

**Class I, Div II VSEP SYSTEM COMPONENT SPECIFICATIONS**

Updated: 5/22/09

**1] Filter Pack**

<b>Membrane:</b>	MF, UF, NF, or RO
<b>Maximum Operating Temperature:</b>	160 °F (70°C) (Options for up to 130°C)
<b>Allowable Feed Slurry pH Range:</b>	2-11 (Options for 1-14)
<b>O-ring Material:</b>	EPDM (Options for Viton)
<b>Filter Pack Housing:</b>	Vinyl Ester 8084 Derekan Fiberglass
<b>Wetted Steel Trays:</b>	304 Stainless Steel .018 Gauge (Option for 316SS)
<b>Wetted Plastic End Plates:</b>	Polypropylene (Options for Teflon, Aluminum)

**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>Special VSEP Concentrate Pipe:</b>	1-1/4" Alloy 20 Stainless Steel .065 wall
<b>Flexible Hoses:</b>	<i>Weatherhead</i> Neoprene Lined Reinforced Flex Hose
<b>Pipe Clamps:</b>	<i>Victaulic</i> Zero-Flex Style 07 EPDM
<b>On/Off Control Valves:</b>	<i>FloTite</i> Series-300 316SS 3-Piece Ball Valves w/ Teflon seats
<b>Flow Control Valves:</b>	<i>FloTite</i> Series-300 316SS 60 degree V-Ball <i>BLX</i> V100E positioner
<b>Check Valves:</b>	<i>JFW Valve</i> Series-200 CF8M Swing Check Valve
<b>Pneumatic Actuators:</b>	<i>Habonim</i> Compact2 Pneumatic Rack and Pinion Spring Return
<b>Skid Piping Terminations:</b>	150lb 316SS 1.5"/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] Vibration System**

<b>Motor:</b>	<i>Baldor</i> CM7059T 460VAC, 3phase, 20HP, 3525 RPM
<b>Motor Speed Controller:</b>	<i>AC Tech</i> 20HP NEMA 4 (or Equal)
<b>Vibration Amplitude:</b>	3/4 inch (peak to peak measured at the Filter Pack)
<b>Frequency Range:</b>	49.0 hz to 55.0 hz (Approximate)
<b>Maximum Decibels:</b>	<85
<b>Bearing RPM:</b>	2800 to 3100
<b>Bearing Oil:</b>	<i>Sullube</i> ~750 ml Compressor Oil
<b>Bearing O-rings:</b>	2-263 & 2-270 Buna

**4] Electrical Specifications:**

<b>Controls Voltage:</b>	220/120VAC, 1phase, 15A, 50/60Hz
<b>Programmable Controller Type:</b>	<i>Allen-Bradley</i> CompactLogix 1769
<b>Touch Screen Display Type:</b>	<i>Allen-Bradley</i> PanelView+ 1000
<b>Enclosures:</b>	<i>Hoffman</i> NEMA 7 Powdercoat Finish 48x30x10, 24x30x8
<b>Switches, Relays, &amp; Contactors:</b>	<i>Allen Bradley</i> 220/110 Volt
<b>Pressure Sensors:</b>	<i>Foxboro</i> IGP10-A22D1D1F
<b>Flow Tube:</b>	<i>Yamatake</i> MGG18D-050P21CS5ACA-XX
<b>Flow Transmitter:</b>	<i>Yamatake</i> MGG14C-MH4G-1A1N-YAH
<b>Temperature Sensor:</b>	<i>Foxboro</i> RTT15-T1EGQTXF-S3
<b>Level Sensor:</b>	<i>Foxboro</i> IGP10-A22D1C1F
<b>Solenoid Valve:</b>	<i>SMC</i> VV5Q21-20/VQ2101N 20 Port 24VDC
<b>Enclosure Air Purge:</b>	<i>Bebco</i> 1003-LPS-CI-YZ-VMR Z-type
<b>Enclosure Air Vent:</b>	<i>Bebco</i> EPV-2-SA-90

**5] Pump Specifications:**

<b>Feed Pump Type:</b>	<i>Grundfos</i> 316SS 88gpm Vertical Multi-stage Centrifugal
<b>Feed Pump Motor:</b>	<i>Grundfos</i> ML 25 HP 3500 rpm TEFC 460VAC, 3phase, 35A
<b>Motor Speed Controller:</b>	<i>AC Tech</i> 25 HP NEMA 4 (or Equal)
<b>Chemical Metering Pump:</b>	<i>Bran+Luebbe</i> MD 200S 19111 007
<b>Metering Pump Motor:</b>	<i>Baldor</i> 3/4HP 3500rpm TEFC 120/220V, 1phase, 15A, 60/50Hz

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

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

**7] Operating Site Conditions:**

<b>Equipment Rating:</b>	C1D2, spark proof (due to presence of flammable vapors).
<b>Ambient Temperature:</b>	5 - 37°C
<b>Storage Temperature:</b>	2 - 70°C (Protect Filter Pack from Freezing)
<b>Max Relative Humidity:</b>	<95%, non-condensing
<b>Elevation:</b>	3300 ft maximum without derating