

# molstic™ dual, mid flow

P/N 401317

## molbloc™ Mounting System

FLUKE®

Calibration

### DESCRIPTION

molstics provide an engineered solution to the practical issues of mounting and using molbloc flow elements. 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 overpressure. A shut-off valve 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 device under test (DUT), or the optional needle valve kit for manual flow control.

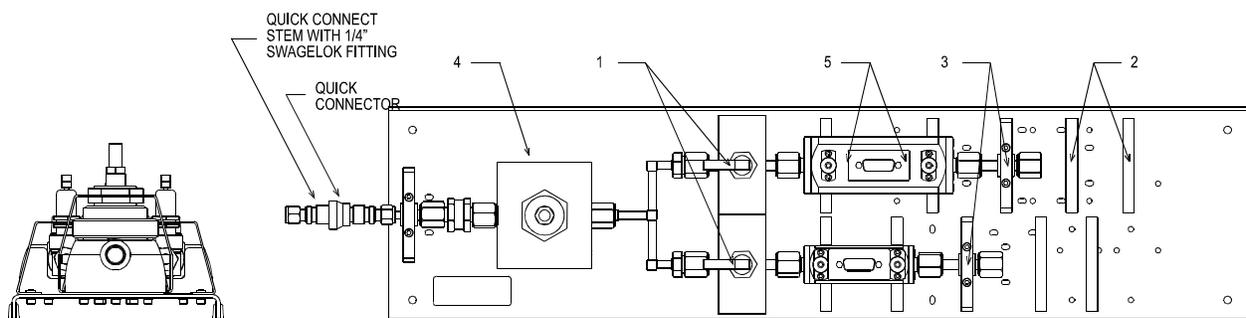
molstic, dual, mid flow (P/N 401317) is designed to optimize use of 5E2 to 3E4 molblocs (500 sccm to 60 slm). It should not be used for lower flow ranges which require the single (P/N 401316) or dual (P/N 401318) low flow molstics. The 1E5 molbloc requires the hi flow molstic (P/N 401663).

### START UP (for Independent Operation of Each Channel)

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.

- 1 **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 valves (1) are closed** (handle down) before connecting the quick connector stem to the quick connector.
- 2 **Install the molblocs:** Install the desired molblocs onto the molstic (see molbloc INSTALLATION AND SWAPPING below).
- 3 **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 molbloc'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.**
- 4 **Install the MFC/device under test:** Install the MFC to be used or tested onto the molstic downstream of the appropriate molbloc. 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.

**Note concerning high flow operation:** To achieve maximum flow rates, assure that the gas handling equipment upstream of the molstic maintains the pressure supplied to the molstic at 760 kPa (110 psig) or higher. Also, monitor molbloc upstream pressure to assure it remains within the recommended limits of the molbloc pressure dependent calibration type.



PN 3152479

April 2014

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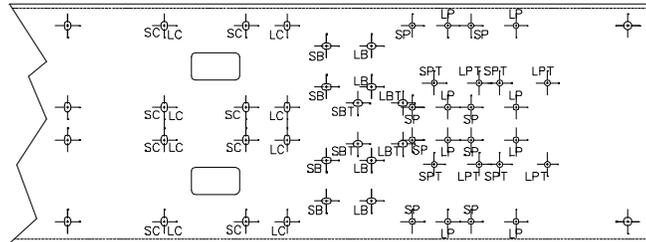
## molbloc INSTALLATION AND SWAPPING

The dual molstic can accommodate both large (10 and 30 slm) and small (<10 slm) molblobs. The dual molstic is shipped set up for one large and one small molbloc. One set of large and one set of small molbloc cradles (5) are installed set up for independent operation of two molblobs. An additional set of cradles is included and were packed in a bag with this instruction sheet.

### Changing the molstic molbloc Size Configuration

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

Install the interconnecting nipple bracket downstream from the molbloc in the appropriate position (SB for small and LB for large).



### Setting Up to Use Two molblobs in Parallel

- For two large molblobs: Use the optional downstream tee (P/N 122581).
- For one large and one small molbloc: Use the optional large/small tee (P/N 401324).

Install the tee holding bracket (3) (use one of the brackets from the independent downstream connections) in the LBT position. Connect the two molblobs together using the tee. The MFC pads (2) may also be moved to the central position if desired.

### Installing a molbloc

- 1 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.
- 2 Place the molblobs in the molstic molbloc cradles (be sure flow orientation is correct). Check that no debris is under molblobs.
- 3 Connect and tighten the upstream (valve side) molbloc VCR connections using a soft O-ring and following the procedure provided in Document 560009b (Recommendations for molbloc Installation) supplied with the molbloc.
- 4 Pull the interconnecting nipple towards the molbloc downstream connections. Connect and tighten the downstream molbloc VCR connections using a soft O-ring and following the procedure provided in Document 560009b (Recommendations for molbloc Installation) supplied with the molbloc.
- 5 Tighten the interconnecting nipple clamp (3) until the nipple is secure (5 N/m max).
- 6 Connect molbloc to molbox and leak check the system.
- 7 To remove molblobs from the molstic, reverse the procedure. Break the downstream molbloc VCR connector and pull the interconnecting nipple away from the molbloc. Break the upstream molbloc VCR connectors. Remove the molbloc.

## MAINTENANCE AND RECOMMENDATIONS

- 1 **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.
- 2 **Handling:** molstic should not be picked up or carried by its components. Always handle the molstic by its base.