again at some pre-determined position of screw A and continues until screw B reaches its end-of-profile setpoint.

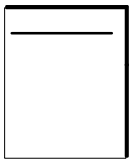
What's Next?



We tell you how to install the modules in Chapter 3.

Installing Co-injection Modules

What's in This Chapter?



This chapter describes how to to install and configure co-injection modules as an addition to the basic Pro-Set 700 package. When you complete this chapter, you will be able to

- choose the correct power supply
- determine I/O chassis addressing mode
- determine the modules' position in the I/O chassis
- key chassis slots for the modules
- determine and record I/O ranges
- make jumper connections on the modules' circuit boards
- install the modules
- ground and shield I/O devices
- make a proper ground connection
- understand the PLC processor power distribution circuit
- wire the modules
- power up the modules
- read module indicator lights
- enter I/O ranges on the Module Configuration screen
- use the Rack Configuration screen to select operating mode

Step 1. Choose the Correct Power Supply

The modules are powered through the chassis backplane with a power supply. To select the correct power supply for the system, ensure that the total current load for all modules does not exceed the power supply's maximum load specification.

To calculate the total current load,

1. Add both co-injection modules' current load to the loads of all other modules in the chassis.

Important: The co-injection module is rated at 1.2A. Check specifications for all other modules in the I/O chassis.

2. Compare your total with the power supply's maximum load rating.

3. If the total voltage exceeds the power supply's maximum load rating, select a larger power supply. See your Allen-Bradley representative for more information.

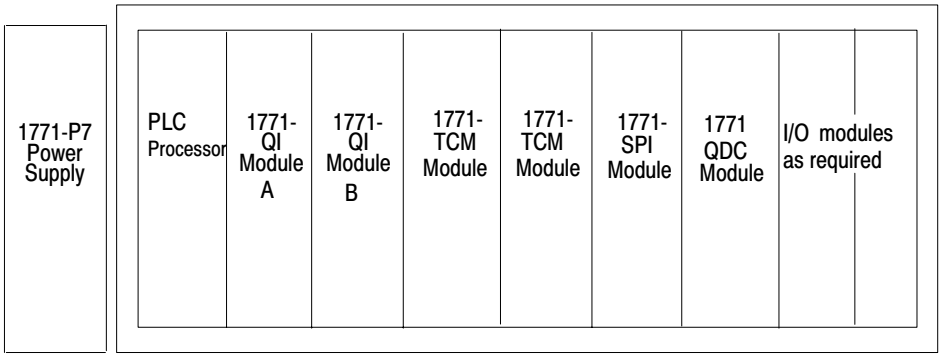
Important: We recommend a standalone power supply, such as catalog number 1771-P1. This power supply is mounted beside the I/O chassis and provides an output of up to 16A.

Step 2: Determine I/O Chassis Addressing Mode

Each QI module has 4 inputs and 4 outputs and is compatible with single-slot addressing.

Step 3: Determine the Modules' Position in the Chassis

Here is the module layout for the co-injection system.



I/O Chassis

1771-P7 Power Supply: Provides power to the chassis backplane

PLC Processor: Provides communication to and from the modules and the host computer

1771-QI Co-injection Modules: Control Inject functions

1771-TCM Temperature Control Modules: Monitor setpoint and actual machine temperatures

1771-SPI Module: Provides SPI-approved communication protocol to and from remote devices

1771-QDC Plastic Molding Module: Controls Clamp and Eject functions

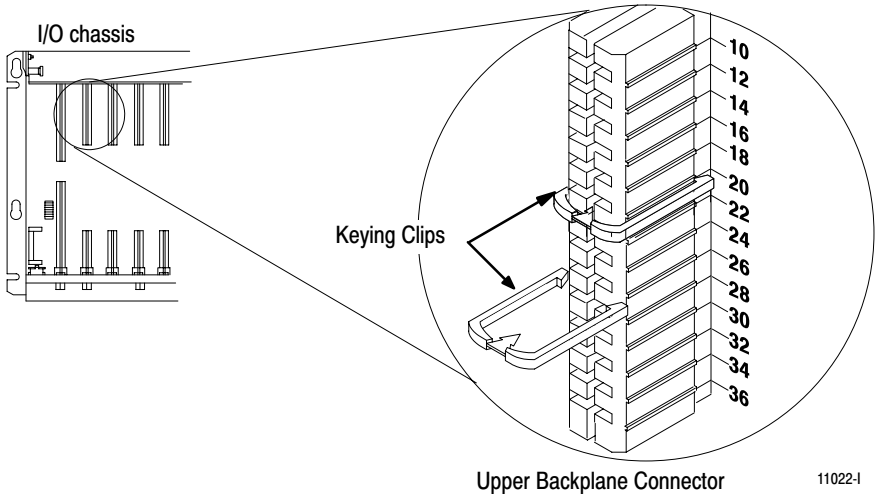
I/O Modules (as required): Provide additional functions as required by your application

Step 4: Key the I/O Chassis for the Co-injection Modules

Use the plastic keying clips shipped with each I/O chassis to key the appropriate I/O slots to accept only the Co-injection modules.

I/O modules are slotted in two places on the rear edge of the circuit board. The keying clips you install must correspond to these slots to allow the module to be inserted only in the designated slot.

ATTENTION: Use your fingers to insert the keying clips, and ensure you've placed the clips correctly. Using a tool or incorrectly keying the module may damage the backplane connector and may cause system faults.



To key the chassis for the module,

1. Place keying clips between these numbers (as labeled on the upper backplane connector):
   - 20 and 22
   - 26 and 28
2. Use your fingers to insert the keying bands.

▶ To change the position of the keys, remove the bands with your fingers. Then re-install the bands in a different position.

Step 5: Determine and Record I/O Ranges

You must determine module I/O ranges before you can make jumper selections. To determine I/O ranges, define and record the following information about your control system. We provide an example worksheet and a blank worksheet that you can complete.

- co-injection module operating modes
- signal ranges of the I/O devices connected to the modules
- outputs to the selected control valve and other valves

Follow these steps to determine I/O ranges. Complete one worksheet for each module.

1. Determine whether the module will control injection unit A or B.
   - module A controls injection unit A
   - module B controls injection unit B
2. Select the inputs you want the modules to monitor from the four options on the worksheet.
3. Select screw A or B for inputs 1 through 4. Your screw selections must match your module selections.
4. Refer to the specifications that accompanied your sensors to determine the operating range.
5. Select the outputs you want to assign from the four options on the worksheet.
6. Determine the sensors and valves that the injection molding machine will use to monitor and control system operation.
7. Circle the I/O ranges for each sensor and valve used.

Important: The following worksheets shows an example of a module configuration. Input 3 is selectable between screw RPM and cavity pressure.

Module A ✓
Module B ✓

Module Operating Modes: (Select A or B)		**Signal Ranges:**	
Input 1: screw position	0 to 10V dc	1 to 5V dc	4 to 20 mA
Input 2: screw pressure	0 to 10V dc	1 to 5V dc	4 to 20 mA
Input 3 :screw RPM or cavity pressure	0 to 10V dc	1 to 5V dc	4 to 20 mA
Input 4: other screw position	0 to 10V dc	1 to 5V dc	4 to 20 mA
Outputs:		**Signal Ranges:**	
Output 1: injection pressure	-10 to 10V dc	0 to 10V dc	4 to 20 mA
Output 2: injection flow	-10 to 10V dc	0 to 10V dc	4 to 20 mA
Output 3: screw RPM	-10 to 10V dc	0 to 10V dc	4 to 20 mA
Output 4: not connected	-10 to 10V dc	0 to 10V dc	4 to 20 mA

Here is a blank worksheet you can photocopy and use to record your own I/O ranges.

Module A ✓
Module B ✓

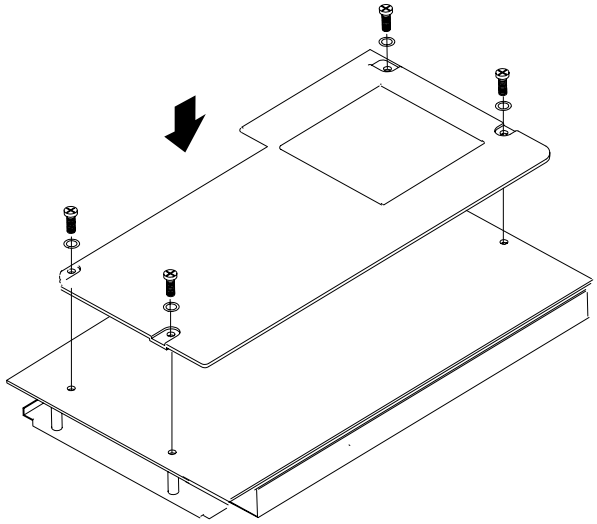
Module Operating Modes: (Select A or B)		**Signal Ranges:**	
Input 1: screw position	0 to 10V dc	1 to 5V dc	4 to 20 mA
Input 2: screw pressure	0 to 10V dc	1 to 5V dc	4 to 20 mA
Input 3: screw RPM or cavity pressure	0 to 10V dc	1 to 5V dc	4 to 20 mA
Input 4: other screw position (select A or B)	0 to 10V dc	1 to 5V dc	4 to 20 mA
Outputs:		**Signal Ranges:**	
Output 1: injection pressure	-10 to 10V dc	0 to 10V dc	4 to 20 mA
Output 2: injection flow	-10 to 10V dc	0 to 10V dc	4 to 20 mA
Output 3: screw RPM	-10 to 10V dc	0 to 10V dc	4 to 20 mA
Output 4: not connected	-10 to 10V dc	0 to 10V dc	4 to 20 mA

Step 6: Make Jumper Connections on the Modules' Circuit Boards

After determining I/O operating ranges (see the worksheet in this chapter) you make jumper connections on the module circuit board to select the ranges. We show you how to make the jumper connections in this section.

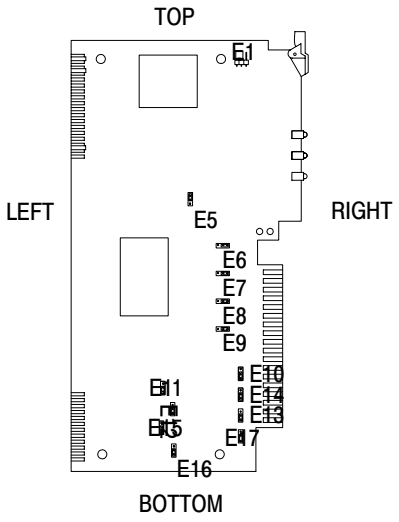
Important: Handle the circuit board by the edges to avoid touching conductive surfaces or components.

1. Remove the module cover plate (on the label side) by removing the four screws holding it in place. See the figure below.

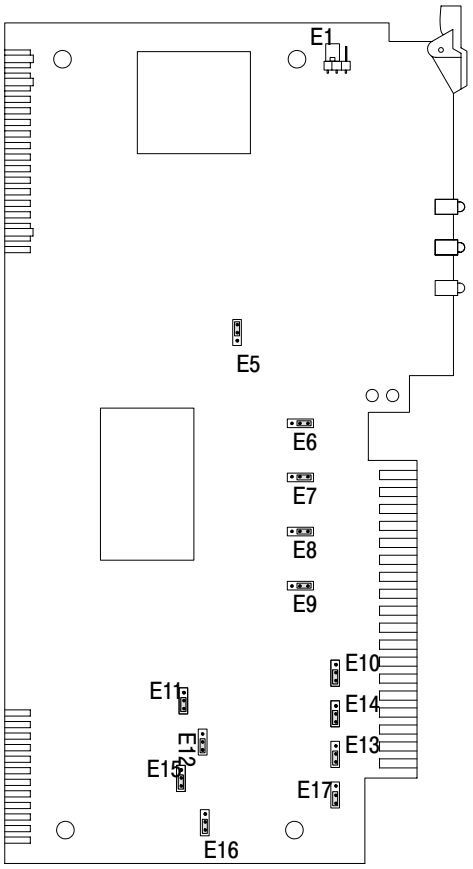


2. Remove the circuit board from the module housing.

3. Orient the circuit board as shown in the figure below.



4. Locate the jumper plugs.as shown in the figure below.



5. Use a pair of small needle-nose pliers to pick up and place the jumper plugs. Refer to the table below for the correct settings.

Important: If you select current output with jumper plugs E10, E14, E13, and/or E17, you must select the 4 to 20 mA position with E11, E12, E15, and/or E16.

ATTENTION: If an output is unconnected, set the jumper (E11, E12, E15, and/or E16) for that output to 0 to 10 V dc (bottom position). This sets the valve for bi-directional valve operation. Setting the jumpers for -10 to +10 V dc and later configuring the output as unconnected causes the modules to output -10 V dc when stopped, or when a system reset occurs, and all outputs are forced to 0% (i.e. 0 % output equals -10 V dc).

Jumper	Function	Setting
E1	Run/calibrate	Calibrate = right Run = left (default)
E5	I/O density	Standard = top (default) Do not use bottom position
E6 E7 E8 E9	Input 1 (Screw A position) Input 2 (Screw pressure) Input 3 (Screw RPM or cavity pressure) Input 4 (Screw B position)	Voltage = right (default) Current = left
E10 E14 E13 E17	Output 1 (Valve 1) Output 2 (Valve 2) Output 3 (Valve 3) Output 4 (Valve 4)	Current = top Voltage = bottom (default)
E11 E12 E15 E16	Output 1 (Valve 1) Output 2 (Valve 2) Output 3 (Valve 3) Output 4 (Valve 4)	-10 to +10 Vdc = top 0 to +10 V dc or 4 to 20 mA = bottom (default)

Important: Be careful not to over-tighten the screws when re-assembling the module. Over-tightening can damage the module cover.

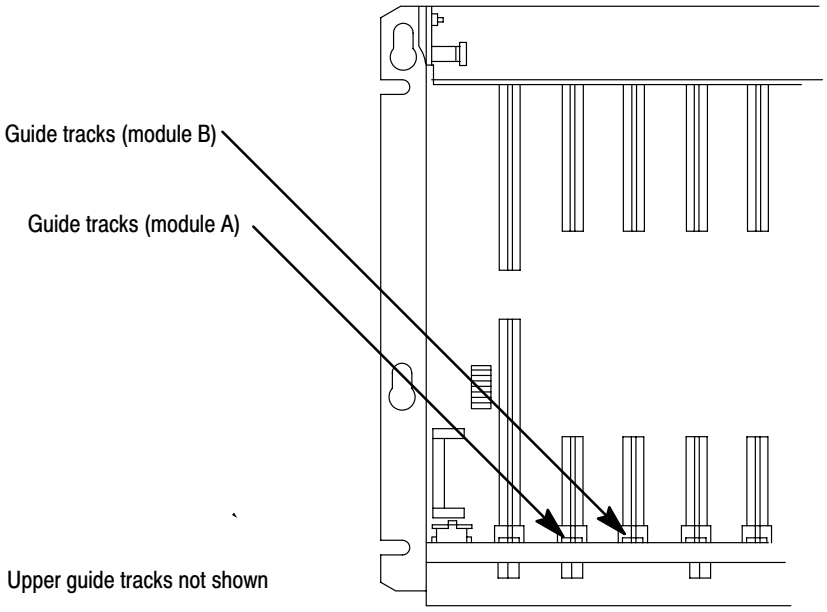
6. Re-assemble the module.

Step 7: Install the Modules into the Chassis

Follow these steps to install the Co-injection module:

ATTENTION: Remove power from the chassis backplane and disconnect the cable from the module before installing or removing a module. Failure to remove power may cause injury, damage, or loss of performance.

1. Turn off power to the I/O chassis.
2. Place the module in the plastic tracks (on the top and bottom of the slot) that guide the module into position.



3. Slide the module into the chassis. Apply firm, even pressure on the module to seat it against the backplane connector.

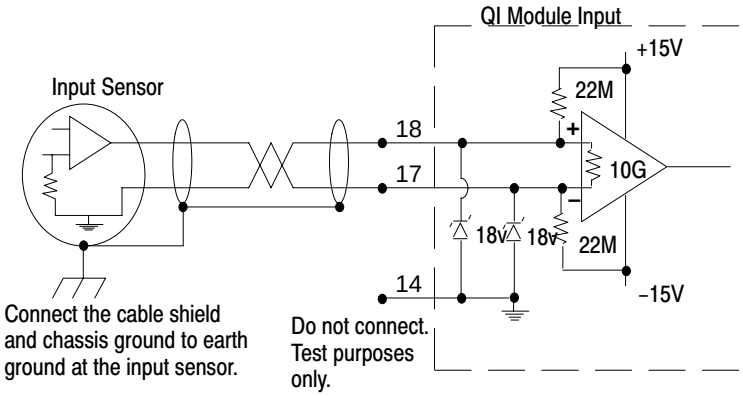
ATTENTION: Do not force the module into the backplane connector. Doing so may damage the module or the connector.

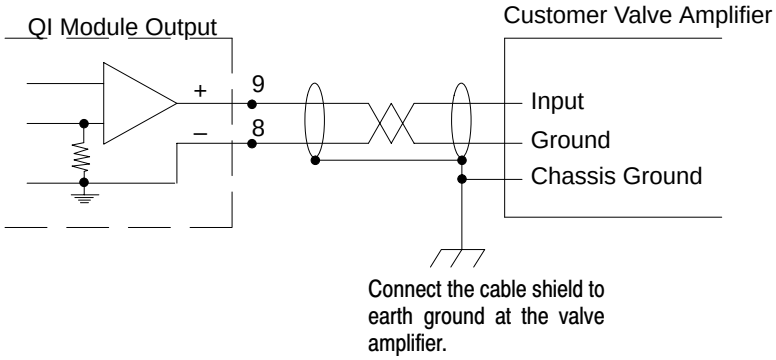
4. Snap the chassis latch over the top of the module to secure it in the chassis.
5. Attach the wiring arm (1771-WF) to the rack.

Step 8: Ground and Shield I/O Devices

Analog inputs and outputs are sensitive to electrical noise. Be sure to properly shield all devices. Follow these guidelines:

- Use 22-gauge (or larger) twisted-pair cable, 100% shielded with drain wire. For distances greater than 50 ft. (15.3 m), use 18-gauge cable.
- Ground the cable shield at one end only, generally at the sensor or amplifier end. Do not shield the cable at the I/O chassis end. See the figures that follow.





- Ground the cable shields to a low-impedance earth ground of less than 1/8 Ω .
- Do not connect any ground to input common (terminal 14), unless you experience unacceptable electrical noise interference.
- Place high-voltage Class A wiring and low-voltage Class B wiring in separate grounded conduits.

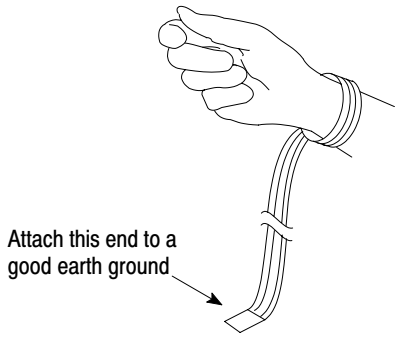
- In parallel runs, separate the Class A and Class B conduit by at least 1 ft. (0.92 m).
- Where conduit runs must cross, cross them at right angles.

Important: If you experience unacceptable electrical interference,

- Disconnect the shield from the input sensor. Then connect the input cable shield to input common (terminal 14).
- Disconnect the output cable from the valve amplifier. Then connect the output cable shield to output common (terminals 8, 6, 4, and/or 2).

Step 9: Make a Proper Ground Connection

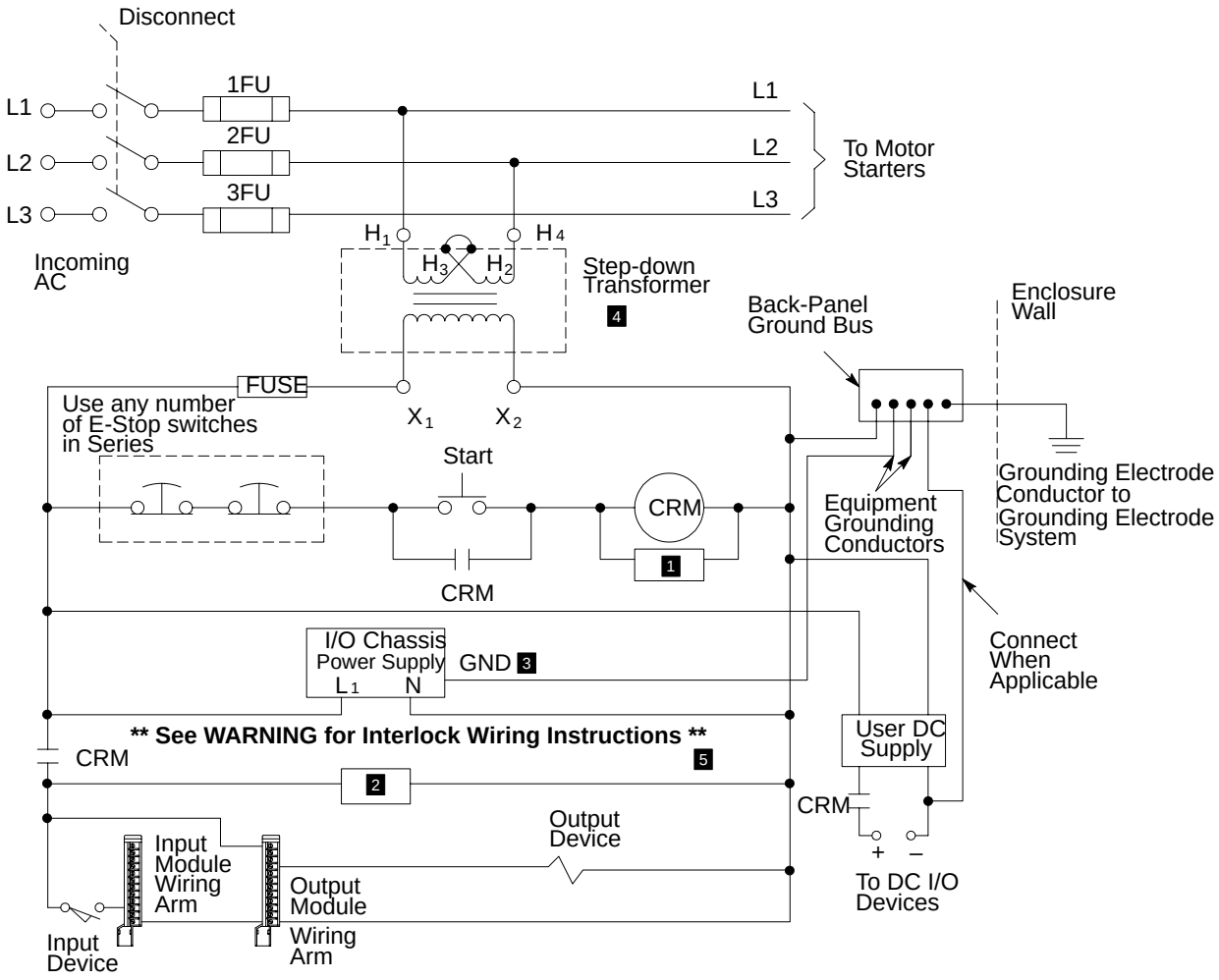
ATTENTION: Electrostatic discharge can damage semiconductor devices inside the module if you do not handle the module properly. Follow the guidelines below.



1. Wear a wrist-strap grounding device.
2. Attach the free end to a good earth ground.
3. Touch a grounded object (such as a metal enclosure) to rid yourself of electrostatic discharge before you handle the module.
4. Do not touch the module backplane connector or pins.
5. Store the module in an anti-static bag when you are not using it or during shipment.

Step 10: Familiarize Yourself With the PLC Processor Power Distribution Circuit

Here is a typical grounded power distribution circuit for PLC processors. For ungrounded systems, or for more information on grounding and wiring, refer to Allen-Bradley Programmable Controller Wiring and Grounding Guidelines, Pub. 1770-4.1,.



1 To minimize EMI generation, you should connect a suppression network: for 120 V ac, use Allen-Bradley cat. no. 700-N24; for 220/240 V ac, use cat. no. 599-KA04.

2 To minimize EMI generation, you should connect a suppression network: for 120 V ac, use Allen-Bradley cat. no. 599-K04; for 220/240 V ac, use cat. no. 599-KA04.

3 For a power supply with a groundable chassis, this represents connection to the chassis only. For a power supply without a groundable chassis, this represents connection to both the chassis and the GND terminal.

4 In many applications, a second transformer provides power to the input circuits and power supplies for isolation from the output circuits.

5
- Reference the current NEC code and ANSI B151.1-1984 for wiring guidelines.
- To minimize EMI generation, suppression network should be connected across coils of electromagnetic devices.

10907-I

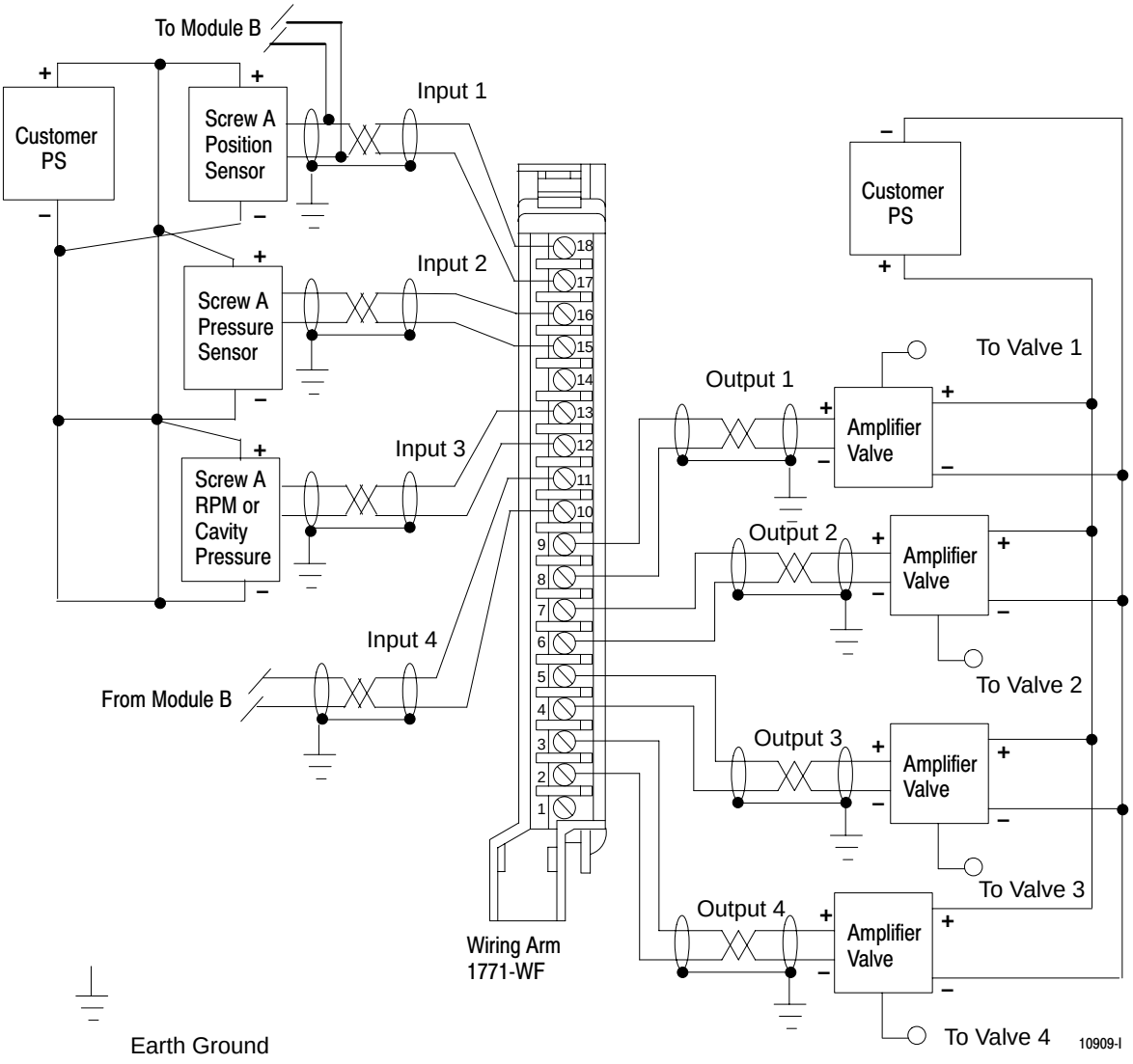
Step 11: Wire the Modules

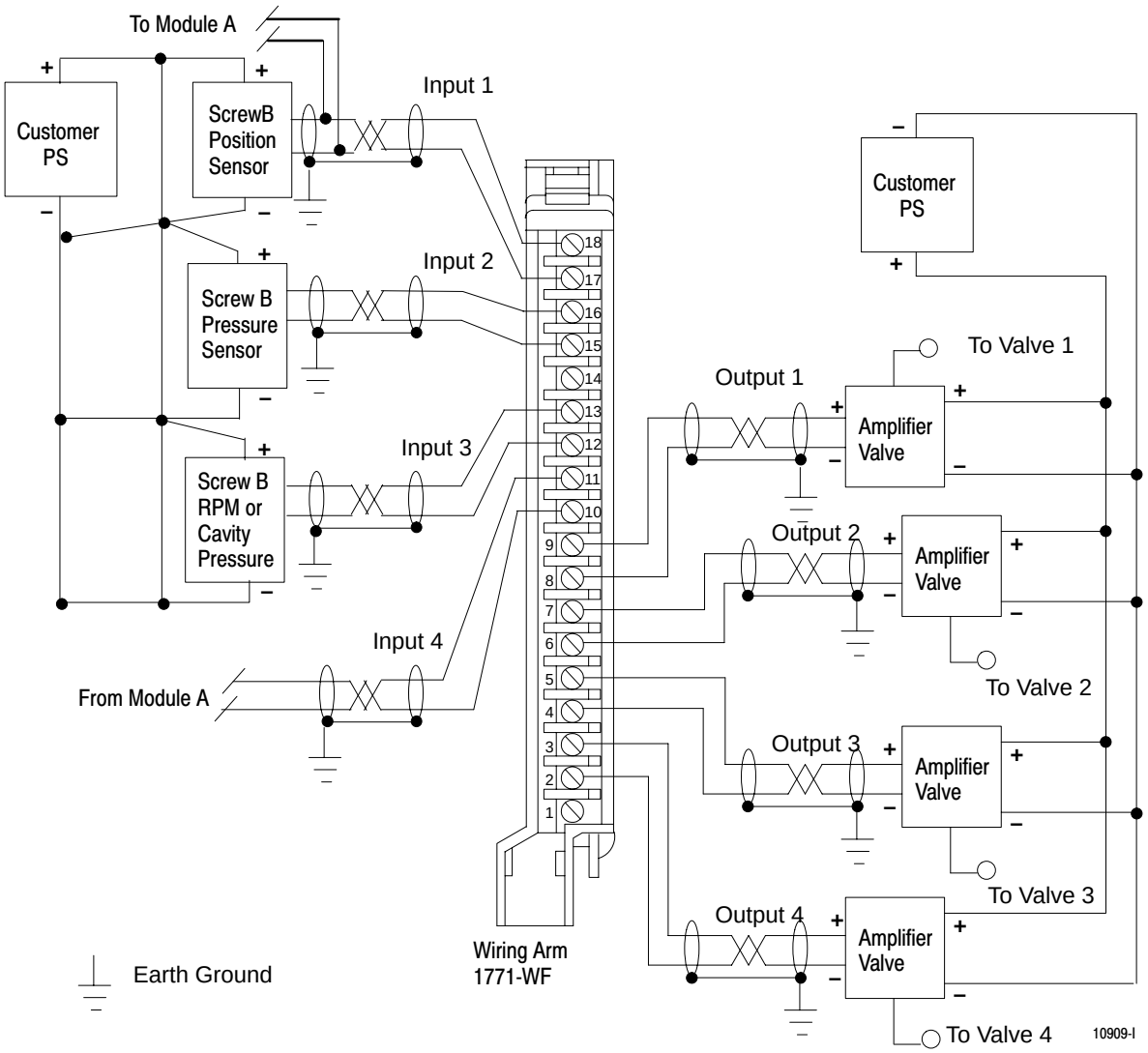
Use the wiring arms (provided with the modules) to wire the modules. The wiring arm lets you install or remove the modules from the chassis without rewiring. Wiring arm terminals are numbered in descending order from the top down, starting with terminal 18.

Important: Use shielded cable between the modules.

- See the figure below to wire module A.
- See the figure on the next page to wire module B

Important: You can wire input 3 for screw RPM or cavity pressure signals. Screw RPM is the default.




To Module A
Customer PS
ScrewB Position Sensor
Input 1
Screw B Pressure Sensor
Input 2
Screw B RPM or Cavity Pressure
Input 3
Input 4
From Module A
Earth Ground
Wiring Arm 1771-WF
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Customer PS
Output 1
Amplifier Valve
To Valve 1
Output 2
Amplifier Valve
To Valve 2
Output 3
Amplifier Valve
To Valve 3
Output 4
Amplifier Valve
To Valve 4
10909-I

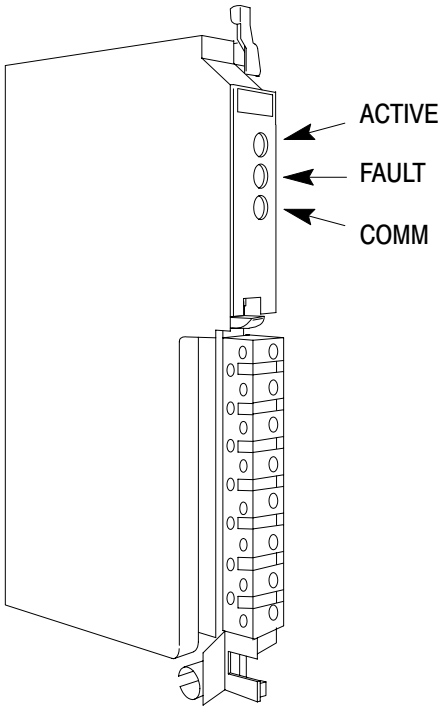
Step 12: Power up the Modules

1. Make all power connections from the I/O chassis to the in-plant power source.
2. Apply power to the chassis power supply.

Step 13: Read Module Indicator Lights

The module front panel contains three indicators that you use to troubleshoot the module during integration or operation. Check the lights to ensure that no fault conditions are present.

This LED	Is
ACTIVE	green
FAULT	red
COMM	yellow



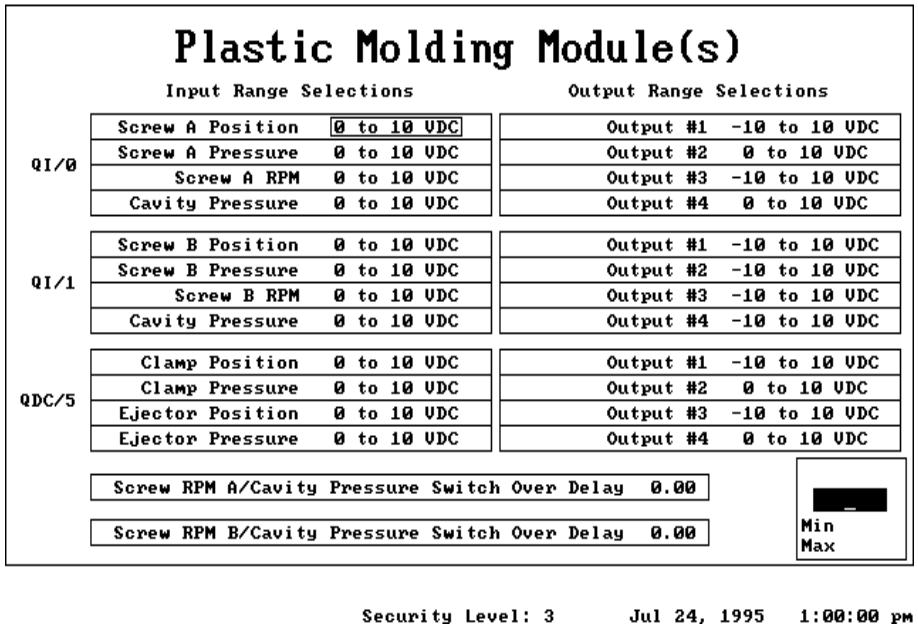
In the following table, we list the operating conditions reported by the modules and how to correct them.

ACTIVE indicator	FAULT indicator	COMM indicator	...means	...so you should
flashing	off	off	The module has completed power-up diagnostics. Hardware and firmware OK, awaiting download of MCC block.	Download the MCC block by using the keyswitch to place the PLC-5 processor in run mode from program mode.
flashing	red	yellow	programming error in the last MCC the module received	1. Find and correct the MCC programming error. 2. Download the MCC to the module.
flashing	red	off	• the last BTW the module received did not have a recognizable block ID, and • the last command block the module received had a programming error	1. Find and correct the MCC programming error. 2. Download the MCC to the module. 3. Verify block IDs in your BTW data files.
flashing	flashing	flashing	you put the run/calibrate jumper (E1) in the Calibrate position	1. Remove jumper E1 from the Calibrate position. 2. Place jumper E1 in the Run position.
green	off	yellow	normal operation	do nothing
green	off	off	the last command block the module received did not have a recognizable block ID	Verify block IDs in your BTW data files
green	red	yellow	programming error	1. Find and correct the MCC programming error. 2. Download corrected data to the module.
green	red	off	• the last BTW the module received did not have a recognizable block ID, and • the last command block the module received had a programming error	1. Find and correct the MCC programming error. 2. Download the MCC to the module. 3. Verify block IDs in your BTW data files.

ACTIVE indicator	FAULT indicator	COMM indicator	...means	...so you should
off	off	flashing	Communications error. The module does not complete continuous transmission of status blocks to the PLC-5 processor. The module will not operate until continuous BTR communication is re-established with the processor.	1. Verify that the PLC-5 processor is in Run mode. 2. Re-seat the co-injection module in the I/O chassis. 3. Check your ladder logic for problems.
off	red	yellow or off	Hardware fault. The module is inoperable.	1. Cycle power to the module. 2. Remove the existing module from the I/O chassis and replace it with a new one. 3. Return the bad module to the factory for repair.

Step 14: Enter I/O Ranges on the Module Configuration Screen

Enter the information you recorded on the worksheet in this chapter on the Plastic Molding Module(s) Configuration screen.

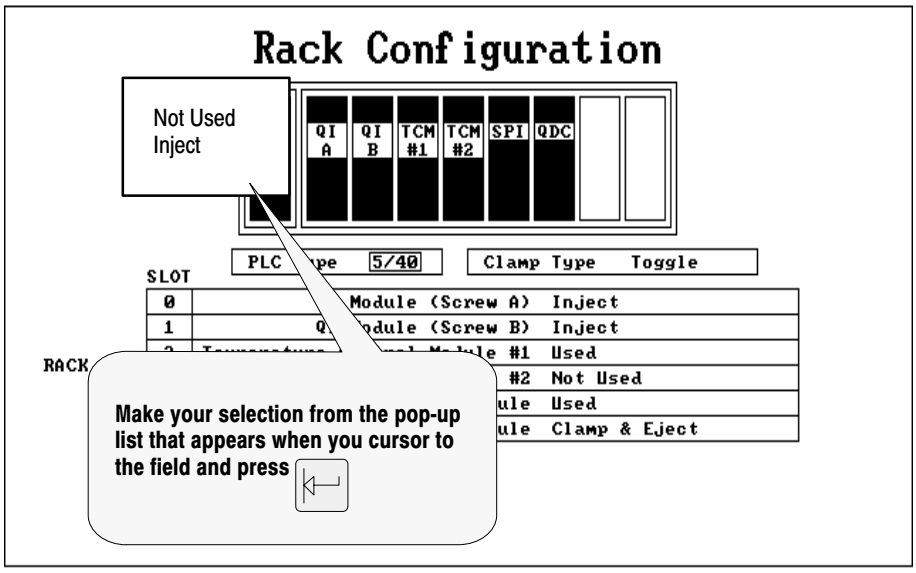


1. If you have not already done so, attach the PLC to the OI. Refer to the Pro-Set 700 Operator Interface Installation Manual, Pub. 6500-6.2.1).
2. From the Hardware Setup menu, select the Configure Plastic Molding Module(s) screen.
3. Move the cursor to the appropriate field on the screen .
4. Press  . You see a pop-up menu.
5. Place the cursor on the selection you want to make and press  . You can select input and output voltages for the QI and QDC modules.
6. Press  to confirm your selections.
7. Press  to download your selections to the PLC-5 processor.

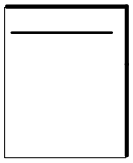
Step 15: Use the Rack Configuration Screen to Select Operating Mode

Use the Pro-Set 700 Co-injection Rack Configuration screen to select operating modes for each module.

1. Attach the PLC to the OI. Refer to the Pro-Set 700 Operator Interface Installation Manual (Pub. 6500-6.2.1).
2. From the Setup menu, select the Rack Configuration screen.
3. Move the cursor to the appropriate field on the screen .
4. Press  . You see a pop-up menu.
5. Place the cursor on the selection you want to make and press  . You can select
   - PLC type
   - machine type
   - mode of operation
6. Press  to confirm your selections.
7. Press  to download your selections to the PLC-5 processor.



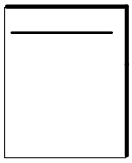
What's Next?



In Chapter 4, we tell you how to set up inputs to the module.

Setting up Inputs to the Modules

What's in This Chapter?



The co-injection modules need to know the characteristics of the valves and sensors you use to position and control your co-injection heads. In this chapter, we tell you how to enter inputs to control

- screw position A and B
- screw pressure A and B
- screw RPM A and B, and/or
- cavity pressure

In this section you first enter inputs so that you can run the machine. Then you must jog the machine to span the sensors and valves. Once you have jogged the machine, you will know the exact values you must enter to run the machine to make parts.

Important: Two screens are provided to set up inputs to modules A and B. One screen lets you set up module A, and the other lets you set up module B. We typically show only the screen for module B, because the module B screen is the same as the module A screen.

Before You Begin

After you have selected an operating range for your sensors, you must select the initial values you use to configure the modules. For example, we show you how to determine these values:

- minimum position
- maximum position
- analog signal at minimum position
- analog signal at maximum position
- minimum pressure
- maximum pressure

1. Use the table below as a guideline when determining initial values.

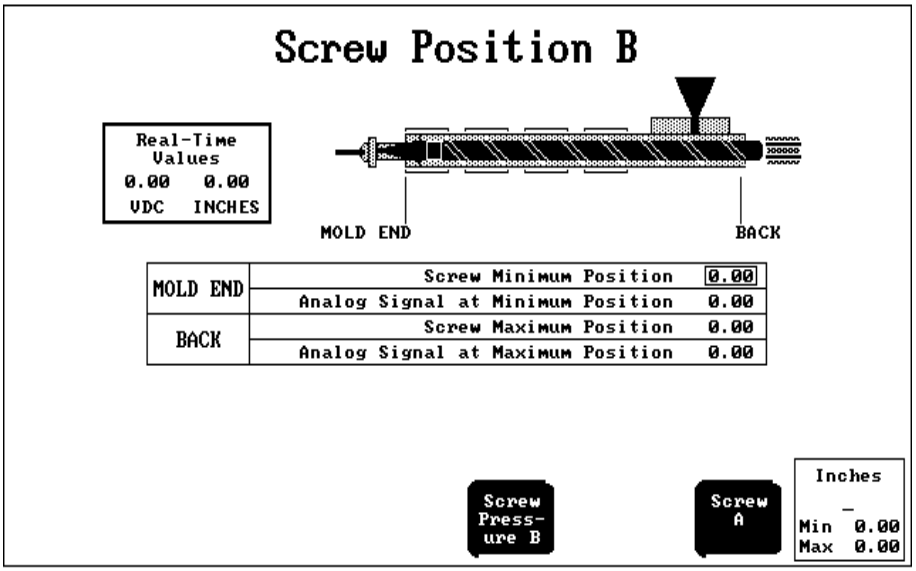
To Set Up This Input	If Your	Then Use A Value Equal To
minimum position	–	zero
maximum position	screw is fully extended at the mold end	full travel of the sensor
analog signal at minimum position	sensor is forward-acting sensor is reverse-acting	low end of the selected range high end of the selected range
analog signal at maximum position	sensor is forward-acting sensor is reverse-acting	high end of the selected range low end of the selected range
minimum pressure	–	minimum range value specified by the manufacturer
maximum pressure	–	maximum range value specified by the manufacturer

2. Make a note of the initial values you have selected by writing them down here. You will enter these values on the co-injection screens in the next step.

For This Input	Write The Values You Have Selected in This Column
minimum position	
maximum position	
analog signal at minimum position	
analog signal at maximum position	
minimum pressure	
maximum pressure	

Setting up Screw Position A and B

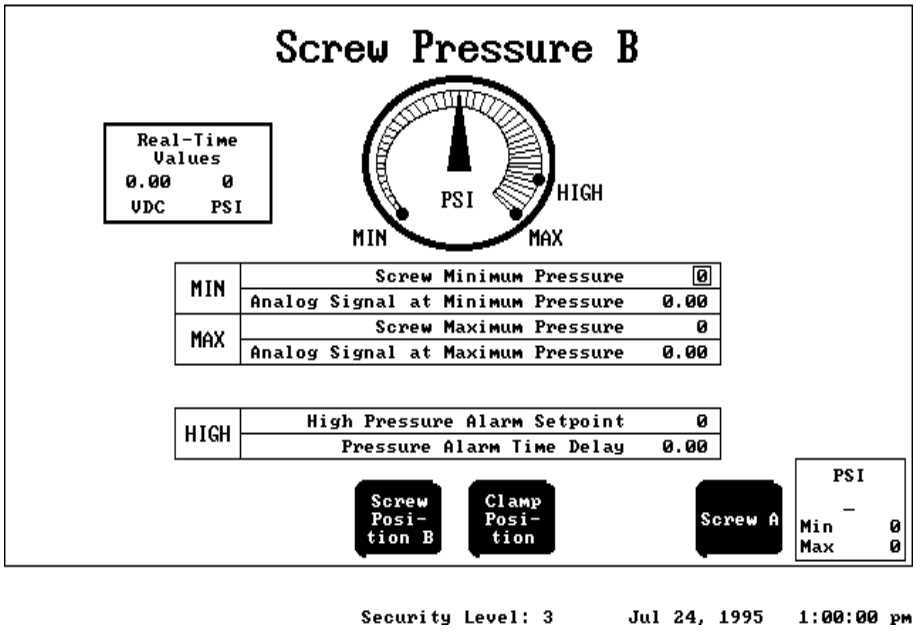
Follow this procedure to set up screw position A and B.



1. If you have not already done so, attach the PLC-5 processor to the operator interface. Refer to the Pro-Set 700 Operator Interface Installation Manual, pub. 6500-6.2.1.
2. From the Inputs Setup menu, select the Screw Position B screen.
3. Move the cursor to the appropriate field on the screen.
4. Enter a number between the minimum and maximum in the data entry box.
5. Press  to confirm your selections.
6. Press  to download your selections to the PLC-5 processor.

Setting up Screw Pressure A and B

Follow this procedure to set up screw pressure A and B.

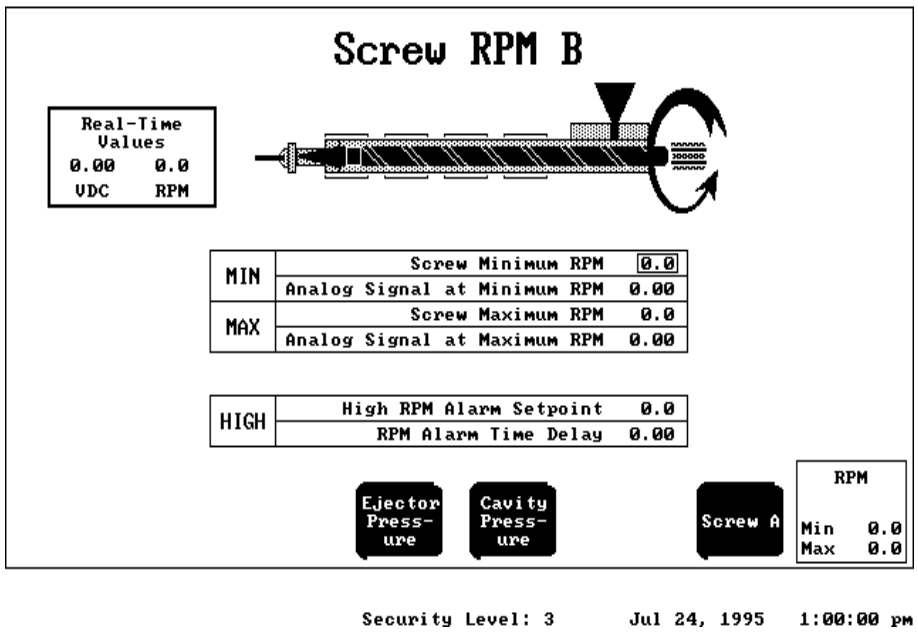


1. If you have not already done so, attach the PLC-5 processor to the operator interface. Refer to the Pro-Set 700 Operator Interface Installation Manual, pub. 6500-6.2.1.
2. From the Inputs Setup menu, select the Screw Pressure B screen.
3. Move the cursor to the appropriate field on the screen.
4. Enter a number between the minimum and maximum in the data entry box.
5. Press  to confirm your selections.
6. Press  to download your selections to the PLC-5 processor.

Setting up Screw RPM A and B

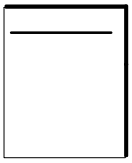
Follow this procedure to set up screw RPM A and B.

Important: You can choose either screw RPM and/or cavity pressure for this input. RPM is the default. For information on setting up Cavity Pressure screens, refer to the Pro-Set 700 User Manual, Pub. 6500-6.5.18. For wiring information, see Chapter 4 of this manual.



1. If you have not already done so, attach the PLC-5 processor to the operator interface. Refer to the Pro-Set 700 Operator Interface Installation Manual, pub. 6500-6.2.1.
2. From the Inputs Setup menu, select the Screw RPM B screen.
3. Move the cursor to the appropriate field on the screen .
4. Enter a number between the minimum and maximum in the data entry box.
5. Press  to confirm your selections.
6. Press  to download your selections to the PLC-5 processor.

What 's Next?



In Chapter 5, we tell you how to set up profiles.

Setting up Profiles

What's in This Chapter?

Now you are ready to set up profiles to control the molding machine's operation. To create profiles, you enter setpoints and values for machine operation. This chapter helps you set up profiles with machine-specific parameters.

To set up Profile screens, you enter machine-specific parameters, such as

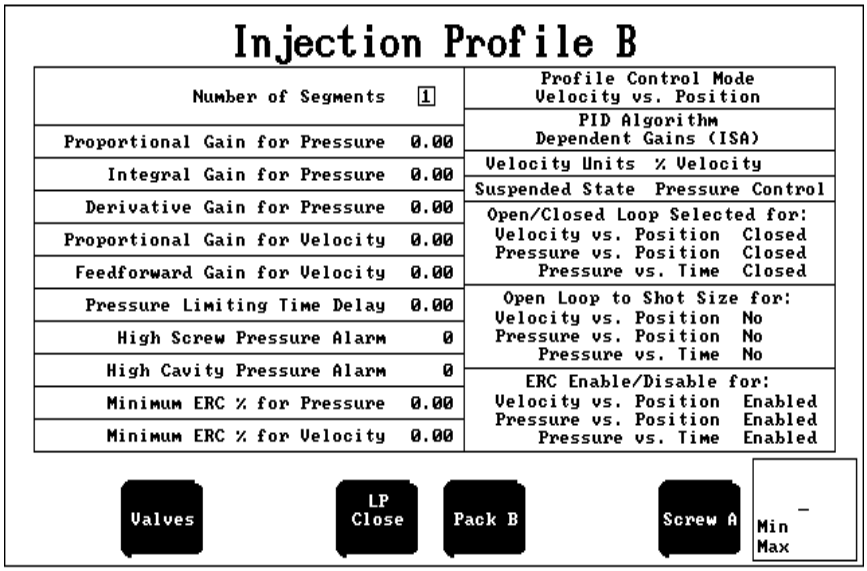
- the number of segments in the profile
- gain constants for PID and velocity feedforward
- high-pressure alarm setpoints
- Expert Response Compensation (ERC) setpoints

You enter these parameters on Profile screens.

Important: This chapter tells you how to set up co-injection profiles only. To set up profiles for the clamp and ejector, refer to the Pro-Set 700 Software User Manual, Pub. 6500-6.5.18.

Setting Up Injection Profiles

From the Setup Profiles menu, select the Injection Profile screen.



1. Move the cursor to the data entry fields on the left side of the screen and enter these values:

In This Data Entry Field	Enter This Value
Number of Segments	about 5 segments, depending on the application
Proportional Gain for Pressure/Velocity	a value between the min. and max.
Integral Gain for Pressure	a value betweeen the min. and max.
Derivative Gain for Pressure/Velocity	leave at default
Feedforward Gain for Velocity	use only if profile is velocity vs. position
Pressure Limiting Time Delay	zero (to disable)①
High Screw Pressure Alarm	zero (to disable)①
High Cavity Pressure Alarm	zero (to disable)①
Minimum ERC % for Pressure/Velocity	leave at default

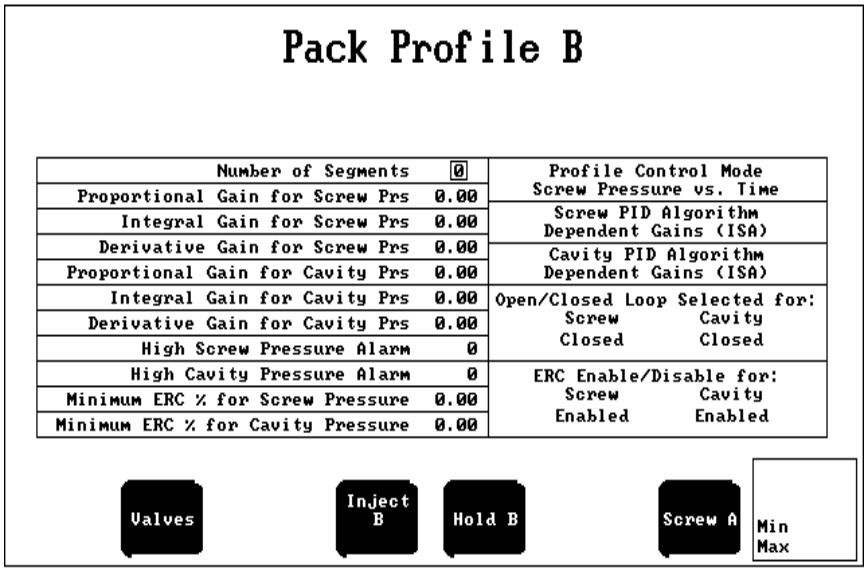
① You may want to disable alarms for spanning.

2. Move the cursor to the selection fields on the right side of the screen and enter these values:

In This Selection Field	Select From These Choices
Profile Control Mode	Velocity vs. Position (for spanning)
PID Algorithm	Independent Gains (AB)
Velocity Units	% Velocity Or Inches/Second
Suspended State	Pressure Control or Set Output
Open/Closed Loop Selected for:	Open Loop for all selections (required for spanning)
Open Loop to Shot Size for:	Yes for all selections (required for spanning)
ERC Enable/Disable for:	select Disable for all selections (required for spanning)

Setting Up Pack Profiles

From the Setup Profiles menu, select the Pack Profile screen.



1. Move the cursor to the data entry fields on the left side of the screen and enter these values:

In This Data Entry Field	Enter This Value
Number of Segments	one segment, minimum
Proportional Gain for Screw/Cavity Pressure	a value betwenn the min. and max.
Integral Gain for Screw/Cavity Pressure	leave at default
Derivative Gain for Screw/Cavity Pressure	a value beween the min. and the max.
High Screw/Cavity Pressure Alarm	zero (to disable)①
Minimum ERC % for Screw/Cavity Pressure	leave at default
Pre-decompress Watchdog Timer (Hold)	a value greater than expected for the movement
Pre-decompress High Pressure Alarm (Hold)	zero (to disable)①

① You may want to disable alarms for spanning.

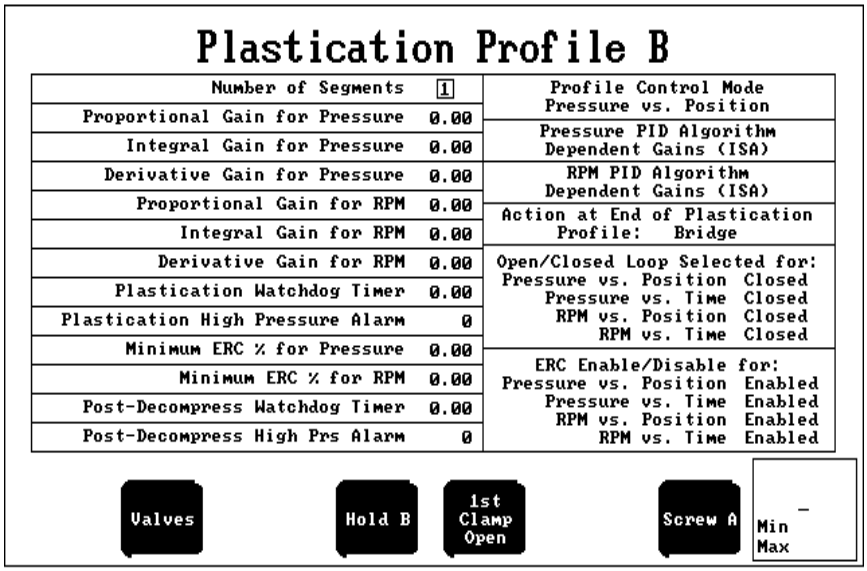
2. Move the cursor to the selection fields on the right side of the screen and enter these values:

In This Selection Field	Select From These Choices
Profile Control Mode	Screw Pressure vs. Time
Screw PID Algorithm	Independent Gains (AB)
Cavity PID Algorithm	Independent Gains (AB)
Action at End of Profile (Hold)	Bridge to next movement ①
Action at End of Pre-decompress (Hold)	Bridge to next profile ①
Open/Closed Loop Selected for:	Open Loop (required for spanning)
ERC Enable/Disable for:	Disabled (required for spanning)

① If not bridging, write corresponding ladder logic. See the Pro-Set 700 Reference Manual, Pub. 6500-6.4.3.

Setting up Plastication Profiles

From the Setup Profiles menu, select the Plastication Profile screen.



1. Move the cursor to the data entry fields on the left side of the screen and enter these values:

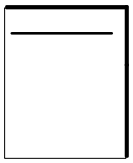
In This Data Entry Field	Enter This Value
Number of Segments	about 5 segments, depending on the application
Proportional Gain for Pressure/RPM	a value between the min. and max.
Integral Gain for Pressure/RPM	leave at default
Derivative Gain for Pressure/RPM	a value between the min. and max.
Plastication Watchdog Timer	a value greater than expected for the profile
Plastication High Pressure Alarm (for Profile)	zero (for spanning)
Minimum ERC % for Pressure/RPM	leave at default
Post-decompress Watchdog Timer (Hold)	a value greater than expected for the movement
Post-decompress High Pressure Alarm (Hold)	zero (to disable spanning)

2. Move the cursor to the selection fields on the right side of the screen and enter these values:

In This Selection Field	select From These Choices
Profile Control Mode	Pressure vs. Position
Pressure PID Algorithm	Independent Gains (AB)
RPM PID Algorithm	Independent Gains (AB)
Action at End of Plastication Profile	Bridge ①
Open/Closed Loop Selected for:	Open Loop (required for spanning)
ERC Enable/Disable for:	Disabled (required for spanning)

① If not bridging, write corresponding ladder logic. See the Pro-Set 700 Reference Manual, Pub. 6500-6.4.3.

What's Next?



The appendix that follows contains reference information.

Reference Information

What's in This Appendix?

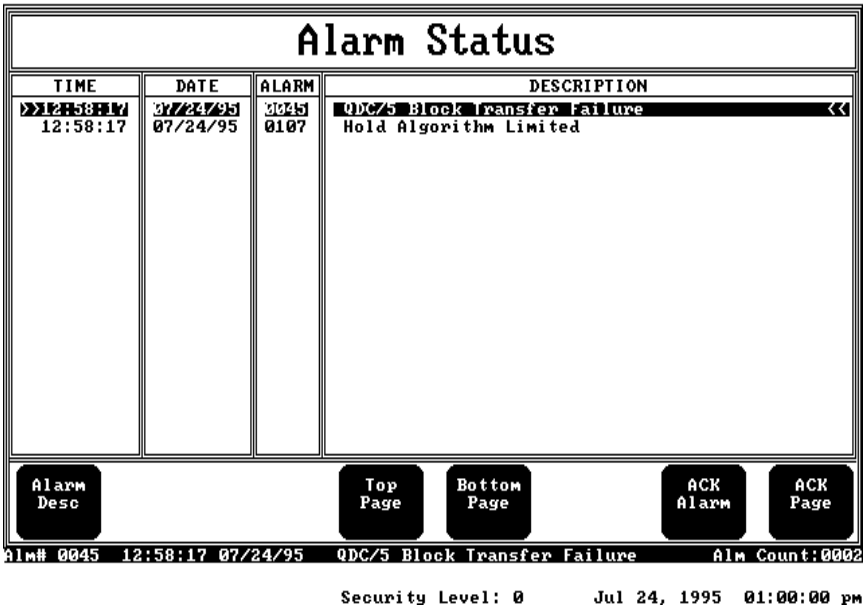
This appendix contains

- codes for alarms supplied with co-injection software
- co-injection (QI) module download bits
- co-injection (QI) module error codes
- Task Definition files for Setup and Process screens
- database tag names and PLC processor addresses

Alarms Supplied with Pro-Set 700 Co-injection Software

These alarm messages are supplied with Pro-Set 700 Co-injection software. For other alarm messages specific to the Pro-Set 700 core software package, refer to the Pro-Set 700 Reference Manual (Pub. 6500-6.4.3).

These alarm conditions are automatically displayed on the OI when your ladder logic sets corresponding bits in file B46. For information on writing ladder logic for alarms, refer to the Pro-Set 700 Reference Manual.



B46/xxx	Description
40	QI/0 Block Transfer Failure
41	QI/1 Block Transfer Failure
42	Screw A Position Deviation Between QI/0 and QI/1
43	Screw B Position Deviation Between QI/0 and QI/1
45	QDC/5 Block Transfer failure
46	Screw A Positon Sensor Failure
47	Screw B Position Sensor failure
192	MCCB Programming Error
193	JGCB Programming Error
194	INCB Programming Error
195	IPCB Programming Error
196	PKCB Programming Error
197	HDCB Programming Error
198	HPCB Programming Error
199	PRCB Programming Error
200	PLCB Programming Error
201	PPCB Programming Error
202	PSCB Programming Error
203	DYCB Programming Error
204	RLCB Pprogramming Error
205	Double Command Error
206	Screw B Over-travel at Mold End
207	Screw B Over-travel at Top
208	Screw B Position Sensor Failure
209	Screw B Pressure Sensor Failure
210	Screw B RPM Sensor Failure
211	Cavity B Pressure Sensor Failure
212	Jog B Command Error
213	Injection B Command Error
214	Pack B Command Error
215	Hold B Command Error
216	Pre-decompress B Command Error
217	Plastication B Command Error
218	Post-decompression Command Error
219	Maximum Screw B Over-pressure
220	Maximum Screw B Over-speed
221	Maximum Cavity B Over-pressure
222	High RPM During Screw B Rotate Jog
223	High Pressure During Screw B Jog
224	High Screw B Pressure at Inject
225	High Cavity Pressure B During Inject

B46/xxx	Description
226	High Screw B Pressure During Pack
227	High Screw B Pressure During Pack
228	High Screw B Pressure During Hold
229	High Cavity Pressure During Hold
230	High Pressure During Pre-decompression B
231	High Pressure During Plasticate B
232	High Pressure During Post-decompress B
233	Watchdog Timeout at Pre-decompress B
234	Watchdog Timeout at Plasticate B
235	Watchdog Timeout at Post-decompress B
236	Injection B Algorithm Limited
237	Pack B Algorithm Limited
238	Hold B Algorithm Limited
239	Plastication B Algorithm Limited
240	Velocity Injection B Pressure Limited

QI Module Download Bits

If you download co-injection (QI) module B tags from a screen, these bits are set.

Tag Name	QI Block	PLC Processor Address (by bit)	PLC Processor Address (by word)
DOWNLOADB.WORD1	MCCB	B21:16/0	B21/256
	JGCB	B21:16/1	B21/257
	FCCB	B21:16/2	B21/258
	SCCB	B21:16/3	B21/259
	TCCB	B21:16/4	B21/260
	LPCB	B21:16/5	B21/261
	CPCB	B21:16/6	B21/262
	INCB	B21:16/7	B21/263
	IPCB	B21:16/8	B21/264
	PKCB	B21:16/9	B21/265
	HDCB	B21:16/10	B21/266
	HPCB	B21:16/11	B21/267
	PRCB	B21:16/12	B21/268

QI Module Error Codes

Here are the co-injection error codes and their description.

QI Block	Word	Means
MCC	602	Word 2 is not configured for co-injection
	507	Input 4 is not configured
	263	Word 63 is out of range (0000 – 0099)
IPC	207	Word 7 is out of range (0000 – 0099)
	408	Word 8 is out of range (Word 23 $\leq$ Word 8 $\leq$ Word 24
	455	Word 55 is out of range (Word 9 $\leq$ Word 55 $\leq$ Word 10)
	456	Word 56 is out of range (Word 41 $\leq$ Word 56 $\leq$ Word 42)
INC	261	Word 61 is out of range (0000 – 9999)
	262	Word 62 is out of range (0000 – 9999)
	263	Word 63 is out of range (0000 – 9999)
	264	Word 64 is out of range (0000 – 9999)
DYC	503	DYC03.B05 is selecting an invalid cavity input
	569	DYC03.B05 was switched before a time interval or during a profile

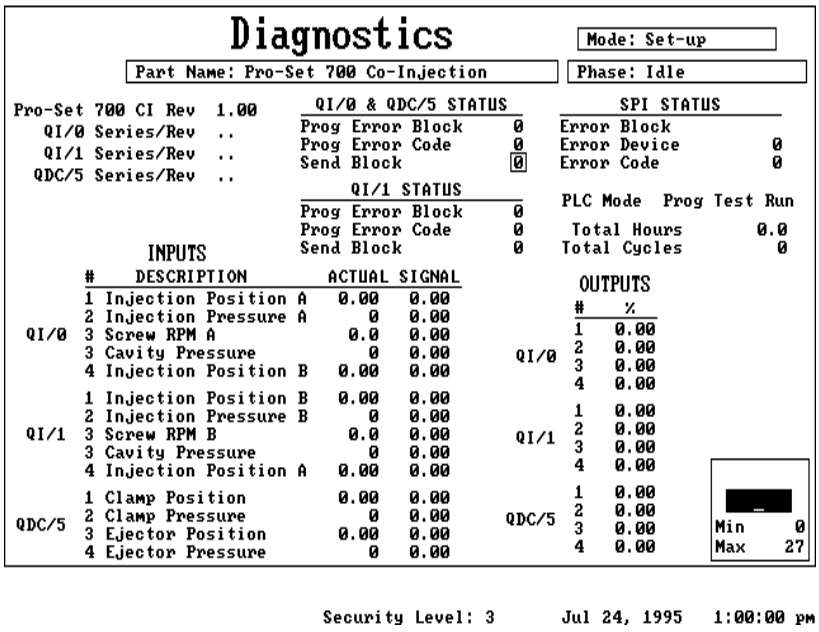
Diagnostics Screen Task Definition Files

Here is a listing of the Task Definition files for the Pro-Set 700 Co-injection Diagnostics screen. You must have this information to execute the screens or make changes to it.

Screen	.TSK File	.TDT/.TDB File	.TXT File
Diagnostics	RUNTD	ADDIAGCI	ADBIAGCI

Diagnostics Screen Tag Names and PLC Processor Addresses

The Pro-Set 700 Co-injection database tag names and corresponding PLC processor addresses for the Diagnostics screen fields are listed here. You need to know these tag names and PLC processor addresses to create and modify ladder logic code.



Field	Tag Name	PLC Processor Address
Pro-Set 700 CI Rev	GENERAL.PS7_REV	*None*
QI/0 Series/Rev	PLCMODE.REV_QI0	A25:15
QI/1 Series/Rev	PLCMODE.REV_QI1	A25:16
QDC/5 Series/Rev	PLCMODE.REV_QDC5	A25:17
QI/0 & QDC/5 Prog Error Block	SYS._61	N40:213
QI/0 & QDC/5 Prog Error Code	SYS._62	N40:214
QI/0 & QDC/5 Send Block	DYC._61	N40:173
QI/1 Prog Error Block	SYSB._61	N127:213
QI/1 Prog Error Code	SYSB._62	N127:214
QI/1 Send Block	DYCB._61	N127:173
SPI Error Block	*None*	B23:6/4-6
SPI Error Device	SPI.ERR_DEV	N24:6
SPI Error Code	SPI.ERR_CODE	N24:7
PLC Mode–Program	PLCMODE.PROGRAM	S:1/3
PLC Mode–Test	PLCMODE.TEST	S:1/2

Field	Tag Name	PLC Processor Address
PLC Mode–Run	PLCMODE.RUN	S:1/1
Total Hours	GENERAL.TOTAL_HRS	F36:4
Total Cycles	GENERAL.TOTAL_CYC_1 GENERAL.TOTAL_CYC_2	N24:32 N24:33
QI/0–Injection Position A (actual)	SYS._25	N40:177
QI/0–Injection Position A (signal)	SYS._33	N40:185
QI/0–Injection Pressure A (actual)	SYS._26	N40:178
QI/0 Injection Pressure A (signal)	SYS._34	N40:186
QI/0–Screw RPM A (actual)	SYS._31	N40:183
QI/0–Screw RPM A (signal)	SYS._39	N40:191
QI/0–Cavity Pressure (actual)	SYS._32	N40:184
QI/0–Cavity Pressure (signal)	SYS._40	N40:192
QI/0–Injection Position B (actual)	SYSB._29	N127:181
QI/0–Injection Position B (signal)	SYSB._37	N127:189
QI/1–Injection Position B (actual)	SYSB._25	N127:177
QI/1–Injection Position B (signal)	SYSB._33	N127:185
QI/1–Injection Pressure B (actual)	SYSB._26	N127:178
QI/1–Injection Pressure B (signal)	SYSB._34	N127:186
QI/1–Screw RPM B (actual)	SYSB._31	N127:183
QI/1–Screw RPM B (signal)	SYSB._39	N127:191
QI/1–Cavity Pressure (actual)	SYSB._32	N127:184
QI/1–Cavity Pressure (signal)	SYSB._40	N127:192
QI/1–Injection Position A (actual)	SYSB._30	N127:182
QI/1–Injection Position A (signal)	SYSB._38	N127:190
QDC/5–Clamp Position (actual)	SYS._27	N40:179
QDC/5–Clamp Position (signal)	SYS._35	N40:187

Field	Tag Name	PLC Processor Address
QDC/5–Clamp Pressure (actual)	SYS._28	N40:180
QDC/5–Clamp Pressure (signal)	SYS._36	N40:188
QDC/5–Ejector Position (actual)	SYS._29	N40:181
QDC/5–Ejector Position (signal)	SYS._37	N40:189
QDC/5–Ejector Pressure (actual)	SYS._30	N40:182
QDC/5–Ejector Pressure (signal)	SYS._38	N40:190
QI/0–Output #1	SYS._41	N40:193
QI/0–Output #2	SYS._42	N40:194
QI/0–Output #3	SYS._43	N40:195
QI/0–Output #4	SYS._44	N40:196
QI/1–Output #1	SYSB._41	N127:193
QI/1–Output #2	SYSB._42	N127:194
QI/1–Output #3	SYSB._43	N127:195
QI/1–Output #4	SYSB._44	N127:196
QDC/5–Output #1	SYS._45	N40:197
QDC/5–Output #2	SYS._46	N40:198
QDC/5–Output #3	SYS._47	N40:199
QDC/5–Output #4	SYS._48	N40:200

Setup Screen Task Definition Files

Here is a listing of the Task Definition files for Pro-Set 700 Co-injection Setup screens, as well as other screens you can change with .TDT files. You must have this information to execute the screens or make changes to them.

Setup Screen	.TSK File	.TDT/.TDB File	.TXT File(s)	/P1 Value
Rack Configuration	RUNTD	RACKC_CI	RACKC_CI	
PMM Configuration	PMMC_CI	PMMC_CI	PMMC_CI	
TCM #1 First Setup	RUNTD	TCMC1	TCMC11	TCM2
TCM #2 First Setup	RUNTD	TCMC1	TCMC21	TCM3
TCM #1 Second Setup	RUNTD	TCMC2	TCMC12	TCM2
TCM #2 Second Setup	RUNTD	TCMC2	TCMC22	TCM3
TCM #1 Third Setup	RUNTD	TCMC3	TCMC13	TCM2
TCM #2 Third Setup	RUNTD	TCMC3	TCMC23	TCM3
TCM #1 Tuning Assist	RUNTD	TCMT	TCMT1	TCM2
TCM #2 Tuning Assist	RUNTD	TCMT	TCMT2	TCM3
TCM #1 Alarm Status	RUNTD	TCMA	TCMA1	TCM2
TCM #2 Alarm Status	RUNTD	TCMA	TCMA2	TCM3
Screw Position A	HWINPUTS	INJPO_A	INJPO_A	
Screw Position B	HWINPUTS	INJPO_B	INJPO_B	
Screw Pressure A	HWINPUTS	INJPR_A	INJPR_A	
Screw Pressure B	HWINPUTS	INJPR_B	INJPR_B	
Clamp Position	HWINPUTS	CLAPO	CLAPO	
Clamp Pressure	HWINPUTS	CLAPR	CLAPR	
Ejector Position	HWINPUTS	EJEPO	EJEPO	
Ejector Pressure	HWINPUTS	EJEPR	EJEPR	
Screw RPM A	HWINPUTS	SRPM_A	SRPM_A	
Screw RPM B	HWINPUTS	SRPM_B	SRPM_B	
Cavity Pressure	HWINPUTS	CAVPR_CI	CAVPR_CI	
Cavity Pressure A	HWINPUTS	CAVPR_A	CAVPR_A	
Cavity Pressure B	HWINPUTS	CAVPR_B	CAVPR_B	
Inject Jogs A	RUNTD	SJOGS_A	SJOGS_A	
Inject Jogs B	RUNTD	SJOGS_B	SJOGS_B	
Clamp/Eject Jogs	RUNTD	CEJOGS	CEJOGS	
1st Close Valves	RUNTD	FCCV	FCCV	
2nd Close Valves	RUNTD	SCCV	SCCV	
3rd Close Valves	RUNTD	TCCV	TCCV	
LP Close Valves	RUNTD	LPCV	LPCV	
Tonnage Valves	RUNTD	TONV	TONV	
Injection Valves A	RUNTD	INJV_A	INJV_A	
Injection Valves B	RUNTD	INJV_B	INJV_B	
Pack Valves A	RUNTD	PKCV_A	PKCV_A	
Pack Valves B	RUNTD	PKCV_B	PKCV_B	
Hold Valves A	RUNTD	HDCV_A	HDCV_A	
Hold Valves B	RUNTD	HDCV_B	HDCV_B	
Pre-Decompress Valves A	RUNTD	PRCSCV_A	PRCV_A	PRC
Pre-Decompress Valves B	RUNTD	PRCSCV_B	PRCV_B	PRCB

Setup Screen	.TSK File	.TDT/.TDB File	.TXT File(s)	/P1 Value
Plastication Valves A	RUNTD	PLCV_A	PLCV_A	
Plastication Valves B	RUNTD	PLCV_B	PLCV_B	
Post-Decompress Valves A	RUNTD	PRCSCV_A	PSCV_A	PSC
Post-Decompress Valves B	RUNTD	PRCSCV_B	PSCV_B	PSCB
1st Open Valves	RUNTD	FOCV	FOCV	
2nd Open Valves	RUNTD	SOCV	SOCV	
3rd Open Valves	RUNTD	TOCV	TOCV	
Open Slow Valves	RUNTD	OSCV	OSCV	
Ejector Advance Valves	RUNTD	EACV	EACV	
Ejector Retract Valves	RUNTD	ERCV	ERCV	
Dynamic Command Ramp Rates	RUNTD	RAMPS	DYCRR	DYC
1st Close Ramp Rates	RUNTD	RAMPS	FCCRR	FCC
2nd Close Ramp Rates	RUNTD	RAMPS	SCCRR	SCC
3rd Close Ramp Rates	RUNTD	RAMPS	TCCRR	TCC
LP Close Ramp Rates	RUNTD	RAMPS	LPCRR	LPC
Injection Ramp Rates A	RUNTD	RAMPS_A	INJRR_A	INC
Injection Ramp Rates B	RUNTD	RAMPS_B	INJRR_B	INCB
Pack Ramp Rates A	RUNTD	RAMPS_A	PKCRR_A	PKC
Pack Ramp Rates B	RUNTD	RAMPS_B	PKCRR_B	PKCB
Hold Ramp Rates A	RUNTD	RAMPS_A	HDCRR_A	HDC
Hold Ramp Rates B	RUNTD	RAMPS_B	HDCRR_B	HDCB
Pre-decompress Ramp Rates A	RUNTD	RAMPS_A	PRCRR_A	PRC
Pre-decompress Ramp Rates B	RUNTD	RAMPS_B	PRCRR_B	PRCB
Plastication Ramp Rates A	RUNTD	RAMPS_A	PLCRR_A	PLC
Plastication Ramp Rates B	RUNTD	RAMPS_B	PLCRR_B	PLCB
Post-decompress Ramp Rates A	RUNTD	RAMPS_A	PSCRR_A	PSC
Post-decompress Ramp Rates B	RUNTD	RAMPS_B	PSCRR_B	PSCB
1st Open Ramp Rates	RUNTD	RAMPS	FOCRR	FOC
2nd Open Ramp Rates	RUNTD	RAMPS	SOCRR	SOC
3rd Open Ramp Rates	RUNTD	RAMPS	TOCRR	TOC
Open Slow Ramp Rates	RUNTD	RAMPS	OSCRR	OSC
Ejector Advance Ramp Rates	RUNTD	RAMPS	EACRR	EAC
Ejector Retract Ramp Rates	RUNTD	RAMPS	ERCRR	ERC
1st Close Profile	RUNTD	FCCP	FCCP	
2nd Close Profile	RUNTD	SCCP	SCCP	
3rd Close Profile	RUNTD	TCCP	TCCP	
LP Close Profile	RUNTD	LPCP	LPCP	
Injection Profile A	INJP	INJP_A	INJP_A	
Injection Profile B	INJP	INJP_B	INJP_B	
Pack Profile A	RUNTD	PKCP_A	PKCP_A	
Pack Profile B	RUNTD	PKCP_B	PKCP_B	
Hold Profile A	RUNTD	HDCP_A	HDCP_A	

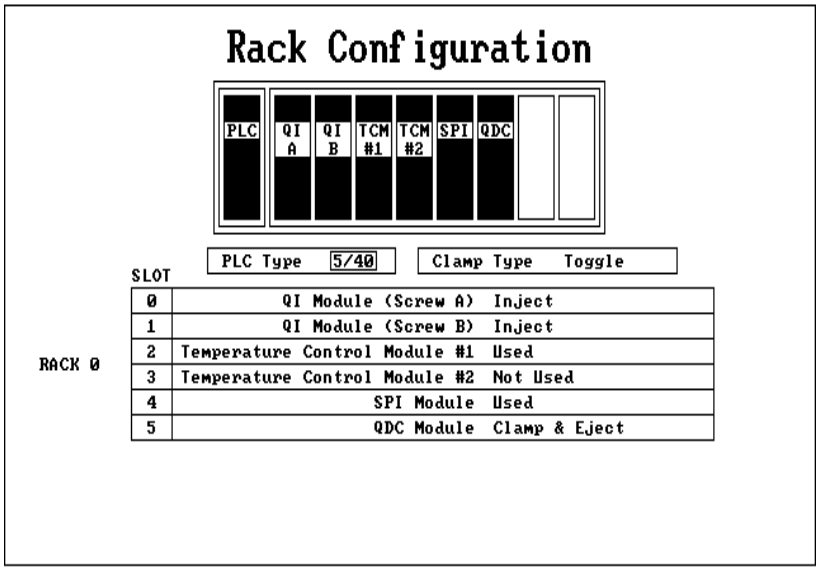
Setup Screen	.TSK File	.TDT/.TDB File	.TXT File(s)	/P1 Value
Hold Profile B	RUNTD	HDCP_B	HDCP_B	
Plastication Profile A	RUNTD	PLCP_A	PLCP_A	
Plastication Profile B	RUNTD	PLCP_B	PLCP_B	
1st Open Profile	RUNTD	FOCP	FOCP	
2nd Open Profile	RUNTD	SOCP	SOCP	
3rd Open Profile	RUNTD	TOCP	TOCP	
Open Slow Profile	RUNTD	OSCP	OSCP	
Ejector Advance Profile	RUNTD	EACP	EACP	
Ejector Retract Profile	RUNTD	ERCP	ERCP	
Ejector General Profile	RUNTD	EGCP	EGCP	

Setup Screen Tag Names and PLC Processor Addresses

All Pro-Set 700 Co-injection database tag names and corresponding PLC processor addresses for co-injection Setup screen fields are listed here. You need to know these tag names and PLC processor addresses to create and modify ladder logic code.

Rack Configuration Setup Screen

Here are the tag names and PLC processor addresses for the Rack Configuration screen. All of the tags referenced on this screen are in the MCC group except one (GENERAL.CLAMP).

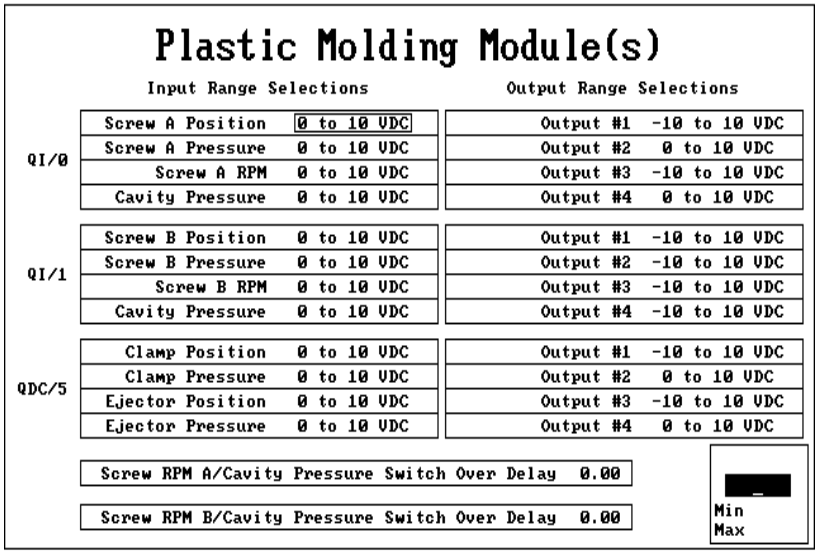


Field	Tag Name	PLC Processor Address
PLC Type	MCC.PLC_TYPE	N24:54
Clamp Type	GENERAL.CLAMP	B23/3
QI Module (Screw A)	MCC.QI_0.CONFIG	B23/8
QI Module (Screw B)	MCC.QI_1.CONFIG	B23/10
Temperature Control Module #1	MCC.TCM.SUPPORT8 MCC.TCM2.CONFIG	B23/21 B51/0
Temperature Control Module #2	MCC.TCM.SUPPORT8 MCC.TCM3.CONFIG	B23/21 B51/1
SPI Module	MCC.SPI.SUPPORTED MCC.SPI.CONFIG	B23/20 B23/12
QDC Module	MCC.QDC_5.CONFIG	B23/9

Plastic Molding Module(s) Setup Screen

Here are the tag names and PLC processoraddresses for the Plastic Molding Module(s) screen.

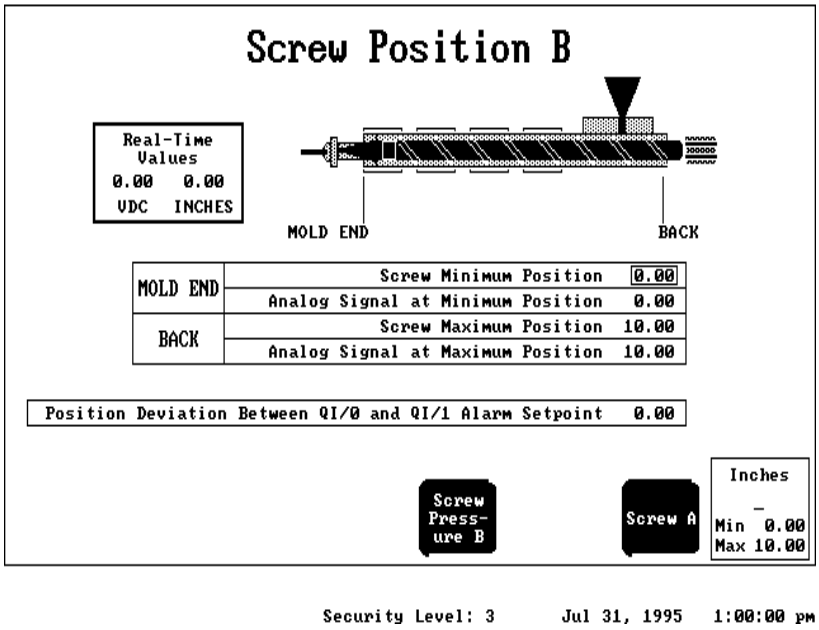
Important: If you use both the Screw RPM and the Cavity Pressure, you must have the same input range selected for both.



Field	Tag Name	PLC Processor Address
QI/0 and QDC/5 Input Range Selections	MCC._03.WORD	B34:34
QI/1 Input Range Selections	MCCB._03.WORD	B124:34
QI/0 and QDC/5 Output Range Selections	MCC._04.WORD	B34:35
QI/1 Output Range Selections	MCCB._04.WORD	B124:35
Screw RPM A/Cavity Pressure Switch Over Delay	MCC._63	N40:59
Screw RPM B/Cavity Pressure Switch Over Delay	MCCB._63	N127:59

Screw Position Setup Screen

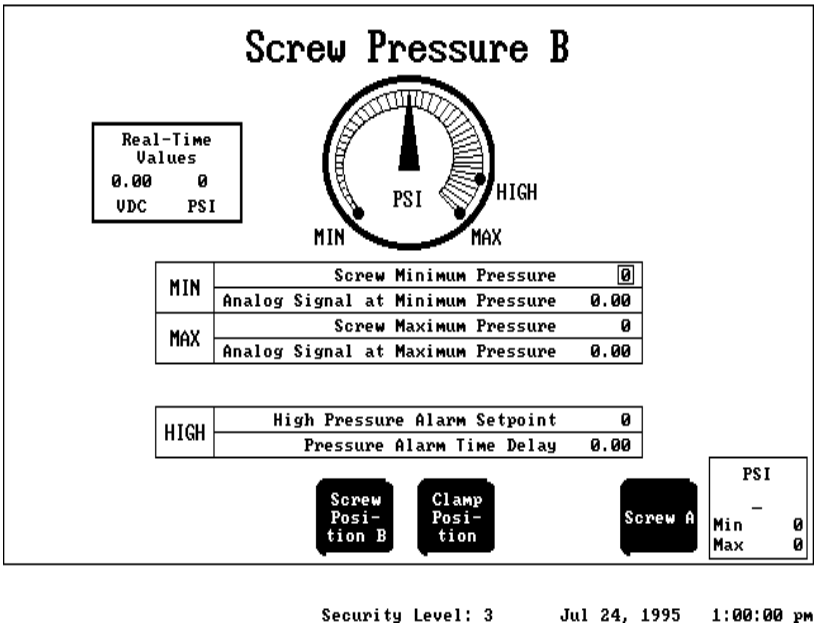
Here are the tag names and PLC processor addresses for the Screw Position Setup screen. All fields on these screens are numeric entry type.



Field	Tag Name	PLC Processor Address
Screw Minimum Position	MCCB._09 ZEROAXISB.SCREW.EMIN	N127:5 N24:56
Analog Signal At Minimum Position	MCCB._11 ZEROAXISB.SCREWB.SMIN	N127:7 N24:57
Screw Maximum Position	MCCB._10 ZEROAXISB.SCREW.EMAX	N127:6 N24:58
Analog Signal At Maximum Position	MCCB._12 ZEROAXISB.SCREW.SMAX	N127:8 N24:59
Position Deviation Between QI/0 and QI/1 Alarm Setpoint	MCCB.POSDEVALM	N24:68

Screw Pressure Setup Screen

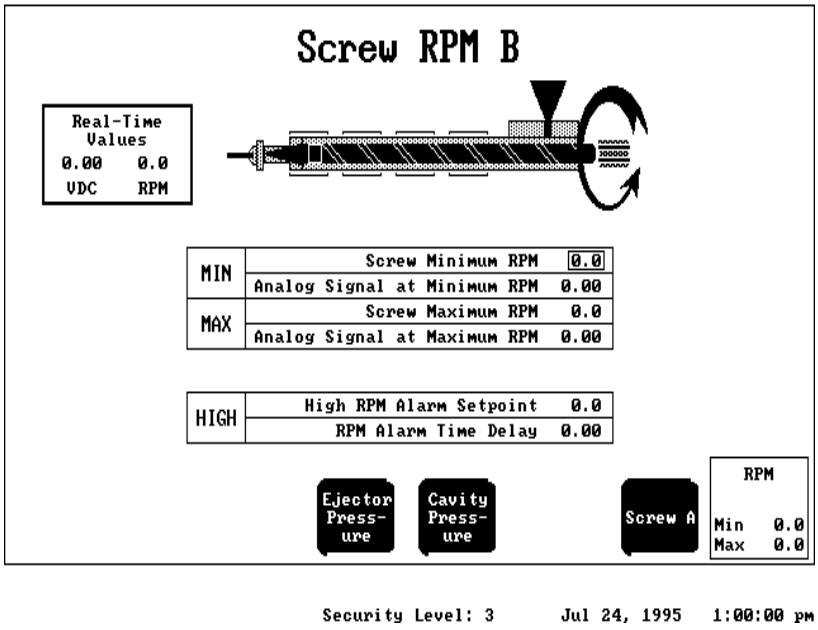
Here are the tag names and PLC processoraddresses for the Screw Pressure Setup screen. All fields on these screens are numeric entry type.



Field	Tag Name	PLC Processor Address
Minimum Pressure	MCCB._17	N127:13
Analog Signal At Minimum Pressure	MCCB._19	N127:15
Maximum Pressure	MCCB._18	N127:14
Analog Signal At Maximum Pressure	MCCB._20	N127:16
High Pressure Alarm Setpoint	MCCB._21	N127:17
Pressure Alarm Time Delay	MCCB._22	N127:18

Screw RPM Setup Screen

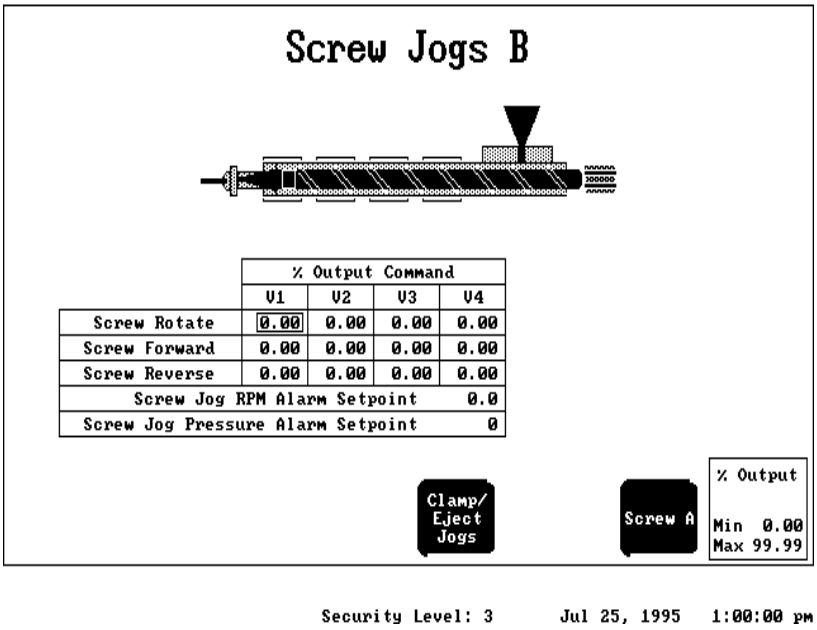
Here are the tag names and PLC processoraddresses for the Screw RPM Setup screen. All fields on this screen are numeric entry items.



Field	Tag Name	PLC Processor Address
Minimum RPM	MCCB._51	N127:47
Analog Signal At Minimum RPM	MCCB._53	N127:49
Maximum RPM	MCCB._52	N127:48
Analog Signal At Maximum RPM	MCCB._54	N127:50
High RPM Alarm Setpoint	MCCB._55	N127:51
RPM Alarm Time Delay	MCCB._56	N127:52

Screw Jogs Setup Screen

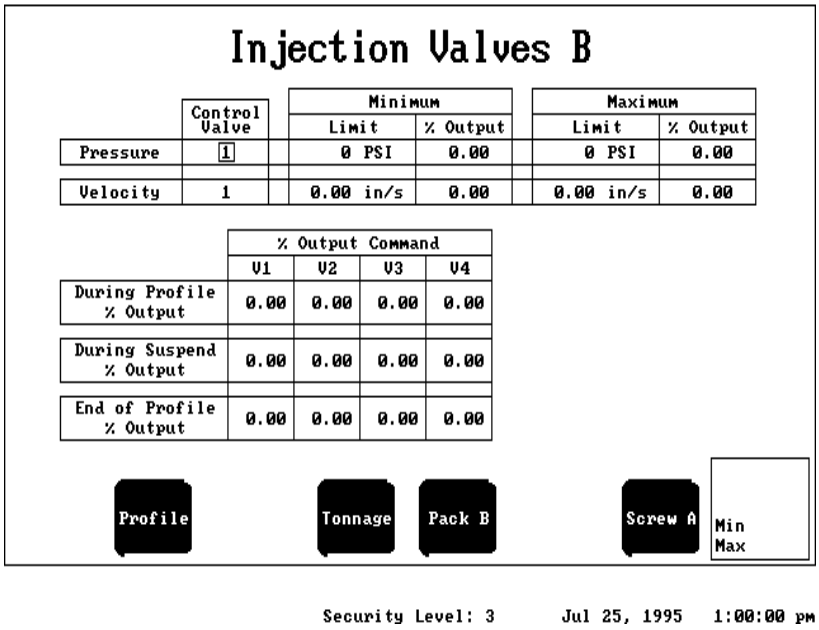
Here are the tag names and PLC processoraddresses for the fields on the Screw Jogs Setup screen. All the fields are numeric entry items.



Field	Tag Name	PLC Processor Address
Screw Rotate (V1-V4)	JGCB._09–JGCB_12	N127:65-N127:68
Screw Forward (V1–V4)	JGCB._17–JGCB._20	N127:73–N127:76
Screw Reverse (V1–V4)	JGCB._25–JGCB._28	N127:81–N127:84
Screw Jog RPM Alarm Setpoint	JGCB._05	N127:61
Screw Jog Pressure Alarm Setpoint	JGCB._06	N127:62

Injection Valves Setup Screens

Here are the tag names and PLC processoraddresses for the Injection Valves screen.



Field name	Field Type	Selection	Tag Name	PLC Processor Address
Pressure Control Valve	Pop-up selection	1 through 4	INCB._02.WORD	B126:1
Pressure Minimum Control Limit	Numeric entry	0 to INCB._42. psi	INCB._41	N128:37
Pressure Minimum % Output	Numeric entry	0 – 99.99 %	INCB._43	N128:39
Pressure Maximum Control Limit	Numeric entry	INCB._41 to 9999 psi	INCB._42	N128:38
Pressure Maximum % Output	Numeric entry	0 – 99.99 %	INCB._44	N128:40
Velocity Control Valve	Pop-up selection	1 through 4	INCB._02.WORD	B126:1
Veleocity Minimum Control Limit	Numeric entry	0 to INCB._41 in./ sec.	INCB._45	N128:41
Velocity Minimum % Output	Numeric entry	0 – 99.99 %	INCB._47	N128:43

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Velocity Maximum Control Limit	Numeric entry	INCB._45 to 9999 psi	INCB._46	N128:42
Velocity Maximum % Output	Numeric entry	0 – 99.99 %	INCB._48	N128:44

Tag Names and PLC Processor Addresses for % Output Commands

This table lists tag names and PLC addresses for the % Output Command on the Injection Valves screen.

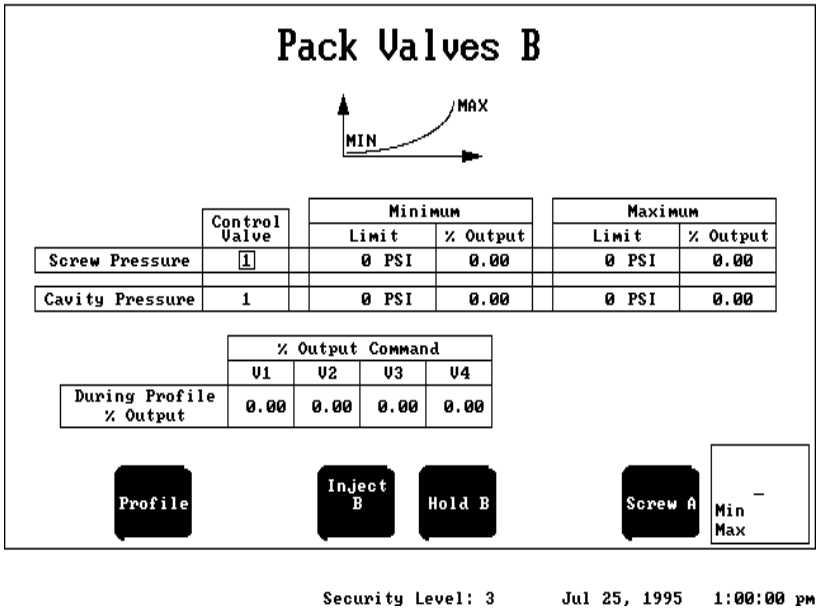
During Profile % Output	V1	V2	V3	V4
	INCB._09 N128:5	INCB._10 N128:6	INCB._11 N128:7	INCB._12 N128:8

During Suspend % Output	V1	V2	V3	V4
	INCB._61 N128:57	INCB._62 N128:58	INCB._63 N128:59	INCB._64 N128:60

End of Profile % Output	V1	V2	V3	V4
	INCB._33 N128:29	INCB._34 N128:30	INCB._35 N128:31	INCB._36 N128:32

Pack Valves Setup Screens

Here are the tag names and PLC processor addresses for the Pack Valves screen.



Field name	Field Type	Selection	Tag Name	PLC Processor Address
Screw Pressure Control Valve	Pop-up selection	1 through 4	PKCB._02.WORD	B126:9
Screw Pressure Minimum Control Limit	Numeric entry	0 to PKCB.__42 psi	PKCB._41	N128:159
Screw Pressure Minimum % Output	Numeric entry	0 – 99.99%	PKCB._43	N128:157
Screw Pressure Maximum Control Limit	Numeric entry	PKCB._41 to 9999 psi	PKCB._42	N128:158
Screw Pressure Maximum % Output	Numeric entry	0 – 99.99%	PKCB._44	N128:160
Cavity Pressure Control Valve	Pop-up selection	1 through 4	PKCB._02.WORD	B126:9
Cavity Pressure Minimum Control Limit	Numeric entry	0 to PKCB.__46 psi	PKCB._45	N128:161

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Cavity Pressure Minimum % Output	Numeric entry	0 – 99.99%	PKCB._47	N128:163
Cavity Pressure Maximum Control Limit	Numeric entry	PKCB._45 to 9999 psi	PKCB._46	N128:162
Cavity Pressure Maximum % Output	Numeric entry	0 – 99.99%	PKCB._48	N128:164

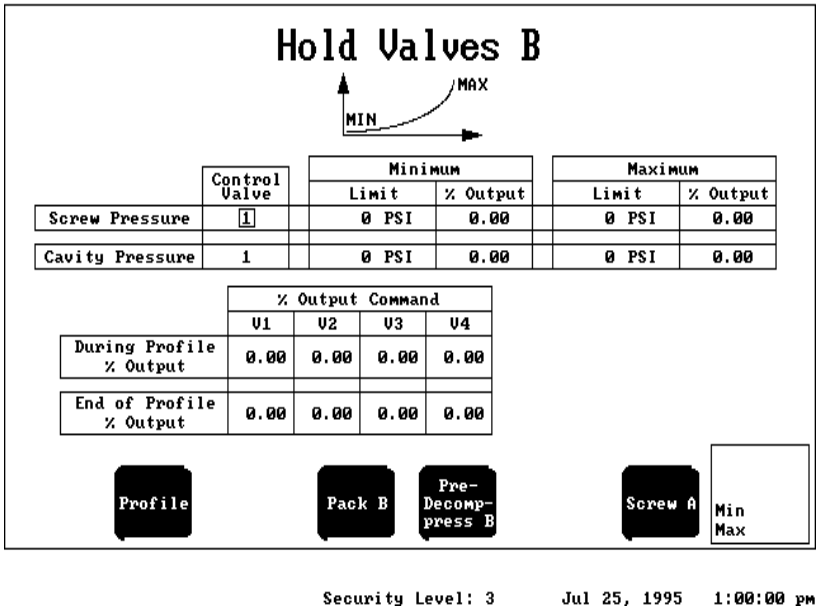
Tag Names and PLC Processor Addresses for % Output Commands

This table lists tag names and PLC processor addresses for the % Output Command on the Pack Valves screen.

During Profile % Output	V1	V2	V3	V4
	PKCB._09 N128:125	PKCB._10 N128:126	PKCB._11 N128:127	PKCB._12 N128:128

Hold Valves Setup Screens

Here are the tag names and PLC processor addresses for the Hold Valves screen.



Field name	Field Type	Selection	Tag Name	PLC Processor Address
Screw Pressure Control Valve	Pop-up selection	1 through 4	HDCB._02.WORD	B126:13
Screw Pressure Minimum Control Limit	Numeric entry	0 to HDCB._42 psi	HDCB._41	N128:217
Screw Pressure Minimum % Output	Numeric entry	0 – 99.99%	HDCB._43	N128:219
Screw Pressure Maximum Control Limit	Numeric entry	HDCB._41 to 9999 psi	HDCB._42	N128:218
Screw Pressure Maximum % Output	Numeric entry	0 – 99.99%	HDCB._44	N128:220
Cavity Pressure Control Valve	Pop-up selection	1 through 4	HDCB._02.WORD	B126:13

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Cavity Pressure Minimum Control Limit	Numeric entry	0 to HDCB._46 psi	HDCB._45	N128:221
Cavity Pressure Minimum % Output	Numeric entry	0 – 99.99%	HDCB._47	N128:223
Cavity Pressure Maximum Control Limit	Numeric entry	HDCB._45 to 9999 psi	HDCB._46	N128:222
Cavity Pressure Maximum % Output	Numeric entry	0 – 99.99%	HDCB._48	N128:224

Tag Names and PLC Processor Addresses for % Output Commands

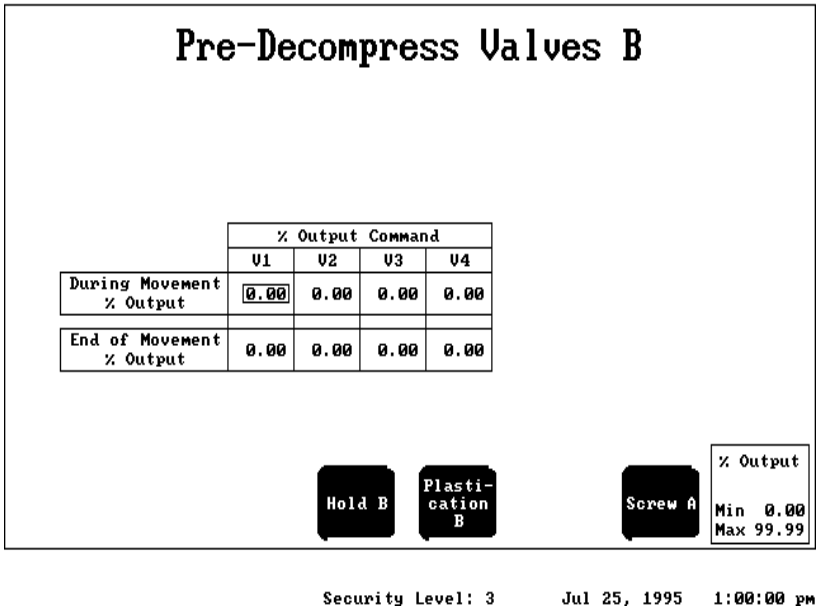
This table lists tag names and PLC processor addresses for the % Output Command on the Pack Valves screen.

During Profile % Output	V1	V2	V3	V4
	HDCB._09 N128:185	HDCB._10 N128:186	HDCB._11 N128:187	HDCB._12 N128:188

End of Profile % Output	V1	V2	V3	V4
	INCB._33 N128:29	INCB._34 N128:30	INCB._35 N128:31	INCB._36 N128:32

Pre-decompress Valves Setup Screen

This table lists tag names and PLC processor addresses for the % Output Command on the Pre-decompress Valves screen.

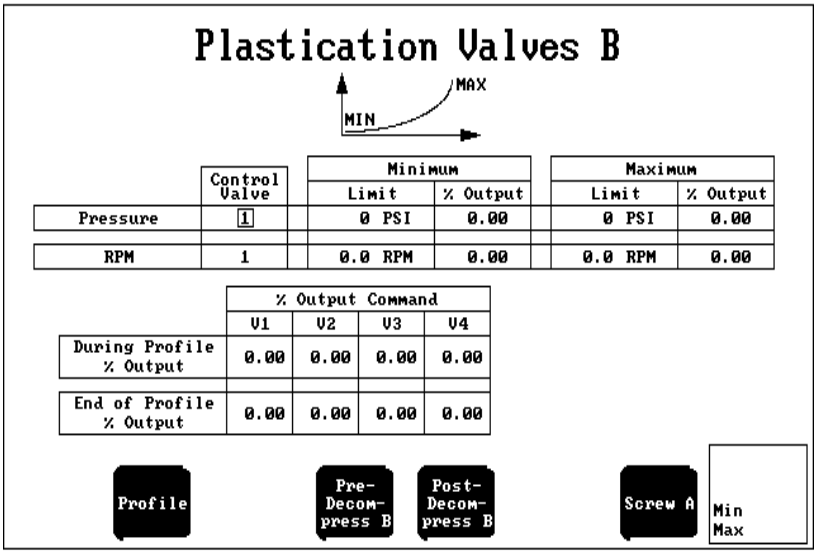


Important: The valid range for each field is 0 to 99.99%.

During Profile % Output	V1	V2	V3	V4
	PRCB._09 N128:305	PRCB._10 N128:306	PRCB._11 N128:307	PRCB._12 N128:308 PRCB._13 N128:309

Plastication Valves Setup Screen

Here are tag names and PLC processor addresses for the Plastication Valves screen.



Field name	Field Type	Selection	Tag Name	PLC Processor Address
Pressure Control Valve	Pop-up selection	1 through 4	PLCB._02.WORD	B126:25
Pressure Minimum Control Limit	Numeric entry	0 to PLCB._42 psi	PLCB._41	N128:397
Pressure Minimum % Output	Numeric entry	0 – 99.99%	PLCB._43	N128:399
Pressure Maximum Control Limit	Numeric entry	PLCB._41 to 9999 psi	PLCB._42	N128:398
Pressure Maximum % Output	Numeric entry	0 – 99.99%	PLCB._44	N128:400
RPM Control Valve	Pop-up selection	1 through 4	PLCB._02.WORD	B126:25
RPM Minimum Control Limit	Numeric entry	0 to PLCB._46 rpm	PLCB._45	N128:401
RPM Minimum % Output	Numeric entry	0 – 99.99%	PLCB._47	N128:403

Field name	Field Type	Selection	Tag Name	PLC Processor Address
RPM Maximum Control Limit	Numeric entry	PLCB._45 to 9999 rpm	PLCB._46	N128:402
RPM Maximum % Output	Numeric entry	0 – 99.99%	PLCB._48	N128:404

Tag Names and PLC Processor Addresses for % Output Commands

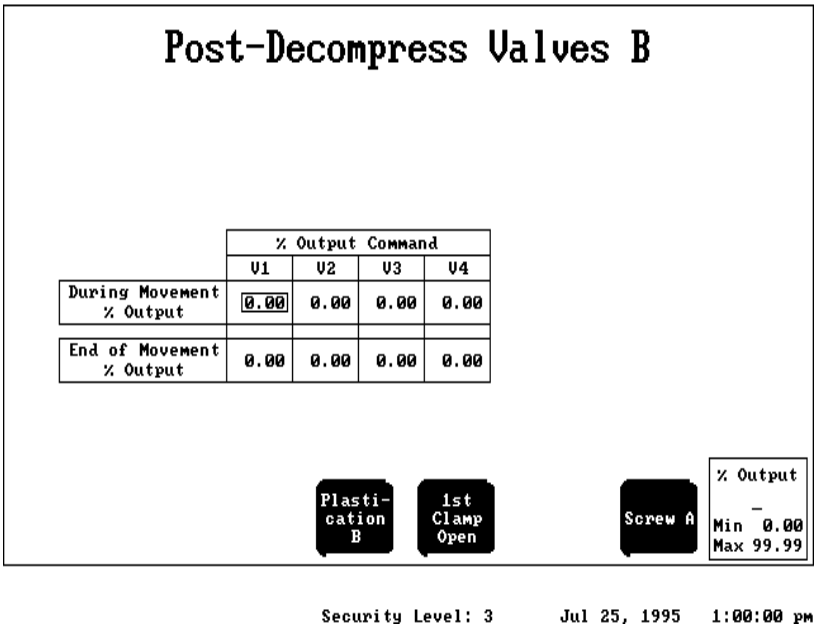
This table lists tag names and PLC processor addresses for the % Output Command on the Plastication Valves screen.

During Profile % Output	V1	V2	V3	V4
	PLCB._09 N128:365	PLCB._10 N128:366	PLCB._11 N128:367	PLCB._12 N128:368 PLCB._13 N128:369

End-of-Profile % Output	V1	V2	V3	V4
	PLCB._33 N128:389	PLCB._34 N128:390	PLCB._35 N128:391	PLCB._36 N128:392

Post-decompress Valves Setup Screen

This table lists tag names and PLC processor addresses for the % Output Command on the Post-decompress Valves screen.



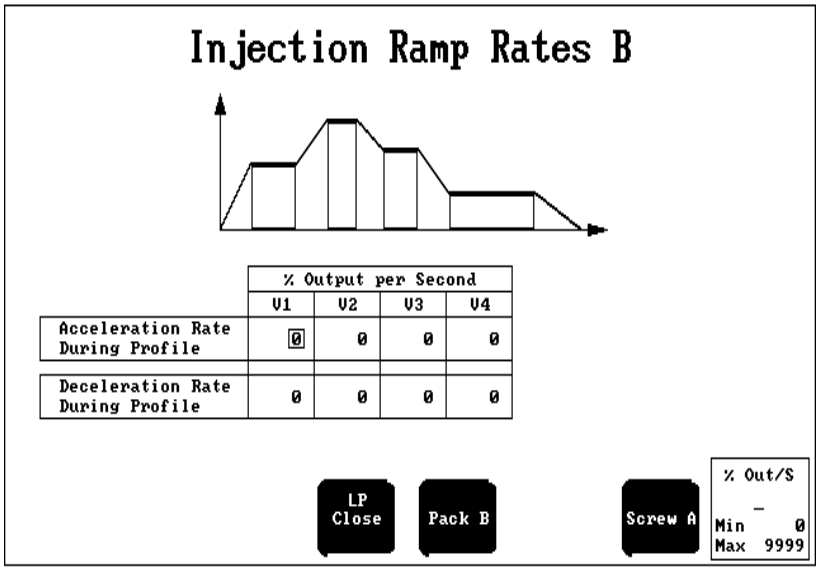
Important: The valid range for each field is 0 to 99.99%.

During Profile % Output	V1	V2	V3	V4
	PSCB._09 N128:485	PSCB._10 N128:486	PSCB._11 N128:487	PSCB._12 N128:488

End-of-Profile % Output	V1	V2	V3	V4
	PSCB._33 N128:509	PSCB._34 N128:510	PSCB._35 N128:511	PSCB._36 N128:512

Injection Ramp Rates Setup Screen

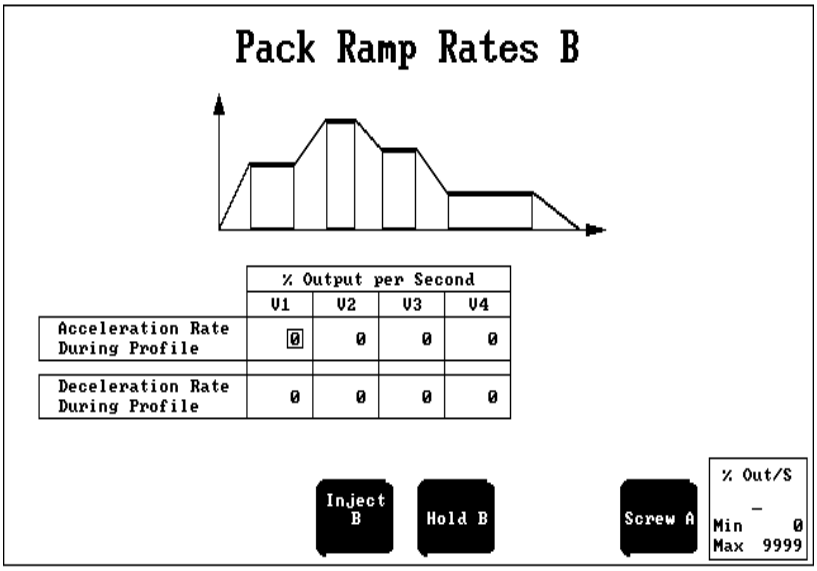
Here are the tag names and PLC processor addresses for the Injection Ramp Rates screen.



Field	Tag Name	PLC Processor Address
Acceleration (V1–V8)	INCB._17–INCB._24	N128:13–N128:20
Deceleration (V1–V8)	INCB._25–INCB._32	N128:21–N128:28

Pack Ramp Rates Setup Screen

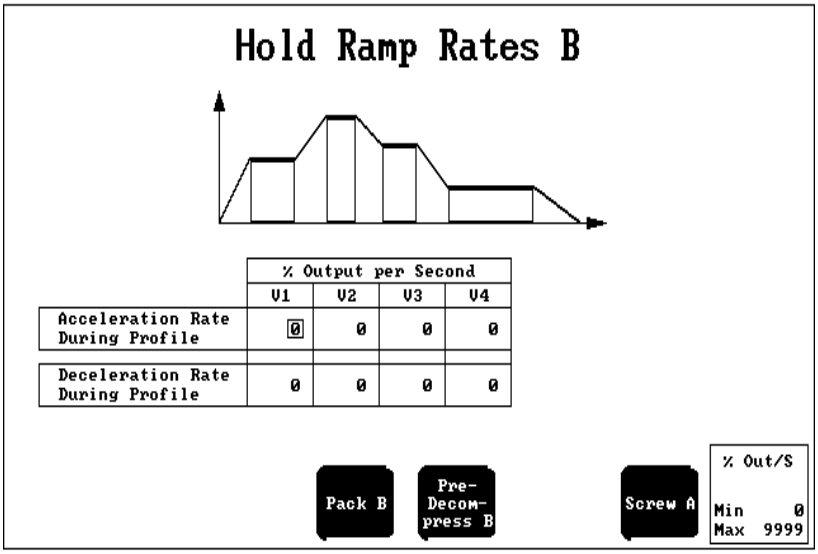
Here are the tag names and PLC processor addresses for the Pack Ramp Rates screen.



Field	Tag Name	PLC Processor Address
Acceleration (V1–V8)	PKCB._17–PKCB._24	N128:133–N128:140
Deceleration (V1–V8)	PKCB._25–PKCB._32	N128:141–N128:148

Hold Ramp Rates Setup Screen

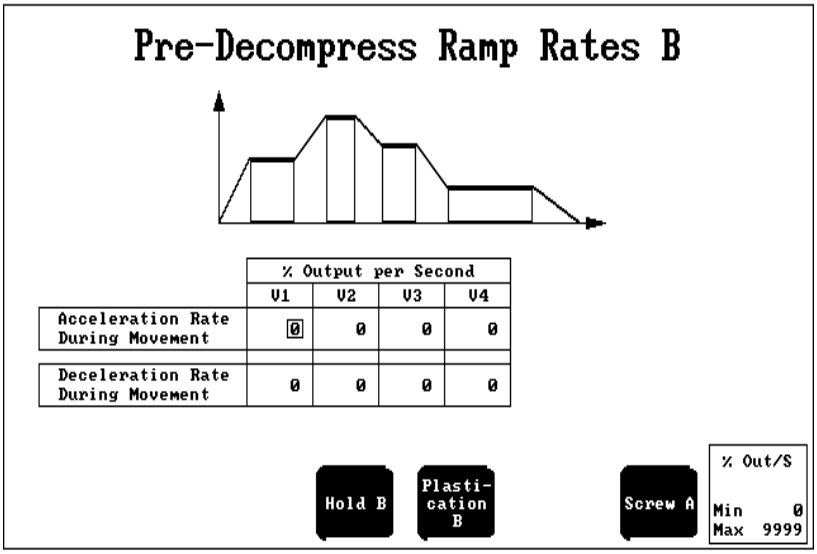
Here are the tag names and PLC processor addressses for the Hold Ramp Rates screen.



Field	Tag Name	PLC Processor Address
Acceleration (V1–V8)	HDCB._17–HDCB._24	N128:193–N128:200
Deceleration (V1–V8)	HDCB._25–HDCB._32	N128:201–N128:208

Pre-decompress Ramp Rates Setup Screen

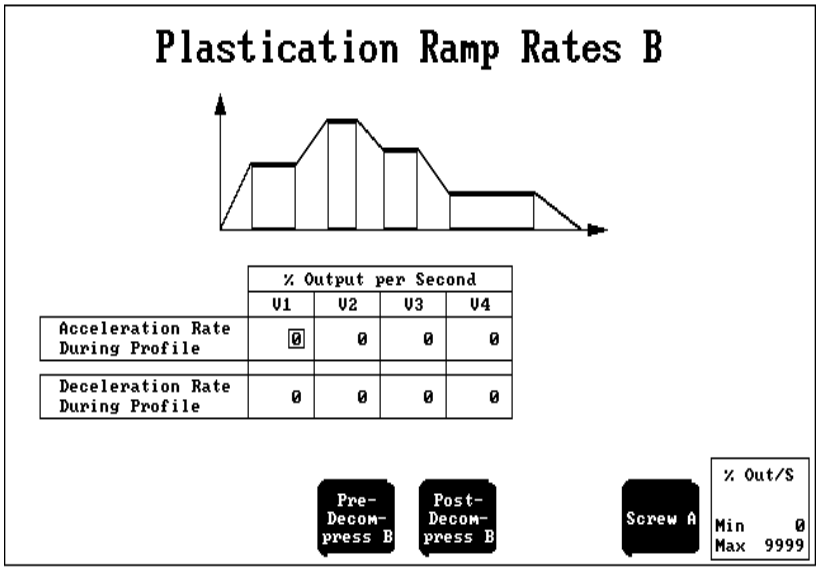
Here are the tag names and PLC processor addresses for the Pre-Decompress Ramp Rates screen.



Field	Tag Name	PLC Processor Address
Acceleration (V1–V8)	PRCB._17–PRCB._24	N128:313–N128:320
Deceleration (V1–V8)	PRCB._25–PRCB._32	N128:321–N128:328

Plastication Ramp Rates Setup Screen

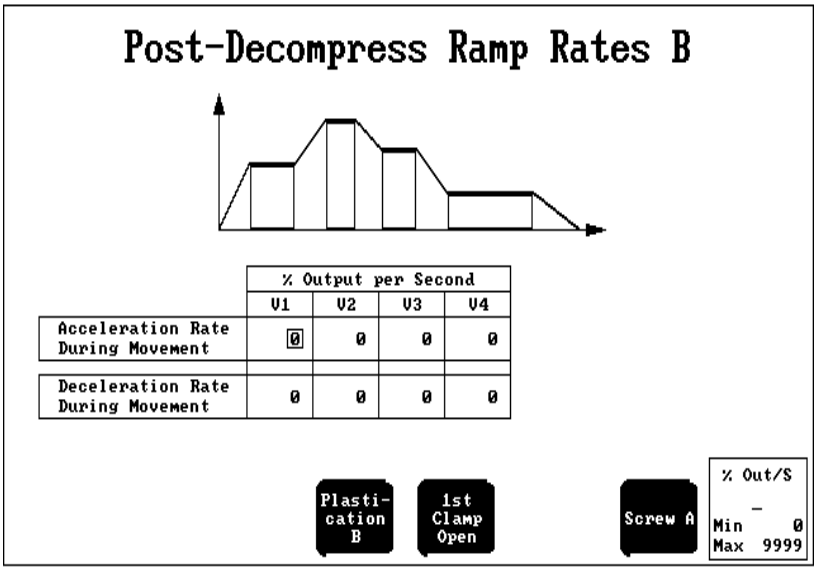
Here are the tag names and PLC processor addresses for the Plastication Ramp Rates screen.



Field	Tag Name	PLC Processor Address
Acceleration (V1–V8)	PLCB._17–PLCB._24	N128:373–N128:380
Deceleration (V1–V8)	PLCB._25–PLCB._32	N128:381–N128:388

Post-decompress Ramp Rates Setup Screen

Here are the tag names and PLC processor addresses for the Post-decompress Ramp Rates screen.

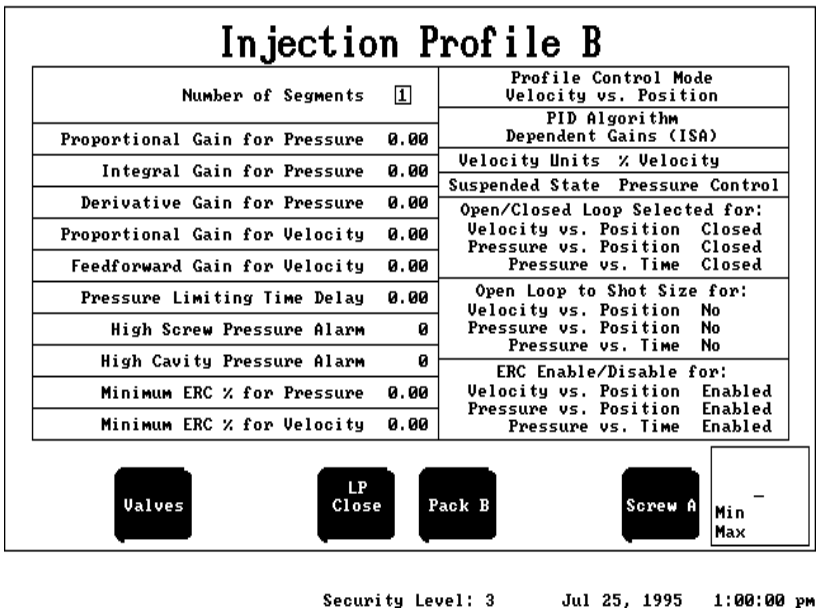


Field	Tag Name	PLC Processor Address
Acceleration (V1–V8)	PSCB._17–PSCB._24	N128:493–N128:500
Deceleration (V1–V8)	PSCB._25–PSCB._32	N128:501–N128:508

Injection Profile Setup Screen

Here are the tag names and PLC processor addressses for the Injection Profile screen.

Important: If the profile control mode is Velocity vs. Pressure or Position, the velocity and position of unused setpoints are set to 0 (zero). If the profile control mode is Pressure vs. Pressure or Position, the pressure and position of unused setpoints are set to 0 (zero).



Field name	Field Type	Selection	Tag Name	PLC Processor Address
Number of Segments	Pop-up selection	1 through 11	INCB.SEG_NUM	N24:44
Proportional Gain for Pressure	Numeric entry	0 – 99.99	INCB._49	N128:45
Integral Gain for Pressure	Numeric entry	0 – 99.99	INCB._50	N128:46
Derivative Gain for pressure	Numeric entry	0 – 99.99	INCB._51	N128:47
Proportional Gain for Velocity	Numeric entry	0 – 99.99	INCB._52	N128:48
Feedforward Gain for Velocity	Numeric entry	0 – 99.99	INCB._53	N128:49
Pressure Limiting Time Delay	Numeric entry	0 – 99.99 seconds	IPCB._59	N128:115

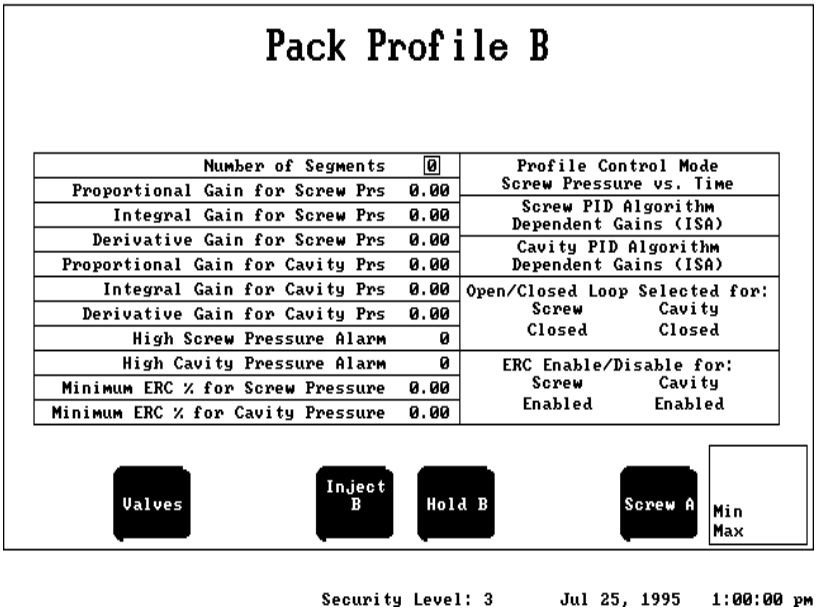
Field name	Field Type	Selection	Tag Name	PLC Processor Address
High Screw Pressure Alarm	Numeric entry	0 or MCCB._17 to MCCB._18 psi	INCB._57	N128:53
High Cavity Pressure Alarm	Numeric entry	0 or MCCB._57 to MCCB._58 psi	INCB._58	N128:54
Minimum ERC % for Pressure	Numeric entry	0 – 99.99%	INCB._06	N128:2
Minimum ERC % for Velocity	Numeric entry	0 – 99.99%	INCB._05	N128:1
Profile Control Mode	Pop-up selection	Velocity vs. Position or Pressure vs. Position or Pressure vs. Time	IPCB._03.WORD	B126:6
PID Algorithm	Pop-up selection	Dependent Gains (ISA) or Independent Gains (AB)	INCB._02.B07	B126/23
Suspend State Pressure Control	Pop-up selection	Set Output Pressure Control or Velocity Control	IPC._02.B11 (A) IPCB._02.B11 (B)	B38/91 (A) B126/91 (B)
Velocity Units	Pop-up selection	% Velocity or in./sec.	IPCB._03.B14	B126/110
Open/Closed Loop Selected for Velocity vs. Position	Pop-up selection	Closed Open	IPCB._04.B00	B126/112
Open/Closed Loop Selected for Pressure vs. Position	Pop-up selection	Closed Open	IPCB._04.B02	B126/114
Open/Closed Loop Selected for Pressure vs. Time	Pop-up selection	Closed Open	IPCB._04.B03	B126/115

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Open Loop to Shot Size for Velocity vs. Position	Pop-up selection	No Yes	IPCB._04.B04	B126/116
Open Loop to Shot Size for Pressure vs. Position	Pop-up selection	No Yes	IPCB._04.B06	B126/118
Open Loop to Shot Size for Pressure vs. Time	Pop-up selection	No Yes	IPCB._04.B07	B126/119
ERC Enable/ Disable for Velocity vs. Position	Pop-up selection	Enabled Disabled	IPCB._04.B08	B126/120
ERC Enable/ Disable for Pressure vs. Position	Pop-up selection	Enabled Disabled	IPCB._04.B10	B126/122
ERC Enable/ Disable for Pressure vs. Time	Pop-up selection	Enabled Disabled	IPCB._04.B11	B126/123

Pack Profile Setup Screen

Here are the tag names and PLC processor addresses for the Pack Profile screen.

Important: If the profile control mode is Screw Pressure vs. Time, the screw pressure and time setpoints of the unused segments are set to 0 (zero). If the profile control mode is Cavity Pressure vs. Time, the cavity pressure and time setpoints of the unused segments are set to 0 (zero).



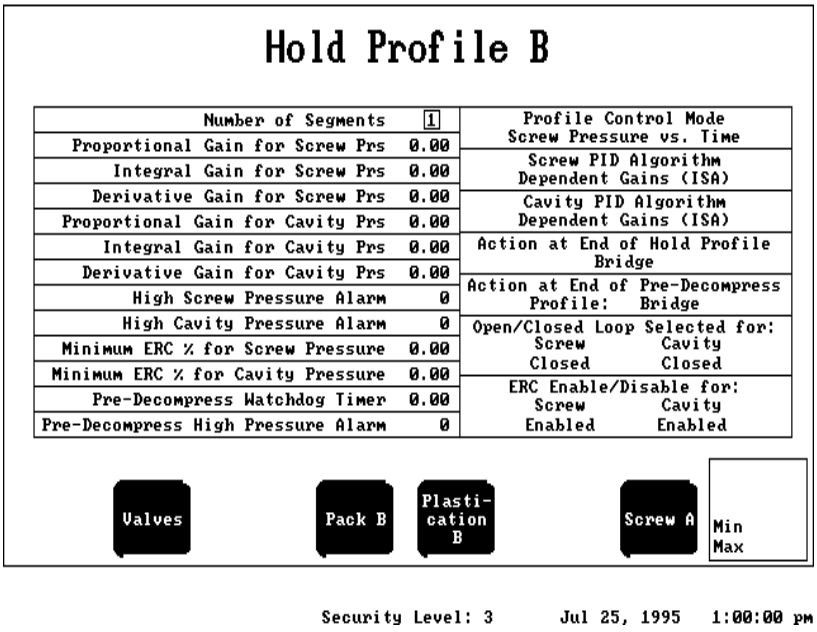
Field name	Field Type	Selection	Tag Name	PLC Processor Address
Number of Segments	Pop-up selection	0 through 5	PKCB.SEG_NUM	N24:45
Proportional Gain for Screw Pressure	Numeric entry	0 – 99.99	PKCB._49	N128:165
Integral Gain for Screw Pressure	Numeric entry	0 – 99.99	PKCB._50	N128:166
Derivative Gain for Screw Pressure	Numeric entry	0 – 99.99	PKCB._51	N128:167
Proportional Gain for Cavity Pressure	Numeric entry	0 – 99.99	PKCB._52	N128:168

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Integral Gain for Cavity Pressure	Numeric entry	0 – 99.99	PKCB._53	N128:169
Derivative Gain for Cavity Pressure	Numeric entry	0 – 99.99	PKCB._54	N128:170
High Screw Pressure Alarm	Numeric entry	0 or MCCB._17 to MCCB._18 psi	PKCB._57	N128:173
High Cavity Pressure Alarm	Numeric entry	0 or MCCB._57 to MCCB.58 psi	PKCB._58	N128:174
Minimum ERC % for Screw Pressure	Numeric entry	0 – 99.99%	PKCB._06	N128:122
Minimum ERC% for Cavity Pressure	Numeric entry	0 – 99.99%	PKCB._05	N128:121
Profile Control Mode	Pop-up selection	Screw Pressure vs. Time or Cavity Pressure vs. Time	HPCB._03.B00	B126/288
Screw PID Algorithm	Pop-up selection	Dependent Gains (ISA) or Independent Gains (AB)	PKCB._02.B07	B126/151
Cavity PID Algorithm	Pop-up selection	Dependent Gains (ISA) or Independent Gains (AB)	PKCB._02.B03	B126/147
Open/Closed Loop Selected for Screw	Pop-up selection	Closed Open	HPCB._04.B00	B126/304
Open/Closed Loop Selected for Cavity	Pop-up selection	Closed Open	HPCB._04.B01	B126/305
ERC Enable/ Disable for Screw	Pop-up selection	Enabled Disabled	HPCB._04.B08	B126/312
ERC Enable/ Disable for Cavity	Pop-up selection	Enabled Disabled	HPCB._04.B09	B126/313

Hold Profile Setup Screen

Here are the tag names and PLC processor addresses for the Hold Profile screen.

Important: If the profile control mode is Screw Pressure vs. Time, the screw pressure and time setpoints of the unused segments are set to 0 (zero). If the profile control mode is Cavity Pressure vs. Time, the cavity pressure and time setpoints of the unused segments are set to 0 (zero).



Field name	Field Type	Selection	Tag Name	PLC Processor Address
Number of Segments	Pop-up selection	1 through 5	HDCB.SEG_NUM	N24:46
Proportional Gain for Screw Pressure	Numeric entry	0 – 99.99	HDCB._49	N128:225
Integral Gain for Screw Pressure	Numeric entry	0 – 99.99	HDCB._50	N128:226
Derivative Gain for Screw Pressure	Numeric entry	0 – 99.99	HDCB._51	N128:227
Proportional Gain for Cavity Pressure	Numeric entry	0 – 99.99	HDCB._52	N128:228

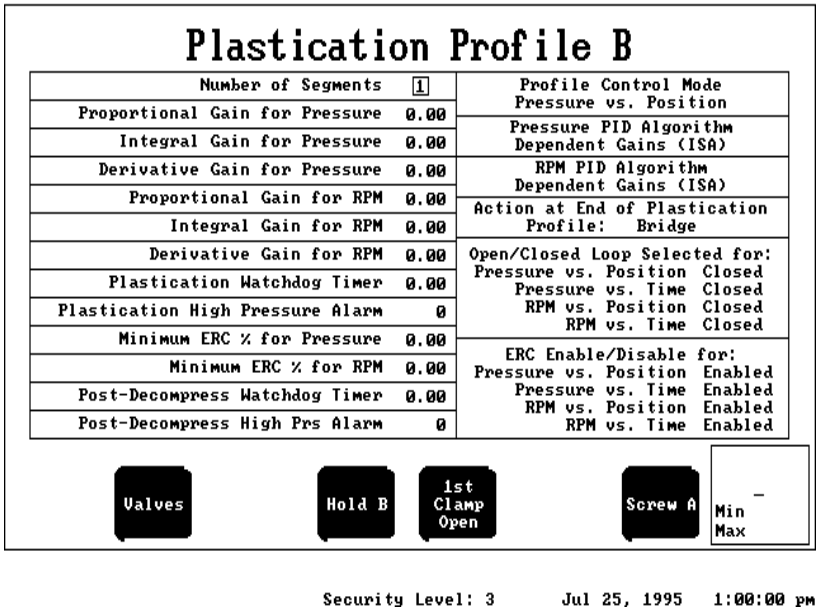
Field name	Field Type	Selection	Tag Name	PLC Processor Address
Integral Gain for Cavity Pressure	Numeric entry	0 – 99.99	HDCB._53	N128:229
Derivative Gain for Cavity Pressure	Numeric entry	0 – 99.99	HDCB._54	N128:230
High Screw Pressure Alarm	Numeric entry	0 or MCCB._17 to MCCB._18 psi	HDCB._57	N128:233
High Cavity Pressure Alarm	Numeric entry	0 or MCCB._57 to MCCB._58 psi	HDCB._58	N128:234
Mininmum ERC % for Screw Pressure	Numeric entry	0 – 99.99%	HDCB._06	N128:182
Minimum ERC % for Cavity Pressure	Numeric entry	0 –99.99%	HDCB._05	N128:181
Pre-decompress Watchdog Timer	Numeric entry	0 – 99.99 seconds	PRCB._08	N128:304
Pre-decompress High Pressure Alarm	Numeric entry	0 or MCCB._17 to MCCB._18 psi	PRCB._57	N128:353
Profile Control Mode	Pop-up selection	Screw Pressure vs. Time or Cavity Pressure vs. Time	HPCB._03.B02	B126/290
Screw PID Algorithm	Pop-up selection	Dependent Gains (ISA) or Independent Gains (AB)	HDCB._02.B07	B126/215
Cavity PID Algorithm	Pop-up selection	Dependent Gains (ISA) or Independent Gains (AB)	HDCB._02.B03	B126/211
Action at End of Hold Profile	Pop-up selection	Bridge Set Output	HPCB._03.B08	B126/296
Action at End of Pre-decompress	Pop-up selection	Bridge Set Output	HPCB._03.B09	B126/297

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Open/Closed Loop Selected for Screw	Pop-up selection	Closed Open	HPCB._04.B02	B126/306
Open/Closed Loop Selected for Cavity	Pop-up selection	Closed Open	HPCB.__04.B03	B126/307
ERC Enable/ Disable for Screw	Pop-up selection	Enabled Disabled	HPCB._04.B10	B126/314
ERC Enable/ Disable for Cavity	Pop-up selection	Enabled Disabled	HPCB._04.B11	B126/315

Plastication Profile Setup Screen

Here are the tag names and PLC processor addresses for the Plastication Profile screen.

Important: If the profile control mode is Pressure vs. Velocity or Position, the pressure and position or time setpoints of unused segements are set to 0 (zero). If the profile control mode is RPM vs. Velocity or Position, the RPM and position or time setpoints of unused segments are set to 0 (zero).



Field name	Field Type	Selection	Tag Name	PLC Processor Address
Number of Segments	Pop-up selection	1 through 10	PLCB.SEG_NUM	N24:47
Proportional Gain for Pressure	Numeric entry	0 – 99.99	PLCB._49	N128:405
Integral Gain for Pressure	Numeric entry	0 – 99.99	PLCB._50	N128:406
Derivative Gain for Pressure	Numeric entry	0 – 99.99	PLCB._51	N128:407
Proportional Gain for RPM	Numeric entry	0 – 99.99	PLCB._52	N128:408
Integral Gain for RPM	Numeric entry	0 – 99.99	PLCB._53	N128:409
Derivative Gain for RPM	Numeric entry	0 –99.99	PLCB._54	N128:410

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Plastication Watchdog Timer	Numeric entry	0 – 99.99 seconds	PLCB._08	N128:364
Plastication High Pressure Alarm	Numeric entry	0 or MCCB._17 to MCCB._18 psi	PLCB._57	N128:413
Minimum ERC % for Pressure	Numeric entry	0 – 99.99%	PLCB._06	N128:362
Minimum ERC % for Velocity	Numeric entry	0 – 99.99%	PLCB._05	N128:361
Post-decompress Watchdog Timer	Numeric entry	0 – 99.99 seconds	PSCB._08	N128:484
Post-decompress High Pressure Alarm	Numeric entry	0 or MCCB._17 to MCCB._18 psi	PSCB._57	N128:533
Profile Control Mode	Pop-up selection	Pressure vs. Position or Pressure vs. Time or RPM vs. Position or RPM vs. Time	PPCB._03.WORD	B126:30
Pressure PID Algorithm	Pop-up selection	Dependent Gains (ISA) or Independent Gains (AB)	PLCB._02.B07	B126/407
RPM PID Algorithm	Pop-up selection	Dependent Gains (ISA) or Independent Gains (AB)	PLCB._02.B03	B126/403
Action at End of Plastication	Pop-up selection	Bridge Set Output	PPCB._03.B08	B126/488
Open/Closed Loop Selected for Pressure vs. Position	Pop-up selection	Closed Open	PPCB._04.B00	B126/496
Open/ Closed Loop Selected for Pressure vs. Time	Pop-up selecrion	Closed Open	PPCB._04.B01	B126:497

Field name	Field Type	Selection	Tag Name	PLC Processor Address
Open/Closed Loop Selected for RPM vs. Position	Pop-up selection	Closed Open	PPCB._04.B02	B126/498
Open/ Closed Loop Selected for RPM vs. Time	Pop-up selection	Closed Open	PPCB._04.B03	B126/499
ERC Enable/ Disable for Pressure vs. Position	Pop-up selection	Enabled Disabled	PPCB._04.B08	B126/504
ERC Enable/ Disable for Pressure vs. Time	Pop-up selection	Enabled Disabled	PPCB._04.B09	B126/505
ERC Enable/ Disable for RPM vs. Position	Pop-up selection	Enabled Disabled	PPCB._04.B10	B126/506
ERC Enable/ Disable for RPM vs. Time	Pop-up selection	Enabled Disabled	PPCB._04.B11	B126/507

Process Screen Task Definition Files

Here is a listing of the Task Definition files for the Pro-Set 700 Co-injection Setup screens as well as other screens you can change with .TDT files. You must have this information to execute the screens or make changes to them.

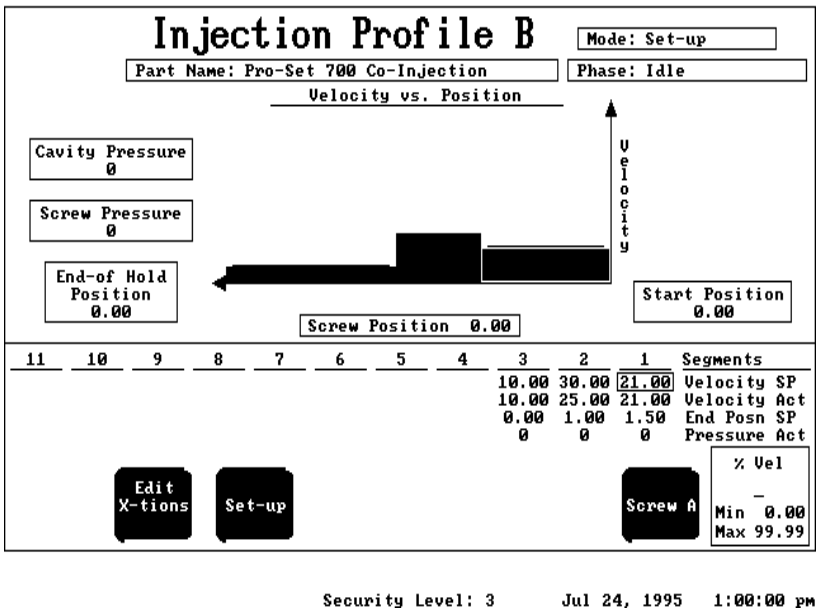
Process Screen	.TSK File	.TDT/.TDB File	.TXT File(s)	/P1 Value
Clamp Close Profile	CC	CC	CC	
Injection Profiles	IJ_AB	IJ_AB	IJ_AB	
Injection Profile A	IJ	IJ_A	IJ_A	
Injection Profile B	IJ_B	IJ_B	IJ_B	
Pack/Hold Profile A	PH	PH_A	PH_A	
Pack/Hold Profile B	PH_B	PH_B	PH_B	
Plastication Profile A	PL	PL_A	PL_A	
Plastication Profile B	PL_B	PL_B	PL_B	
Clamp Open Profile	CO	CO	CO	
TCM #1	RUNTD	TCM	TCM1	TCM2
TCM #2	RUNTD	TCM	TCM2	TCM3

Process Screen Tag Names and PLC Processor Addrsses

All Pro-Set 700 co-injection database tag names and corresponding PLC processor addresses for co-injection Process screen fields are listed here. You need to know these tag names and PLC processor addresses to create and modify ladder logic code.

Injection Profile Process Screen

Here are the tag names and PLC processor addresses for the Injection Profile Task screen.



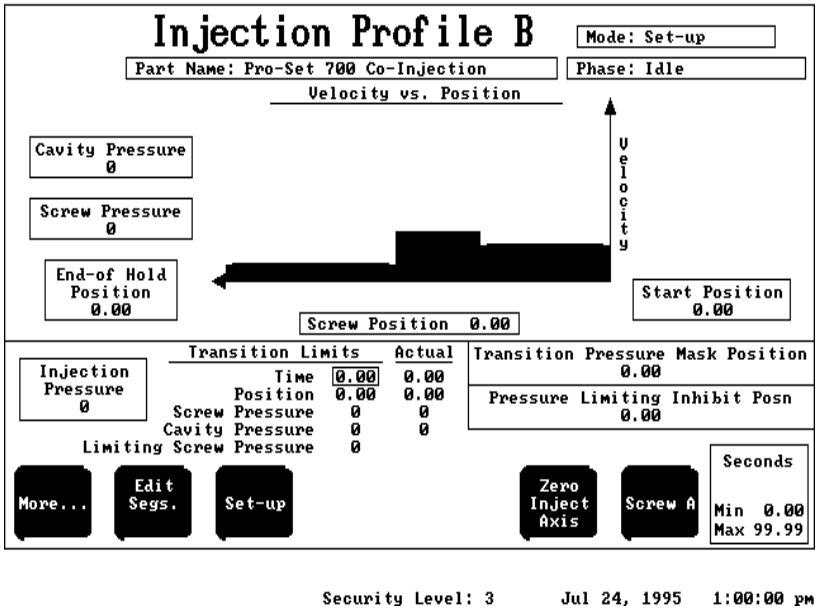
Field	Tag Name	PLC Processor Address
Part Name	PARTNAME	A25:0 – A25:34
Mode	MODE	B23:6
Phase	PHASE SYSB._03.B03	B124:20 B124/35
Injection Profile Mode	IPCB._03.WORD	B126:6
Screw Position Bar Graph	SYSB._25	N127:177
Cavity Pressure	SYSB._32	N127:184
Screw Pressure	SYSB._26	N127:178
Screw Position	SYSB._25	N127:177
Start Position	Sum of: PPCB._61 PPCB._62 PSCB._05	N128:477 N128:478 N128:481

Field	Tag Name	PLC Processor Address
Pressure Setpoints		
Segment 11	IPCB._50	N128:106
Segment 10	IPCB._46	N128:102
Segment 9	IPCB._42	N128:98
Segment 8	IPCB._38	N128:94
Segment 7	IPCB._34	N128:90
Segment 6	IPCB._30	N128:86
Segment 5	IPCB._26	N128:82
Segment 4	IPCB._22	N128:78
Segment 3	IPCB._18	N128:74
Segment 2	IPCB._14	N128:70
Segment 1	IPCB._10	N128:66
Velocity Setpoints		
Segment 11	IPCB._49	N128:105
Segment 10	IPCB._45	N128:101
Segment 9	IPCB._41	N128:97
Segment 8	IPCB._37	N128:93
Segment 7	IPCB._33	N128:89
Segment 6	IPCB._29	N128:85
Segment 5	IPCB._25	N128:81
Segment 4	IPCB._21	N128:77
Segment 3	IPCB._17	N128:73
Segment 2	IPCB._13	N128:69
Segment 1	IPCB._09	N128:65
Pressure Actuals		
Segment 11	IPSB._50	N128:642
Segment 10	IPSB._46	N128:638
Segment 9	IPSB._42	N128:634
Segment 8	IPSB._38	N128:630
Segment 7	IPSB._34	N128:626
Segment 6	IPSB._30	N128:622
Segment 5	IPSB._26	N128:618
Segment 4	IPSB._22	N128:614
Segment 3	IPSB._18	N128:610
Segment 2	IPSB._14	N128:606
Segment 1	IPSB._10	N128:602

Field	Tag Name	PLC Processor Address
Velocity Actuals		
Segment 11	IPSB._49	N128:641
Segment 10	IPSB._45	N128:637
Segment 9	IPSB._41	N128:633
Segment 8	IPSB._37	N128:629
Segment 7	IPSB._33	N128:625
Segment 6	IPSB._29	N128:621
Segment 5	IPSB._25	N128:617
Segment 4	IPSB._21	N128:613
Segment 3	IPSB._17	N128:609
Segment 2	IPSB._13	N128:605
Segment 1	IPSB._09	N128:601
End Position Setpoints		
Segment 11	N/A	N/A
Segment 10	IPCB._47	N128:103
Segment 9	IPCB._43	N128:99
Segment 8	IPCB._39	N128:95
Segment 7	IPCB._35	N128:91
Segment 6	IPCB._31	N128:87
Segment 5	IPCB._27	N128:83
Segment 4	IPCB._23	N128:79
Segment 3	IPCB._19	N128:75
Segment 2	IPCB._15	N128:71
Segment 1	IPCB._11	N128:67
Time Setpoints		
Segment 11	N/A	N/A
Segment 10	IPCB._48	N128:104
Segment 9	IPCB._44	N128:100
Segment 8	IPCB._40	N128:96
Segment 7	IPCB._36	N128:92
Segment 6	IPCB._32	N128:88
Segment 5	IPCB._28	N128:84
Segment 4	IPCB._24	N128:80
Segment 3	IPCB._20	N128:76
Segment 2	IPCB._16	N128:72
Segment 1	IPCB._12	N128:68

Injection Transition Parameters Profile Process Screen

When you press the Edit X-tions key, the lower portion of the screen changes to show the transition parameters for Injection. The upper section of the screen remains the same as described previously. Here are the tag names and PLC processor addresses of each transition parameter.

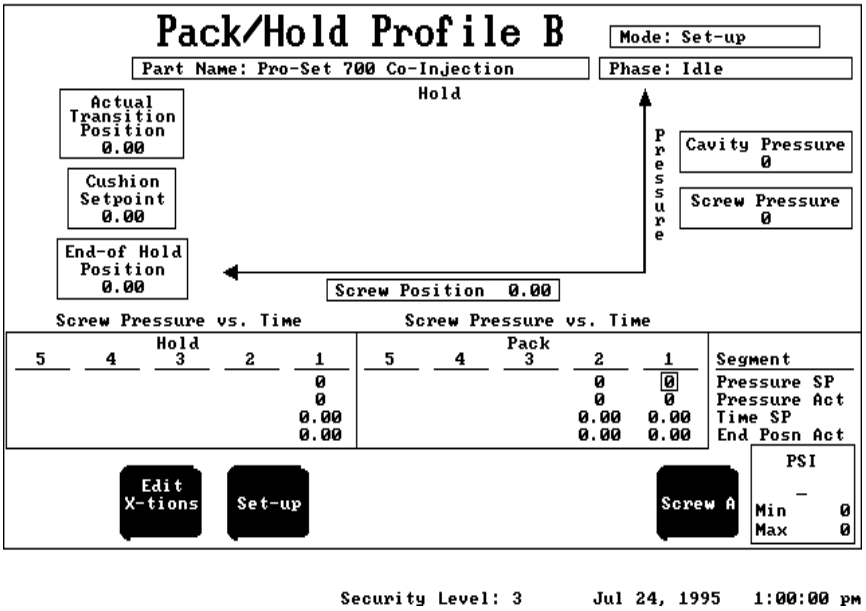


Field	Tag Name	PLC Processor Address
End–Of Hold Position	HPSB._63	N128:711
Transition Time Limit	IPCB._60	N128:116
Transition Position Limit	IPCB._61	N128:117
Transition Screw Pressure Limit	IPCB._62	N128:118
Transition Cavity Pressure Limit	IPCB._63	N128:119
Limiting Screw Pressure	IPCB._57	N128:113
Transition Time Actual	IPSB._61	N128:653
Transition Position Actual	IPSB._62	N128:654
Transition Screw Pressure Actual	IPSB._63	N128:655
Transition Cavity Pressure Actual	IPSB._64	N128:656

Field	Tag Name	PLC Processor Address
Transition Pressure Mask Position	IPCB._64	N128:120
Pressure Limiting Inhibit Position	IPCB._58	N128:114
Injection Pressure if velocity vs. position, or velocity vs. position (pressure-limited)	INCB._09 INCB._10 INCB._11 INCB._12	N128:5 N128:6 N128:7 N128:8
Injection Flow if pressure vs. position or time	INCB._09 INCB._10 INCB._11 INCB._12	N128:5 N128:6 N128:7 N128:8
Zero Axis Function		
Eng. Min	ZEROAXISB.SCREW.EMIN MCCB._09	N24:56 N127:5
Eng. Max.	ZEROAXISB.SCREW.EMAX MCCB._10	N24:57 N127:6
Signal Min.	ZEROAXISB.SCREW.SMIN MCCB._11	N24:58 N127:7
Signal Max.	ZEROAXISB.SCREW.SMAX MCCB._12	N24:59 N127:8
Inject Input Signal	SYSB._33	N127:185

Pack/Hold Profile Process Screen

Here are the tag names and PLC processor addresses for the Pack/Hold Profile screen.



Field	Tag Name	PLC Processor Address
Part Name	PARTNAME	A25:20 – A25:34
Mode	MODE	B23:6
Phase	PHASE SYSB._03.B03	B124:20 B124:35
Pack Profile Mode	HPCB._03.B00	B126/288
Hold Profile Mode	HPCB._03.B02	B126/290
Actual Transition Position	IPSB._62	N128:654
Cushion Setpoint	PPCB._61	N128:477
End-Of Hold Position	HPSB._63	N128:711
Screw Position	SYSB._25	N127:177
Cavity Pressure	SYSB._32	N127:184
Screw Pressure	SYSB._26	N127:178
Cavity Pressure Setpoints–Pack		
Segment 5	HPCB._21	N128:257
Segment 4	HPCB._18	N128:254
Segment 3	HPCB._15	N128:251
Segment 2	HPCB._12	N128:248
Segment 1	HPCB._09	N128:245

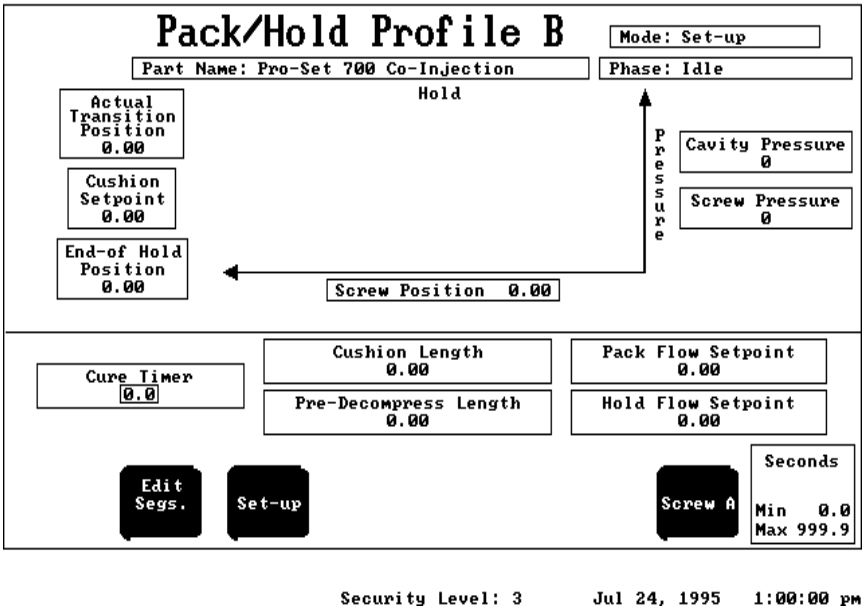
Field	Tag Name	PLC Processor Address
Cavity Pressure Setpoints–Hold		
Segment 5	HPCB._38	N128:274
Segment 4	HPCB._35	N128:271
Segment 3	HPCB._32	N128:268
Segment 2	HPCB._29	N128:265
Segment 1	HPCB._26	N128:262
Screw Pressure Setpoints–Pack		
Segment 5	HPCB._22	N128:258
Segment 4	HPCB._19	N128:255
Segment 3	HPCB._16	N128:252
Segment 2	HPCB._13	N128:249
Segment 1	HPCB._10	N128:246
Screw Pressure Setpoints–Hold		
Segment 5	HPCB._39	N128:275
Segment 4	HPCB._36	N128:272
Segment 3	HPCB._33	N128:269
Segment 2	HPCB._30	N128:266
Segment 1	HPCB._27	N128:263
Cavity Pressure Actuals–Pack		
Segment 5	HPSB._21	N128:669
Segment 4	HPSB._18	N128:666
Segment 3	HPSB._15	N128:663
Segment 2	HPSB._12	N128:660
Segment 1	HPSB._09	N128:657
Cavity Pressure Actuals–Hold		
Segment 5	HPSB._38	N128:686
Segment 4	HPSB._35	N128:683
Segment 3	HPSB._32	N128:680
Segment 2	HPSB._29	N128:677
Segment 1	HPSB._26	N128:674

Field	Tag Name	PLC Processor Address
Screw Pressure Actuals–Pack		
Segment 5	HPSB._22	N128:670
Segment 4	HPSB._19	N128:667
Segment 3	HPSB._16	N128:664
Segment 2	HPSB._13	N128:661
Segment 1	HPSB._10	N128:658
Screw Pressure Actuals–Hold		
Segment 5	HPSB._39	N128:687
Segment 4	HPSB._36	N128:684
Segment 3	HPSB._33	N128:681
Segment 2	HPSB._30	N128:678
Segment 1	HPSB._27	N128:675
Time Setpoints–Pack		
Segment 5	HPCB._23	N128:259
Segment 4	HPCB._20	N128:256
Segment 3	HPCB._17	N128:253
Segment 2	HPCB._14	N128:250
Segment 1	HPCB._11	N128:247
Time Setpoints–Hold		
Segment 5	HPCB._40	N128:276
Segment 4	HPCB._37	N128:273
Segment 3	HPCB._34	N128:270
Segment 2	HPCB._31	N128:267
Segment 1	HPCB._28	N128:264
End Position Actuals–Hold		
Segment 5	HPSB._40	N128:688
Segment 4	HPSB._37	N128:685
Segment 3	HPSB._34	N128:682
Segment 2	HPSB._31	N128:679
Segment 1	HPSB._28	N128:676

Field	Tag Name	PLC Processor Address
End Position Actuals–Pack		
Segment 5	HPSB._23	N128:671
Segment 4	HPSB._20	N128:668
Segment 3	HPSB._17	N128:665
Segment 2	HPSB._14	N128:662
Segment 1	HPSB._11	N128:659

Pack/Hold Transition Parameters Profile Process Screen

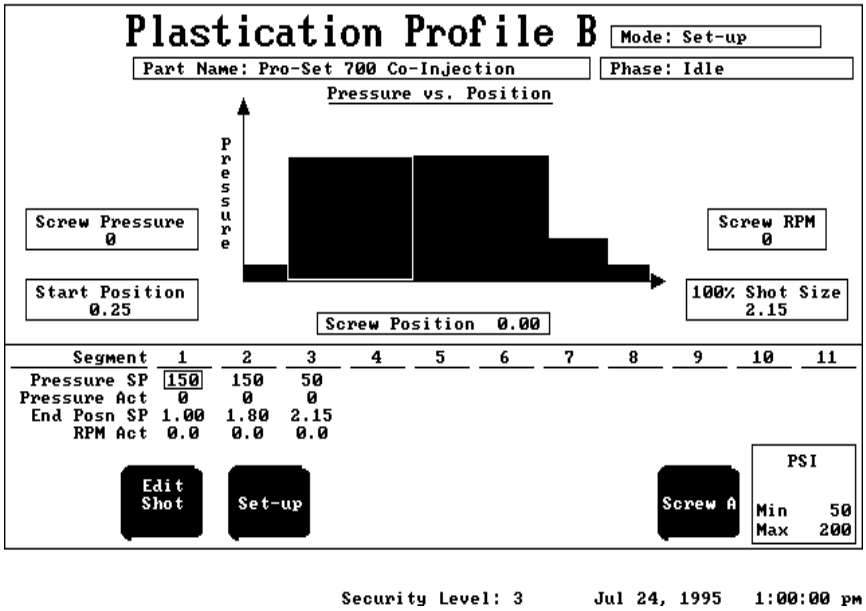
When you press the Edit X-tions key, the lower portion of the screen changes to show the transition parameters for Pack and Hold. The upper section of the screen does not change. Here are the tag names and PLC processor addresses for the transition parameters.



Field	Tag Name	PLC Processor Address
Cure Timer	HPCB._61	N128:297
Cushion Length	PPCB._61	N128:477
Pre-decompress Length	PRCB._05	N128:301
Pack Flow Setpoint	PKCB._09 PKCB._10 PKCB._11 or PKCB._12	N128:125 N128:126 N128:127 N128:128
Hold Flow Setpoint	HDCB._09 HDCB._10 HDCB._11 or HDCB._12	N128:185 N128:186 N128:187 N128:188

Plastication Profile Process Screen

Here are the tag names and PLC processor addresses for the Plastication Profile screen.



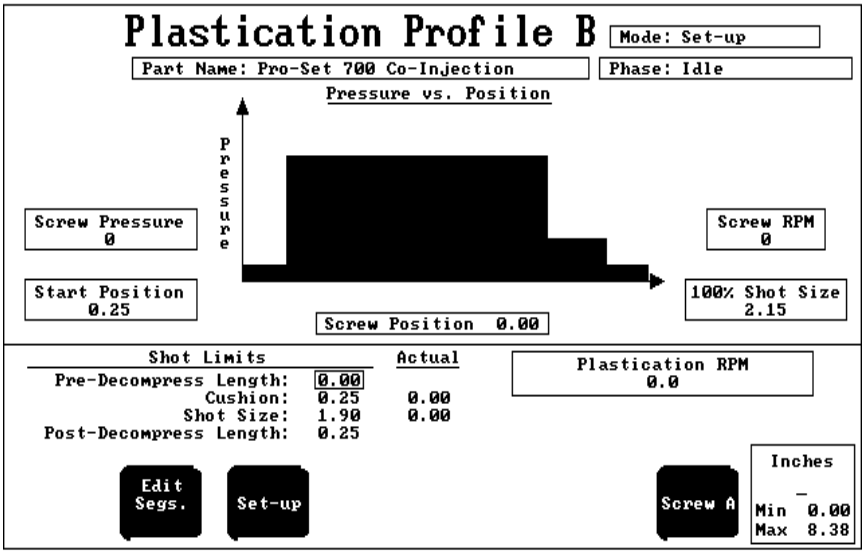
Field	Tag Name	PLC Processor Address
Part Name	PARTNAME	A25:20 – A25:34
Mode	MODE	B23:6
Phase	PHASE SYSB._03.B03	B124:20 B124/35
Plastication Profile Mode	PPCB._03.WORD	B126:30
Screw Position Bar Graph	SYSB._25	N127:177
Screw Pressure	SYSB._26	N127:178
Start Position	Sum of: PPCB._61 PRCB._05	 N128:477 N128:301
Screw Position	SYSB._25	N127:177
Screw RPM	SYSB._31	N127:183
100% Shot Size	Sum of: PPCB._61 PPCB._62	 N128:477 N128:478

Field	Tag Name	PLC Processor Address
Pressure Setpoints		
Segment 1	PPCB._10	N128:426
Segment 2	PPCB._14	N128:430
Segment 3	PPCB._18	N128:434
Segment 4	PPCB._22	N128:438
Segment 5	PPCB._26	N128:442
Segment 6	PPCB._30	N128:446
Segment 7	PPCB._34	N128:450
Segment 8	PPCB._38	N128:454
Segment 9	PPCB._42	N128:458
Segment 10	PPCB._46	N128:462
Segment 11	PPCB._50	N128:466
RPM Setpoints		
Segment 1	PPCB._09	N128:425
Segment 2	PPCB._13	N128:429
Segment 3	PPCB._17	N128:433
Segment 4	PPCB._21	N128:437
Segment 5	PPCB._25	N128:441
Segment 6	PPCB._29	N128:445
Segment 7	PPCB._33	N128:449
Segment 8	PPCB._37	N128:453
Segment 9	PPCB._41	N128:457
Segment 10	PPCB._45	N128:461
Segment 11	PPCB._49	N128:465
Pressure Actuals		
Segment 1	PPSB._10	N128:714
Segment 2	PPSB._14	N128:718
Segment 3	PPSB._18	N128:722
Segment 4	PPSB._22	N128:726
Segment 5	PPSB._26	N128:730
Segment 6	PPSB._30	N128:734
Segment 7	PPSB._34	N128:738
Segment 8	PPSB._38	N128:742
Segment 9	PPSB._42	N128:746
Segment 10	PPSB._46	N128:750
Segment 11	PPSB._50	N128:754

Field	Tag Name	PLC Processor Address
RPM Actuals		
Segment 1	PPSB._09	N128:713
Segment 2	PPSB._13	N128:717
Segment 3	PPSB._17	N128:721
Segment 4	PPSB._21	N128:725
Segment 5	PPSB._25	N128:729
Segment 6	PPSB._29	N128:733
Segment 7	PPSB._33	N128:737
Segment 8	PPSB._37	N128:741
Segment 9	PPSB._41	N128:745
Segment 10	PPSB._45	N128:749
Segment 11	PPSB._49	N128:753
End Position Setpoints		
Segment 1	PPCB._11	N128:427
Segment 2	PPCB._15	N128:431
Segment 3	PPCB._19	N128:435
Segment 4	PPCB._23	N128:439
Segment 5	PPCB._27	N128:443
Segment 6	PPCB._31	N128:447
Segment 7	PPCB._35	N128:451
Segment 8	PPCB._39	N128:455
Segment 9	PPCB._43	N128:459
Segment 10	PPCB._47	N128:463
Segment 11	N/A	N/A
Time Setpoints		
Segment 1	PPCB._12	N128:428
Segment 2	PPCB._16	N128:432
Segment 3	PPCB._20	N128:436
Segment 4	PPCB._24	N128:440
Segment 5	PPCB._28	N128:444
Segment 6	PPCB._32	N128:448
Segment 7	PPCB._36	N128:452
Segment 8	PPCB._40	N128:456
Segment 9	PPCB._44	N128:460
Segment 10	PPCB._48	N128:464
Segment 11	N/A	N/A

Plastication Transition Parameters Profile Process Screen

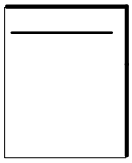
When you press the Edit Shot key, the lower portion of the screen changes to show the trannsition (shot) parameters for Plastication, The upper section of the screen does not change. Here are the tag names and PLC processor addresses for each of the shot parameters.



Field	Tag Name	PLC Processor Address
Pre-decompress Length	PRCB._05	N128:301
Cushion	PPCB._61	N128:477
Shot Size	PPCB._62	N128:478
Post-decompress Length	PSCB._05	N128:481
Cushion Actual	HPSB._63	N128:711
Shot Size Actual	PPSB._63	N128:767
Plastication RPM (Pressure vs. Position or Time)	PLCB._09 PLCB._10 PLCB._11 or PLCB._12	N128:365 N128:366 N128:367 N128:368
Plastication Backpressure	PLCB._09 PLCB._10 PLCB._11 or PLCB._12	N128:365 N128:366 N128:367 N128:368

Quick Start for the Experienced User

What's in This Chapter?

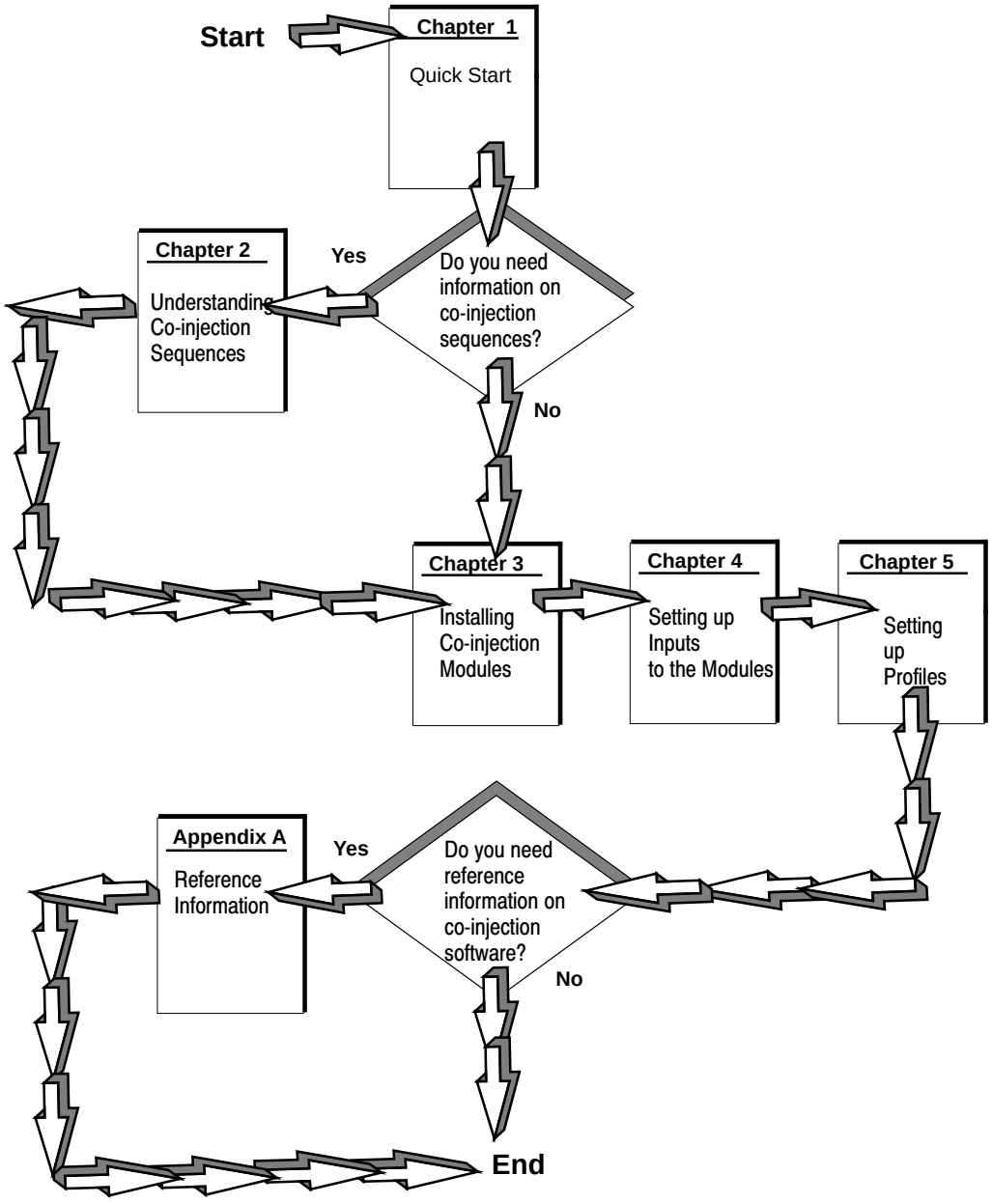


This chapter contains an overview of the procedures you must follow to install and use the co-injection modules and the software that comes with them.

Use the flowchart and charts to help you determine which tasks to perform.

Understanding the Tasks You Will Perform

The flowchart shows you everything you need to do to make your modules operational.



Performing Setup Tasks

The tasks on the chart that follows help you set up your modules for operation. Follow the tasks in the order they are listed on the chart.

To Do This Task	Go to	And Do This
Understand the machine phases that the co-injection modules control	Chapter 2	Determine how you want the modules to control your process
Install the modules	Chapter 3	1. Ground the modules. 2. Choose the correct power supply. 3. Determine where the modules should be placed in the I/O chassis. 4. Key chassis slots for the modules. 5. Jumper the modules. 6. Install the modules in the chassis. 7. Wire the modules. 8. Ground and shield I/O devices. 9. Plan for E-stops and interlocks. 10. Understand the PLC power distribution circuit. . 11. Read module indicator lights.
Set up inputs to the modules	Chapter 4	Set up inputs for ● screw position for A and B ● screw pressure for A and B ● screw RPM for A and B, or ● cavity pressure
Set up profiles to control machine operation	Chapter 5	Enter information such as the number of segments and gain constants for PID loops for these machine phases: ● Inject ● Pack ● Hold ● Plastication

Finding Reference Information

When you perform tasks such as creating screens or setting up alarms you need reference information (download bits and alarm codes, for example). Refer to the table below.

To do this task...	...go to	...and do this
Understand where to find information on download bits, errors, tag names, PLC processor addresses, and alarms supplied with the software	Appendix A	Use this chapter as a reference.

Performing Other Tasks

When you integrate the co-injection modules into your system, you need to perform other tasks on your injection molding machine. These tasks could include spanning valves and sensors across their linear operating range and entering that information on screens.

Because injection molding machines vary widely, we do not tell you how to perform these additional tasks in this manual. Consult the specifications shipped with your machine, sensors, or valves for more information on operating ranges and limits.

To set up outputs and enter spanning valves on screens, refer to the Pro-Set 700 Software User Manual, pub. 6500-6.5.18.

Installing Co-injection Software

To install the co-injection software, you must perform the following tasks:

1. Export a current database.
2. Make backups of any files that are overwritten.
3. Install the software onto the operator interface.
4. Run the alarm conversion utility.
5. Merge the exported database with the co-injection database.
6. Import the merged database.

The following sections explain each of these steps.

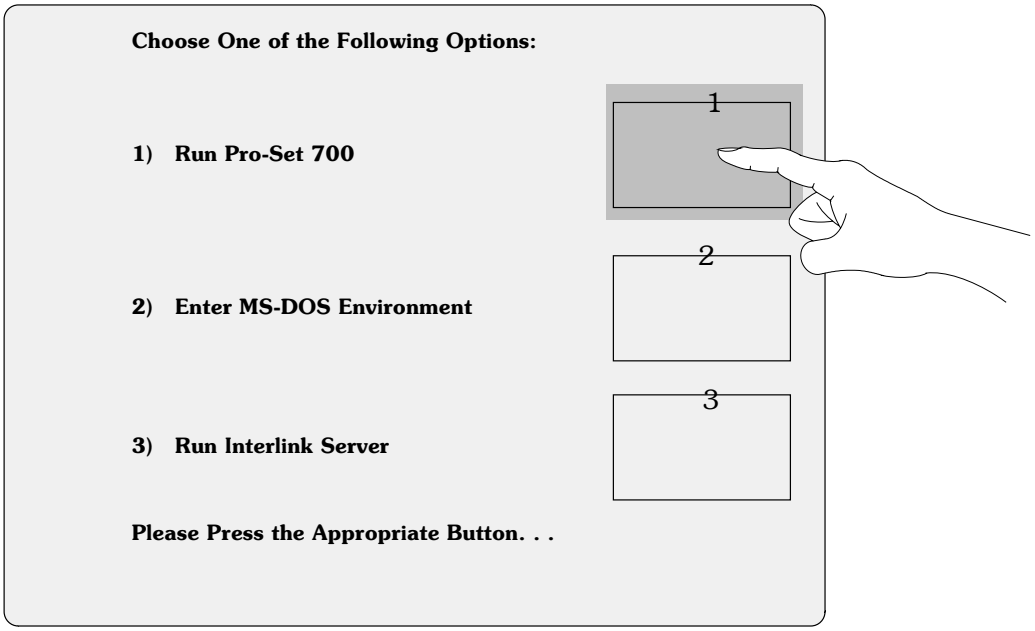
Exporting a Current Database

Before you actually install the co-injection software onto your operator interface, you must have a current exported database. If you do not already have one, then you need to export the database. Use the following instructions to export your database:

1. Back up your current database. See the Pro-Set 700 Operator Interface Installation Manual, pub. 6500-6.2.1.
2. At the operator interface command prompt, type

   123 Return

   You see



3. Select option `1) Run Pro-Set 700`.

4. Log on to security level 3. Refer to the Pro-Set 700 Software Reference Manual, Pub. 6500-6.4.3, for more information on security levels.

5. Press the  button.

6. Select the **General** menu.

7. Select **Toggle CV Command Line**.

8. Type  on the host computer keyboard.

9. Choose a unique name for your exported database. In our examples, we use `EXAMPLE.DBS`.

10. At the ControlView command line, type

    ```
    DBexp PS700 database_name
    ```

    where *`database_name`* is the name of the exported database you chose earlier. For example, in this instance you would type

    ```
    DBexp PS700 example.dbs
    ```

    The database file is exported in ASCII format to the `\ACCESS\UTIL\` directory on the OI for editing. A `.DBS` extension is automatically added to the filename.

11. From the **General** menu, select **Exit Pro-Set 700** to exit from the software.

Making File Backups

Important: When you install the co-injection software, it copies some of the current Pro-Set 700 files to `.OLD` files and then overwrites the existing files. If you have modified these files in any way, you should still make backups of them before you install the co-injection software. Then, when you are finished installing the co-injection software, you can add the changes you made in the Pro-Set 700 files to the co-injection files.

The following Pro-Set 700 files are overwritten when you install co-injection software:

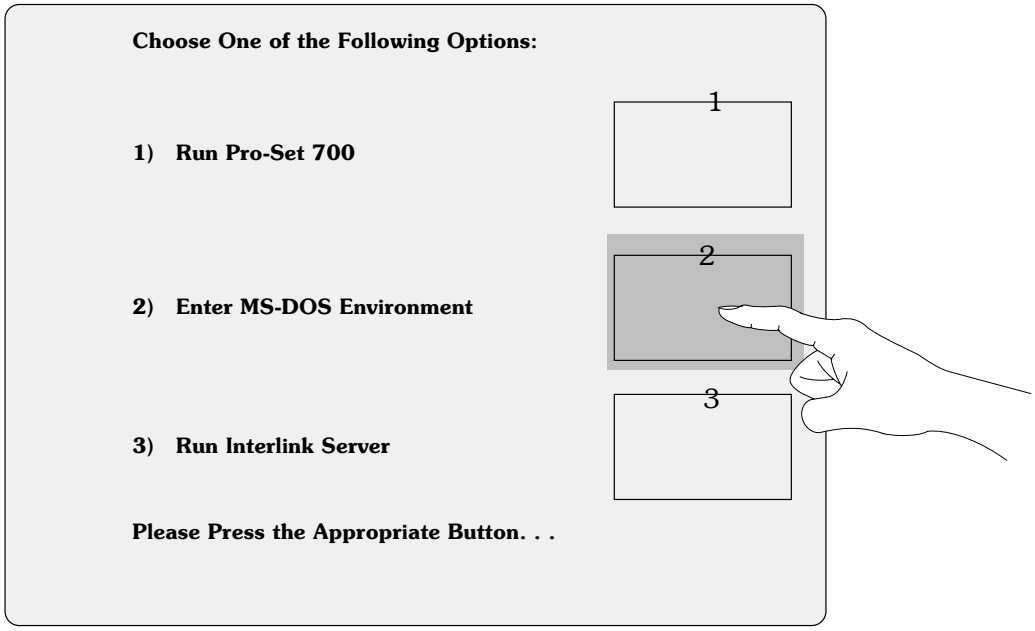
File name and location	File description
\ABPS700\PS700.DEF	key definitions
\ABPS700\MCR\STARTUP	STARTUP macro
\ABPS700\MCR\TOPLEVEL	TOPLEVEL macro
\ABPS700\MOLDPART\MACHMASK	Mold/part machine mask file
\ABPS700\MOLDPART\PARTMASK	Mold/part part mask file
\ABPS700\SCRNTEXT\ALLTAGS	ALLTAGS file

▶ If you customized your setup menu file (`PS700.MNU`), you should also make a backup of this file and add its changes to the co-injection setup menu file, `PS700CI.MNU`.

Installing the Software onto the Operator Interface

To install the co-injection software onto your operator interface, follow these instructions:

1. Exit Pro-Set 700 by touching `2) Enter MS-DOS Environment.`



2. Make sure the floppy drive is enabled in the Operator Interface Setup menu. For more information about enabling the floppy drive, refer to the Pro-Set 700 Operator Interface Installation Manual, pub. 6500-6.2.1.

3. Insert disk #1 into the floppy drive.

4. At the DOS command line prompt, type

```
a:\install c
```

5. When the installation program displays the copyright message, press any key.

The installation program then installs the co-injection software for you. It displays status messages throughout the installation process.

Running the Alarm Conversion Utility

To run the alarm conversion utility, use the following instructions:

1. Go to the \ACCESS\UTIL directory. You can do this by typing the following command at the MS-DOS prompt:

   ```
   cd \access\util
   ```

2. Run the alarm conversion utility. You can do this by typing the following command at the MS-DOS prompt:

   ALMCNVT *database*_name switches

   For example, if you named your database EXAMPLE.DBS, you would use the following command:

   ```
   ALMCNVT example /m
   ```

   This tells the utility to convert the alarm information and modify the original database.

The alarm conversion utility modifies the existing database file by removing all of the ControlView alarming information. It also generates two new files:

- USER_1.ALM
- PS7_1.ALM

These two files must be copied from the \ACCESS\UTIL directory to the \ABPS700\ALARM directory. You can do this by typing the following commands at the DOS prompt:

```
copy \access\util\USER_1.ALM  \abps700\alarm\
```

and

```
copy \access\util\PS7_1.ALM  \abps700\alarm\
```

Merging the Exported and Co-injection Databases

After the co-injection software is installed, you need to merge the database you exported with the co-injection database (`\ACCESS\UTIL\CI.DBS`). To merge these databases, follow these instructions:

1. Change to the `\ACCESS\UTIL` directory by typing

   ```
   cd \access\util
   ```

   at the DOS prompt.

2. At the MS-DOS prompt, type

   ```
   copy database_name.dbs+ci.dbs ps700ci.dbs
   ```

   This merges the two databases and copies them into `\ACCESS\UTIL\PS700CI.DBS`.

   For example, if you named your database `EXAMPLE.DBS`, you would type the following command:

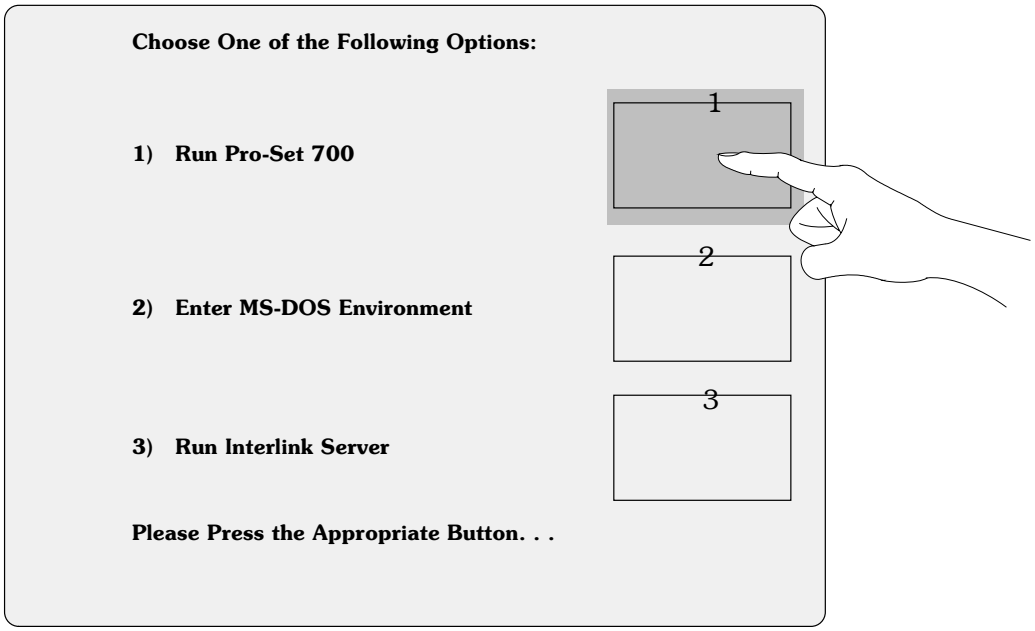
   ```
   copy example.dbs+ci.dbs ps700ci.dbs
   ```

The name of the Pro-Set 700 Co-injection database is `PS700CI.DBS`.

Importing the Merged Database

The last step in installing the co-injection software is importing the merged database (`PS700CI.DBS`) into Pro-Set 700 software. To import the database, follow these instructions:

1. Re-start the operator interface. You see



2. Touch option `1) Run Pro-Set 700.`

3. Log on to security level 3. Refer to the Pro-Set 700 Reference Manual, pub. 6500-6.4.3, for more information on security levels.

4. Press the  button.

5. Select the **General** menu.

6. Select **Toggle CV Command Line**.

7. Type  on the host computer keyboard.

8. At the ControlView command line, type

```
DBimp New DBS200 PS700CI.dbs
```

This file is converted to an internal ControlView format.

▶ With the co-injection software, you no longer have to import the alarming information.

9. When the import process completes, press the  button.

10. From the **General** menu, select **Exit Pro-Set 700** to exit from the software.

11. When you are at the MS-DOS prompt, use the MS-DOS MOVE command to rename the existing database from `\ABPS700\DB\PS700` to `\ABPS700\DB\OLD`. You can do this by typing

```
move \ABPS700\DB\PS700 \ABPS700\DB\OLD
```

at the MS-DOS prompt.

12. Use the MS-DOS MOVE command to rename the newly-imported database from `\ABPS700\DB\New` to `\ABPS700\DB\PS700`. You can do this by typing

```
move \ABPS700\DB\NEW \ABPS700\DB\PS700CI
```

at the MS-DOS prompt.

Important: If a directory with the name `ABPS700\DB\OLD` already exists, delete it by using the MS-DOS DELTREE command. You can do this by typing

```
DELTREE ABPS700\DB\OLD
```

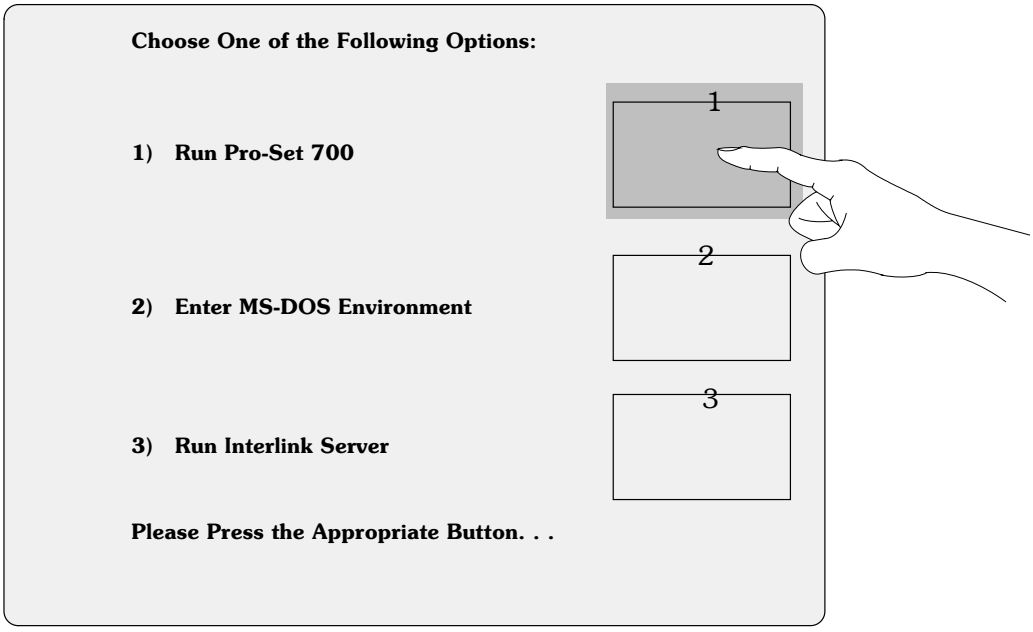
at the MS-DOS prompt.

13. Re-start Pro-Set 700 by typing

`123` Return

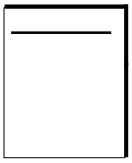
at the operator interface command prompt.

You see



14. Select option `1) Run Pro-Set 700`.

What 's Next?



In Chapter 2, we explain co-injection sequences.

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Publication 6500-6.5.19 – January, 1996

PN 956503-01