



Eclipse Proportional Isolation Valve

Product Demo Operating Instructions



Physical Connections

The Eclipse demo case has two ¼ push quick fittings on the rear and an IEC power receptacle. Looking at the rear of the case, the air supply is located on the right. This port can either be supplied with “shop” air (130 psig max) or regulated air up to 30 psi. Be sure to position the toggle valve into the appropriate position based on the supply. Note: forgetting to switch the toggle will not damage the valve or demo, but could result in a temporary leak. The IEC power connector is located just left of center and includes a power switch. The included power cable should be used to power the demo case with 110-220 AC.

The ¼ push quick located on the left is the valve outlet port. This port can be used to connect the valve to other devices. Note: Obstructing this port can cause flow variations.

Required Items to Operate

- 110-220 AC power cord (included). *Adapter required for European market.*
- Supply air 130 psig max. Clean dry air supply with 1/4" OD tubing.
- 110-220 AC grounded outlet

Quick Start Guide

1. Plug in power cable.
2. Switch on power.
3. Check that toggle valve is switched to “USE DR-2-5” position.
4. Attach air supply (130 psig max) to supply port on rear of case.
5. Adjust DR-2-5 regulator as needed (30 psi max). The current pressure is shown in the **blue** box located in the lower right corner.
 - When adjusting the pressure, always increase to the desired pressure. If lower pressure is needed, lower the pressure 5 psi below the desired set-point and then increase until the desired pressure is reached.

The Demo will start on the Cycle Screen

- Use the **green** “Cycle” button in the lower left corner to run a flow curve.
- The valve will cycle and a flow curve will be displayed on the graph.
- Press “Repeat” to run another flow curve and overlay the results from the previous cycle.
- To clear the chart and run a new curve, press “Cycle” again.
- Please see the troubleshooting guide if any problems occur.

User Interface

The EIVU-DEMO case is controlled using a graphical user interface with a capacitive touchscreen. There are five menu screens including the home screen. On the right side of each screen is the PFPI. The Position, Flow and Pressure Indicator is always visible so the user can easily get a quick understanding of what state the demo case is in.

- The **red** box on top shows the current position, in steps, of the Eclipse relative to the home position. A small icon in the lower right corner of this box indicates the current micro-step setting.
- The **green** box in the middle shows the current flow through the valve in either SLPM (default) or SCFH. The flow is also represented visually with a **green** bar.
- The **blue** box on the bottom shows the current supply pressure to the Eclipse in PSI (default) and can be configured to show BAR. Note: while the internal pressure sensor can withstand 150 psi max, it will not display values over 60 psi.

Position (Steps)
000000
1

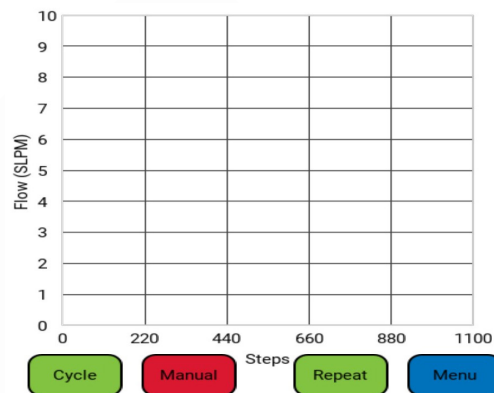
Flow (SLPM)
0.00

Pressure (PSI)
0.00

Cycle Screen

The Cycle Screen displays a flow chart with flow on the vertical axis and steps on the horizontal axis. The graph automatically scales to size. Below the chart are four buttons.

- **Cycle:** Clears the graph and runs the valve to the cycle distance and back at the motor speed as defined in the "Settings" menu. A live curve is displayed as the valve operates.
- **Manual:** Gives the user manual control of the valve's position.
- **Repeat:** Functions the same as the "Cycle" button except the graph is not cleared. A new flow curve is generated while the previous curve(s) remain visible.
- **Menu:** Navigates to the main menu.



Position (Steps)
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1

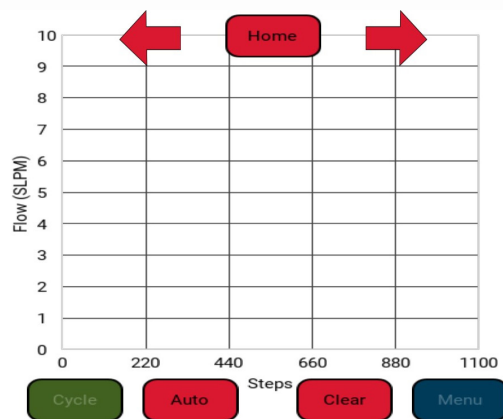
Flow (SLPM)
0.00

Pressure (PSI)
0.00

Manual Curve Mode

When in Manual Curve Mode, the buttons under the flow curve are changed and new buttons appear near the top of the graph. In Manual Curve Mode, only the **red** buttons can be used.

- **Auto:** Switches the demo back into automatic mode where the "Cycle" button can be used and the rest of the buttons return to normal.
- **Clear:** Clears all recorded flow curves.
- **Home:** Returns the valve to its home position (0 steps) as defined in the "Manual Mode" menu. Motor speed is determined by the motor speed set in the "Settings" menu.
- **Arrow Buttons:** The left and right arrows act as momentary buttons and move the motor in the direction shown while the button is pressed. Motor speed is determined by the motor speed set in the "Settings" menu.



Position (Steps)
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1

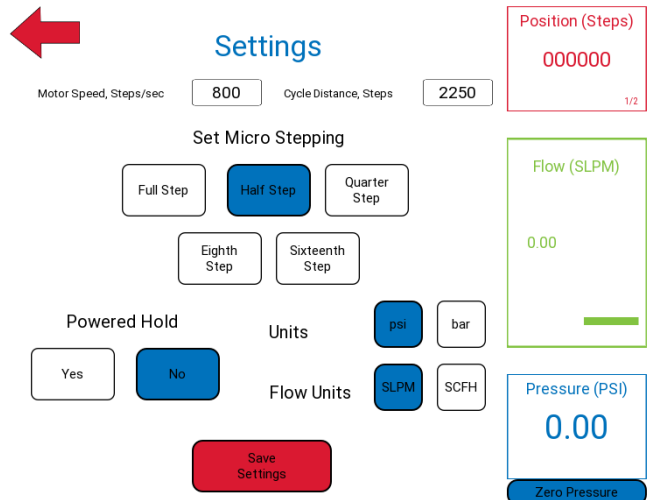
Flow (SLPM)
0.00

Pressure (PSI)
0.00

Settings

The Settings menu is used to configure the motor speed used for all motor movements, the cycle distance, the micro-stepping mode, powered hold, and the units displayed on the PFPI and flow curve.

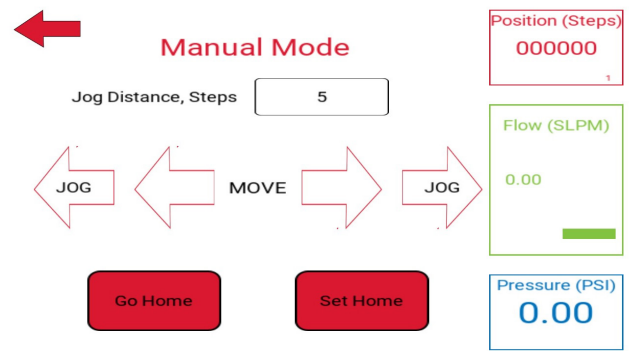
- **Motor Speed:** The motor speed is measured in steps/sec and is limited to 1000 steps/sec for all micro-stepping modes except 1/16 th micro-stepping where it is limited to 2000 steps/sec. To change the speed, tap the adjacent box. A number pad will pop up on screen. Type in a value and press “ENT”.
 - There is no backspace, so if an error is made, press the “x” in the top right corner.
- **Cycle Distance:** The cycle distance is measured in steps and is the distance the valve moves in one direction when the cycle button is pressed. To change the cycle distance, tap the adjacent box. A number pad will pop up on screen. Type in a value and press “ENT”.
 - There is no backspace, so if an error is made, press the “x” in the top right corner.
 - The standard cycle distance for full stepping is 1125 steps.
 - The cycle distance is automatically adjusted when the micro-stepping mode is changed.
- **Set Micro Stepping:** Use the buttons to toggle a micro-stepping mode.
 - A micro-step is a division of a full step. Two half steps make one full step, etc.
 - The current micro-stepping setting will be colored **blue** and is also shown in the PFPI in the lower right corner of the position box.
 - Given the same speed and distance, it will take the motor twice as long to complete a cycle in half stepping mode versus full stepping mode.
- **Powered Hold:** This feature showcases the power saving capabilities of the Eclipse. Use the buttons to toggle powered hold on or off. When toggled on, the coils will remain powered all the time. When toggled off, the coils are only powered when the motor is stepping.
 - Note: The motor may get hot when this feature is toggled on (approximately 100°F). If it gets too hot, check the current limiting potentiometer on the SCPVD-1. The voltage at test point 1 on the driver should read 0.43 Volts. Please See the operating instructions for the SCPVD-1 for more information.
- **Units:** Toggle the preferred units to be displayed in the PFPI and on the flow curve. Pressure can be switched between psi and bar and the flow units can be switched between SLPM and SCFH.
- **Save Settings:** Pushing this button will save the current settings to memory for use the next time the demo is powered on.
- **Zero Pressure:** This button is used to calibrate the internal pressure sensor. With zero pressure on the supply, press this button to zero out the pressure reading



Manual Mode

Manual Mode, not to be confused with Manual Curve Mode, is mainly used for fine tuning the home position of the valve. Here the position of the valve is controlled manually using the onscreen buttons.

- **Jog Distance:** The number of steps the valve will move with each press of the jog arrows. To change the jog distance, tap the adjacent box. A number pad will pop up on screen. Type in a value and press "ENT".
 - There is no backspace, so if an error is made, press the "X" in the top right corner.
- **Move Arrows:** The inner two arrows will move the motor in opposite directions at the speed set in the "Settings" menu. The motor will move as long as the arrow is pressed.
 - Note: The left arrow moves the internal ceramic assembly toward the motor.
 - The motor will stall when reaching the extents of travel in either direction resulting in skipped steps and an incorrect position reading.
- **Jog Arrows:** The outer two arrows will move the motor in opposite directions by the distance shown in the Jog Distance box. The valve will move by the Jog Distance each time the arrow is pressed.
 - Note: The left arrow moves the internal ceramic assembly toward the motor.
 - The motor will stall when reaching the extents of travel in either direction resulting in skipped steps and an incorrect position reading.
- **Go Home:** Press this button to return the valve to the home position as set by the Set Home button. The home position is shown as position 0 in the PFPI.
- **Set Home:** Sets the current position to the home position.
 - Check the PFPI to ensure that the current position is set to 0 after pressing the Set Home button.

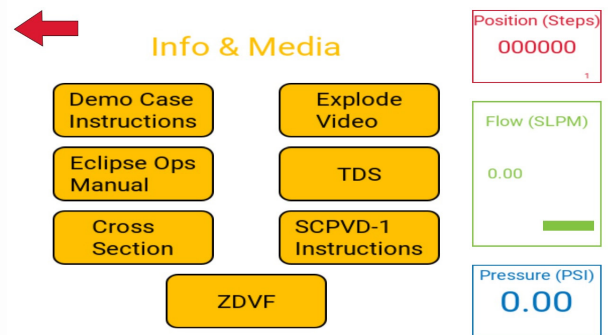


Information & Media

The Info & Media menu is used to access all media and documentation relating to the Eclipse demo case.

- **Demo Case Instructions:** Pressing this button will display a QR code linked to this document.
- **Eclipse Ops Manual:** Pressing this button will display a QR code linked to the operations manual for the Eclipse.
- **Cross Section:** Pressing this button will launch a video showing a simplified cross section version of the Eclipse in motion.
- **ZDVF:** Pressing this button will launch a video showing how zero dead volume fittings are installed without an elastomer seal.
- **Explode Video:** Pressing this button will launch a video showing an exploded view of the Eclipse valve and how the components fit together to form an assembled valve.
- **TDS:** Pressing this button will display a QR code linked to the Technical Data Sheet for the Eclipse.
- **SCPVD-1 Instructions:** Pressing this button will display a QR code linked to the operating instructions for the included SCPVD-1 stepper driver.

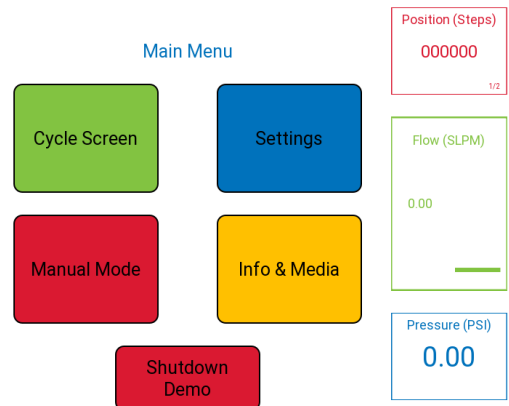
All QR codes can be accessed using a smart phone connected to the internet. Open the camera app and focus on the QR code. A prompt should pop up with a link to the appropriate document. Contact Clippard for more information. All embed videos are displayed on a simple video player with a play/pause button and an "X" in the top right corner to exit the video.



Shutting Down

In order to avoid any potential damage to the electronics, it is best to first shut down the demo before switching off the power. Press the “Shutdown Demo” button located on the main menu and wait until the screen says “No Signal” before switching power off. When powering down, the last settings used will be saved to memory for next use.

Note: If the screen does not display the “No Signal” notification after 30 seconds it is okay to switch the power off.



Troubleshooting FAQ

Q: Why does the flow curve look odd?

A: The home position is most likely wrong. Use Manual Mode to reset the home position.

Q: I changed my settings and I can't get it back to the original settings.

A: The demo case ships in half-step mode and with the speed set to 800 steps/sec and a cycle distance of 2250 steps.

Q: When I zero my pressure using the button on the settings page, why is the pressure not reading correctly?

A: The pressure will have to be zeroed out again using the zero pressure button on the settings page. In order to properly zero out the pressure, all pressure should be removed from the system before pressing the button. With no pressure on the supply, push the zero pressure button. The demo case is now calibrated. (Note: The button momentarily darkens when pressed and the pressure reading will display 0.00).