

### Tools and Materials Needed

1. 407 1.66" PVC Drop Tube Assembly (#105225) Includes:
  - Top Drop Tube Extension (#104647)
  - Bottom Drop Tube Extension (#104870)
  - 2 x 1/2" Nylon Compression Fittings (#104360)
  - Filter Retainer for Weight (#103803)
  - 2 x 3/8" OD Teflon® Check Balls (spare)
  - 2 x #V116 O-rings (one as spare) (#103493)
2. 1/2" OD x 3/8" ID LDPE tubing (#101083) (length as required)
3. Tubing Cutters
4. Weight (optional)

- Notes:**
1. See separate operating instructions for the 1.66" OD PVC Model 407 Bladder Pumps. The Pump Body must remain submerged during operation.
  2. Refer to the operating instructions in the lid of the Solinst Model 466 Pump Controller for detailed pumping instructions.
  3. This Drop Tube Assembly is also suitable for use with the 1.66" OD PVC Model 408 SS Double Valve Pumps. (See separate operating instructions).

### Operating Principles

A Drop Tube Assembly allows samples to be obtained from greater depths than the standard maximum 100 ft (30 m) below grade for PVC Integra® Bladder Pumps. The Drop Tube places the screened filter intake of the Pump as deep as necessary to access the sample zone desired.

The Drop Tube Assembly is easily installed on existing Pumps, even in the field. Pumps are operated in the same manner as those without a Drop Tube, which maintains high sample integrity.

### Installation

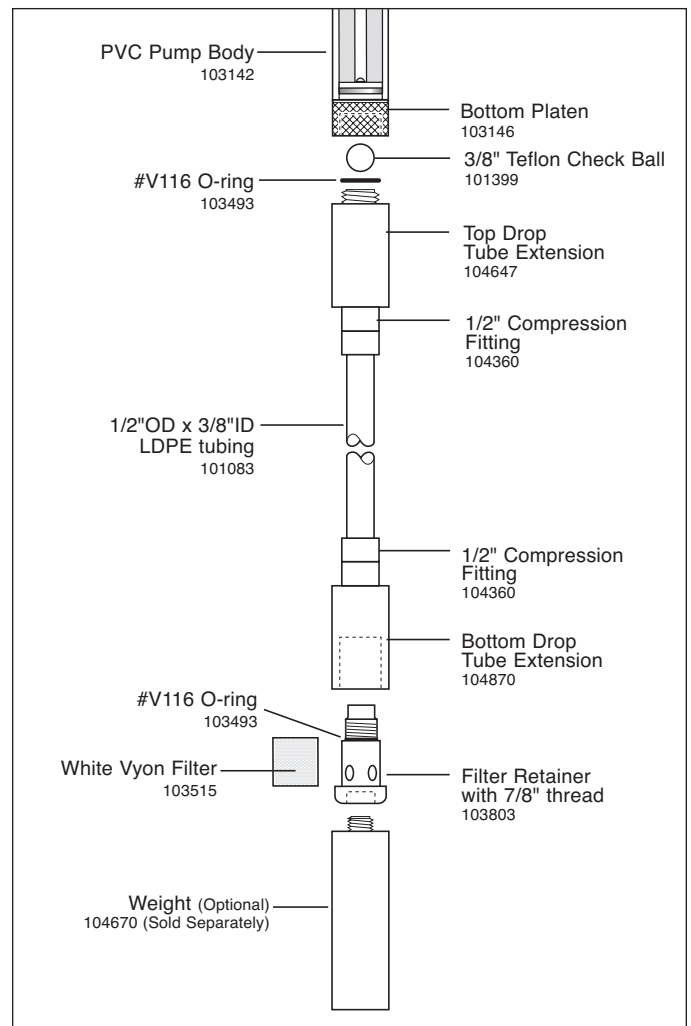
1. Select and cut the appropriate length of 1/2" OD x 3/8" ID tubing. The most common type of tubing used is low density polyethylene (LDPE).

**Note:** Other sizes and types of tubing may also be used, however, the end user will need to supply their own tubing and tubing adaptors.

2. Unscrew and remove the Filter Retainer (with the white Vyon filter) from the Bottom Platen of the Pump. Keep the Check Ball.
3. Remove the white Vyon filter from the Filter Retainer and slide it over the new Filter Retainer with the 7/8" thread.
4. Insert the Check Ball into the stem of the Top Drop Tube Extension.
5. Ensure there is a #V116 O-ring over the groove at the shoulder of the Top Drop Tube Extension, and tighten by hand into the Bottom Platen of the pump until the O-ring properly seats.
6. Push one end of the 1/2" OD x 3/8" ID tubing into the compression fitting on the bottom of the Top Drop Tube Extension.

**Note:** To use the compression fittings, loosen the compression fitting nut, and then insert the tubing all the way into the fitting. Then re-tighten the nut snug by hand, then 1-1/4 turns more past finger-tight.

7. Take the Bottom Drop Tube Extension and connect it to the other end of the tubing using the compression fitting.
8. Thread the Filter Retainer (with the white Vyon filter) into the bottom of the Bottom Drop Tube Extension, ensuring the O-ring on the Filter Retainer properly seats.



**Model 407 PVC 1.66" Diameter Drop Tube Assembly**

9. Thread a weight, if required, into the thread on the bottom of the Filter Retainer to complete the installation.
10. The Bladder Pump is operated in the same manner as those without a Drop Tube. See separate operating and pumping instructions. The entire Pump Body must be submerged when operating using a Drop Tube.