



**GLASS-TUBE
PURGE METER
STAINLESS STEEL FRAME**

FEATURES

Wallace & Tiernan Products Purge Meters are low-capacity variable area meters which incorporate several improvements in basic design. They feature an unusually rigid, corrosion resistant stainless steel frame and a positive, easily controlled tube lock.

Purge Meters are specifically designed for such service as the purging of instrument cases and control lines. They are readily adapted to liquid-level indication, sampling, liquid-specific-gravity determination, and similar applications.

When higher accuracy (2% fs) is required for measuring small volumes, write for publication TI 510.150 on the Low Flow Meter. For high temperature, high pressure, or hazardous fluid metering, write for publication TI 520.205 on the Metal-tube Varea-Meter® or 520.215 on the TFE-lined and PVC-tube Varea-Meters®.

STRUCTURALLY STRONG FRAME

The side frames are heavy, channel-form stainless steel sections welded to stainless end fittings turned from bar stock. This produces a rigid unit which resists pipe strains and protects tube alignment.



CHOICE OF CORROSION-RESISTANT MATERIALS

The frame is made of 302 stainless steel; the end fittings, 316 stainless. The metering-tube retainer is Kynar vinylidene fluoride resin with 316 stainless optional. O-rings come in a choice of Buna N or Viton with EPR (ethylene propylene rubber) optional. Valve trim (seat and stem) is 316 stainless.

POSITIVE TUBE LOCK AND A TUBE SHIELD

A knurled tube-locking nut, external to the flow, positions the tube retainer and locks the tube firmly in place. Tube removal is quick and easy. O-rings seal the tube at both ends. A clear plastic

shield covers the tube. It has tabs which snap into slots in the frame.

VERSATILE FLOW CONTROLLER

A W&T Flow Controller keeps flow constant regardless of pressure variations. It comes in brass or 316 stainless steel, in inlet or outlet configurations and high or low capacities. Replaceable seat adapters make for easy capacity changes. Straight-through design means the controller can be threaded directly into the meter body, eliminating pipe nipples and static piping.



10610 - 172 Street, Edmonton, Alberta
Canada T5S 1H8

Phone: (780) 486-2400 Toll Free: 1-800-661-8823
Fax: (780) 486-2500
Email: info@muiscontrols.com www.muiscontrols.com

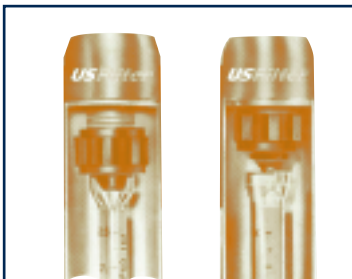
Features Continued

INTEGRAL BACKCHECK

An anti-backflow device is built into the discharge. It consists of a 316 stainless steel poppet with a Buna N or Viton O-ring seal.

HIGH INTERCHANGEABILITY

All parts, except tubes, frames, and plastic shields, are interchangeable regardless of scale length. Tubes have same size O-rings at each end. The tubes for all capacities fit one frame size. This and the one-piece frame make for design simplicity with simplified maintenance and spare parts stocking.



CHOICE OF ARRANGEMENTS AND OPERATING POSITION

Purge Meters are available in 1-1/2- and 3-inch scale lengths. They can be supplied with: an integral flow control valve with a screwdriver-slot stem or a knob for adjustment; a factory-connected flow controller to maintain flows constant; and a plastic bezel for flush panel mounting (of the 3-inch size). The meter can be inverted and its tube reversed to change the control valve from the inlet to the discharge.

VERSATILE CONTROL VALVE

The optional control valve has a common stem with high- or low-capacity seats; all are 316 stainless. An O-ring in the seat makes it easy to change. The valve gives smooth adjustment and a fine degree of control.



SELECTION PROCEDURE

Determine the capacity range, temperature and pressure capability, materials of construction, and options required for each meter. See Technical Data Section for pressure and temperature limits.

Note: For fluids with SP.GR. other than 1.0 or viscosity other than 1.0 CSS consult your local Wallace & Tiernan Varea-Meter® Distributor.

TABLE A - ORDERING NUMBERS FOR BASIC METER ARRANGEMENTS				
CAPACITY	FUNCTION		316 STAINLESS END FITTINGS	
			BUNA N O-RINGS	VITON O-RINGS
EXTRA LOW 1.75 ccm H ₂ O or 145 sccm air maximum	METER ONLY		20	30
	METER WITH CONTROL VALVE		NOT AVAILABLE	
LOW 5 GPH H ₂ O or 30 scfh air maximum	METER ONLY		20	30
	METER WITH CONTROL VALVE	VALVE TRIM	316 SS	316 SS
		WITH KNOB	22	32
		WITH SLOT	26	36
HIGH 40 GPH H ₂ O or 110 scfh air maximum	METER ONLY		20	30
	METER WITH CONTROL VALVE	VALVE TRIM	316 SS	316 SS
		WITH KNOB	24	34
		WITH SLOT	28	38

TABLE B - ORDERING NUMBERS FOR TUBES, FLOATS AND SCALES - WATER				
	MAXIMUM CAPACITY AND SCALE UNITS	1-1/2" SCALE LENGTH	3" SCALE LENGTH	FLOAT MATERIAL
EXTRA LOW CAPACITY	0.32 ccm 0-100%	-	-	Sapphire
	0.34 ccm 0-100%	C021	-	Sapphire
	0.65 ccm 0-100%	-	-	316 SS
	0.95 ccm 0-100%	C041	-	316 SS
	1.10 ccm 0-100%	-	-	Tantalum
	1.75 ccm 0-100%	C061	-	Tantalum
LOW CAPACITY	0.1 gph 6 ccm 0-100%	-	A073	Black Glass
	0.5 gph 30 ccm 0-100%	A081 C081	A083 C083	316 SS
	1.0 gph 60 ccm 0-100%	A091 C091	A093 C093	Black Glass
	3.0 gph 30 ccm 0-100%	A101 C101	A103 C103	316 SS
	5.0 gph	A111	A113	Black Glass
	8.0 gph 500 ccm 0-100%	A121 C121	A123 C123	316 SS
	15.0 gph 900 ccm 0-100%	A131 C131	A133 C133	316 SS
	25.0 gph 1500 ccm 0-100%	A141 C141	A143 C143	316 SS
	40.0 gph 2500 ccm 0-100%	A151 C151	A153 C153	Tantalum

TABLE C - ORDERING NUMBERS FOR TUBES AND FLOATS - AIR				
	MAXIMUM CAPACITY AND SCALE UNITS	1-1/2" SCALE LENGTH	3" SCALE LENGTH	FLOAT MATERIAL
EXTRA LOW CAPACITY	30 sccm 0-100%	-	-	Sapphire
	46 sccm 0-100%	-	-	316 SS
	50 sccm 0-100%	-	-	Sapphire
	87 sccm 0-100%	-	-	Tantalum
	105 sccm 0-100%	-	-	316 SS
	145 sccm 0-100%	-	-	Tantalum
LOW CAPACITY	1.0 scfh 0-100%	E071 C071	E073 C073	Black Glass
	2.5 scfh 0-100%	E081 D081	E083 D083	316 SS
	6.0 scfh 0-100%	E091 D091	E093 D093	Black Glass
	12.0 scfh 0-100%	E101 D101	E103 D103	316 SS
	20.0 scfh 0-100%	E121 D121	E123 D123	Black Glass
	30.0 scfh*	E111	E113	Black Glass
	36.0 scfh 0-100%	-	-	316 SS
	60.0 scfh 0-100%	-	-	316 SS
HIGH CAPACITY	110 scfh	E151	E153	316 SS

Note: 472 sccm = 1 scfh

Note: For special calibrations of low and high capacity meters, the first digit of the tube, float and scale code is an L for liquid service and a G for gas service.

WARNING: Do not use Glass-Tube Meters for fluids which are toxic, hazardous or attack glass.

ORDERING PROCEDURE

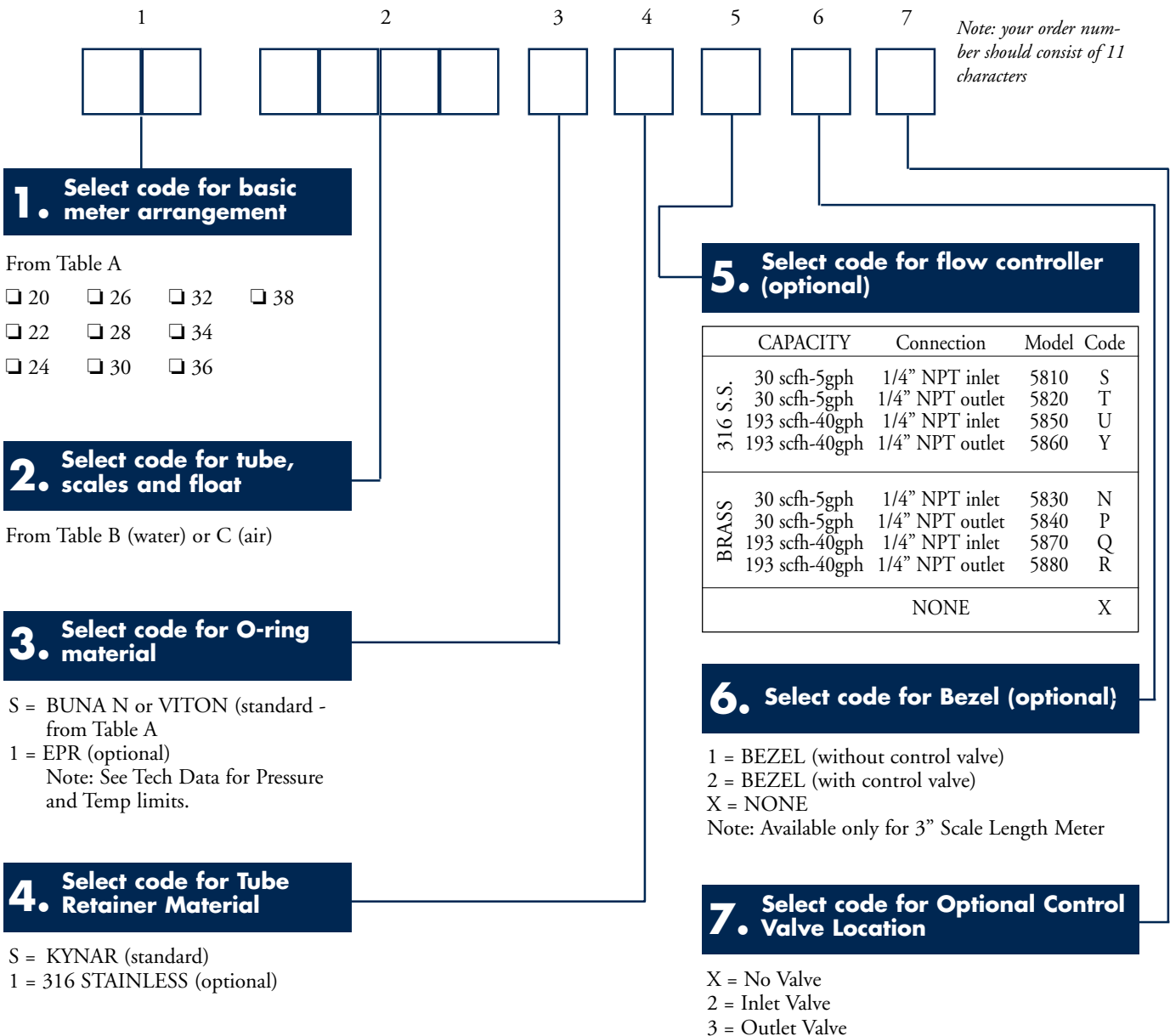
EXAMPLE.

To order a low capacity purge meter and control valve with knob and 316 stainless trim, specify 22. To order a tube with 3-inch scale, capacity of 6 ccm

water, and scale units in ccm add B073. Add S for standard 0-ring material, add S for standard Kynar tube retainer, add X for no flow controller, add 2 for bezel to accommodate meter with control

valve, add 2 for control valve at inlet.

Thus the complete ordering number is: **22B073 SSX22.**



TECHNICAL DATA

Accuracy

10% of full scale.

Operating Range

10 to 1.

Pipe Connections

1/4-inch female NPT at meter inlet and outlet, at control valve inlet, and at flow controller inlet; horizontal in and horizontal out.

Mounting

In-line; wall through mounting holes in the back of the frame; flush panel with optional bezel.

Scales

As indicated in Tables B and C.

Pressure and Temperature Limits

(Temperature and pressure are interdependent but the following limits must not be exceeded under any conditions.)

TUBE RETAINER	O-RINGS	PRESS. (Psig)	TEMP. (F)
Kynar	Buna N	200	200
Kynar	Viton	200	200
316 SS	Viton	250	250
Kynar	EPR	200	200
316 SS	EPR	250	250

Write for publication TI 500.010, which is a detailed listing of this meter's compatibility with a wide range of fluids.

Special Calibration

Excluding extra low capacities. Scales calibrated in other than the standard units in Tables B and C are available at extra cost. Calibration for fluids with viscosity other than 1 centistoke is also available at extra cost.

Materials of Construction

FRAME	302 stainless
END FITTINGS	316 stainless
TUBE	Borosilicate glass
FLOAT	See Tables B and C
O-RINGS	Buna N or Viton with EPR (ethylene propylene rubber) optional
TUBE RETAINER	Kynar, 316 stainless (optional)
LOCK NUT	Kynar
FLOW INSERT	Kynar (Used with high capacity air meters only.)
CHECK VALVE	316 stainless
POPPET	
CHECK VALVE	Buna N or Viton
O-RINGS	
TUBE SHIELD	Polycarbonate
VALVE STEM	316 stainless
VALVE SEAT	316 stainless
STEM ADAPTER	316 stainless
STEM RETAINER	316 stainless
PIPE PLUG	316 stainless

Shipping Weights

Meter only, 1 lb. Meter with control valve, 2 lb. Panel mounting bezel, 3 lb.

FLOW CONTROLLERS

Purge meters with control valves and W&T Flow Controllers are designed to give reliable flow control, regardless of pressure changes. For liquid service, specify inlet type from Selection 5. For gas service with varying upstream and constant downstream pressures, specify inlet type. For gas service with constant upstream and varying downstream pressures, specify outlet type. Meters with valves at the outlet have a ball check instead of a poppet.

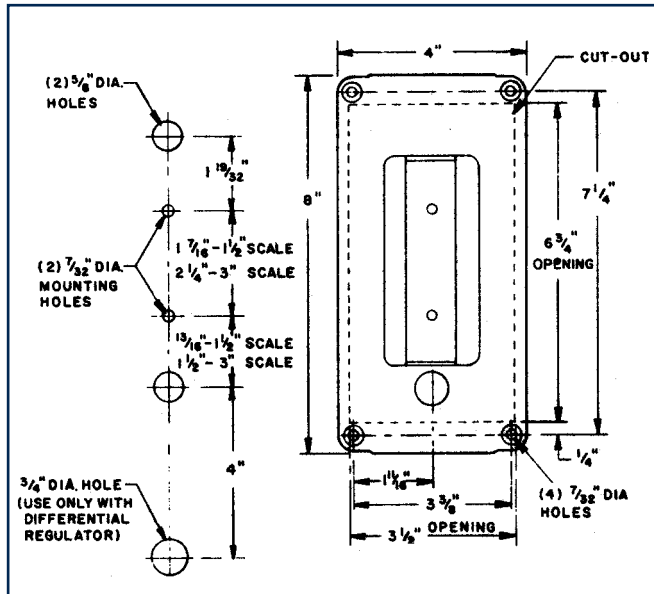
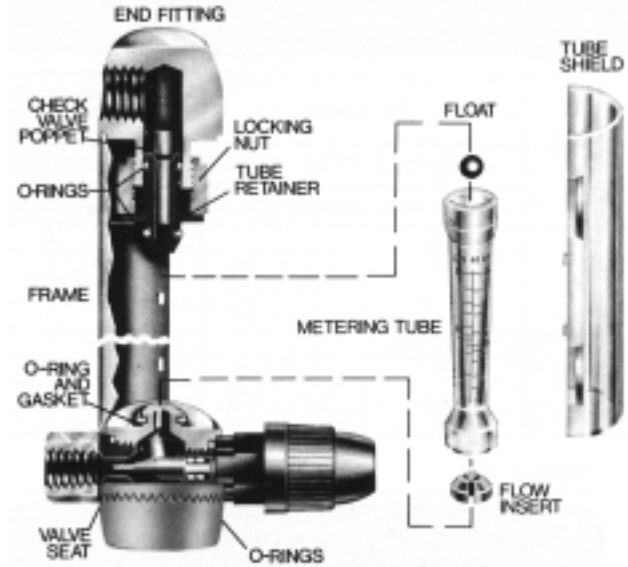
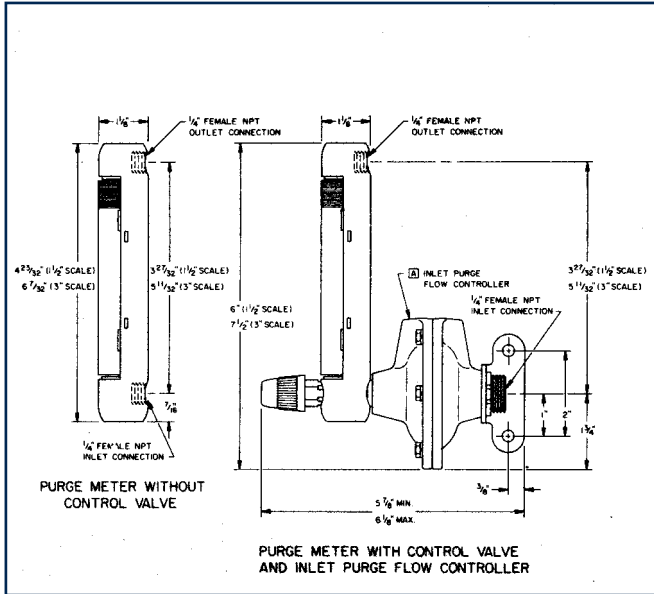


FLOW CONTROLLER TECHNICAL DATA

	High Cap.	Low Cap.
maximum capacity-gas	193 SCFH	30 SCFH
maximum capacity-liquid	40 GPH	5 GPH
maximum temperature	200°F - Brass (Black Paint Finish) with Buna-N Diaphragm, 250°F - 316 Stainless Steel with TFE Diaphragm	
Maximum Inlet Pressure	250 psi	250 psi
Maximum Pressure Drop	8 psi	8 psi
Connection Inlet/Outlet	1/4" NPT	1/4" NPT

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DIMENSIONS



ACCESSORIES

FLUSH PANEL MOUNTING

Plastic bezels for flush mounting are available at nominal cost. They are easy to keep clean and the meter is readily accessible.



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