

D-16

D-25

SS-16

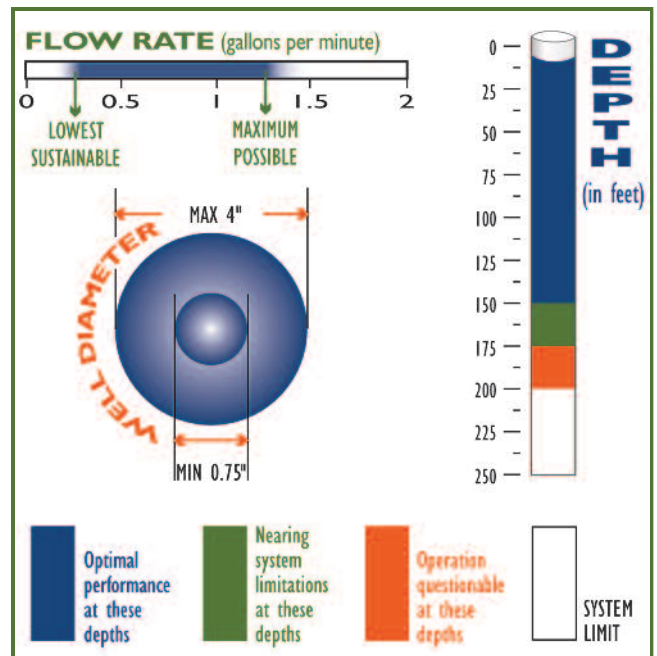
SS-19

**W**aterra's Standard Flow System is the most popular inertial pump. This system is best suited for 2" monitoring wells and can provide lifts of 150 to 200 feet. Flow rates can be as much as 1 gallon per minute.

This system typically consists of two components — a **Standard Flow foot valve** and a length of 5/8" OD **high density polyethylene (HDPE) tubing**.

The most commonly used foot valve is the 1" OD acetal thermo-plastic **D-25**. Optional foot valves include the 5/8" OD **D-16**, and the stainless steel 5/8" OD **SS-16** and 3/4" OD **SS-19**.

The Standard Flow System is best used in wells of 1" to 2" inside diameter. This system is suitable for a variety of sampling environments. Optional tubing includes **low density polyethylene (LDPE)** and **Teflon (FEP)**.



**STANDARD FLOW PERFORMANCE CHART**

### VOC SAMPLING

#### WITH VOC TUBING

The Standard Flow System can be used for VOC sampling. The best technique to use for collecting these samples requires the use of a short length of 1/4" OD **VOC tubing**.

The VOC tube is inserted inside the standard flow tubing and is primed while the well is purged.

Flow from the VOC tube can easily be directed into the VOC sample bottle.

Field comparisons of inertial pump VOC samples to those collected by bladder pumps have shown no significant differences.

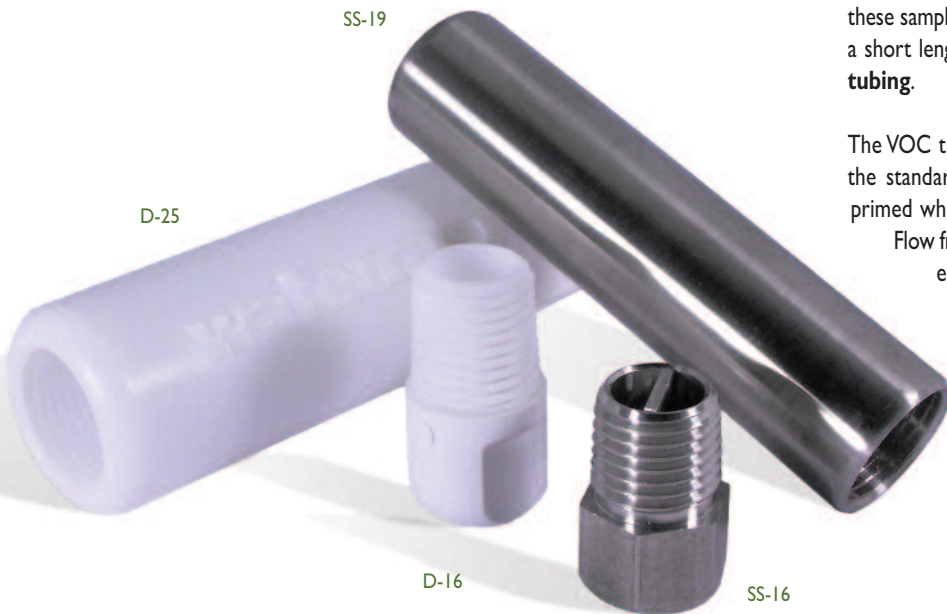
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# Standard Flow

## well development with the surge block



standard flow

surge blocks

The **Waterra Surge Block** is an excellent well development tool. It simply press fits over the body of the Standard Flow foot valve (D-25). The inertial pump has a substantial capacity for developing monitoring wells because of the cyclical action of the valve in the well screen area. This characteristic can be utilized to remove silt and sediment that has accumulated in the foot of the monitoring well and can also be used to remove fines from the sand pack and well screen.

The surge block effectively increases the outside diameter of the D-25 foot valve to 1<sup>7/8</sup>" in 2" wells and 3<sup>7/8</sup>" OD in 4" wells, reducing the annular gap between the valve and the inside of the well screen to approximately 1/16". This results in a significant increase in the surging action of the valve.

The use of the Inertial Pump and Surge Block together is one of the most effective methods for developing monitoring wells because it simultaneously surges and pumps the well. This frees up silt and sediment in the sand pack and screen and breaks down bridging, drawing these particles into the well and then removing this material from the well.

### SURGE BLOCKS

Waterra has surge blocks available for both 2" and 4" wells and for both the Standard Flow (SBD-25) and High Flow (SBD-32) systems. Please be sure to specify your preference when ordering.



SBD-32 & SBD-25  
FOR 2" WELLS



SBD-25-4 & SBD-32-4  
FOR 4" WELLS

### RECOMMENDED DEVICES

The **Standard Flow System** can be manually operated in most wells simply by holding the tubing by hand and oscillating it up and down in the well. Sometimes performance and endurance can be improved with the addition of the **Waterra Lever Pump** (WLP 100).

The greatest performance improvements are realized with the use of the **Waterra Hydrolift-2, PowerLift-3, PowerPack-PP1** or **PowerPump-2**. The use of one of these automated actuators greatly improves the well development capacity of the inertial pump. The automated actuators are also recommended when substantial purge volumes are required.



LEVER PUMP



HYDROLIFT-2



POWERLIFT-3



POWERPACK-PP1



POWERPUMP-2

