



Continuous Screen Changer
(CSC) Controls

FilterPak 50

PSI-Polymer Systems



FilterPak 50

The FilterPak 50 is PSI's entry level pendant operated, PLC based control system.

The system includes

- basic PLC with keypad interface for parameter setup
- remote handheld pendant with switch control for automatic or manual screen changer operation.



Numbers shown in the above screens are for demonstration only.
Actual field value input is required for operation.

CLICK any button in **RED**



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This is an INTERACTIVE presentation. CLICK any button outlined in RED to go to the selected screen

Refer to the Manual for Flow Chart and command button sequencing

Button 1 accesses the Setup Menu

Buttons 7,8 and 9 on the Opening Menu screen are quick links for calibration and position identification:

- 7- Calibration
- 8- Top Bolt: Current Position
- 9- Bottom Bolt: Current Position



Numbers shown in the above screens are for demonstration only.
Actual field value input is required for operation.

CLICK any button in RED



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Button 3:

Set Screen Change, Vent and Home Positions

[Click for 'How To' settings info](#)



Button 4:

Set timers for venting

[Click for 'How To' settings info](#)



Button 5:

Set Alarm pressures and Pressure calibration Zero



Numbers shown in the above screens are for demonstration only.
Actual field value input is required for operation.

CLICK any button in RED



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Alarm Settings and PSI (pressure) screen

2 = Alarm settings for upstream pressure set point warning and silencing timer, high alarm / extruder shutdown, and scaling for the upstream pressure transducer (if connected).

3 = PSI (pressure) screen. This screen reads the upstream pressure when connected to an upstream pressure transducer. The screen also provides a pressure calibration function.



Numbers shown in the above screens are for demonstration only.
Actual field value input is required for operation.

CLICK any button in RED



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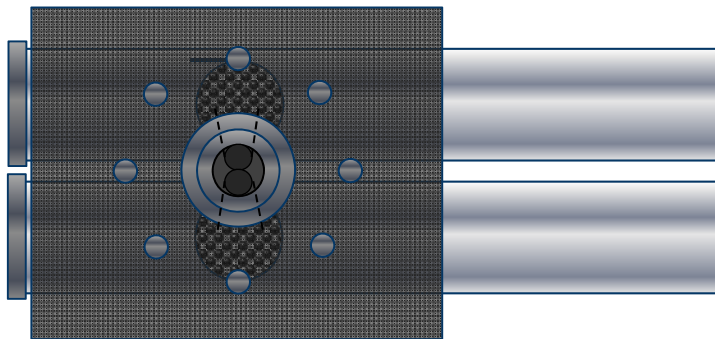
AUTO / MANUAL Mode

AUTO mode automatically engages the hydraulic power unit for the full stroke of the screen changer cross bolt during operator initiated extend and retract operations for screen changes.

By default, only one bolt can be out of the home position at a time for the hydraulic power unit to operate.

Click the EXTEND knob to simulate a screen change in AUTO mode

Auto / Bolt 1



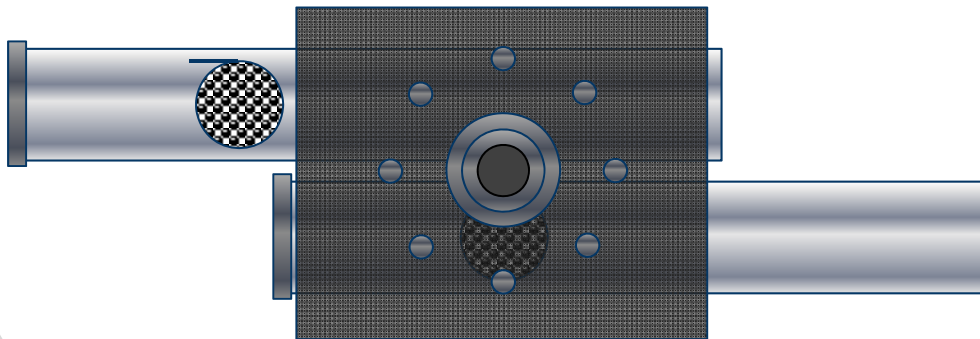
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AUTO / MANUAL Mode

The FilterPak50 can be switched to MANUAL mode at any time. Manual mode will cancel all automatic movement functions. The extend and return switch must be held throughout the bolt's movement.

CLICK the Return/Extend knob to continue

CONTINUOUS SCREEN CHANGER (CSC)



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AUTO / MANUAL Mode

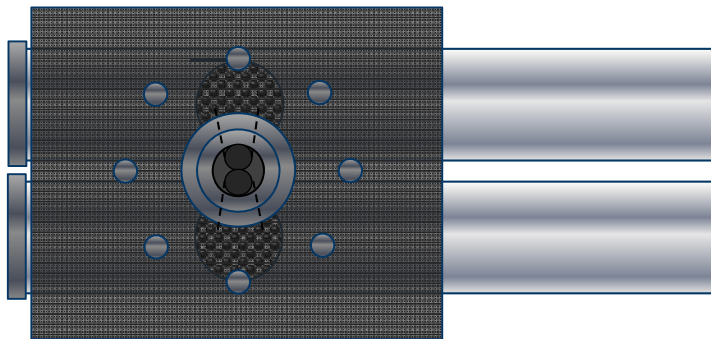
MANUAL mode engages the hydraulic power unit only while the return / extend button is manually held open.

MANUAL mode is normally only used for establishing vent and home positions.

By default, only one bolt can be out of the home position at a time for the hydraulic power unit to operate.

Click the EXTEND knob to simulate a screen change in MANUAL mode

Manual / Bolt 1



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Button 3: SET POSITIONS

Before the CSC screen changer can be placed in operation, position set points must be entered for each of the five (5) cross bolt positions for RUN (home), SC (screen change) and Vents 1, 2 & 3.

To do this the cross bolt must be moved to each position using the ECB (pendant) set to MANUAL mode.

Values for each position are entered to the Top and Bot (bottom) Position Set Point screens (Top Bolt screens shown to the right) using the keypad.



Note: Values are within a scale and do not represent units of measure



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Button 3: SET POSITIONS

Using the pendant control in MANUAL: The cross bolt position (relative to the scale of the linear transducer) is identified on the Top and Bot (bottom) Position Current Value screens.

These screens can be accessed in one of two ways.

1. From the main menu. Button 8 accesses the top bolt position current value screen. Button 9 accesses the bottom bolt position current value screen.
2. From the Top and Bot (bottom) Position Set Point screens using the up arrow



TOP POSITION
CUR VALUE = ___



BOT POSITION
CUR VALUE = ___



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Button 3: SET POSITIONS

If accessing current position from the Main Menu using the 8 or 9 button, best practice is to move the bolt to all positions and record position shown.

With all five set points recorded, the operator would then access the Set Point Positions Settings screen and enter the values for RUN, SC, V1 V2 and then press the right arrow to access the V3 screen to enter that set point.

Offset recommended setting is 5. This allows for an alignment variance +/- . Top and bottom offset should be the same.



```
TOP POSITION
CUR VALUE =  ___
```

```
BOT POSITION
CUR VALUE =  ___
```



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Button 3: SET POSITIONS

If entering from the Set Point Positions screen, the operator would:

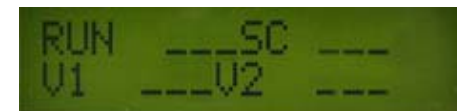
- * move the bolt to the RUN position
- * press the up arrow to show the Position Current Value screen and record position
- * press the back arrow to return to the settings screen
- * enter that value for RUN

The operator would then repeat this process for each of the SC, V1 and V2 positions.

Vent 3:

While still on the (Top or Bot) Position Set Point screen, the operator would manually index the bolt to the Vent 3 position, press the up arrow to identify current position, press the back arrow to return to the settings screen, press the right arrow to access the Vent 3 set point screen and enter the position for Vent 3.

Offset recommended setting is 5. This allows for an alignment variance +/- . Top and bottom offset should be the same.



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Button 3: SET POSITIONS

VENT POSITION RULE OF THUMB

- * Each Vent should be exposed approximately $\frac{1}{2}$ of the width of the vent.
- * This distance is viscosity dependent. A larger gap will vent material more quickly, but can also affect die pressure if too much material is allowed to vent too quickly.



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Button 4: TIMER SETTINGS

Guidelines

- * Timer settings are material (viscosity/thickness) and flow dependent.
- * As a start point; Set the vent timers for 5 minutes each.
- * If polymer does not exit the vent before the cross bolt indexes to the next position (in AUTO mode), increase the timer setting until polymer can be seen to vent free of any air bubbles. Conversely, if material is flowing with no bubbles at the 5 minute setting, reduce the setting value to minimize waste.
- * It is not uncommon for some viscous materials to have a long vent time.
- * Vents 2 & 3 can often have shorter vent times.
- * Move and Dwell (stepper function) times slow the movement of the cross bolt for die pressure sensitive applications (reduces die pressure variation during cross bolt transit) – i.e.: short move/long dwell minimizes die pressure variation



```
U111:10 U200:10  
U300:10 +=STEP
```

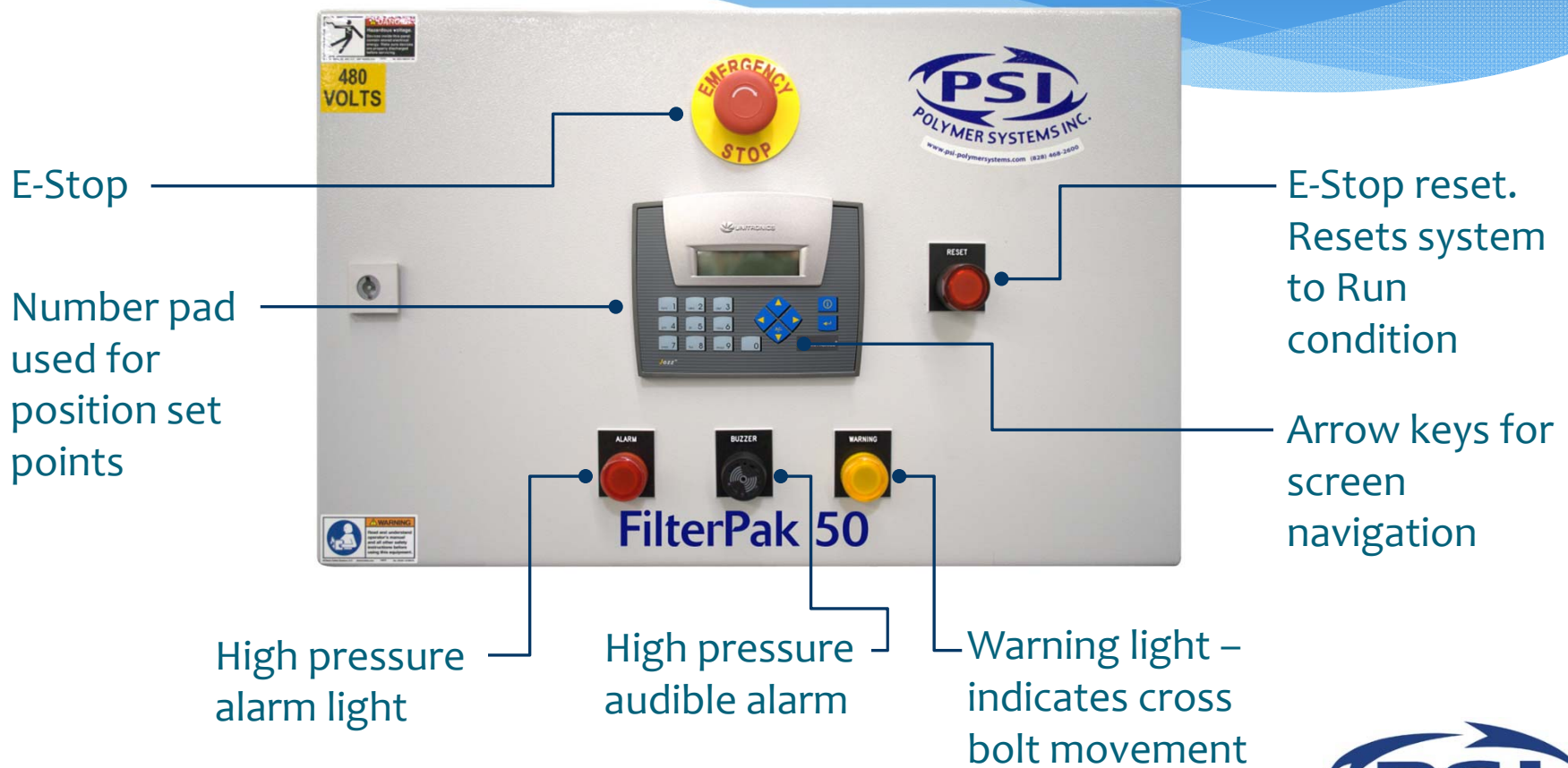
```
TOP MOVE _1.20  
TOP DWELL 00.50
```

```
U1_0:10 U200:10  
U300:10 +=STEP
```

```
BOT MOVE 01.20  
BOT DWELL 00.50
```



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Screen Navigation Flow Chart

