

STANDARD CELL CIRCULATION SYSTEM

PRODUCT DATA SHEET

As part of an electrocoat paint system and used in conjunction with Membrane Electrode (ME) Cells, a Standard Circulation System (SCCS) monitors and maintains electrolyte (either anolyte or catholyte) flow and conductivity. Conductivity is maintained by adding DI or RO water, which dilutes the concentration of ionic contaminants. The major components of the Electrolyte Circulation System are: a XLPE poly electrolyte storage tank w/drain, horizontal pump, conductivity controller, pump strainer, pressure gauge, low tank float switch, and PVC Schedule 80 piping. Electrolyte Circulation Systems with tank volumes of 171 liter (45 gal), 606 liter (160 gal), 948 liter (250 gal), and 1421 liter (375 gal) are standard sizes.

Conductivity Controller

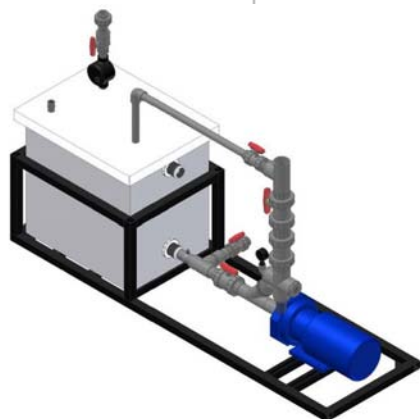
- Conductivity sensor is located in the discharge piping.
- Conductivity range is 0 - 20,000 μ Siemens/cm, same as 0 – 20,000 μ Mho/cm).
- Digital meter display with internal single set point; 220/110 V AC 50/60 Hz; housed in NEMA type 12/13 gray enclosure.
- Electric valve for D.I. water is 110 V AC 50/60 Hz. 220 VAC 50/60 is optional.
- Low tank level alarm switch.

Pump

- Horizontal Corrosion Resistant Magnetic Drive Pump with Y-Strainer on suction.
- 3 phase, 460/230 V AC motor for 50/60 Hz operation.
- Note: motor starter/disconnect is not included.

Design Criteria

- Electric solenoid valve can accept 2.5 – 4 bar (40-60 psi) inlet pressure.
- Electrolyte flow should be 8 lpm for each 1m² (2 gpm for every 10ft²) of Electrode surface area.
- Recommended electrolyte pressure at the required flow rate is 1.52 bar (22 psi).
- Tank volume should approximate total volume of electrolyte in all the cells or at least enough to provide a tank turnover of 3 times per minute.
- Electrolyte Supply manifold should be 50 mm (2") PVC Sch 80 pipe, or larger. Size so that velocity does not exceed 1 – 1.5 m/sec (3 – 5 ft/sec).
- Electrolyte Return manifold should be 75 mm (3") or 100 mm (4") PVC Sch 40 pipe. Return manifold should be sloped at least 20 mm per meter (1/4 inch per foot) and have minimal directional changes and never be more than 3/4 full.
- Incoming D.I. Water flow rate should be 40% - 60% of circulation pump capacity.
- SCCS tank should be next to e-coat tank and no more than 3 meters (10 feet) below rim of tank.
- Siphon breaker is required on supply manifold. Vent is required on return manifold.
- Limited one-year warranty.



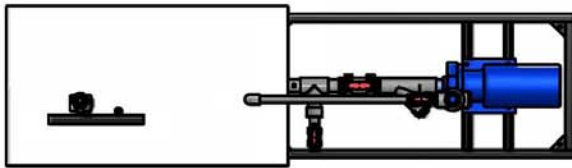
SCCS Accessories Available

- Disconnect Switch
- 220 V AC solenoid valve
- PVC Supply and Return Manifolds

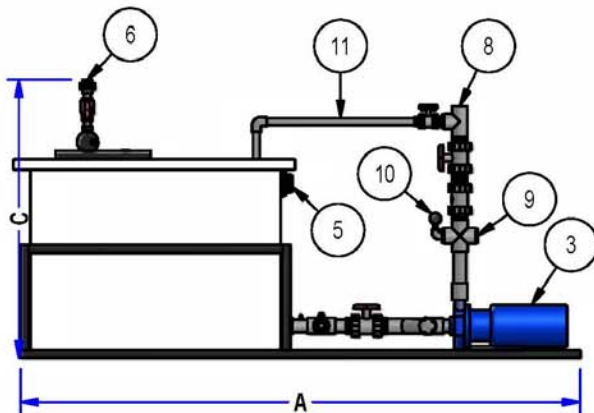
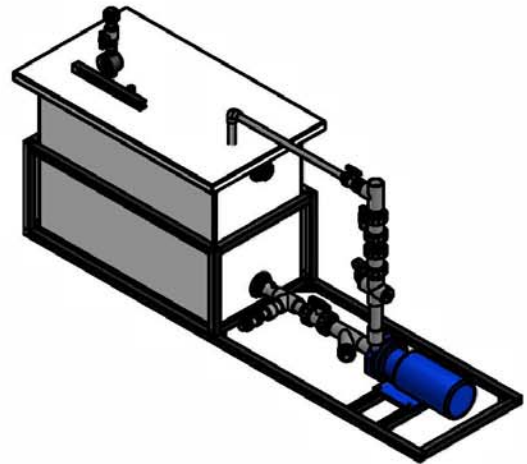
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Standard Items	
Item	Description
1	Frame
2	Tank
3	Motor/Pump (all motors are 3Ø/460VAC)
4	1" Drain (PVC Connection by others)
5	2" Overflow (Connection by others)
6	1" D.I. Water (Connection by others)
7	Low Level Sensor
8	2" PVC Discharge (To Analyte Supply Manifold connection by others)
9	Conductivity Sensor Location (Conductivity Panel to be mounted by others)
10	Pressure Gauge (0-60PSI)
11	By-Pass Assembly

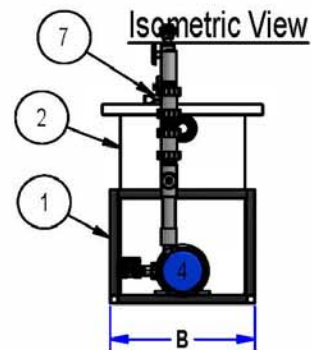
UFS PN	Capacity		Dimensions						Motor HP	Flow @ 55' TDH (~1.5 bar)	
			A		B		C			gpm	lpm
	Gallons	Liters	Inches	mm	Inches	mm	Inches	mm			
735100	45	170	75	1905	22	559	42	1067	1	45	170
735101	160	606	106	2692	27	686	53	1346	2	75	284
735102	250	946	108	2743	39	991	53	1346	3	105	397
735103	375	1420	132	3353	39	991	53	1346	5	135	511



Top View



Front View



Side View

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