SMARTFLOW®

plastiXs
A GLOBELUS Company

Mold Validation Cart

Operating Instructions

Applies to: SVC- 8 - 4 - ☐ - 40H - EP

General

Smartflow Mold Validation Cart is a portable cooling water line test unit that facilitates cooling water bench test in any location of an injection molding or mold-building facility.

Standard equipment includes anodized aluminum Supply and Return water manifolds with assembled Tracer$_{VM}$ Flow Meters equipped with Delta-Q® Flow Regulators to confirm and control the flow rate of four individual circuits. A SWAP® Valve is attached to the system for quick evacuation of all circuits quickly and cleanly between mold tests.

Analog pressure gauges are included on the supply manifold and on the return side of each cooling line for pressure drop documentation, and leak or clogged line detection.

Smartlink® Tracer$_{VM}$ Interface collects digital flow and temperature data from the flow meters, creating the data file needed for electronic record-keeping of test results. (See Smartlink instruction manual Form 206.)

The on-board notebook computer is preloaded with Smartflow Data-Logger software and connects to the flow meters through the Smartlink TracerVM Interface and built-in Ethernet switch.

IMPORTANT

Earth Ground is required for reliable flow and temperature output display. Ensure that proper Earth Ground is available to the power input.

Follow all product safety instructions regarding pump operations. Pump manufacturer documentation is provided with Mold Validation Cart shipment. Keep all documentation for future reference.

Instructions for Smartflow Products are included in the documentation package for your convenience. Installation functions do not apply for most discrete products.

This product is not for use with potable water.

The pump motor is designed to be used in a clean dry location with access to an adequate supply of cooling air.

CAUTION - BEFORE USING

Fill the tank with water. Gravity will fill the pump.

Do not operate the pump without water. At least one circuit must be open to prevent damage to the pump.

Operation without water will void the factory warranty.

Record Equipment Serial Numbers:

Centrifugal Pump Model _____

Serial _____

Laptop Computer Model _____

Serial _____

Tracer$_{VM}$ Model:__ VM4-B-40H-B-P4Q__

Tracer$_{VM}$ Serial #'s: _____

_____

_____

_____

Smartlink Model:_____ VMBTI-102_____

Serial #: _____

Burger & Brown ENGINEERING

4500 E 142nd Street • Grandview, MO 64030
Tel. (816) 878-6675 • www.smartflow-usa.com

Form #SF-226 (11.25)

Specifications

Cart with Locking Casters ..... powder-coated steel (32"L x 18"W x 35"H)
Centrifugal Pump ..... 1/2 hp, 82ft max head, 1" intake
Plastic Water Tank ..... 18-gallon (68 L) capacity (14 gallons max. recommended)
Molded Body SWAP Valve ..... 1"NPT
Aluminum Supply Manifold (blue) ..... 1"NPT with (4)1/2"NPT ports with large port brass ball valves and quick disconnect fittings 100 psi supply side pressure gauge
Aluminum Return Manifold (red) ..... 1"NPT with (4) $Tracer_{VM}$ Base Flow meters 2-40LPM (0.5 to 10.6 GPM) Brass End Caps 100 psi pressure gauge Delta-Q® Flow Regulators
Smartlink TracerVM Interface VMBTI-102
Power Supply ..... 115VAC to 13.8VDC, 60 Hz
Ethernet Switch with IP Address Generation
Laptop Computer with Smartflow Data Logger Software installed
120VAC Power Strip

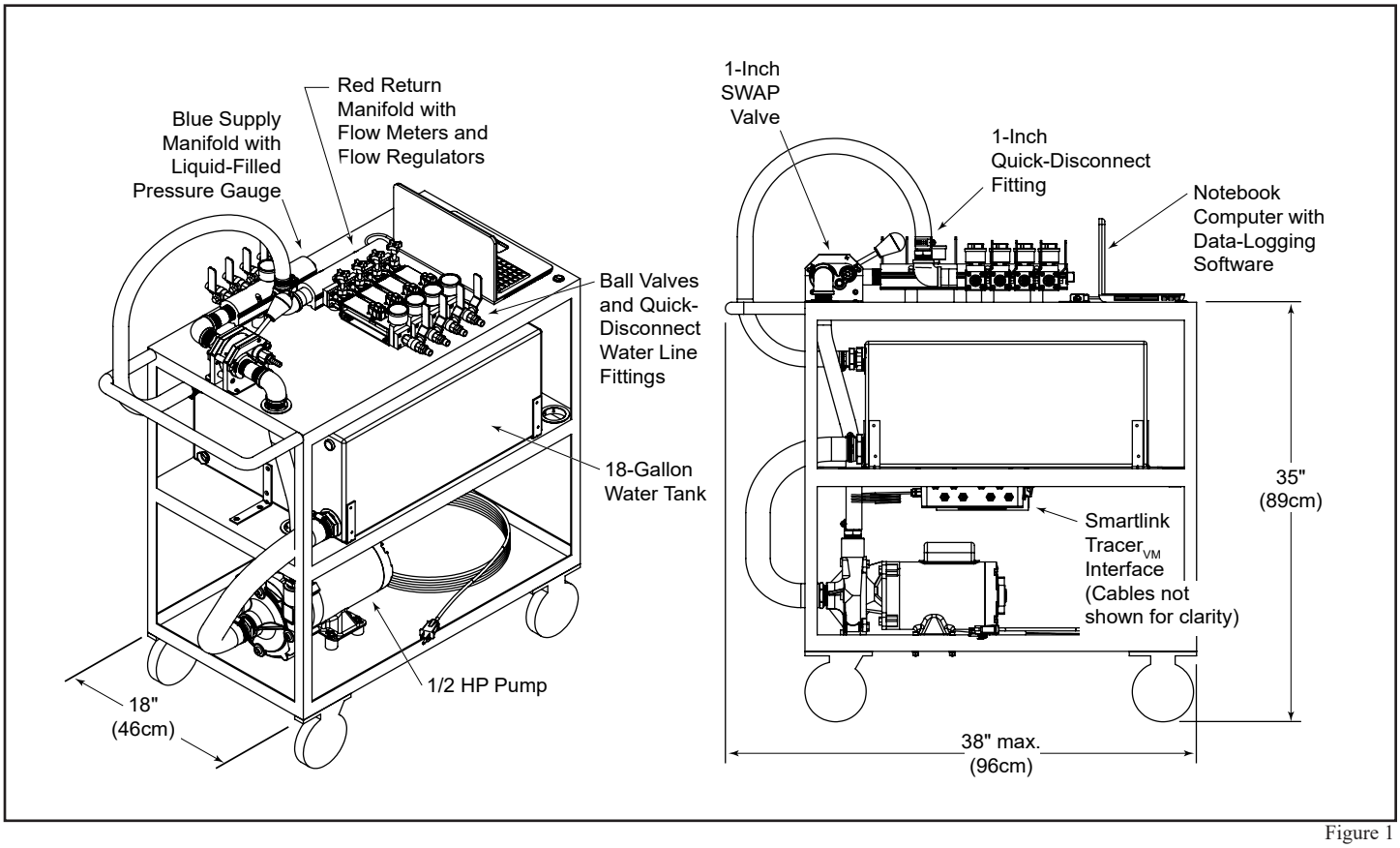

Figure 1

Procedures

Fill the Water Tank and Pump

- Remove the hose end from the Red Return Manifold by pulling up on the quick disconnect ring of the brass fitting.
- Fill the water tank from the open end of the hose. Leave 2" air space inside the tank above the water line.
- Do not over-fill the tank. Gravity will add water to the pump.
- Replace the hose end, pushing down firmly until the fitting clicks into place.
- Confirm a solid connection before next steps.

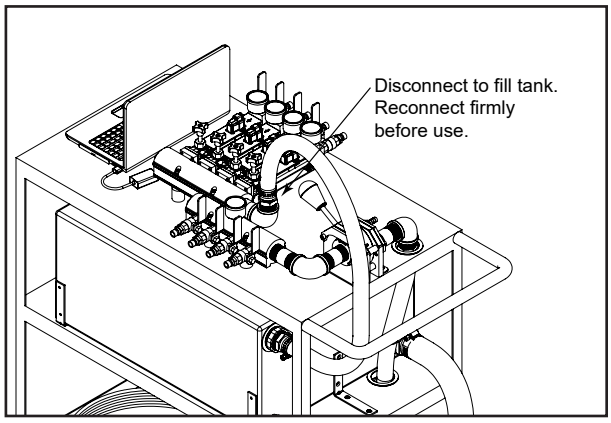

Figure 2

Connect Water Lines

- Attach hoses with quick disconnect fittings (not included) to Supply (blue) and Return (red) manifolds and to the mold to be tested.
- Close ball valves of any unused circuits.
- Confirm the handle of the SWAP Valve is in the "WATER" position.

Test Data-Logging Connection & Perform Testing

- Plug Power Strip into wall outlet. It is preferred not to use an extension cord.
- Power up laptop computer and start Data-Logging software.
- Plug the pump directly into 110 wall outlet.
- Confirm Data Logger Software operation according to page 4 of Smartlink Tracer$_{VM}$ Interface Instruction (Form 206).
- Mobile App operation is also available at this point on one mobile device only. (search for "TracerVM" in The App Store or Google Play)
- Record pressure readings manually as needed from the gauges located on the Supply Manifold and on the individual Tracer$_{VM}$ Flow Meters.
- Save all data points or data files as needed. Refer to Smartlink Tracer$_{VM}$ Interface Instruction for details.

Download on the App Store

GET IT ON Google Play

Clear Water Lines Between Mold Tests

- Attach compressed air line to the SWAP Valve Air port.
- Turn off power to the pump.
- Move the SWAP Valve Handle to the "AIR" position for approximately 30 seconds, or the length of time needed to remove the water from all cooling circuits.
- Move the SWAP Valve Handle to the "PURGE" position. Water and Air lines are closed. Remove the air line from the SWAP Valve if needed.
- Press the air pressure release valve to relieve pressure on closed water lines.
- Remove water lines as needed. Prepare Validation Cart for next operation.

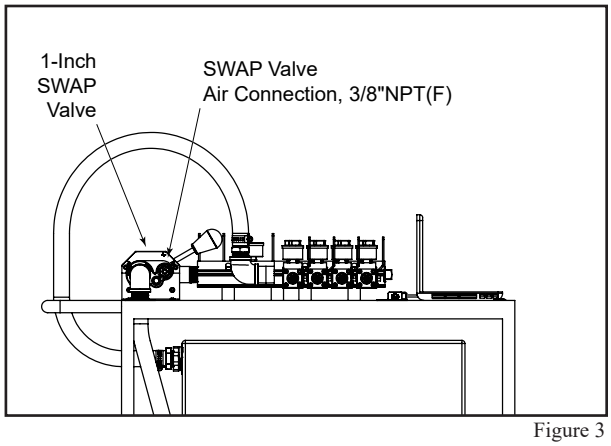

Figure 3

Maintenance

- Before storage, drain the water tank and pump.
- Clean all external parts with non-abrasive cleaner and dry before storage.
- Perform annual test on Tracer$_{VM}$ Flow Meters or send to Burger & Brown Engineering, Inc. as needed.

Troubleshooting

Flow reading is incorrect	Check that DIP Switch Settings on the Smartlink circuit board match the flow range of the flow meters: 2-40LPM - Position 1 = On, Position 2 = Off, Position 3 = Off
Flow reading fluctuates or is intermittent	Check the sensor cable - If the flow reading is not stable, the cable may need to be replaced. Contact the factory for part number CBL-GR-4-2900
No flow or temperature reading	Check that power supply switch is on. Check that the power strip switch is on. Check the unit is plugged into the wall outlet. Confirm sensor integrity - remove the sensor from the Tracer$_{VM}$ Flow Meter and examine the sensor. If light is visible through the sensor, replace it. See Figure 4. Contact the factory for replacement part number VMHS-400-H. Check that sensor cable is plugged into the Tracer$_{VM}$ Flow Meter firmly.

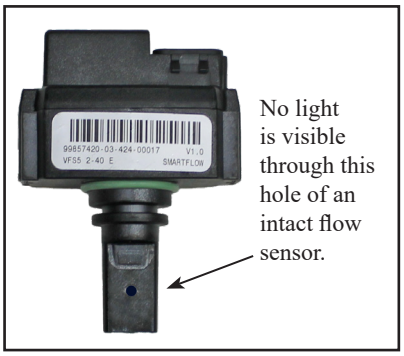

Figure 4

Limited Warranty

Seller warrants that Smartflow® products supplied will conform to the description stated in published literature, and that the product will be of standard quality. The seller warrants manufactured components for 90 days. This is the sole warranty made by Seller with respect to this product. Seller expressly disclaims any other express or implied warranties, including, but not limited to, the implied warranty of merchantability and the implied warranty of fitness for a particular purpose.

Seller shall not be liable for any cost or damages, whether direct, incidental or consequential, including, but not limited to, any injury, loss or damage resulting from the use of this product, regardless of whether any claim for such cost or damages is based on warranty, contract, negligence, tort or strict liability. The sole liability of Seller is limited to repairing or replacing this product.

This warranty shall not apply to any products that have been repaired or altered by anyone other than Seller. The warranty shall not apply to any products subject to misuse due to common negligence or accident, nor to any products manufactured by Seller which are not installed or operated in accordance with the printed instructions of Seller or which have been operated beyond the rated capacity of the goods. Seller states that the product's useful safe life is 5 years. Actual life may vary widely depending on operating environment such as temperature, pressure, and chemical exposure.