

Model 408M

Micro Double Valve Pump

The Micro Double Valve Pump (Micro DVP) has a remarkably small and flexible design. It is a pneumatic pump similar to a Bladder Pump, but using coaxial Teflon® tubing, rather than a Teflon bladder to give high quality samples. It is small enough to fit in 1/2" (13 mm) tubing and all channels of the Solinst Model 403 CMT Systems, as its diameter is only 3/8" (10 mm). The unique combination of flexibility and size make the pump easy to transport and install in a variety of applications.

The Micro DVP is ideal for low flow sampling and narrow down-hole applications. Flow rates of 20 to 150 ml/min, are obtained, with very small associated purge volumes from within the narrow applications. The Micro DVP is durable and easy to operate using the pre-sets and fine tubing capabilities built into the Solinst Model 466 Electronic Control Unit.

Design & Construction

The Micro DVP uses coaxial Teflon tubing in lengths of 50', 100', 150' and 200' (15 m, 30 m, 50 m and 60 m). The 50 ft. (15 m) pump is also available with LDPE outer drive tube and a Teflon inner tube. The pump body and filter is 6" x 3/8" (150 x 10 mm). It is constructed of coaxial Teflon tubing with stainless steel fittings and a 100 mesh stainless steel filter. Filters are easily cleaned and replaced. A manifold at the top end of the pump has a 3/16" (5 mm) Teflon sample tube and a quick-connect fitting for easy attachment to the Control Unit. A multi-purge sampling head is also available for use with the CMT System.



*Model 466
Electronic Control Unit*



Operation

Formation water enters through the filter under hydrostatic pressure into both the inner Teflon tube and the annulus of the coaxial tubes. Drive gas/air is cycled down the annular space between the two tubes to close the lower check valve and push the water up the inner sample tube. The pump is then vented to allow new formation water to enter both tubes under hydrostatic pressure. Air/gas pressures are carefully controlled at all times to ensure that the air/water interface never enters the body of the pump. Repeating the pressure/vent cycle brings the high quality sample to the surface at a controlled rate. The Micro DVP operates with 2 ft (0.6 m) or more head of water above the intake.

*Pump Manifold with
Quick-Connect for Drive Air
and Teflon Sample Tube*



Applications

Groundwater sampling in:

- CMT and Waterloo Multilevel Systems
- Direct-Push/Drive-Points
- Low flow monitoring in narrow diameters

Advantages

- Only 3/8" (10 mm) in diameter
- Flexible Teflon, goes almost anywhere
- Inexpensive and readily dedicated
- Narrow applications

® Teflon is a registered trademark of the Dupont Corporation