



Tech notes



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Pre-engineered Package Lift Stations
for Wastewater and Stormwater

July 2004

Product Information & Updates • Installation & Technical Tips

THIS EDITION OF

TECH NOTES features the Pre-assembled Valve Vaults in Romtec Utilities Pre-engineered Package Lift Stations. Located alongside the wet well, the valve vault houses the check valves, plug valves, pressure sensor and all related piping necessary to isolate the wet well from the downstream force main. In "site built" lift stations, where components are assembled in the field, valve vaults have acquired the reputation for being costly, both in the materials required for site construction and in the time required for a plumber to assemble and test all of the parts and fitting. Some components have long lead times for delivery, thus compounding the cost and timing problems.



Complete pre-assembled valve vault ships with lift station.

The Pre-Assembled & Pressure-Tested Valve Vault

The Romtec Utilities concept is based on a prefabricated/pressure-tested valve assembly, fitted into a quality concrete vault. All piping is stubbed outside the vault, so simple pipe-to-pipe connections are all that is required in the field. The complete valve vault arrives at the job site ready to place in the hole.

The Romtec Utilities valve vault is built of steel reinforced, pre-cast concrete, designed to meet ACI-318-83 building code and ASTM 6-857 minimum structural design loading. Dimensions of the standard vault are 4'-8" wide by 7' long, with standard depths of 5' and 7' with one-foot risers available. Vault walls are 3" thick, and the base is

4" thick. Larger vaults are specified when additional equipment or larger piping is required.



Finished lift station site has top slab with standard aluminum hatch doors.

Top Slab

The vault is designed for placement underground so only the pre-cast top slab is above the finish grade.

The top slab features large double hatch doors for easy access from above. The standard hatch is non-traffic loaded aluminum with gas-assist openers and hold open arms, manufactured by ITT Flygt. The gutter-style hatch drains to the outside of the top slab to reduce rainwater flow into the vault. Note: If water does accumulate in the vault, a pre-cast sump is provided in the center of the vault base for a portable dewatering pump to be placed inside the vault.

Piping

All piping within the vault is of ductile iron, ranging in size from 4" to 10", depending on the requirements of the lift station. The two input pipes are coupled to the stainless steel discharge pipes from the wet well. RomaGrip pipe retainers are field installed outside the vault on



Romtec Utilities is a dedicated integrator of submersible pumps and lift station equipment manufactured by ITT Flygt.



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both input pipes to provide restraint from horizontal forces.

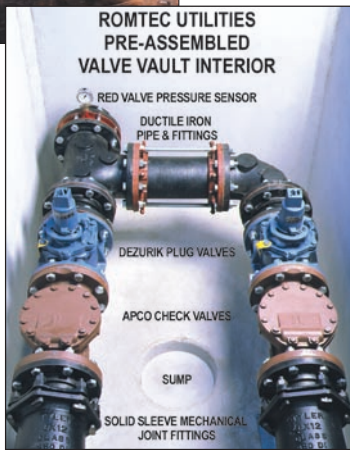
disassembly would be required) with a little flexibility to adjust for variations over time.



Valves & Pressure Sensor

Inside the vault, flow from either input pipe goes first through a rubber-seated swing check valve manufactured by APCO. The

Most of the pipe fittings within the vault are flange fittings, and there is also a solid sleeve mechanical joint fitting on each input pipe. These allow easier disassembly and reassembly of pipes and valves (in the very rare occasion that



check valves prevent unwanted back flow into the wet well when either pump is off. Downstream from each check valve is a manually operated eccentric plug valve manufactured by DeZurick. The plug valve provides isolation for inspection and

maintenance of the check valve and the corresponding pump. Beyond the plug valves the two lines are joined via a T-connection to form a single output line. A Red Valve non-contact pressure sensor is pre-assembled just beyond the T-connector. It is useful in evaluating pump performance during lift station operation.

Optional Features

Romtec Utilities Valve Vaults can be equipped with a number of optional features, as specified by the site engineer or lift station owner. Each option adds important functions to the lift station:

Pigging Port – fitting for inserting a pig into the force main for cleaning.

Emergency Pumping Port – fitting for connecting the flexible outflow pipe from a portable pump temporarily installed in the wet well in an emergency.

Flow Meter – installed in the force main within the vault to measure flow.

Safe-Hatch Access Cover – Flygt's safety grate system for fall protection.

H-20 Occasionally Loaded Aluminum Hatch Assembly – for occasional traffic loads, for example if vault is installed in a parking lot.

Galvanized Steel Traffic-Loaded Hatch – for location in a street or roadway.

FOR MORE INFORMATION

The Romtec Utilities Valve Vault, manufactured to your specifications, is shipped directly to the construction site in a single, ready-to-install unit. No on-site assembly is required within the vault, and the vault is ready to be placed at its operating location with a crane.

Connection to the wet well discharge pipes and force main pipe is straightforward. For more information call Romtec Utilities at

541-496-3541 or visit

www.romtecutilities.com.

