

# Recommendations for 1/4 in. Low- and Mid-Flow Metering Valve Kits for molstic-S™

P/Ns 401885 and 401666

INSTRUCTION SHEET

**FLUKE**®

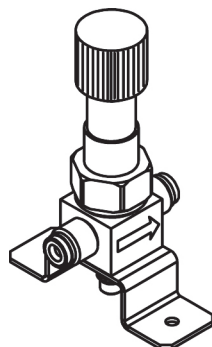
Calibration

The 1/4 in. molstic-S™ is delivered with integrated shut-off/metering valves. These valves provide a measure of flow control for use when calibrating devices that do not have their own flow control means. However their primary use on the molstic-S is to provide a means of positive flow shut-off to allow for system leak testing. The 1/4 in. low-flow and 1/4 in. mid-flow metering valve kits provide higher precision flow control capability.

Use the 1/4 in. metering valve kits with the following molbloc-S® ranges and molboxes™:

**Table 1** Metering Valve Use with molbloc-S

	MOLBOX1-A700K	MOLBOX1-A350K
Low-Flow, P/N 401885	5E1-S	5E1-S
Mid-Flow, P/N 401666	1E2-S, 2E2-S	1E2-S, 2E2-S

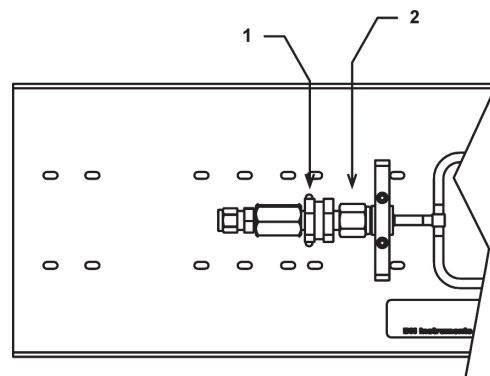


## INSTALLATION OF 1/4 IN. METERING VALVE ONTO MOLSTIC-S PLATFORMS WITHOUT REGULATORS

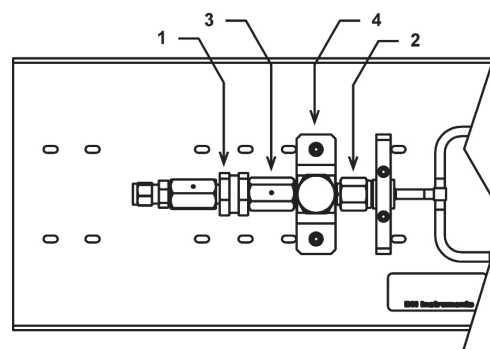
Use the following procedure to install the metering valve kit onto the molstic-S platform that does not have the integrated regulator:

- ❶ Attach the valve bracket to the base of the valve using the two included #10-32 socket head cap screws, the two #10 flat washers and the two #10 lock washers. The long side of the bracket should be perpendicular to the direction of flow through the valve.
- ❷ Using a pair of properly sized wrenches, break the connection between the downstream end of the filter element (1) and the female VCR® swivel nut (2) on the inlet of the molstic-S. Do not disassemble the parts on the inlet side of the filter element (1). Discard the VCR gasket, which is for one-time use.

- ❸ Place a new 1/4 in. VCR gasket (P/N 102183) securely against the sealing surface inside the female VCR swivel nut (2) of the molstic-S inlet.



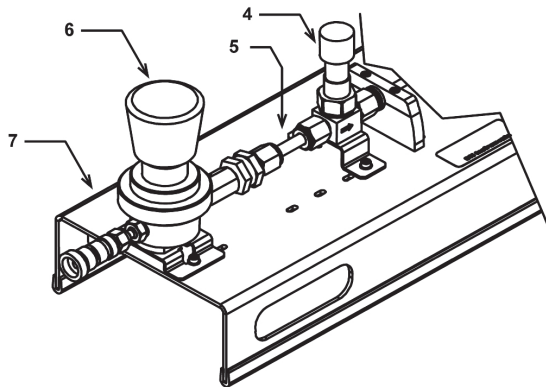
- ❹ Place the metering valve and bracket assembly (4) onto the molstic-S platform and align the VCR connection. Assure that the flow direction of the valve matches the direction of flow of the molstic-S.
- ❺ Tighten the female nut (2) finger-tight.
- ❻ Hold male body stationary with a backup wrench. Tighten the female nut (2) 1/8 turn past finger-tight.



- ❼ Thread the included double female VCR union (non-swivel type), (3), onto the inlet fitting of the metering valve. Leave it approximately one full revolution from the fully stopped position.
- ❽ Place a new 1/4 in. VCR gasket (P/N 102183) securely against the sealing surface inside the double female VCR union (non-swivel type) (3).
- ❾ Install the filter (1) and upstream plumbing into the female VCR union (3). Tighten the female nut finger-tight.
- ❿ Hold male body stationary with a backup wrench. Tighten the female nut 1/8 turn past finger-tight.

- ① Place the flat side of the 60 mm nut plate under the molstic-S platform (see figure below). Align it with the holes in the platform and the valve bracket. Hold it in place.
- ② Thread the socket head cap screws through the valve bracket and tighten securely into the nut plate.

## INSTALLATION OF 1/4 IN. METERING VALVE ONTO MOLSTIC-S PLATFORMS WITH REGULATORS



- ① Use double female swivel union (5) in place of the non-swivel union (3) when installing the metering valve kit (4) onto a molstic-S that has the integrated regulator. Use a new 1/4 in. VCR gasket (P/N 102183) on each end of the union.
- ② Re-secure the regulator (6) to the molstic-S platform (7) with the socket head cap screws and nut plate.

## MOLSTIC-S OPERATION WITH 1/4 IN. LOW-FLOW AND MID-FLOW METERING VALVE

The flow shut-off/metering valve that is integral to the molstic-S should be opened fully when using the 1/4 in. low-flow and 1/4 in. mid-flow metering valves to adjust flow to the molbloc-S. The metering valves supplied with this kit may limit the maximum obtainable flow rate of some of the molbloc-S elements that can be mounted on the 1/4 in. molstic-S (see Table 1). In these cases the shut-off/metering valve that is integral to the molstic-S should be used, (and the metering valve removed).

In order to make extremely fine flow rate adjustments the metering valve can be used in combination with small adjustments in the supply pressure.



Do not adjust the supply pressure to the 1/4 in. metering valve in excess of the maximum operating pressure of the molbox: 600 kPaa (87 psia) for molbox1-A700K; 250 kPaa (36 psia) for molbox1-A350K.



Do not attempt to completely close off flow using the 1/4 in. low-flow or mid-flow metering valve. They are not designed to be used as shut off valves. Damage to the valve seat can occur.

## PARTS INCLUDED WITH 1/4 IN. LOW-FLOW AND MID-FLOW METERING VALVE KITS

The following parts are included in the shipment:

### P/N 401885 Low-Flow Metering Valve Kit

DESCRIPTION	QTY	PART NO.
Metering valve, low flow	1	102570
Bracket, valve	1	123612
Union, 4VCR F x 4VCR F	1	102181
Gasket, 4VCR	2	102183
Nut plate, 60 mm	1	123621
Washer, flat, M4	2	100918-Z
Screw, SHC, M4 X 12	2	101016-Z
Washer, split lock, #10	2	103021-Z
Screw, SHC, 10-32 X 3/8	2	103277-Z
Washer, flat, #10	2	103278-Z
Union, swivel, 4VCR F x 4VCR F	1	102144

### P/N 401666 Mid-Flow Metering Valve Kit

DESCRIPTION	QTY	PART NO.
Metering valve, mid flow	1	102571
Bracket, valve	1	123612
Union, 4VCR F x 4VCR F	1	102181
Gasket, 4VCR	2	102183
Nut plate, 60 mm	1	123621
Washer, flat, M4	2	100918-Z
Screw, SHC, M4 X 12	2	101016-Z
Washer, split lock, #10	2	103021-Z
Screw, SHC, 10-32 X 3/8	2	103277-Z
Washer, flat, #10	2	103278-Z
Union, swivel, 4VCR F x 4VCR F	1	102144