

KEEN PUMP

BASIN PACKAGE SYSTEMS

COMPLETE TURNKEY PACKAGES

- * Pre-assembled
- * Ready for Installation
- * Quick, Easy, Convenient



BASINS

- Diameters to 72"
- Lengths to 22'

SYSTEMS

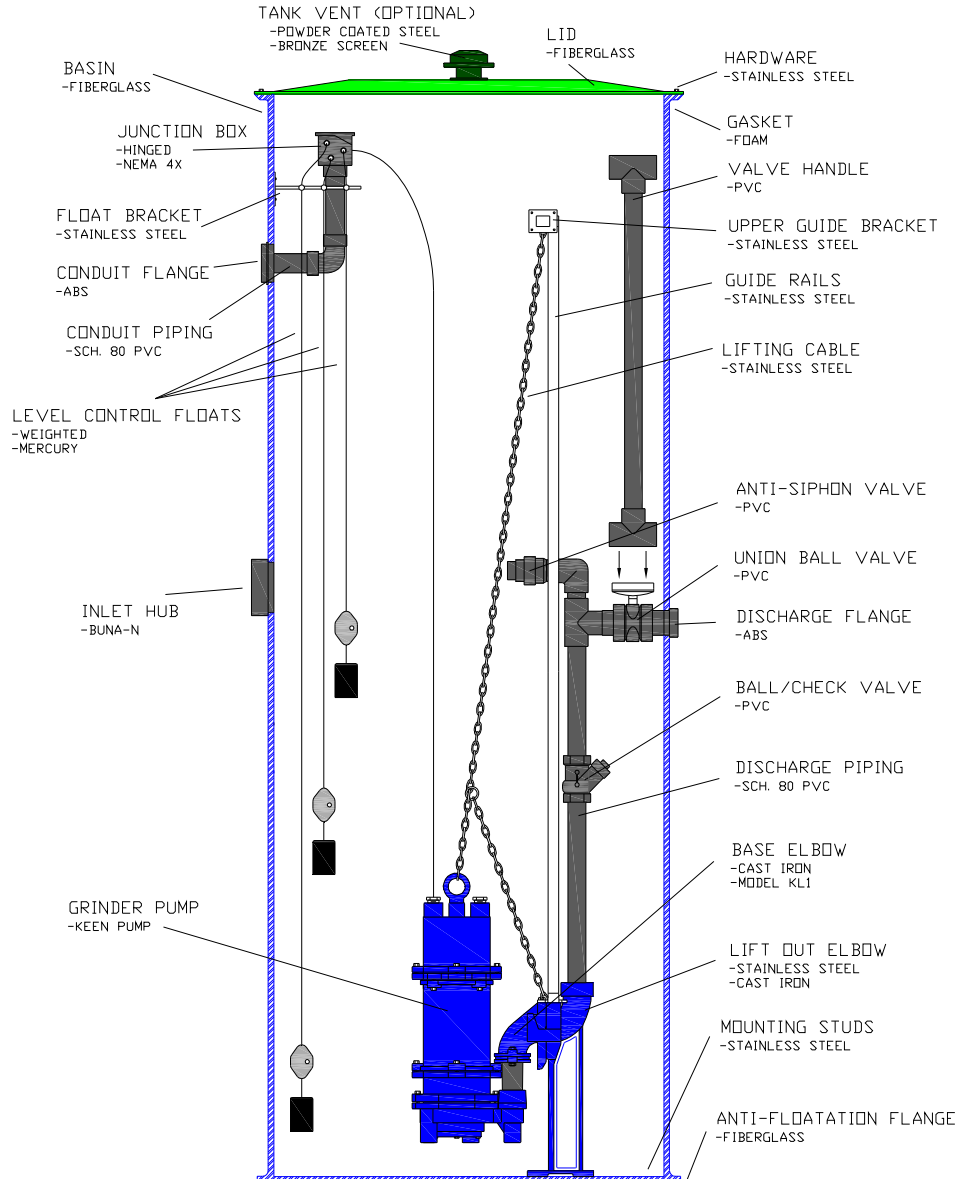
- Simplex
- Duplex

PACKAGES

- Pumps
- Controls
- Junction Box
- Floats
- Rail System
- Piping

Fiberglass Basin Packages

- Completely Assembled
- Quick & Simple Field Installation
- Saves Time & Money
- Fast Shipping Time
- Custom Built to Your Requirements



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Fiberglass Basin

TECHNICAL SPECIFICATIONS

GENERAL – The fiberglass basin shall use resins of commercial grade polyester and shall be evaluated as a laminate by test or determined by previous service to be acceptable for the intended environment. The reinforcing material shall be a commercial grade of glass fiber (continuous strand, chopped-strand, continuous mat and/or noncontinuous mat) having a coupling agent which will provide a suitable bond between the glass reinforcement material and resin.

DIMENSIONS – The basin shall be _____” in diameter and _____’ in depth. The basin shall be fiberglass, manufactured by the filament winding process.

CONFIGURATION – The basin assembly shall consist of an integral fiberglass anti-flotation collar. The basin shall also consist of an integral fiberglass upper collar for attachment of the basin cover.

BASIN COVER – A one-piece, solid fiberglass basin cover shall be provided with each basin assembly. The fiberglass cover is used on 24” and 30” diameter basins. All covers shall be green in color. Covers shall contain a captive, not separate gasket. Covers shall be bolted to the basin with stainless steel cap screws.

TECHNICAL – The FRP laminate will have a Barcol hardness of at least 90% of the resin manufacturer’s specified hardness for the fully cured resin. The Barcol hardness shall be the same for both interior and exterior surfaces.

The FRP laminate wall thickness shall vary with the wet well height to provide the aggregate strength necessary to meet the tensile and flexural physical properties requirements. The wet well FRP wall laminate must be designed to withstand wall collapse based on a hydrostatic pressure of 62.4 lbs. per sq. ft.: a saturated soil weight of 120 pounds per cubic foot; a soil modulus of 700 lbs per sq. ft.; and the pipe stiffness values as specified in ASTM D3753. The basin wall laminate shall be constructed to withstand or exceed two times the assumed loading for any depth of basin.

The basin bottom shall be of sufficient thickness to withstand applicable hydrostatic uplift pressure with a safety factor of two. In saturated conditions, the center deflection of the empty basin bottom shall be less than 3/8” (elastic deflection) and shall not interfere with bottom pump mounting requirements or operation of the system.

The wet well top flange shall have an outside diameter at least 4.0 inches greater than the inside diameter of the wet well.

Corrosion resistant threaded inserts shall be embedded in the top flange of the basin for securing the basin cover. The threaded inserts shall be totally encapsulated in the fiberglass to prevent turning and corrosion. A quantity of six (6) threaded inserts shall be embedded in the top flange. The inserts shall have an offset tab to prevent stripping or spinning out when removing or reinserting cover fasteners.

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Basin Package

TECHNICAL SPECIFICATIONS

GENERAL – Furnish and install a fully assembled grinder pump package consisting of the grinder pump, basin assembly, internal discharge piping, check valve, shut-off valve, quick-disconnect guide rail system, lifting cable, three level controls, level control bracket, junction box, inlet fitting and control panel.

All equipment shall be factory installed except for the grinder pump, inlet fitting and externally mounted control panel.

BASIN – The basin shall be _____” in diameter and _____’ in depth. The basin shall be fiberglass with the reinforcing material and resins per the basin specification sheet. The basin wall shall be designed to withstand a wall collapse based on the assumption of hydrostatic type loading by backfill with a minimum density of 120 pounds per cubic foot. An anti-flotation collar shall be manufactured as part of each basin.

BASIN COVER – A one-piece, solid fiberglass basin cover shall be provided with each basin assembly. The fiberglass cover is used on 24”, 30” and 36” diameter basins. The covers shall contain a captive, not separate gasket. Covers shall be bolted to the basin with stainless steel cap screws. Noncorroding stainless steel threaded inserts shall be fully encapsulated in the upper flange of the fiberglass basin.

RAIL ASSEMBLY – The lift-out rail system shall permit easy removal and installation of the pump without the necessity of personnel entering the basin. The rail assembly shall consist of a ductile iron lift-out base / elbow assembly, stainless steel guide rails and stainless steel guide rail brackets. The lift-out elbow for the base assembly shall contain a dove-tailed groove and sealing o-ring on the face to provide a leak-proof seal at all operating pressures. The guide rails are to be of sufficient strength to prevent binding and ease of pump removal and installation. The lift-out base elbow incorporates a non-binding stainless steel guide bracket. The guide rail design must be stress-free once the pump is located within the base assembly.

CHECK VALVE – A lift-out ball check valve assembly shall be an integral part of the lift-out base elbow. The check valve assembly shall be attached to the discharge of the pump and remove simultaneously with the pump. No entry in the wet well is required for servicing the check valve. The check valve shall contain a free flowing ball, unobstructive to the flow of liquids and solids within the discharge piping. The valve design shall be such to allow for operation when negative heads, up to 5 feet are encountered. The valve shall contain a maintenance access port capable of servicing the valve without disrupting the existing piping. The valve shall be designed to operate at all pressures within the sewer system created by the grinder pumps.

SHUT-OFF VALVE – A PVC, ¼ turn ball type shut-off valve with teflon seats shall be furnished as an integral part of the internal piping assembly. An extension handle shall be supplied if the discharge depth is greater than 18” from the surface.

DISCHARGE PIPING – Schedule 80 PVC discharge piping shall connect to the stationary discharge base lift assembly and terminate at a 1-1/4” discharge flange mounted on the basin at the height shown in the plans. The discharge flange shall be manufactured of a non-corrosive engineered resin or stainless steel. The discharge flange shall have 1-1/4” NPT threads for attaching external discharge piping.

INLET FITTING – A one-piece inlet fitting for 4” _____SCH 40 or _____SDR 35 plastic pipe shall be shipped loose for field installation as required by the installation. The fitting must be a water and vapor tight seal with no caulking.

LEVEL CONTROLS – Pump on, off and alarm levels shall be controlled the three (3) mercury tube float switches. Switches shall consist of a mercury tube switch sealed in a corrosion-resistant polypropylene housing with a minimum of 18 gauge, 2-wire, SJOW/A jacketed cable. The level controls shall be suspended from a stainless steel bracket so that adjustment or replacement may be done without the use of any tools. Level controls shall be UL /

CSA listed. The cable length shall be of sufficient length to reach the junction box without splices.

JUNCTION BOX – The junction box shall be constructed of structural plastic for corrosion resistance and of adequate thickness to provide stability and mechanical strength. The junction box shall have a fully gasketed cover that is held in place by four (4) captive stainless steel screws with heads of adequate size so that they may easily be installed and removed without the use of special tools.

An adequate number of sealing-type cord grips shall be supplied for incoming pump and level control cords. The cord grips shall be made of a non-corrosive material, such as PVC or nylon, and shall make an effective seal around the wire jacket. The cord grips shall seal to the junction box with an o-ring or gasket.

The junction box shall have a PVC solvent weld socket type conduit hub of adequate size to accommodate the number of wires required for the pump and level control operation. The incoming wires shall be sealed by an external EY type seal-off (supplied by others) so condensation from the conduit or groundwater will not enter the enclosure. The interior of the enclosure shall be of adequate size to accommodate the wires and connections for pump and level control operation.

The wires running between the control panel and the junction box shall be color-coded and fastened to

the pump and level controls by means of adequately sized and insulated twist lock or crimp connectors.

CONTROL BOX – (Separate from basin assembly). A NEMA 4X fiberglass control panel shall be furnished with each basin package. The control panel shall be molded of glass reinforced polyester resins which are chemically resistant to corrosive atmospheres. The resin system shall be pigmented to impart a gray color to the enclosure and be resistant to ultraviolet light.

The resin system shall include a flame retardant to obtain flammability rating which meets U.L. 94V-O. Heat distortion temperature shall be 350 degrees Fahrenheit.

The enclosure shall be hinged with a heavy duty corrosion resistant stainless steel piano hinge. Two stainless steel lockable clasps shall be incorporated in the enclosure.

The complete control box assembly shall conform to U.L. 508 standards.

Refer to control panel specifications for details of panel construction.

GRINDER PUMP – The pump shall be of centrifugal design. Positive displacement pumps shall not be considered equal. The pump shall be rated 2 HP, 3450 rpm. The pump shall be manufactured by Keen Pump Co. Inc, per the specification sheet for the pump selected for the application.