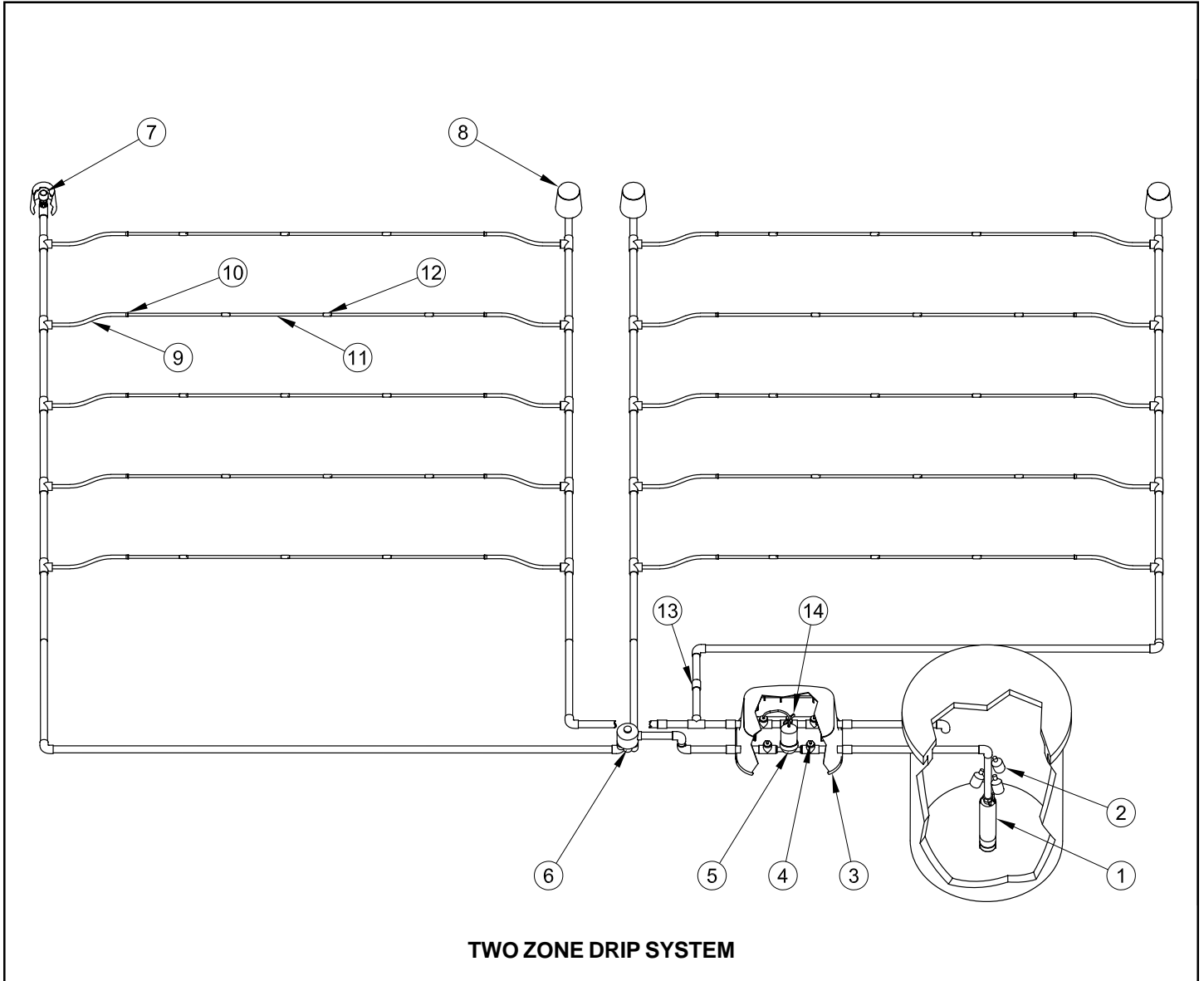


norweco® **SINGULAIR**®

SUBSURFACE DRIP DISPOSAL SYSTEMS

PRE-ENGINEERED DESIGNS PARTS LIST



| | | | |
|---|---------------------------------|----|------------------------------------|
| 1 | HB105 Submersible Effluent Pump | 8 | Relief Valve Enclosure |
| 2 | Pump Float Switches | 9 | Flexible PVC Hose |
| 3 | Headworks Enclosure | 10 | Compression Fitting |
| 4 | Schrader Valve | 11 | Drip Emitter Tubing |
| 5 | 1" Disc Filter | 12 | Pressure Compensating Drip Emitter |
| 6 | Zone Indexing Valve | 13 | PVC Check Valve |
| 7 | Air/Vacuum Relief Valve | 14 | PVC Flush Valve |

PRE-ENGINEERED DESIGNS PARTS LIST (Page 2 of 4)

INTEGRATED SYSTEM CONTROLS

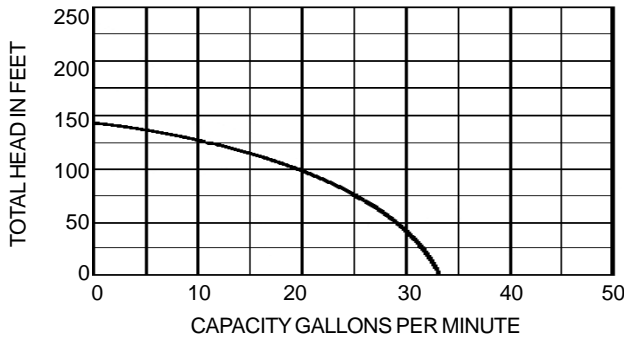
Integrated system controls (ISC) by Norweco eliminate the need to install and maintain separate controls for different components of the treatment system. One control center manages it all.



Certified and listed by NSF and CSA, ISC control centers bring together into one enclosure alarm/pump test switches, alarm silence switches, audible/visual alarms, failsafe features, remote monitoring, telemetry and aerator/pump timers.

EFFLUENT PUMP SPECIFICATIONS

The pump shall be a Norweco Model HB105 high head submersible pump, designed to handle filtered effluent and be capable of passing 1/16" spherical solids. The 115 volt, single phase, 60 cycle pump shall be UL and CSA listed and capable of running dry for short durations without damage to the motor or pump end.



The pump motor shall be 1/2 horsepower rated and operate at 3450 RPM. The motor assembly shall have corrosion resistant stainless steel exterior construction and incorporate a dual action starting switch to provide automatic torque reversal. Electrical surge protection shall be provided. Automatic motor overload protection shall be included at the top end of the motor windings and shall be wired in series to automatically cease operation when the motor winding temperature reaches 266° F. The 10 foot long motor power cord shall be 14-3, jacketed, type SJOW. The power cord shall be sealed at the motor entrance by means of a rubber grommet and stainless steel



compression plate. The pump impeller shall be of the six vane enclosed type, constructed of engineered thermoplastic. The impeller shall have a hexagonal I.D. and be positively driven by a hexagonal 300 series stainless steel pump shaft. The pump shall be warranted by the manufacturer against defects in material and workmanship for a period of one year under normal use and service.

FLOAT SWITCH

The mechanically-activated, wide-angle pump control switch provides automatic operation of the effluent dosing pump. This commercial duty float switch is not sensitive to rotation or turbulence, allowing it to be used in both calm and turbulent applications. Float switch features consist of UL recognition, NSF Standard 61 listing, CSA certification and Water Quality Association approval. **NOTE:** This switch is not recommended for controlling non-arcing electric loads or electric loads less than <100 milliamps, 12 VAC. Switch must be used with pumps that provide integral thermal overload protection.



FLOAT SWITCH TECHNICAL DATA

| | |
|-------------------------------|--|
| Cable | Flexible 16 Gauge, 2 Conductor SJOW, Water Resistant |
| Float Housing | 2.74" Diameter x 4.83" Long, High Impact, Corrosion Resistant, Polypropylene |
| Water Depth | 30 Feet |
| Electrical | 120/125 VAC 50/60 Hz Single Phase |
| Maximum Pump Starting Current | 78 Amps |
| Maximum Pump Running Current | 13 Amps |
| Maximum Pump HP | 1/2 HP |

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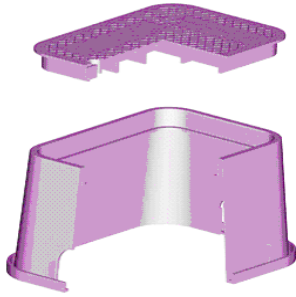
Engineering the future of water and wastewater treatment

NORWECO, INC.
NORWALK, OHIO
U.S.A. 44857
www.norweco.com

PRE-ENGINEERED DESIGNS PARTS LIST (Page 3 of 4)

HEADWORKS ENCLOSURE

The headworks enclosure is purple in color and rectangular in shape. Green enclosures are available if state and local regulations permit. All hydraulic system control components are contained within this open bottom enclosure. Components are conveniently arranged so that all necessary connections can be accessed from grade during routine service.



HEADWORKS ENCLOSURE TECHNICAL DATA

| | |
|----------------------------|--------|
| Enclosure Length | 15" |
| Enclosure Width | 21" |
| Enclosure Depth | 12" |
| Enclosure Color (Standard) | Purple |

SCHRADER VALVE

Schrader valves are manufactured with viton and PTFE threaded seals and are used with a liquid pressure gauge to accurately monitor system operating pressure. Located upstream and downstream of the disc filter and upstream of the flush valve.



SCHRADER VALVE TECHNICAL DATA

| | |
|-------------------|-----------------|
| Connection | 1/4" NPT |
| Maximum Pressure | 200 PSI |
| Temperature Range | 40° F to 300° F |
| Thread Size | 0.305" - 32 |

1" DISC FILTER



The disc filter is completely corrosion resistant and designed to capture and retain effluent suspended solids. 1" disc filters are manufactured specially for small flow applications. A built-in tap allows for continuous flushing of filtered solids to the return line. Operation is automatic and requires no special tools.

1" DISC FILTER TECHNICAL DATA

| | Metric | Imperial |
|------------------------------|---------------------|--------------------|
| Maximum Pressure | 10 Bar | 145 PSI |
| Flow Rate | 6 m ³ /h | 26 GPM |
| Flow Rate | 4 m ³ /h | 18 GPM |
| Filtration Surface Area | 316 cm ² | 49 in ² |
| Filtration Volume | 440 cm ³ | 27 in ³ |
| Filter Length | 237 mm | 9 11/32" |
| Filter Width | 158 mm | 6 7/32" |
| Distance Between Connections | 158 mm | 6 7/32" |
| Weight | 1 kg | 2.2 lbs. |

ZONE INDEXING VALVE

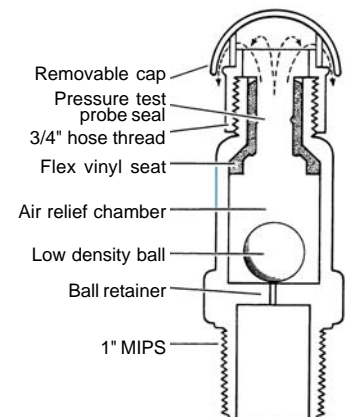
Zone indexing valves offer a reliable and economical way to automate multiple zoned residential and small commercial effluent drip disposal systems. Indexing valves are constructed of high strength, noncorrosive ABS polymer for long service life. Available in four and six outlet models, these valves make it easy to change from two to six disposal zones. Valves are easily maintained and serviced for long product life due to the simplicity of the design. Reliably automates multiple zoned residential and small commercial effluent disposal systems with flows as low as 10 GPM and pressures of 25-75 PSI.



AIR/VACUUM RELIEF VALVE

Air/vacuum relief valves are installed at the high points of the drip field to keep soil from being pulled into the drip emitters due to back siphoning or back pressure. They are also used for proper draining of the supply and return lines in freezing conditions.

The air/vacuum relief valve provides instant and continuous vacuum relief and noncontinuous air relief. Both the body and the removable cover shall be constructed of molded plastic. The body and the cover shall be connected with a 3/4" hose thread.



PRE-ENGINEERED DESIGNS PARTS LIST (Page 4 of 4)



RELIEF VALVE ENCLOSURE

Manufactured from low density polymer resin, this 6" round enclosure provides a secure housing for the relief valve.



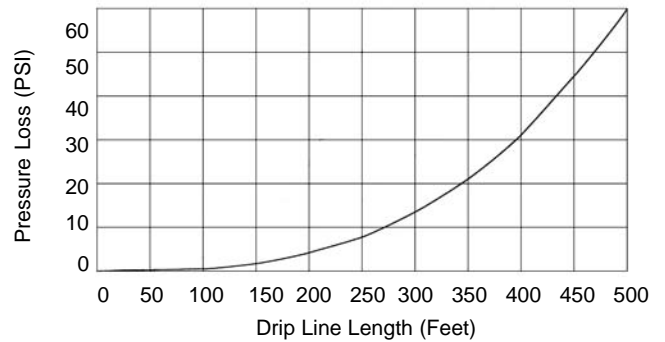
FLEXIBLE PVC HOSE

Designed to be glued into Schedule 40 PVC fittings, this flexible hose is used to connect drip tubing to supply and return lines. The hose is also used in single trench disposal zones to make loops in the drip tubing. Saves time and labor. Requires fewer fittings than rigid pipe. Smooth bore construction allows unrestricted flow. Use with recommended PVC primer and cement.



layers; the inside layer shall be a bactericide protection, the middle layer shall be black and the outside layer shall be purple striped for easy identification. The pressure compensating emitters shall be molded from virgin polyethylene resin with a silicone rubber diaphragm and shall have a nominal discharge rate of 1.02 gallons per hour. Each emitter shall be impregnated with a root growth inhibitor to protect against root intrusion.

Pressure Loss vs. Length of Drip Line



CHECK VALVE

PVC (Polyvinyl Chloride) check valves prevent effluent from flowing into resting disposal zones when active zones are being dosed. The check valves also allow maintenance to be performed without losing pressure in the system ahead of the maintenance.



Check valves are a vital component in multi-zone effluent drip disposal systems. The check valves are available as a union check valve combination, allowing a convenient connect/disconnect location anywhere in the system.

COMPRESSION FITTING



Compression fittings and adapters are specifically designed for use in subsurface effluent drip disposal systems. Manufactured from high strength polymer resin, these fittings simplify the installation of the emitter tubing.

COMPRESSION FITTING TECHNICAL DATA

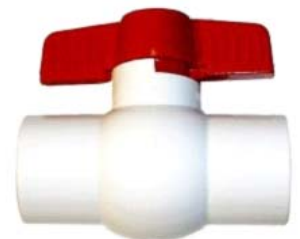
| |
|----------------------------|
| 1/2" Slip x 1/2" Drip Line |
| Weight: 0.005 lbs. |

FLUSH VALVE

The flush valve is used to establish system operating pressure, allowing a continuous flow through the disposal field.

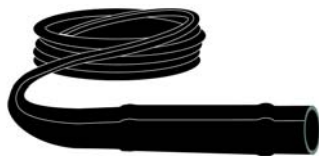
FLUSH VALVE TECHNICAL DATA

| |
|--|
| Size: 1 1/4" PVC Ball Valve (Standard) |
| Rated for 150 PSI at 73° F |



DRIP EMITTER TUBING

The drip tubing shall consist of nominal sized 1/2" linear low density, polyethylene tubing with turbulent flow drip emitters bonded to the inside wall. The drip emitter flow passage shall be 0.032" x 0.045" square. The tubing shall have an outside diameter (O.D.) of approximately 0.64" and an inside diameter (I.D.) of approximately 0.55". The tubing shall consist of three



Flow Rate vs. Pressure / TDH

| Drip Tubing | Head | Pressure |
|-------------|---------------|------------|
| 1.02 GPH | 16 - 139 Feet | 7 - 60 PSI |

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