

**PREMIUM SPIRAL SYSTEM COMPONENT SPECIFICATIONS: (S-18,000 Unit)**

Updated: 1/18/10

**1] Filter Pack**

<b>Membrane:</b>	LFC-3, LFC-3LD
<b>Membrane Surface Area:</b>	18000sf (2230m <sup>2</sup> ) (45ea 8”Dia x 40”L)
<b>Estimated Production:</b>	62.5-125gpm (at 5-10GFD)
<b>Maximum Operating Temperature:</b>	120 °F (49°C) (Options for up to 80°C)
<b>Allowable Feed Slurry pH Range:</b>	2-11 (Options for 1-14)
<b>O-ring Material:</b>	Ethylene Propylene
<b>Filter Pack Housing:</b>	Polyurethane Coated, Filament Wound, Epoxy FRP
<b>Wetted Ports:</b>	316L Stainless Steel
<b>Wetted Plastic End Plates:</b>	PVC Thermoplastic

**2] Piping**

<b>Maximum Pressure:</b>	550 psi (Options for up to 1200 psi)
<b>Pressure Piping:</b>	316L Stainless Steel Schedule 80
<b>Atmospheric Piping:</b>	316L Stainless Steel Schedule 40
<b>Pipe Clamps:</b>	<i>Victaulic Zero-Flex Style 07 EPDM</i>
<b>On/Off Control Valves:</b>	<i>FloTite Series-300 316SS 3-Piece Ball Valves w/ Teflon seats</i>
<b>Flow Control Valves:</b>	<i>FloTite Series 300 316SS 60 degree 3 piece V-Ball BLX V100E positioner</i>
<b>Check Valves:</b>	<i>JFW Valve Series-200 CF8M Swing Check Valve</i>
<b>Pneumatic Actuators:</b>	<i>Habonim Compact2 Pneumatic Rack and Pinion Spring Return</i>
<b>Skid Piping Terminations:</b>	150lb 316SS 4”/3”/2” Flange with EPDM Gaskets
<b>Pneumatic Air Supply:</b>	90lb Instrument Grade Air (3/8” connection)
<b>Clean in Place Tank:</b>	260 Gallon Cross Linked Polypropylene w/ Lid (36” ø x 74”)

**3] Clean In Place “CIP” System**

(Note typically this is provided with a VSEP system, and is split with the spiral system)

<b>CIP Pump Type:</b>	<i>Grundfos 316SS 66 gpm Centrifugal</i>
<b>CIP Pump Motor:</b>	<i>Baldor 20 HP 3500 rpm TEFC 460VAC, 3phase, 30A</i>
<b>Motor Speed Controller:</b>	<i>AC Tech 20HP NEMA 4 (or Equal)</i>
<b>Enclosures:</b>	<i>Hoffman NEMA 4 Powdercoat Finish 24x30x8</i>
<b>Level Sensor:</b>	<i>Efector PN-2228</i>
<b>Temperature Sensor:</b>	<i>Efector TN-2530/ E-40107</i>
<b>pH Meter</b>	<i>GF Signet 3-2774-1/ 3-2750-2</i>
<b>Solenoid Valve:</b>	<i>SMC VV5Q21-20/VQ2101N Gang Mounted 20 Port 24 volt</i>

**4] Electrical Specifications:**

<b>Controls Voltage:</b>	None
<b>Programmable Controller Type:</b>	None (Control signals from VSEP PLC)
<b>Touch Screen Display Type:</b>	None (Set Point change at VSEP HMI)
<b>Enclosures:</b>	<i>Hoffman NEMA 4 Powdercoat Finish 20x16x8</i>
<b>Switches, Relays, &amp; Contactors:</b>	<i>Allen Bradley 220/110 Volt</i>
<b>Pressure Sensors:</b>	<i>Efector PN-2222</i>
<b>Flow Transmitter:</b>	<i>Yamatake MGG14C-MH4G-1A1N-YAH</i>
<b>Flow Tube:</b>	<i>Yamatake MGG18D-050P21CS5ACA-XX</i>
<b>Temperature Sensor:</b>	<i>Efector TN-2530/ E-40107</i>
<b>Conductivity Meter</b>	<i>Signet 3-2850-52-41</i>

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**5] Pump Specifications:**

<b>Feed Pump Type:</b>	<i>Grundfos 316SS 198 gpm Vertical Multi-stage Centrifugal</i>
<b>Feed Pump Motor:</b>	<i>Grundfos 40 HP 3500 rpm TEFC 460VAC, 3phase, 50A</i>
<b>Motor Speed Controller:</b>	<i>AC Tech Model 30HP NEMA 4 (or Equal)</i>
<b>Chemical Metering Pump:</b>	<i>Bran+Luebbe MD 200S 19111 007</i>
<b>Metering Pump Motor:</b>	<i>Baldor 3/4HP 3500rpm TEFC 120/220V, 1phase, 15A, 60/50Hz</i>

**6] Pre-Screen Basket Strainer:**

<b>Filter Housing Type (or equal):</b>	<i>NLR Custom Made</i>
<b>Basket Strainer:</b>	<i>60 Mesh 316 SS</i>
<b>Capacity:</b>	<i>220 GPM</i>
<b>Filter Housing Material:</b>	<i>316L Stainless Steel</i>
<b>Elastomers (Seals):</b>	<i>EPDM</i>

**7] Operating Site Conditions:**

<b>Equipment Rating:</b>	<i>NEMA 4, Indoor/Outdoor protect from sunlight &amp; rain.</i>
<b>Ambient Temperature:</b>	<i>5 - 37°C</i>
<b>Storage Temperature:</b>	<i>2 - 70°C (Protect Filter Pack from Freezing)</i>
<b>Max Relative Humidity:</b>	<i>&lt;95%, non-condensing</i>
<b>Elevation:</b>	<i>3300 ft maximum without derating</i>