



Training Manual



Operator Login Screen

The image shows a blue rectangular login screen with rounded corners. At the top center, the word "LOGIN" is displayed in white capital letters. Below it, the text "Enter ID Number" is centered. A light blue circular icon with the number "1" is positioned to the left of a rectangular input field. The input field contains the digit "0". In the bottom right corner, there is a light blue circular icon with the number "2" next to a grey rectangular button labeled "EXIT" in black capital letters.

1. Enter login credentials to be verified against database in **"OPERATOR LIST"** screen.

These login credentials will be used to log:

Shots

Calibration Sequences

Barcode Scans

Manual Shots

2. Press **"EXIT"** to return to **"CALIBRATION SHOT SEQUENCE"** screen.



Calibration Shot Sequence Screen

The screenshot shows the 'CALIBRATION SHOT' screen for a '30# Gun'. At the top, a yellow box with callout 1 contains the instruction: 'Pull Gun Trigger for Calibration Shot Time Press Scroll Button to Accept'. Below this, the text '10.00 WAITING....' is displayed with callout 3. In the center, a grey box with callout 5 shows '0 g'. To the right of the grey box is a button with callout 3 labeled 'UNITS: GRAMS PUSH TO TOGGLE'. Below the grey box is a button with callout 2 labeled 'READ WEIGHT'. At the bottom left is a button with callout 4 labeled 'BYPASS'. At the bottom center, the text 'Last Cal: 41.10 LBS/min' is shown with callout 6. At the bottom right is a button labeled 'CANCEL'.

1. Gun size can be selected in **"SYSTEM CONFIGURATION"** screen.
2. Press **"READ WEIGHT"** to update shot weight valve from the integrated scale or press the scroll button on cabinet.
3. Toggle between units of measurement (lbs. & grams).
4. Bypass calibration shot (usually for troubleshooting or setup purposes).
Only supervisors can bypass this step. Bypasses calibration shots are always logged in the database.
5. If electronic scale provided malfunctions or is broken, press the grey background to manually enter the shot weight value.
6. Displays the calculate output capacity from the last successful calibration shot.



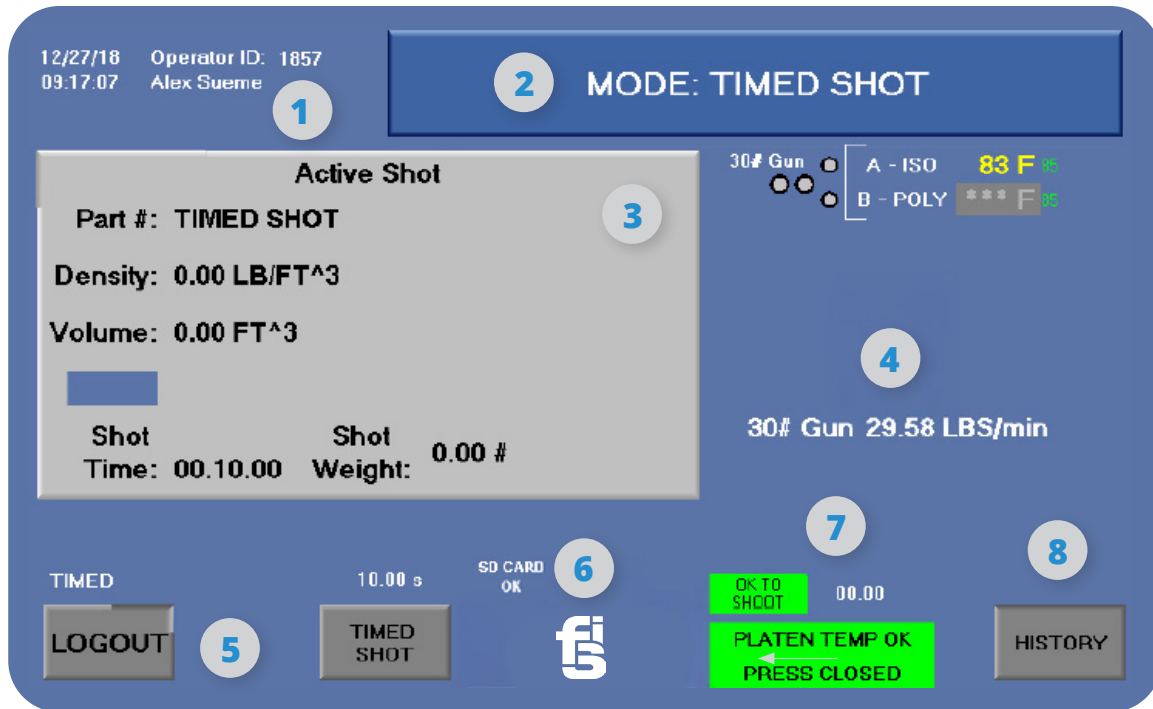
Manual Bag Shot Weigh Entry Screen



The calibration shot weight automatically retrieved from the scale or manually entered in the screen above must be within a predetermined weight range.



Main Interface Screen



1. Displays date, time, and ID of operator.
2. Press to cycle between shot modes.
3. Window displaying current shot data.
4. Calculated gun output based upon last calibration.
5. Logout button changes operators and requires the calibration sequence to be performed.
6. Press FSI logo to enter **"FOAMING SETUP"** screen.
7. Displays status of press platen and press temperature if enabled and provided by the customer.
8. View of shot history.



Shot History Screen

Shot History										
ID	G	Date	Time	Part #	Shot #	Time	Den	Vol.	A	B
24291	30	12/27/18	07:33:34 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:32:58 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:32:29 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:31:53 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:24:48 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:23:45 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:22:30 AM	TIMED SHOT		10.00	0.00	0.00	76	***
24291	30	12/27/18	07:21:43 AM	TIMED SHOT		10.00	0.00	0.00	76	***
24291	30	12/27/18	07:21:05 AM	TIMED SHOT		10.00	0.00	0.00	76	***
1857	30	12/12/18	02:50:15 PM	http://878242		7.22	2.80	1.27	78	***

SCROLL to page down

System in Single Heater mode
*** means heater disconnected

Also RESET Button

EXIT



Foaming Setup Screen

The screenshot shows the 'Foaming Setup' screen with various controls and displays. Numbered callouts are as follows:

- 1:** Warmup Time MM:SS (05.00)
- 2:** Calibrat Shot: (10.00), 30# Gun, Last Gun LBS/min (41.10)
- 3:** Liquid Weight - LBS (0.00)
- 4:** Temperature Set Point (85 F), Dead Band (2), Enable (EN/DIS)
- 5:** Ethernet NAME: FSI, MAC Address: 00-0D-22-21-DB-FC, Subnet Mask: 255.255.255.0
- 6:** Units: F Toggle
- 7:** ON-SCREEN TRIG ON
- 8:** Ethernet NAME: FSI, MAC Address: 00-0D-22-21-DB-FC, Subnet Mask: 255.255.255.0
- 9:** EXIT button

Other visible elements include: System Info button, 30# Gun selection, A - ISO and B - POLY temperature set points, Overheat Cut Off Temperature (95 F), Heater Max Power (50 %), Upper Shot Temperature (90 F), Lower Shot Temperature (75 F), User Reset Disabled button, and version 11.17.18.

1. Enter the time to be allotted for hose heat and/or cal rods to bring chemical in hoses up to operating temp.
Cal shot sequence cannot begin until acceptable chemical temperature is reached.
2. Displays cal shot time, gun size selected, last calculated cal shot output capacity.
3. Calculates amount of liquid chemical dispensed from last cal shot.
4. Supervisor can enter the temperature set point at which the PLC will not allow the user to complete a shot. PLC will not allow normal operation until the temperature is brought within the acceptable range and the alarm is reset.
5. Duty cycle set point for hose and/or cal rod power.
Value should stay at or below 50% to prevent damage to hose heaters or cal rods.
6. Toggles between celsius and fahrenheit.
7. Enables/disables gun trigger button to be simulated on PLC touchscreen. Usually for troubleshooting purposes.
8. Displays ethernet and network information. User can enter the IP address of the PLC and the remote gateway to be used for network connection purposes.
9. Returns to **"MAIN INTERFACE"** screen.
6. Enters **"SYSTEM INFO"** screen.



Foaming Setup Screen (Continued)

The screenshot displays the 'Foaming Setup Screen (Continued)' interface. It features a top navigation bar with 'System Info' and 'Setup' tabs. The 'Setup' tab is active, showing configuration for two guns (A - ISO and B - POLY). Key parameters include Temperature (*** F), Set Point (85 F), Dead Band (2), and Enable status (EN for A, DIS for B). A 'Calibrat Shot' section shows '10.00' and '30# Gun'. A 'Warmup Time MM:SS' field is set to '05.00'. A 'Last Gun LBS/min' field is set to '41.10'. A 'Weight - LBS' field is set to '0.00'. A 'System Info' button is labeled '16'. An 'Ethernet' section shows 'NAME: FSI', 'MAC Address: 00-0D-22-21-DB-FC', and 'Subnet Mask: 255.255.255.0'. IP and Gateway fields are set to '192.168.0.42' and '192.168.0.1' respectively. An 'Overheat Cut Off Temperature' field is set to '95 F'. A 'Heater Max Power' field is set to '50 %'. 'Upper Shot Temperature' is set to '90 F' and 'Lower Shot Temperature' is set to '75 F'. A 'Units: F Toggle' button is labeled '15'. A 'User Reset Disabled' button is labeled '14'. An 'ON-SCREEN TRIG ON' button is at the bottom. The version 'ver 11.17.18' and an 'EXIT' button are also visible.

Parameter	Value
Warmup Time MM:SS	05.00
Calibrat Shot	10.00
30# Gun	41.10
Weight - LBS	0.00
System Info	16
Ethernet NAME	FSI
MAC Address	00-0D-22-21-DB-FC
Subnet Mask	255.255.255.0
IP	192.168.0.42
Gateway	192.168.0.1
Overheat Cut Off Temperature	95 F
Heater Max Power	50 %
Upper Shot Temperature	90 F
Lower Shot Temperature	75 F
Units: F Toggle	15
User Reset Disabled	14
ON-SCREEN TRIG ON	
ver	11.17.18
EXIT	

- 11. Supervisor can enter desired chemical temperature set point.
- 12. Fine tunes the heater controls.
- 13. Enable/disable individual heaters. For one gun with hose heat, only enable A side heater. When using cal rods, you must enable both A and B side heaters.
- 14. Supervisor can enter the temperature cut off points that will prevent the PLC from attempting a shot.
This is different from the overheat cut off temperature set point.
- 15. Enables/disables the ability for operators to reset the temperature alarms without requiring a supervisor.
- 16. Enters the "SYSTEM INFO" screen.



System Info Screen

System Info

Press and Hold to Reset

	Shot Counters	Total Weight
Total	4 1	33
User	4	6
Technician	4 2	
30# Gun	15	

Cal Shot Log **3**

System Config **4**

Operator List **5**

Also RESET Button

EXIT

1. Displays a summary of historical data. Total shot count cannot be reset. Displays the lifetime number of shot cycles. Other items can be reset.
2. Calculates each shot count by user, tech, and gun. Can be reset to track the longevity of equipment and productivity of each employee.
3. Enters **"CALIBRATION SHOT LOG"** history screen.
4. Enters the **"SYSTEM CONFIGURATION"** screen.
5. Enters the **"OPERATOR LIST"** screen.
6. Displays the calculated chemical weight dispensed by the unit. Can be reset at shift change, operator change, or anytime to track specific production volume.



Calibration Shot Log Screen

0

Cal Shot History

ID	Gun	Date	Time	Shot Time	Shot Weight	In Spec	Status
0	0	12/03/18	08:43:02 AM	0.00	0.00	NO	BYPASSED
0	30	12/03/18	08:42:54 AM	0.00	0.00	NO	BYPASSED
0	0	12/03/18	08:42:24 AM	0.00	0.00	NO	BYPASSED
0	30	12/03/18	08:42:22 AM	0.00	0.00	NO	BYPASSED
0	0	11/30/18	03:29:57 PM	0.00	0.00	NO	BYPASSED
0	30	11/30/18	03:29:57 PM	0.00	0.00	NO	BYPASSED
0	30	11/30/18	03:29:54 PM	10.00	41.10	NO	BYPASSED
0	30	11/30/18	03:29:54 PM	10.00	41.10	NO	BYPASSED
0	30	11/30/18	03:29:53 PM	10.00	41.10	NO	BYPASSED
0	30	11/30/18	03:29:49 PM	10.00	41.10	NO	BYPASSED

Also RESET Button

SCROLL to page down

EXIT

Displays historical data specific to the calibration sequence.

ITEMS RECORDED

- Logged in Operator
- Each Gun's Calibration
- Date and Time
- Shot Time Used
- Calculated Gun Output Capacity
- In Specifications (Y/N)
- Successful / Bypass



System Configuration Screen

The System Configuration screen is a blue interface with a title bar at the top. It is divided into two main sections by a horizontal yellow line. The top section contains two columns of controls. The left column, labeled 'Gun 1 Size', has two green circular buttons with white arrows pointing up and down, and a blue button labeled '30# GUN' with a circled '1' below it. The right column, labeled 'Gun 2 Size', has similar green arrows and a blue button labeled 'NONE' with a circled '2' below it. The bottom section is split by a vertical yellow line. The left side has a 'Barcode Delimiter' section with a blue button showing an asterisk '*' and a 'Valid Characters: ! \" \$ % & ' () * + ,' text, and an 'Include X of Y?' section with a blue button labeled 'NO' and a circled '4' below it. The right side is labeled 'Shift Change Times (HR)' with a circled '5' and contains three input fields: '1st:' with '07 :00', '2nd:' with '15 :00', and '3rd:' with '23 :00'. A grey 'EXIT' button is located at the bottom right of the screen.

1. Cycle through gun size options (6, 15, 30, 45)
Determines shot size crossover point and assigns shot volume to correct size gun.
2. Select corresponding gun capacity size. Determines successful calibration sequence ranges ensuring equipment is in proper working range.
3. Select QR code delimiter.
Useful for different ERP systems. SAP cannot use comma (,) as delimiter.
4. For parts that require multiple shots. Tied to an ERP requirement.
If QR codes include "shot x of y" - shot 3 out of 7 shots required to complete the part.
5. Shift change times. For multiple and single shift operations. Determines when a calibration sequence must be performed. System automatically logs out user and requires calibration sequence to be successfully completed for production to continue. System will not interrupt shot in-progress. Ensures QC.



6. Enter shift change times in 24hr format.



Operator List Screen

Operator List

0

ID	Security 1 = OPER 2 = SUPV	Name
14237	2	Andrew Yue
17229	2	Filipp Pavenko
16448	1	Alex Lytvynenko
0	0	
22116	2	John Raisanen
666	2	DAMIEN
10584	1	Knoblock, Todd R.
10632	1	Hommerding, Christop
12027	1	Augustine, Tracy T.
12134	1	Miller, Irene M.

Save

EXIT

Up arrow button

Down arrow button

1. Users enter unique login ID at start of calibration/operation sequence. ID will be associated with every shot, calibration, bypass, or login.
2. Supervisors or FSI Technician can set users security access level. Configuration operations are restricted to supervisors, troubleshooting operations are restricted to FSI Technicians.
3. Names associated with ID numbers.
ID and name can be edited by supervisors with level 2 security and up.
4. Use up and down buttons to scroll through lists.
5. Always press save to confirm changes to screen.



Foaming Shot History Screen

0

Shot History

ID	G	Date	Time	Part #	Shot #	Time	Den	Vol.	A	B
24291	30	12/27/18	07:33:34 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:32:58 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:32:29 AM	TIMED SHOT		10.00	0.00	0.00	75	***
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24291	30	12/27/18	07:23:45 AM	TIMED SHOT		10.00	0.00	0.00	75	***
24291	30	12/27/18	07:22:30 AM	TIMED SHOT		10.00	0.00	0.00	76	***
24291	30	12/27/18	07:21:43 AM	TIMED SHOT		10.00	0.00	0.00	76	***
24291	30	12/27/18	07:21:05 AM	TIMED SHOT		10.00	0.00	0.00	76	***
1857	30	12/12/18	02:50:15 PM	http://878242		7.22	2.80	1.27	78	***

1

SCROLL to page down

System in Single Heater mode
*** means heater disconnected

Also RESET Button
EXIT

1. Use scroll button on front of PLC box to scroll through last set of logged shots stored on PLC memory. SD card logs every shot. Accessed by FSI Technicians by downloading .csv file into Excel.

Permissions have been granted for customer personnel to view data as well.



Single Barcode Shot Mode Screen

12/27/18
09.03.41

Operator ID: 1857
Alex Sueme

1

MODE: SINGLE BARCODE

Active Shot

2

Part #: 878291

Density: 2.41 LB/FT³

Volume: 1.19 FT³

Shot Time: 00.05.81

Shot Weight: 2.86 #

30# GUN

30# Gun ☐ A - ISO 85 F ☐ B - POLY *** F ☐

30# Gun 29.58 LBS/min

WAIT FOR TRIG

SD CARD
OK

OK TO
SHOOT 00.00

PLATEN TEMP OK
PRESS CLOSED

LOGOUT

HISTORY

1. Single barcode shot mode.

2. Displays information about the part to be shot.

Operator scans one barcode at a time. The shot will be repeated until the next barcode is scanned or a different operation mode is selected.



Multiple Barcode Shot Mode Screen

03/22/21 15:52:51

1 MODE: MULTI-SHOT BARCODE

Operator ID: 0

Active Shot

2

Part #:

Density: 0.00 LB/FT³

Volume: 0.00 FT³

Shot:

GUN SEL IN BARCODE

Shot 00:00.00

Time: 00:00.00

Shot Weight: 5.94

Ratio: 0.0

15 PPM Gun

A - ISO 84 86

B - POLY 85 85

GFCI OK

Flow Online

Last Cal Shot

44.90 LBS/min

60 PPM Gun

A - ISO 86 86

B - POLY 85 86

GFCI OK

Flow Offline

Last Cal Shot

60.00 LBS/min

Shots Scanned: 0 Current Shot # **

MULTI-SCAN LOADING

3

SD CARD OK

4

MULTI SHOT TABLE

HISTORY

LOGIN

SnsiteACT
ADVANCED CONTROL TECHNOLOGY

1. Multiple barcode shot mode.
2. Displays information about current shot in queue. System functions in a first-in first-outshot sequence. Density and volume of each shot are displayed when each part is foamed.
3. Displays status of multi-shot sequence and how many are left in queue.
4. Press to enter "MULTIPLE BARCODE SCAN TABLE."



Multiple Barcode Scan Table Screen

Multi Shot Scan Table 1

Scan Count: 10

	Part #	Shot #	Density	Volume	Weight
1	000611	1	2.41	2.67	6.43
2	070295	2	2.42	2.30	5.56
3	878229	3	2.42	2.88	6.96
4	878416	4	2.41	2.98	7.18
5	070217	5	2.47	4.50	11.11
6	878235	6	2.47	1.78	4.39
7	878234	7	2.41	0.64	1.54
8	070230	8	2.41	2.90	7.10
9	880609	9	2.40	1.25	3.00
10	878289	10	2.41	2.99	7.20

SCAN
"END"
TO
FINISH

1

30# Gun

2

EXIT

Displays all barcodes that have been scanned into current foaming sequence.
Up to 30 barcodes can be scanned into one foaming sequence.

- 1. Press down arrow to cycle through shot queue.
- 2. Exit button returns to "MULTIPLE BARCODE SHOT MODE" screen.
All shots are recorded and data associated with shot is displayed in adjacent columns.



Timed Shot Mode Screen

12/27/18
09:17:07

Operator ID: 1857
Alex Sueme

MODE: TIMED SHOT

Active Shot

Part #: TIMED SHOT

Density: 0.00 LB/FT^3

Volume: 0.00 FT^3

Shot Time: 00.10.00

Shot Weight: 0.00 #

30# Gun

A - ISO 83 F 85

B - POLY *** F 85

30# Gun 29.58 LBS/min

TIMED

10.00 s

SD CARD OK

OK TO SHOOT 00.00

PLATEN TEMP OK

PRESS CLOSED

LOGOUT

1

TIMED SHOT

HISTORY

1. "TIMED SHOT" button brings up shot time entry window.

Timed Shot
Preset

10.00

Also RESET Button

EXIT



Manual Barcode Entry Mode Screen

12/27/18
08:22:46

Operator ID: 24291
Carrie

1

MODE: MANUAL BARCODE ENTRY

Active Shot

Part #:

Density: 0.00 LB/FT^3

Volume: 0.00 FT^3

Shot Time: 00.00.00

Shot Weight: 0.00 #

30# Gun

A - ISO

87 F

B - POLY

*** F

30# Gun 29.58 LBS/min

SCAN PART #

LOGOUT

SD CARD
OK

OK TO SHOOT

00.00

PLATEN TEMP OK

PRESS CLOSED

HISTORY

1. Window below automatically appears to allow user to enter barcode and shot data.

Enter Barcode Data

Active Shot

Part #:

Density: 0.00 LB/FT^3

Volume: 0.00 FT^3

Shot #:

Press OK to Confirm

OK

EXIT



Manual Trigger Mode Screen

12/27/18
00:22:15

Operator ID: 24291
Carrie

MODE: MANUAL TRIGGER

Active Shot

Part #: TIMED SHOT

Density: 0.00 LB/FT^3

Volume: 0.00 FT^3

Shot 00 01 39
Time:

Shot Weight: 0.00 #

30# GUN

30# Gun

A - ISO 87 F

B - POLY *** F

30# Gun 29.58 LBS/min

WAIT FOR TRIG

SD CARD OK

OK TO SHOOT 00.00

PLATEN TEMP OK
PRESS CLOSED

LOGOUT

HISTORY

1. Functions by pressing trigger on SLUG Pro Gun to dispense foam. Total shot time accumulated in this mode is logged along with each individual shot sequence time.