The operator interface which mounted in the front of the Precision Dose control box allows the user to set parameters that control and monitor the dosing of booster paste into the base material. The following information summarizes the screens available and what the different screens control.

1. When the control box is first powered on, the operator interface display will read: (Show screen 1 attached)
   This Main screen displays current frequency of dosing rate and set up F1.

2. After pressing the set up F1, Prompt to enter password appears (default password is '0000') after entering this password the Precision Dose Selects screen appears. (Show screen 7)

This screen prompts user to select a number of different options. Reference the following screen. Select one of the options by using the scroll up and down arrows and highlight the appropriate selection and push the enter key. This will then move you into the appropriate screen for you to edit your parameters.

3. The first choice is the Dose Preset screen. Use select down arrow here to highlight Dose Preset and press enter. The dose Preset screen will appear.
   (Show Screen number 3)
   The current value will be displayed and if the user want s to change this value they must push F1 and then they will be allowed to change the value by using the up and down arrows on the right hand side of the screen to select a number 0-9 and then to enter the next digit use the right of left arrow. Once the correct number is displayed the user must push the enter button. If the value is outside the acceptable range, an error screen will appear, which requires the user to push " any key" to exit. To go back to the screen control the user must push F4 and repeat procedure.
   When complete with changing dosing preset press F4 to go back to Selects Screen.
   This value entered represents how many encoder pulses are required for the dosing valve to actuate one time. The default value of 22 will give an approximate booster level of 2%. For a higher level of booster, enter a lower value (the nominal value for 3% booster is 11). For a lower level of booster level, enter a higher number (the nominal value for 1% booster is 44).
   Note: these values are approximations for booster value. Follow the ratio check procedure to determine actual booster value.

4. The second choice is Alarm Value screen. Use the up and down arrow keys and highlight Alarm Value and press enter key. (Show screen 4)

   The current value will be displayed and if the user wants to change this value they must push the F1 button and then they will be allowed to change the value using the up and down arrows to select a number from 0-9 and then enter the next digit using the right and left arrows. Once the correct number is displayed the user must hit enter. If the value is outside the acceptable range, an error screen will appear, which

requires the user to push " any key" to exit. To go back to Selects Screen the use must push F4 and repeat.
This screen sets the frequency value alarm. In most cases this should remain 5 the default. The only reason to enter a lower value is to limit the overall flow rate during dispense.

5. The third choice is the Upper Tolerance screen. Use up and down arrow keys and highlight Upper tolerance and press enter key. (Show screen 5)
   The current value is displayed and if the user wants to change the value they mush push F1 and then they will be allowed to change the value using the up and down arrows to select a number from 0-9 and then enter the next digit using the right and left arrows. Once the correct number is displayed the user must hit enter. If the value is outside the acceptable range, an error screen will appear, which requires the user to push " any key" to exit. To go back to Selects Screen the use must push F4 and repeat.
   The precision dose control program is set up in default mode to ignore pulses that fall more than 30% outside of the normal range. The consequence is that the dosing valve will fail to actuate if the PLC sees a high rate of pulses from the encoder. This condition can exist when the pump changes direction. Increasing the value displayed on this screen means that the PLC will continue to allow the dosing valve to actuate as pulse rates fall further outside of normal. Our experience is that Sikaflex materials will work well at a default value of 130, but Bostik Findley materials require a higher value to be entered on this screen. Laboratory work indicates that entering 1000 on this screen will give good performance with these materials without creating over-catalyzed, rigid material in the final cure state. Depending on material, it may be necessary to compare results at several different values.

6. The fourth choice is the Lower Tolerance screen. Use up and down arrow keys and highlight Upper tolerance and press enter key. (Show screen 8)
   The PLC program is also set up to ignore pulses that are more than 30% below normal. Changing the value means that the dosing valve continues to actuate even if a very low pulse count is fed to the PLC from the encoder. Our experience is that the nominal value of 70 works well for Sikaflex materials. In Graco lab tests we reset the value to 5 when dispensing Bostik Findley materials, with good results. As the upper tolerance parameter, actual results in production operation may vary, and we recommend that the user compare the results at several settings to determine optimal performance.
   Note: Do not enter 0 in this field.

7. The fifth choice is the Disp Delay screen. Use up and down arrow keys and highlight Upper tolerance and press enter key. (Show screen 9)
   The current value is displayed and if the user wants to change the value they mush push F1 and then they will be allowed to change the value using the up and down arrows to select a number from 0-9 and then enter the next digit using the right and left arrows. Once the correct number is displayed the user must hit enter. If the value is outside the acceptable range, an error screen will appear, which requires the user to

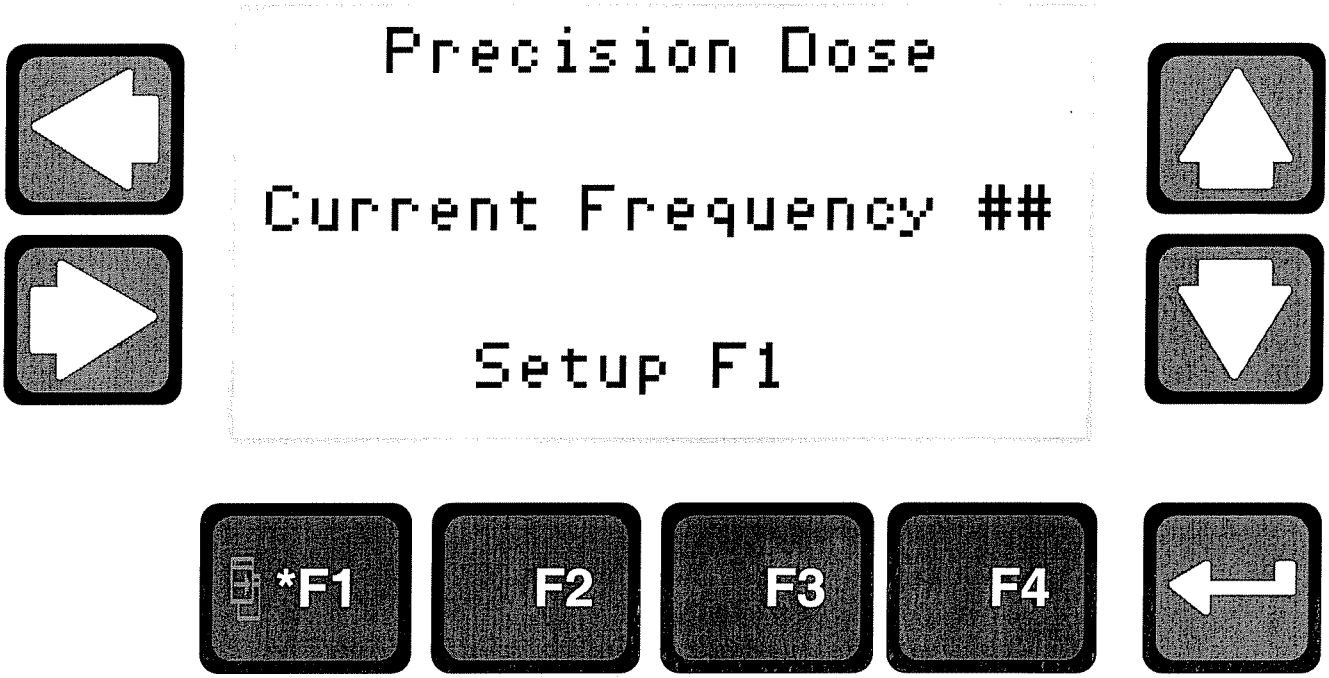
push " any key" to exit. To go back to Selects Screen the use must push F4 and repeat.

The current value is displayed and if the user wants to change the value they mush push F1 and then they will be allowed to change the value using the up and down arrows to select a number from 0-9 and then enter the next digit using the right and left arrows. Once the correct number is displayed the user must hit enter. If the value is outside the acceptable range, an error screen will appear, which requires the user to push " any key" to exit. To go back to Selects Screen the use must push F4 and repeat.

The value entered on this screen tells the PLC not to allow the dosing valve to open for the value entered multiplied by the dosing pre-set valve. For example, the displayed dispense delay (2) multiplied by the dosing preset value (22) equals 44. This means that the booster will not be fed into the base material until the encoder has delivered 44 pulses to the PLC. This value can be reset to 0, if desired, so booster will flow immediately upon triggering the 2K Ultra-Lite valve supplied with the Precision Dose system. Leave the value unchanged if there is a concern that an extra "shot" of booster will cause the material to become too rigid from being over catalyzed.

8. The fifth choice is the Security screen. Use up and down arrow keys and highlight Upper tolerance and press enter key. (Show screen 6)

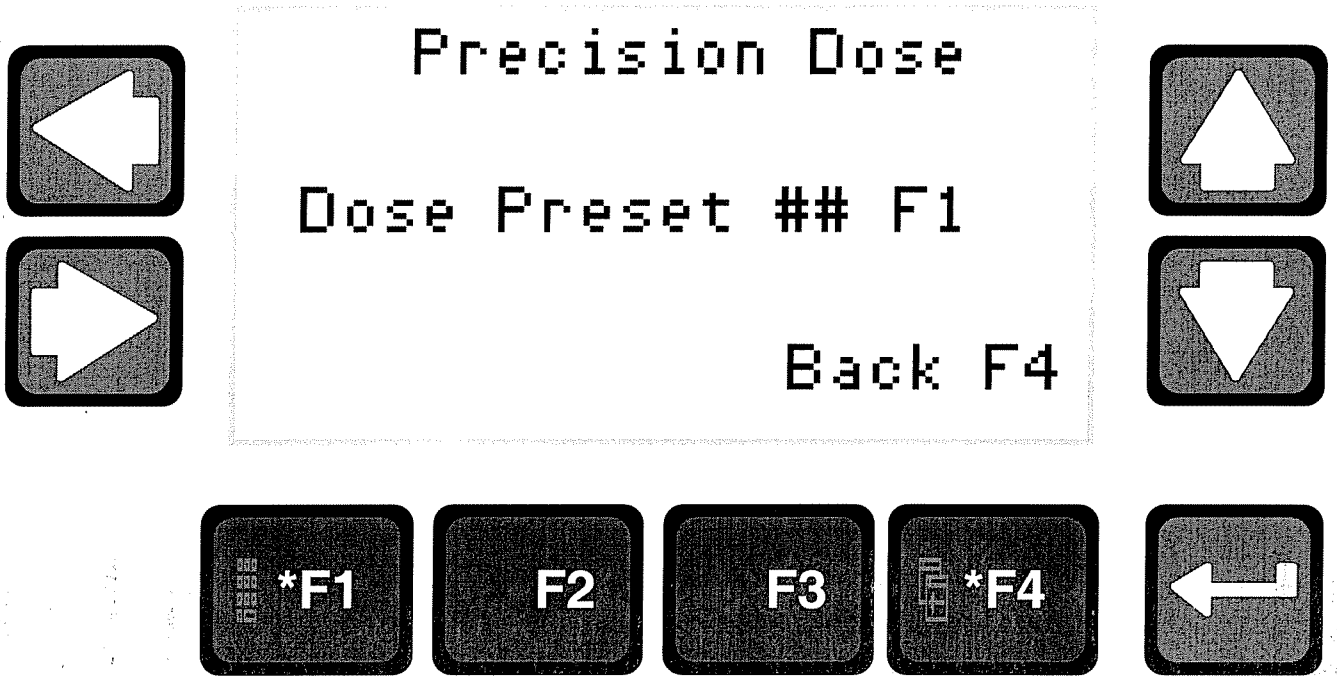
   This screen contains the password change capability. First, the user must push F1 to select operator 1. Next they must push F2 to enter the new password. To change the value using the up and down arrow to select a number 0-9 and then enter the next digit use the right and left arrow. Once the correct number is displayed, the use must push enter. It will prompt to verify password. The user must then push the F3 button to verify their new password. To change the value use the up and down arrows to select a number0-9 and then to enter the next digit use the left and right arrow. Once the correct number is displayed the user must hit enter. Then it will prompt the to password changed.



Screen 1 - Main
Screen Summary Report

Screen 1 - Main

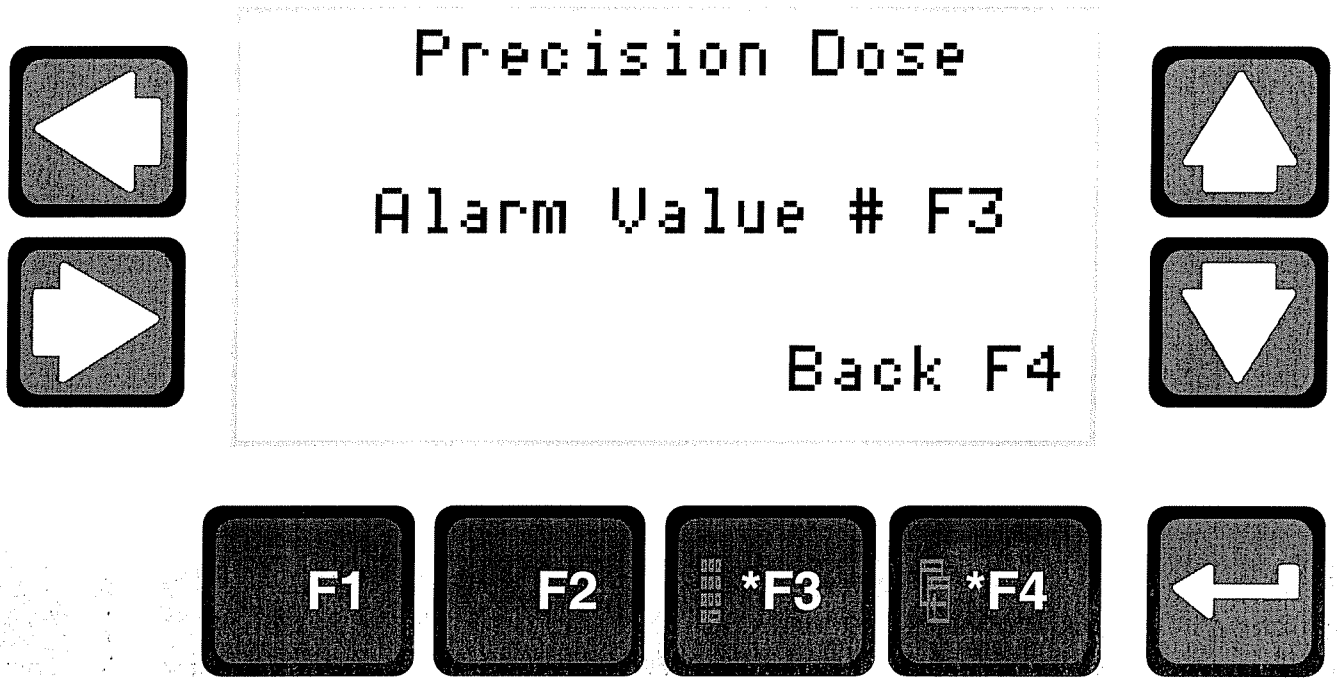
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
22,	Setup F1,	Goto Screen Selector,	(0, 48),	(120, 16),	On ,	Off ,	F1
2055,	current_frequency,	Numeric Data Display,	(0, 24),	(128, 24),	On ,	Off ,	
2217,	None,	Text,	(16, 0),	(96, 16),	On ,	Off ,	



Screen 3 - Dose preset
Screen Summary Report

Screen 3 - Dose preset

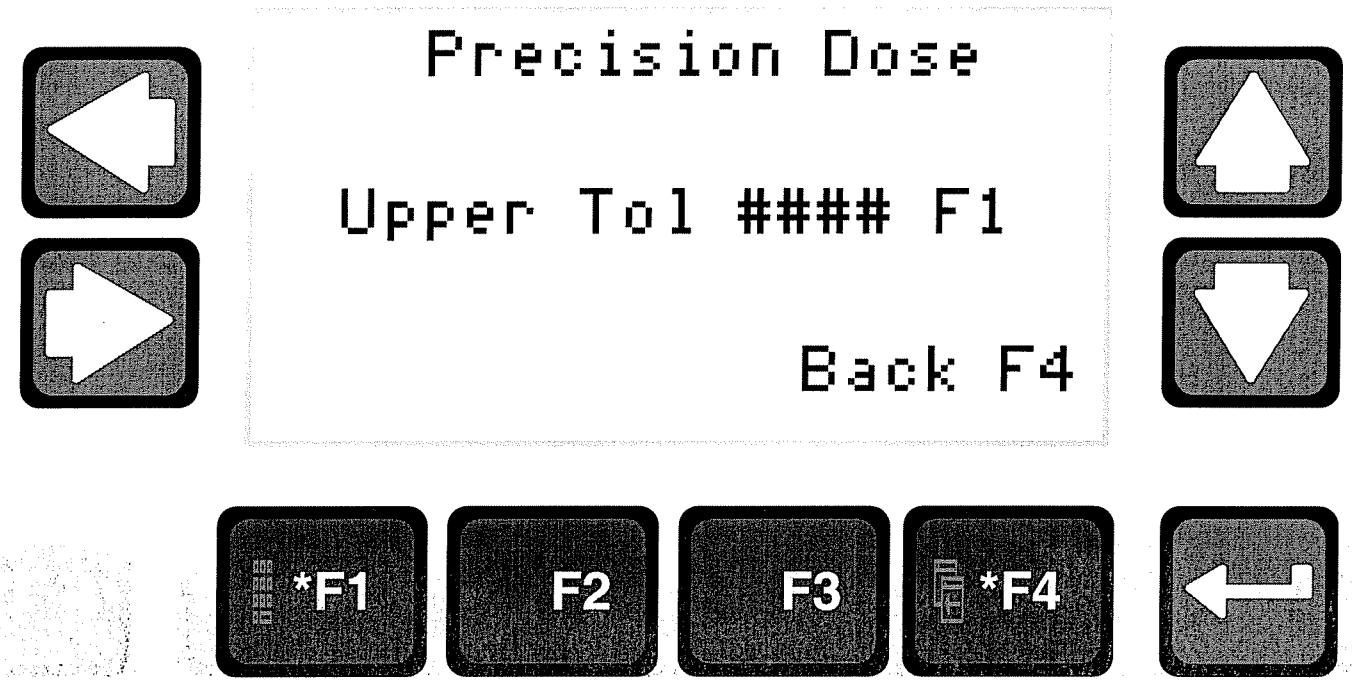
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
402,	dose_preset,	Numeric Entry Keypad Enable,	(0, 24),	(120, 16),	On ,	Off ,	F1
624,	Back F4,	Return To Screen Selector,	(80, 48),	(48, 16),	On ,	Off ,	F4
2375,	None,	Text,	(24, 0),	(88, 16),	On ,	Off ,	



Screen 4 - Alarm Value
Screen Summary Report

Screen 4 - Alarm Value

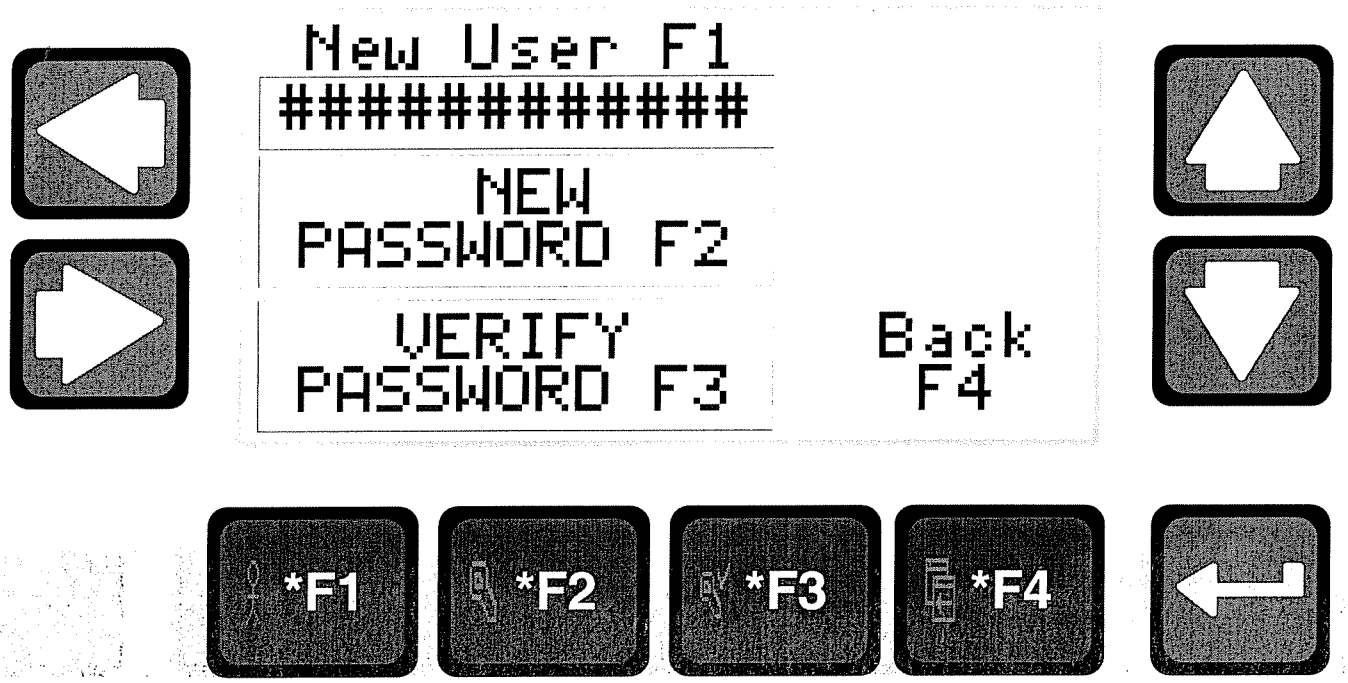
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
896,	Back F4,	Return To Screen Selector,	(80, 48),	(48, 16),	On ,	Off ,	F4
650,	alarm_value,	Numeric Entry Keypad Enable,	(8, 24),	(120, 16),	On ,	Off ,	F3
2387,	None,	Text,	(24, 0),	(88, 16),	On ,	Off ,	



Screen 5 - Upper Tolerance
Screen Summary Report

Screen 5 - Upper Tolerance

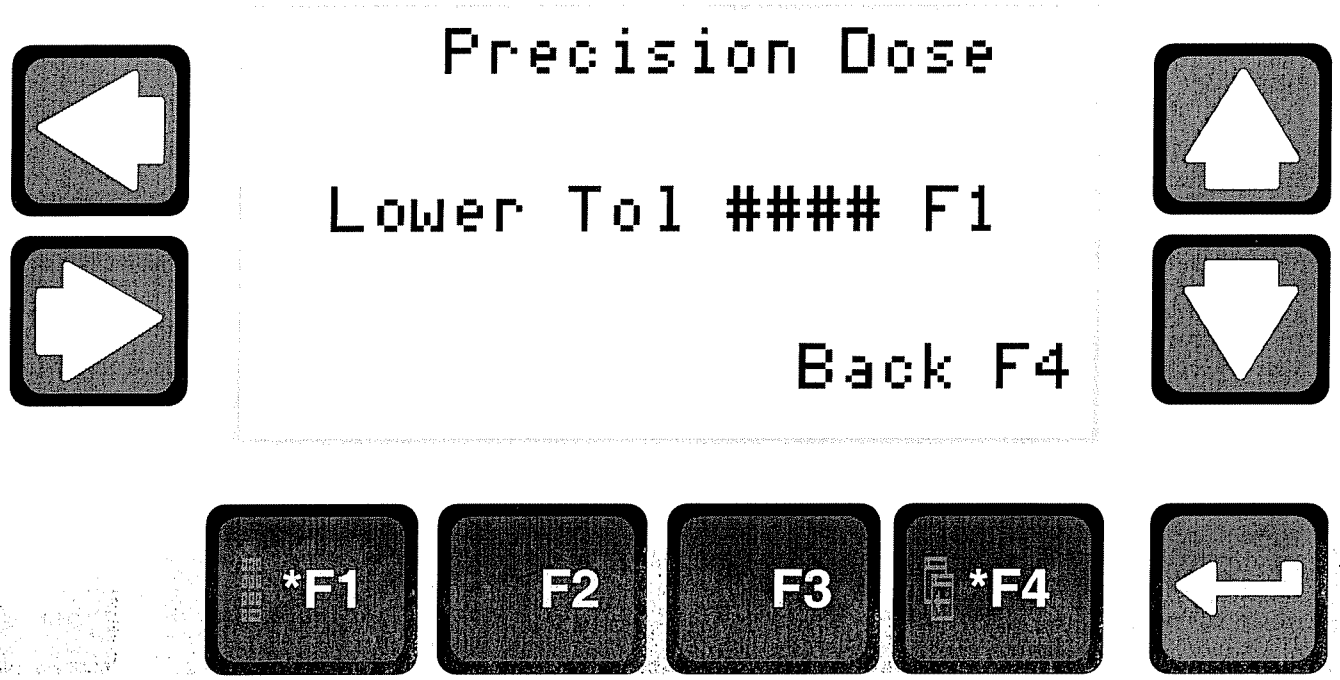
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
2397,	None,	Text,	(24, 0),	(88, 16),	On ,	Off ,	
2401,	upper_tolerance,	Numeric Entry Keypad Enable,	(8, 24),	(112, 16),	On ,	Off ,	F1
2507,	Back F4,	Return To Screen Selector,	(80, 48),	(48, 16),	On ,	Off ,	F4



Screen 6 - security
Screen Summary Report

Screen 6 - security

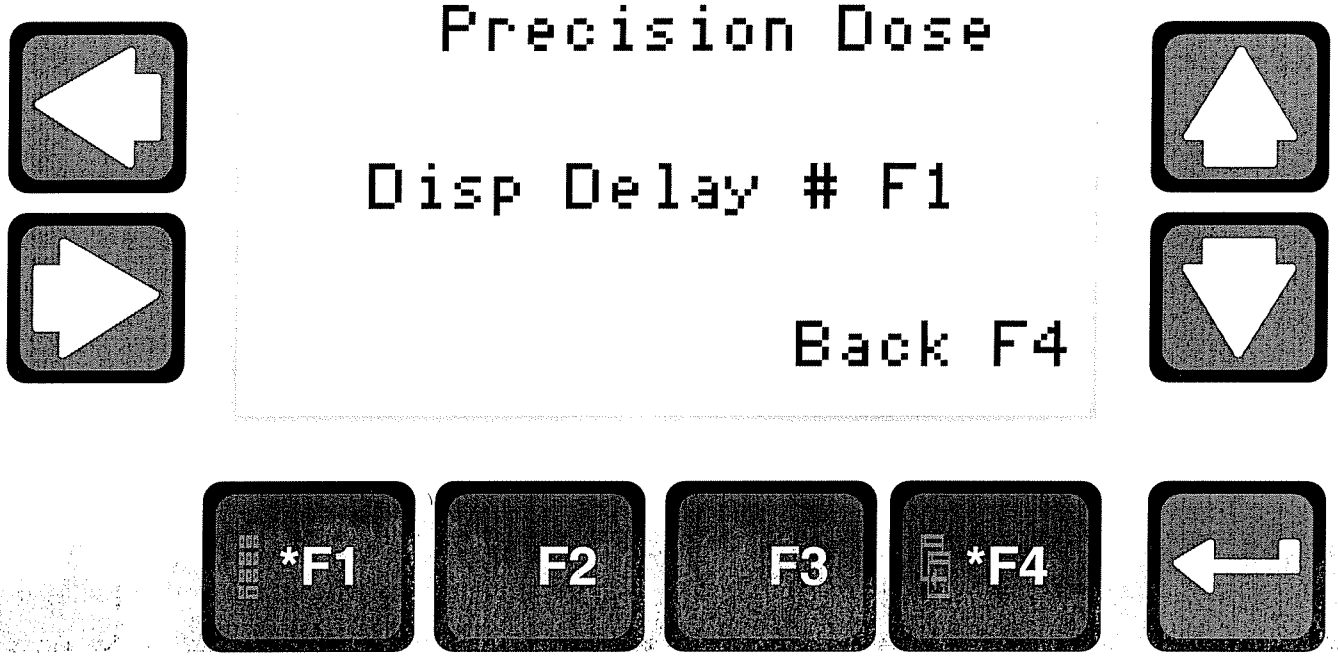
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
3573,	Back F4,	Return To Screen Selector,	(88, 43),	(40, 21),	On ,	Off ,	F4
3621,	@Write_SecNewPassword,	ASCII New Password,	(2, 21),	(78, 20),	On ,	Off ,	F2
3665,	@Write_SecSelectNextOp,	SelOperator Push Button,	(2, 9),	(78, 11),	On ,	Off ,	F1
3629,	@Write_SecVerifyPassword,	ASCII Verify Password,	(2, 43),	(78, 20),	On ,	Off ,	F3
3645,	None,	Text,	(2, 0),	(79, 11),	On ,	Off ,	



Screen 8 - Lower Tolerance
Screen Summary Report

Screen 8 - Lower Tolerance

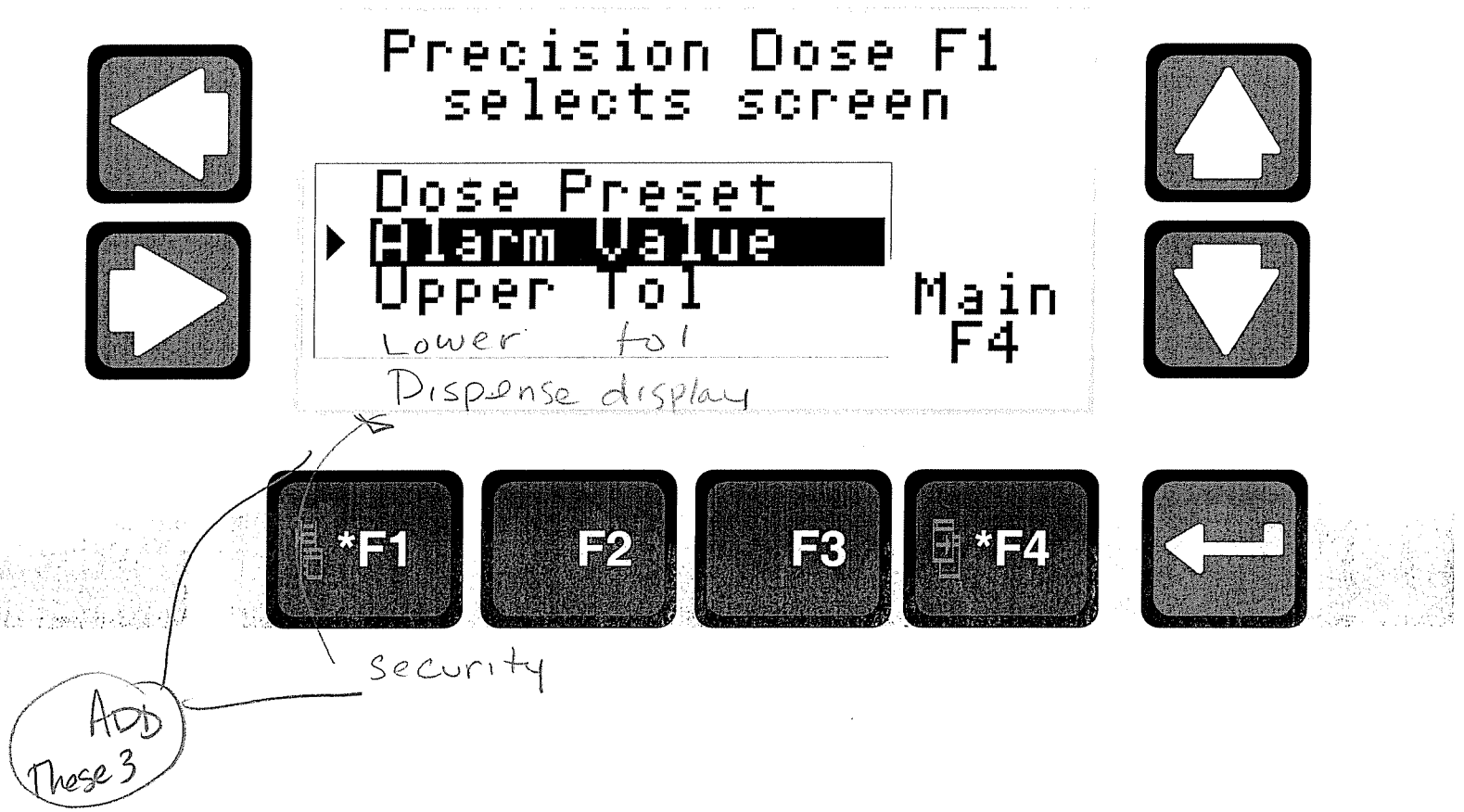
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
2641,	None,	Text,	(24, 0),	(96, 16),	On ,	Off ,	
2645,	lower_tolerance,	Numeric Entry Keypad Enable,	(8, 24),	(112, 16),	On ,	Off ,	F1
2743,	Back F4,	Return To Screen Selector,	(81, 48),	(47, 16),	On ,	Off ,	F4



Screen 9 - Disp Delay
Screen Summary Report

Screen 9 - Disp Delay

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
2633,	None,	Text,	(24, 0),	(96, 16),	On ,	Off ,	
2751,	Back F4,	Return To Screen Selector,	(81, 48),	(47, 16),	On ,	Off ,	F4
2755,	dispense_delay,	Numeric Entry Keypad Enable,	(16, 24),	(96, 16),	On ,	Off ,	F1



Screen 7 - screen control
Screen Summary Report

Screen 7 - screen control

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
2513,	None,	Screen List Selector,	(0, 24),	(96, 32),	On ,	Off ,	F1
2625,	None,	Text,	(0, 0),	(128, 24),	On ,	Off ,	
2873,	Main F4,	Goto Screen Selector,	(96, 40),	(32, 24),	On ,	Off ,	F4