Calibration Solutions for Pressure and Flow™

Instruction Sheet

molstic™ mid flow

P/N 401244

molbloc™ Mounting System

DESCRIPTION

molstics provide an engineered solution to the practical issues of mounting a molbloc, connecting a gas supply, regulating the pressure and connecting the device to be tested. Highest quality components are integrated into a convenient, compact assembly.

The gas supply is attached using a quick connector. A 2.0 micron filter protects the downstream components. Then, an adjustable (0 kPa/0 psig to 700 kPa/100 psig) regulator sets molbloc upstream pressure and protects the molbox transducers against accidental overpressure. A bellows shut-off valve, just before the molbloc, allows the gas supply upstream of the molbloc to be shut-off. A connection and pads are provided downstream of the molbloc for mounting the mass flow controller (MFC), another device under test, or the optional needle valve kit for manual flow control.

molstic, mid flow (P/N 401244) is designed to optimize use of molbloc ranges of 200 sccm and above. It cannot be used effectively for lower flow ranges which require lo flow molstics (P/N 401316 or 401318), which have special features to handle the particular challenges of very low flow measurement.

START UP

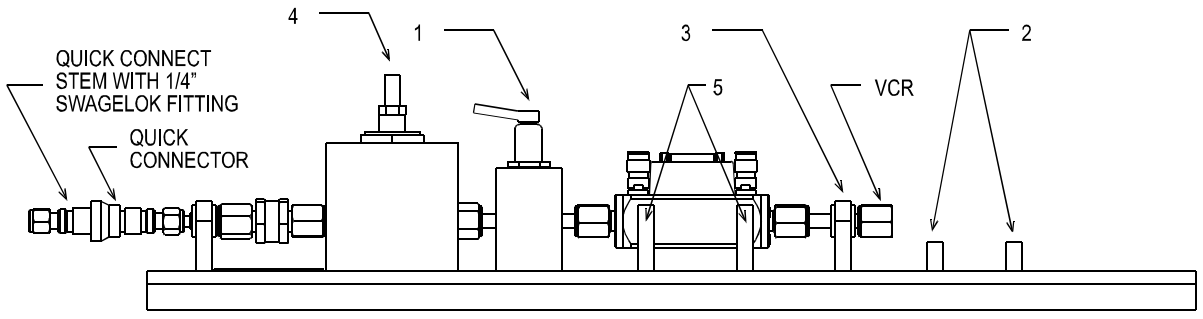
Starting up a molstic requires connecting a gas pressure supply, adjusting the pressure regulator if necessary, and connecting the device or system to be tested downstream of the molbloc. To flow, open the isolation valve (1) for the appropriate molbloc.

❶ **Connect the gas supply:** Connect a gas supply to the quick connector stem (1/4 in. SWG®, NUPRO® SS-QC4-D-400). Ideally, inlet supply pressure will be regulated to approximately 760 kPa (110 psig). The supply should not exceed 1 MPa (150 psig). Note: **Be sure the molstic isolation valve (1) is closed** (handle down) before connecting the quick connector stem to the quick connector.

❷ **Install the molbloc:** Install the desired molbloc onto the molstic (see molbloc INSTALLATION AND SWAPPING below). Connect the molbloc to the molbox (see the molbox Operation and Maintenance Manual).

❸ **Adjust the molbloc upstream pressure regulator:** The molstic is delivered with the pressure regulator set to 270 kPa absolute (40 psia) (about 165 kPa gauge (26 psig)), the most common molbloc upstream pressure setting. Depending on the mobloc's pressure dependent calibration type, a different molbloc upstream pressure setting may be needed (see the molbloc calibration report). Shut off the pressure or cap the connection downstream of the molbloc. To adjust the regulator, open the molbloc isolation valve (1). Read the molbloc upstream pressure using the [P&T] function of the molbox (see the molbox Operation and Maintenance Manual). Adjust the molbloc upstream pressure to the desired value by rotating the regulator stem (4). The regulator is NOT self venting. Once the desired pressure is set, lock the stem by tightening the jam nut on the stem. Note: **If the pressure will be adjusted frequently, the regulator knob may be installed. It is included in the molstic accessories.**

❹ **Install the MFC/test:** Install the MFC to be used or tested onto the molstic. The MFC pads (2) should assure that the MFC is at the correct height for alignment if the MFC fitting is VCR. For MFC fittings other than VCR, use the appropriate adaptor (not supplied). If you have the needle valve option (P/N 401320) for manual flow control, install it here.



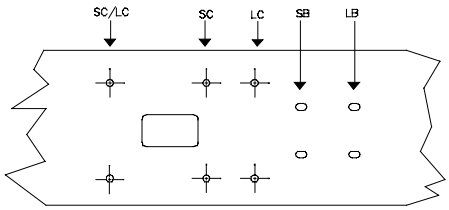
molbloc INSTALLATION AND SWAPPING

molstic, single, mid (P/N 401244) can accommodate both large (10 and 30 slm) and small (10, 50, 100, 200 sccm, 1 slm, and 5 slm) molblocs. The molstic is shipped set up for the small molbloc. The small molbloc cradles (5) are installed and the interconnecting nipple (3) is positioned to accommodate small molbloc dimensions. The large molbloc cradles are included and were packed in a bag with this instruction sheet.

Changing the molstic molbloc Size Configuration

Install the interconnecting nipple bracket in correct position (SB for small, LB for large). Torque to 5 N/m max.

Install the appropriate size molbloc cradles in the correct position (SC for small, LC for large). Torque to 5 N/m max.



Installing a molbloc

❶ Loosen the interconnecting nipple clamp (3) so that the nipple can move freely in its rubber grommet. Move the nipple away from the molbloc cradles to allow maximum room for molbloc insertion.

❷ Place the molbloc in the molstic molbloc cradles (be sure flow orientation is correct). Check that no debris is under molbloc.

❸ Connect and tighten the upstream (valve side) molbloc VCR connection using a soft O-ring and following the procedure provided in Document 560009b (Recommendations for molbloc Installation) supplied with the molbloc.

❹ Pull the interconnecting nipple towards the molbloc downstream connection. Connect and tighten the downstream molbloc VCR connection using a soft O-ring and following the procedure provided in Document 560009b (Recommendations for molbloc Installation) supplied with the molbloc.

❺ Tighten the interconnecting nipple clamp (3) until the nipple is secure (5 N/m max).

❻ Connect molbloc to molbox and leak check the system.

❼ To remove a molbloc from the molstic, reverse the procedure. Break the downstream molbloc VCR connector and pull the interconnecting nipple away from the bloc. Break the upstream molbloc VCR connector. Remove the molbloc.

MAINTENANCE AND RECOMMENDATIONS

❶ **Filter:** The molstic filter is a sealed 2 micron pleated mesh filter (NUPRO SS-4FW-VCR-2). It can be cleaned by backflushing. To backflush, it must be removed from the molstic. When removing, cleaning and installing the filter, the metallic VCR gaskets (NUPRO SS-4-VCR-2-GR) must be replaced and all manufacturers' recommendations followed.

❷ **Handling:** molstic should not be picked up or carried by its components. Always handle the molstic by its base.

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