

1.03-025P/020

AIR AND VACUUM RELEASE VALVES

Sewage:

All force mains and other pressure non-treated mains shall have air and vacuum release valves installed as indicated on the plans. The body of these valves shall be conical shaped to maintain maximum air gap with the spring loaded float and seal plug connection combining to prohibit contact between the sewage and the seal. The valve shall have a double float design with the upper float being enclosed in the upper section of the valve and shall be made of foam polypropylene. The lower float shall be in the main body of the valve and shall be constructed of foam polypropylene. The body, cover flange, and lower flange shall be constructed of reinforced nylon, and shall have a funnel shaped lower body to automatically drain sewage back into the system. All internal metal parts are to be made from corrosion resistant 316 stainless steel, with all operating parts, in the upper and lower sections, to be non-metallic plastic/rubber materials. The hinge for operation for the opening and closing of the seal on the orifice shall be made of EPDM rubber. The rolling resilient seal shall provide smooth positive opening, closing, and leak free sealing over the fluctuation of pressure differentials. The working pressure shall be 145 psi and tested to 230 psi. The lower bowl of the ARV shall be funnel shaped to prohibit raw sewage to run back into the pipe. All hardware shall be of stainless steel bolts and nuts, and the entire valve, except the upper outlet, shall be constructed of reinforced nylon material. All valves shall be equipped for backflushing maintenance with easy connection or disassembly. Valves with a total weight of more than 10 pounds shall be anchored to relieve the excessive weight to the saddle and PVC pipe. Those valves weighing less than 10 pounds will not be required to be anchored. The ARV shall be no taller than 19-inches. The connection on all pipelines shall be the following sizing with an isolation valve of the same size:

12-inch and smaller	2-inch threaded
14-inch through 20-inch	3-inch flange/threaded
24-inch and larger	4-inch flange/threaded

All air and vacuum combination release valves shall be model ARI D-025P, or approved equal, and the automatic air release valves shall be ARI model S-025P or approved equal. All valves shall be installed in accordance with manufacturer recommendations and shall have an isolation valve connection for control. All ARVs shall have ISO 9002 certification in order to be supplied on this project.

1.03-040.1**PUMP STATION AIR VALVES:**

Special application of the air release valves at the pump station piping shall allow for the ARI model D-040 combination valve. These valves are to be located as shown on the drawings, just past the 90-degree bend on the header pipe detail. The body/base of these valves shall be made from high strength lightweight non-corroding fiberglass reinforced nylon, and all operating parts are to be made of engineered corrosion resistance plastic materials. The rolling resilient seal shall provide smooth positive opening, closing, and leak free sealing over the fluctuation of pressure differentials. The valve shall be designed to allow larger than normal automatic orifice providing efficient air release and minimizing potential debris build up and clogging. The working pressure shall be 200 psi and shall have a 2-inch threaded connection. All air and vacuum release valves shall be model ARI D-040 or approved equal. The connection to the system shall be a direct threaded connection on the top of the pipe with a saddle, with an isolation valve.