



TechNotes

ROMTEC UTILITIES, INC.
Product Information & Updates
Installation & Technical Tips



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

This edition of TechNotes describes the **Pre-cast Concrete Barrel Sections**, which make up the walls of Romtec Utilities Pre-engineered Package Lift Stations. Barrels are available in five, six, and eight foot interior diameters. Romtec Utilities wet well barrel sections (and all other concrete parts) are factory pre-cast of steel reinforced concrete, steam cured to a pressure rating of 4000 PSI.

Designed for Easy Installation

Barrel sections are lowered in place with a crane. Each has factory-applied marks to facilitate correct alignment. The watertight R-3 single offset joint between barrel sections has a lubricated rubber gasket that allows sections to be easily fitted. The overall process goes quickly; a complete well can be stacked in a matter of hours.



Wet well barrel sections are installed using alignment marks.

Choice of Barrel Heights

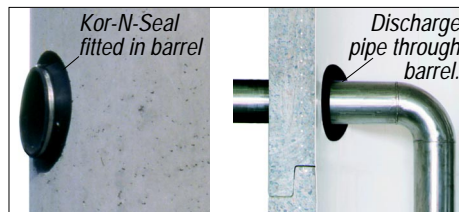
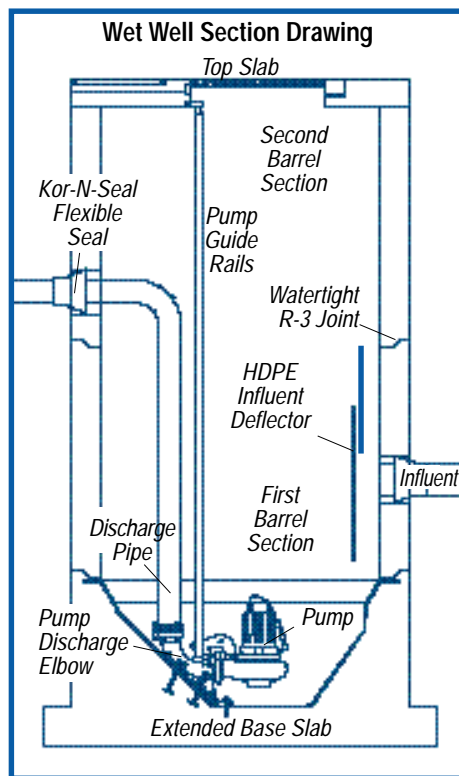
Barrel sections are available in heights from one to six feet. Five feet is the most often used height. It is common to have up to several barrel heights in a single wet well. This ensures that openings for the influent in and discharge pipes will not be aligned with a joint between two barrels.

Pre-cored for Discharge Pipes

Discharge pipe penetrations are factory pre-cored in one of the barrels. These are axially aligned in order to match the spacing and alignment of the two pump discharge elbows and the associated Romtec valve vault adjacent to the wet well. Their location in the barrel is such as to match the proper discharge pipe height and alignment when the wet well is assembled.

Pre-coring Available for Influent Pipes

Factory pre-coring is offered, but not required, for the inflow aperture of the wet well. There may be more than one inflow aperture in some installations. Pre-coring for the inflow is radial in direction in the barrel wall.



A Kor-N-Seal flexible seal is fitted into each wet well penetration to accept the influent and discharge pipes.

HDPE Influent Deflector

The wet well is fitted with one or more Influent Deflectors made of high-density polyethylene. This unit is commonly factory installed, but may also be field installed. The influent deflector forms a flat plate at a short distance from the



HDPE Influent Deflector with Guillotine panel open



18240 North Bank Rd., Roseburg, OR 97470
541-496-3541 - info@romtec.com
www.romtecutilities.com



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wall of the wet well and at a right angle to the influent stream. The deflector causes the influent to flow smoothly down its surface on to the smooth side of the wet well basin. The deflector thus prevents splashing and the resultant off-gassing in the wet well, and it reduces gas entrapment which can result in conditions that increase pump and impeller wear.

The influent deflector has an inspection hole, sized and positioned so that it looks directly into the inflow pipe. During operation the inspection hole is kept closed by its guillotine closure panel, suspended from a stainless steel cable and held in place by brackets on the back of the stationary deflector panel. By lifting up on the cable to open the closure panel, it is possible to inspect the inflow pipe from within the wet well and to insert power-cleaning equipment to clear the inflow pipe should it become clogged.

Pump Guide Rails

The pump guide rails are fitted within the wet well. Their job is to direct the pump when it is raised for inspection/repair or lowered into operating position.

There are two rails per pump. The bottom of each rail fits over a connector that is cast into the pump discharge elbow. The top of each guide rails is fitted into a bracket that is mounted to a unistrut fastened to the wet well top slab.

As each pump is installed in the wet well, the pump is lowered into position by cable with the aid of the guide rails. At the bottom the pump comes in contact with the discharge elbow. A tight connection is made between the precision machined surfaces of the pump output flange and the discharge elbow. The pump is held in place, partly by its own weight.

Discharge Pipes

The stainless steel discharge pipes are installed vertically upward from the pump discharge elbows. Where they reach the height of the axially-cored outflow apertures, they are prefabricated with a 90-degree elbow permitting them to go horizontally outward through the barrel wall.

A stainless steel discharge pipe support bracket is fitted to each discharge pipe. When a pump is in operation, pressure within the discharge pipe will produce a force at the elbow tending to move the pipe assembly inward, away from the barrel wall. To counteract this force the bracket is fastened securely to the inner barrel wall, some six to twelve inches below the position of the discharge pipe elbow.

When to Use a Liner

Romtec wet wells can be supplied in their standard form of precast waterproof reinforced concrete. They may also be supplied with the wet well equipped with a prefabricated inner liner. In warm climates, such as Florida for example, the liquids in the wet well may off-gas considerable amounts of hydrogen sulfide. This gas, in a damp atmosphere, will attack concrete, causing it to disintegrate.

Further, in some applications of lift stations which process industrial wastewater, hydrogen sulfide and other compounds can attack the concrete inner surfaces of the wet well. In instances such as these it is necessary to make use of an inner liner for the wet well.

Interior liners are available factory installed in Romtec wet wells. The lining material typically specified is Ameron polyvinyl chloride T-Lock Liner. Other liner materials are optionally available.

The liner is cast in the interior of the concrete barrels and also in the wet well top slab under surface. The shape of the back surface of the interior liner material locks it in place in the concrete. The joints between barrels and at the inflow and outflow access areas are covered with welded layers of the liner material. These linings prevent damage to the concrete structures by hydrogen sulfide or other potentially harmful chemicals.

Part of the Complete Romtec System

These then are the characteristics of the typical barrel sections of a Romtec Lift Station. The barrels are readily installed in the field, along with the wet well base and top slab, to form a strong and secure, leakproof structure.

The complete Romtec system design offers many advantages. To learn more about Romtec Utilities pre-engineered package lift stations for wastewater and stormwater, please visit our web site or call us during business hours.

Free Lift Station Sizing & Quote

Romtec Utilities offers a free service to specify the right lift station for your next project. On our web site, you can download an easy-to-follow form that helps you compile the data required to specify the size, capacity and all other parameters of your lift station. You can also call us to receive this form by fax.



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