

**Metering Pump Component Diagram**

# Series C7

## Electronic Metering Pump

### Specification Sheet and Assembly Details

Manual No : 1619, 1716

Rev. : G, H

Rev. Date : 6/09, 10/2015



# Specification Sheet

## Series C

### GENERAL

Chemical metering pumps shall be positive displacement, Liquifram™ type pumps that are UL and CUL approved. Output volume shall be adjustable while pumps are in operation from zero to maximum capacity of:

C10, C70, C90	- 1.3 GPH (4.9 liters per hour)
C11, C71, C91	- 2.5 GPH (9.5 liters per hour)
C12, C72, C92	- 4.0 GPH (15.1 liters per hour)
C13, C73, C93	- 8.0 GPH (30.0 liters per hour)
C14, C74, C94	- 20.0 GPH (75.7 liters per hour)
C76*	- 4.0 GPH (15.1 liters per hour)
C77*	- 10.0 GPH (38.0 liters per hour)
C78*	- 25.0 GPH (95.0 liters per hour)

Chemical metering pumps shall be capable, without a hydraulically backed diaphragm, of injecting solutions against pressures up to:

C10, C70, C90	- 300 psig (20.7 bar)
C11, C71, C91	- 150 psig (10.3 bar)
C12, C72, C92	- 100 psig (6.9 bar)
C13, C73, C93	- 60 psig (4.1 bar)
C14, C74, C94	- 25 psig (1.7 bar)
C76*	- 175 psig (12.1 bar)
C77*	- 80 psig (5.5 bar)
C78*	- 30 psig (2.1 bar)

### TYPE C1

Adjustment shall be by means of readily accessible dial knobs, one for changing stroke length and the other for changing stroke frequency (speed). Both knobs are to be located opposite the liquid handling end.

### TYPE C7

Control of Series C7 metering pumps shall be selectable between internal and external pulsing by means of a 3-position center-off switch. Stroke length shall be adjustable by means of readily accessible dial knob. When in external pulsed mode, Series C7 units shall accept signals without the use of electrical timer or internal timer. Pressure capacity shall be adjustable to reduce noise, vibration and wear.

### TYPE C9

Series C9 metering pumps shall have a clear liquid crystal display. Control shall be selectable between internal and external pulsing by means of a

tactile keypad. Internal stroke frequency shall be adjustable from 1 stroke per hour to 100 strokes per minute. Pressure capacity shall be keypad adjustable to reduce noise, vibration and wear. Metering pump shall be capable of dividing or multiplying pulse inputs from 1 to 999 or responding directly or inversely to a 4-20mA input signal.

### DRIVE

The pump drive shall be totally enclosed with no exposed moving parts. Solid state electronic pulser shall be encapsulated and supplied with quick connect terminals at least 3/16" (4.75 mm) wide. Electronics shall be housed in chemical resistant enclosure at the rear of the pump for maximum protection against chemical spillage. Electrical power consumption shall not exceed 87 watts under full speed and maximum pressure conditions. Pump weight shall not exceed 28 lbs (12.7 kg).

### AUTOMATIC PRESSURE RELIEF

To eliminate need for pressure relief valve, Liquifram™ shall automatically stop pulsating when discharge pressure exceeds pump pressure rating by not more than 35%.

### MATERIAL

Chemical metering pump housing shall be of chemically resistant glass fiber reinforced thermoplastic with a glass fiber reinforced polypropylene EPU carrier<sup>1</sup>. All exposed fasteners shall be stainless steel. Chemical metering pump valves shall be ball type, with ceramic balls<sup>2</sup>. Valve seat and seal ring shall be renewable by replacing the combination seat-seal ring<sup>3</sup> or cartridge valve assembly. Pump head shall be of transparent acrylic<sup>4</sup> material capable of resisting the pumped chemical. Fittings and connections at pump head shall be PVC<sup>5</sup>.

### CHECK VALVES AND TUBING

A total of 16 ft (4.8 m) of polyethylene tubing<sup>6</sup> shall be provided per pump complete with compression connections. A foot valve with integral one piece strainer shall be provided for the suction line, and an injection check/back pressure valve with 1/2" NPT male connection for the injection point. The injection check valve shall incorporate a dilating orifice which prohibits scale formation and accumulation of crystalline deposits.

(\* - Not UL or CUL Approved)

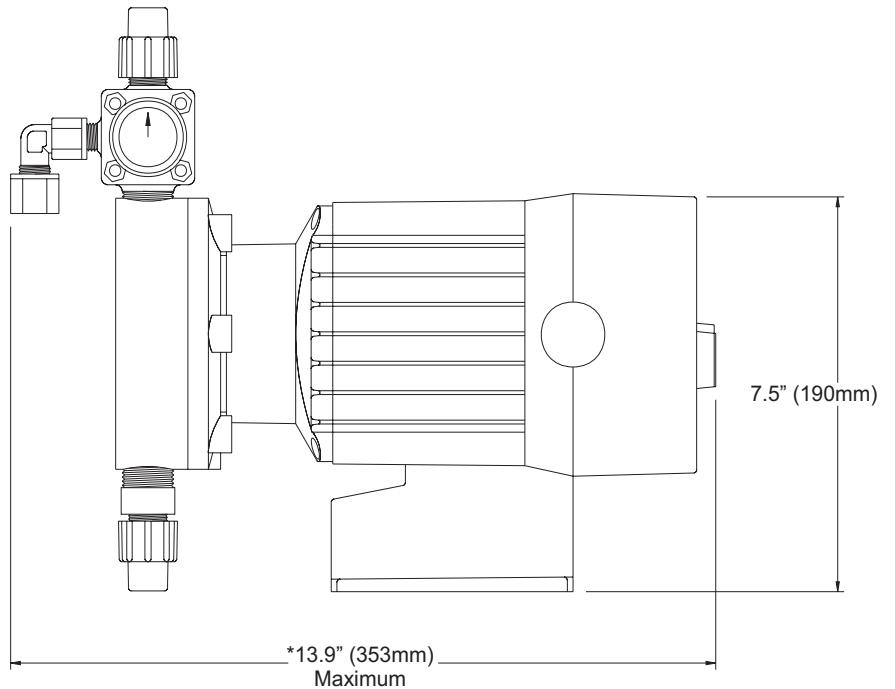
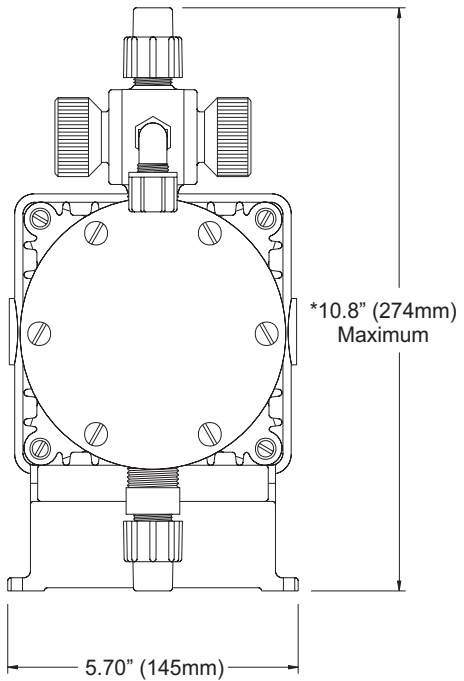
### Notes:

1. With plastic coated cast iron EPU carrier for Series C 76, C77 and C78.
2. Type 316 stainless steel or PTFE may be specified.
3. Hypalon®, PTFE, Viton® or Polyprel® may be specified.
4. PVC, Polypropylene, PDVF or Type 316 stainless steel may be specified.
5. PVDF, Polypropylene, or Type 316 stainless steel may be specified.
6. 6 ft. (1.8 m) of vinyl suction tubing may be specified in place of polyethylene for the suction side only. 1/4" or 1/2" male pipe thread may be specified.

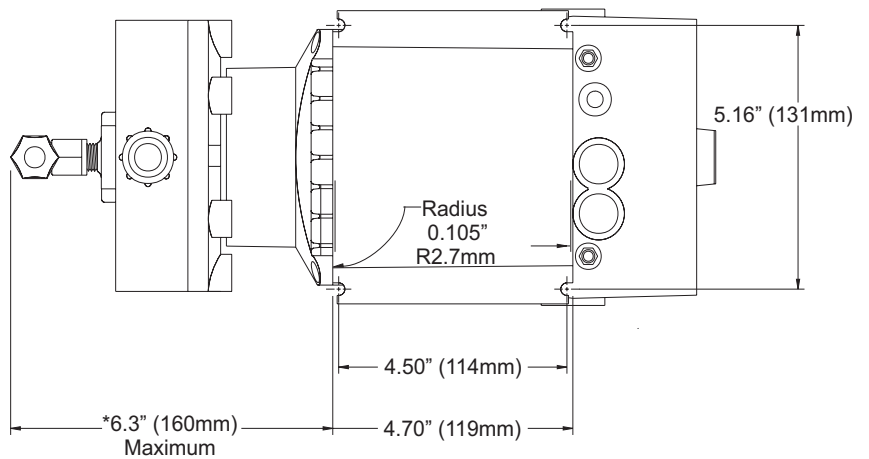


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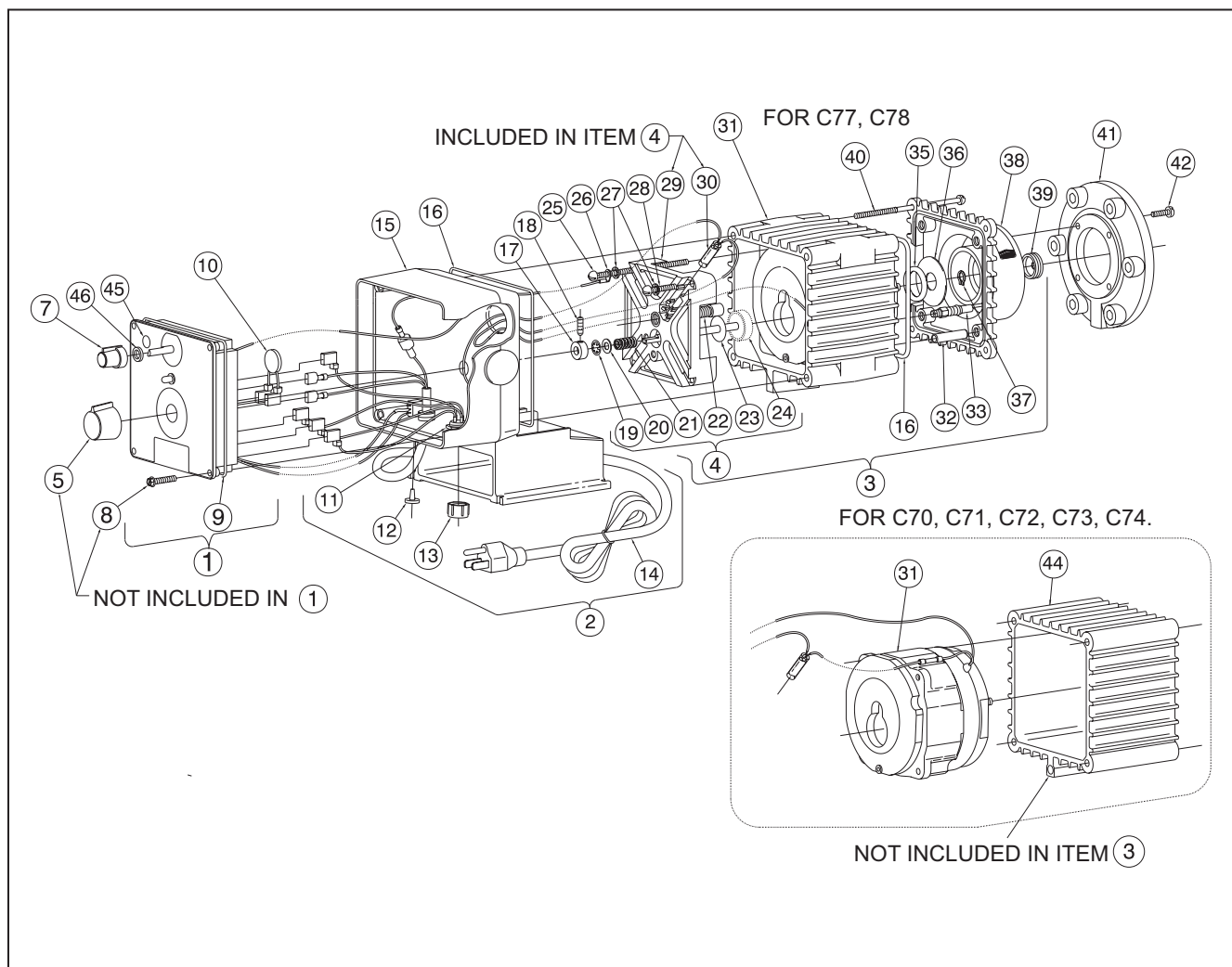


\*Dimensions shown are maximum for largest liquid end available. These dimensions vary depending on the liquid end selected.





## SERIES C7 DRIVE ASSEMBLY EXPLODED VIEW DIAGRAM





## SERIES C7 DRIVE ASSEMBLY PARTS LIST

Key Number	Model Series	Part Number	Description	Qty
1	C701, C711	33814	Control Panel Assembly, 120V	1
	C702, C703, C705, C706, C707, C712, C713, C715, C716, C717	33815	Control Panel Assembly, 240V	1
	C721, C761	33816	Control Panel Assembly, 120V	1
	C722, C723, C725, C726, C727, C762, C765, C766, C767	33817	Control Panel Assembly, 240V	1
	C731	33818	Control Panel Assembly, 120V	1
	C732, C733, C735, C736, C737	33819	Control Panel Assembly, 240V	1
	C741	33820	Control Panel Assembly, 120V	1
	C742, C743, C745, C746, C747	33821	Control Panel Assembly, 240V	1
	C771	33211	Control Panel Assembly, 120V	1
	C772, C773, C775, C776, C777	33212	Control Panel Assembly, 240V	1
	C781	33822	Control Panel Assembly, 120V	1
	C782, C783, C785, C786, C787	33823	Control Panel Assembly, 240V	1
2	C701, C711, C721, C731, C741	32401	Housing Assembly, 120V	1
	C702, C712, C722, C732, C742	32402	Housing Assembly, 240V	1
	C703, C713, C723, C733, C743	32403	Housing Assembly, 220-240V	1
	C705, C715, C725, C735, C745	32404	Housing Assembly, 220-240V, U.K.	1
	C706, C716, C726, C736, C746	32405	Housing Assembly, 220-240V, Aust.	1
	C707, C717, C727, C737, C747	32406	Housing Assembly, 220-240V, SWISS.	1
	C761, C771, C781	32252	Housing Assembly, 120V	1
	C762, C772, C782	32502	Housing Assembly, 240V	1
	C763, C773, C783	32253	Housing Assembly, 220-240V	1
	C765, C775, C785	32503	Housing Assembly, 220-240V, U.K.	1
	C766, C776, C786	32504	Housing Assembly, 220-240V, Aust.	1
	C767, C777, C787	32505	Housing Assembly, 220-240V, SWISS.	1
3	C701	32532	EPU&Spacer Asm, w/Stroke Adj., 120V	1
	C702, C703, C705, C706, C707	32533	EPU&Spacer Asm, w/Stroke Adj., 240V	1
	C711, C721	32534	EPU&Spacer Asm, w/Stroke Adj., 120V	1
	C712, C713, C715, C716, C717, C722, C723, C725, C726, C727	32535	EPU&Spacer Asm, w/Stroke Adj., 240V	1
	C731, C741	32536	EPU&Spacer Asm, w/Stroke Adj., 120V	1
	C732, C733, C735, C737, C742, C743, C745, C747	32537	EPU&Spacer Asm, w/Stroke Adj., 240V	1
	C761	31850	EPU&Spacer Asm, w/Stroke Adj., 240V	1
	C762, C763, C765, C766, C767	31851	EPU&Spacer Asm, w/Stroke Adj., 240V	1
	C771	32329	EPU&Spacer Asm, w/Stroke Adj., 120V	1
	C772, C773, C775, C776, C777	32330	EPU&Spacer Asm, w/Stroke Adj., 240V	1
	C781	32331	EPU&Spacer Asm, w/Stroke Adj., 120V	1
	C782, C783, C785, C786, C787	32332	EPU&Spacer Asm, w/Stroke Adj., 240V	1





## SERIES C7 DRIVE ASSEMBLY PARTS LIST

Key Number	Model Series	Part Number	Description	Qty
4	C7	32251	Stroke Bracket Assembly	1
5	C7	31891	Knob, Stroke	1
7	C7	30709	Knob, Speed	1
8	C7	30306	Screw, 10 x1 S.S.	4
9	C7	10166	O-Ring	1
10	C7X1	10626	MOV Assembly, 120V	1
	C7X2,C7X3, C7X5, C7X6	10627	MOV Assembly, 220-240V	1
11	C7	25907	Jack Assembly	1
12	C7	30307	Plug	1
13	C7	25930	Cover	1
14	C7X1	26293	Power Cord Assembly, 120V	1
	C7X2	26296	Power Cord Assembly, 240V	1
	C7X3	26297	Power Cord Assembly, 220-240V, DIN	1
		26817	Power Cord Assembly, 220-240V, UK	1
	C7X5	26818	Power Cord Assembly, 220-240V, AUST	1
	C7X6	27707	Power Cord Assembly, 220-240V, SWISS	1
15	C7	28925	Housing	1
16	C7	35269	O-Ring	2
17	C7	25424	Collar	1
18	C7	25423	Set Screw	1
19	C7	10462	Retaining Ring	1
20	C7	32302	Washer	1
21	C7	32221	Spring	1
22	C7	32578	Pinion	1
23	C7	25121	Gasket	1
24	C7	31770	Shaft Assembly	1
25	C7	27552	Screw, 10-24x4.0	2
26	C7	27693	Ground Wire Assembly (GRN)	1
27	C7	10415	Washer	4
28	C7	27551	Screw, 10-24x1.25	4
29	C7	12064	Bracket (without mating parts)	1
30	C7	27501	Thermostat	1

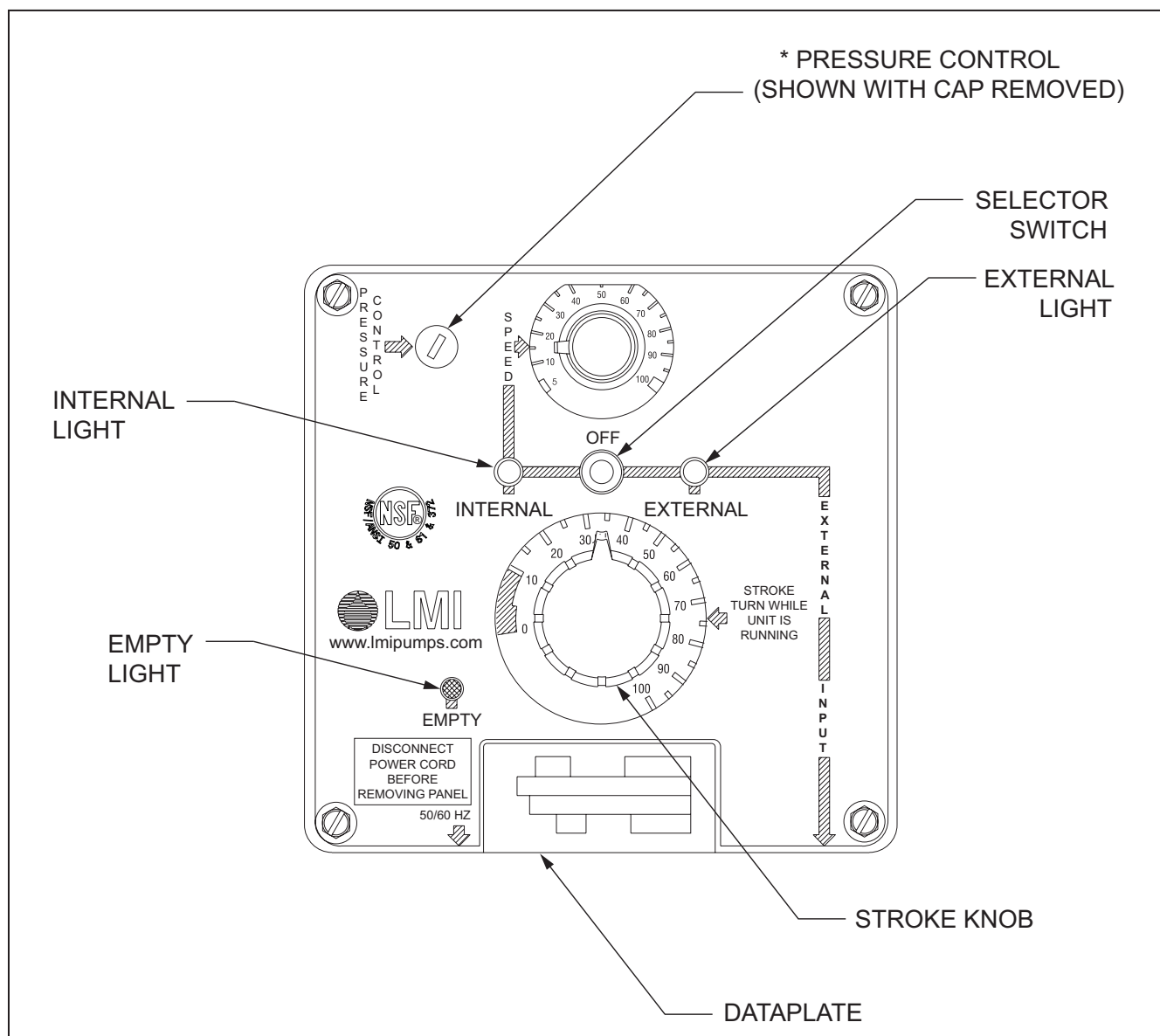


## SERIES C7 DRIVE ASSEMBLY PARTS LIST

Key Number	Model Series	Part Number	Description	Qty
31	C711, C721, C731, C741	32158	EPU Assembly, 120V (38390-C70)	1
	C71, C72, C73, C74 All models rated 220-240 Volts	32159	EPU Assembly, 240V (38391-C70)	1
	C761, C771	32239	EPU Assembly, 120V	1
	C76, C77, All models rated 220-240 Volts	32240	EPU Assembly, 240V	1
	C781	32314	EPU Assembly, 120V	1
	C78, All models rated 220-240 Volts	32315	EPU Assembly, 240V	1
32	C71, C72, C73, C74	27187	Spacing Stud (C70-37963+O-Ring)	2
	C76, C77, C78	32247	Spacing Stud	2
33	C70, C71, C72, C76	27641	Stud Assembly	4
	C73, C74, C77, C78	27641-1	Stud Assembly	4
34	C7	30803	Gasket	1
35	C7	26983	O-Ring	1
36	C7	27586	Shim	1
37	C7	27253	Retaining Ring	1
38	C70	27515	Spacer, 0.9 SI	1
	C71, C72	27516	Spacer, 1.8 SI	1
	C73, C74	27517	Spacer, 3.0 SI	1
	C76	35836	Spacer, 1.8 SI	1
	C77, C78	35839	Spacer, 3.0 SI	1
	C7	35838	Seal	1
40	C7	25127	Screw, RH Slotted, S.S.	4
41	C74, C78	38856	Spacer Adapter, 6.0 SI	1
42	C7	10598	Screw	4
43	C70, C71, C72, C73, C74	25068	Sleeve, EPU	1
Not Shown		25849	Bushing, Unipulser	1
45	C7	29093	Cap	1
46		30803	Necoprence gasket	1



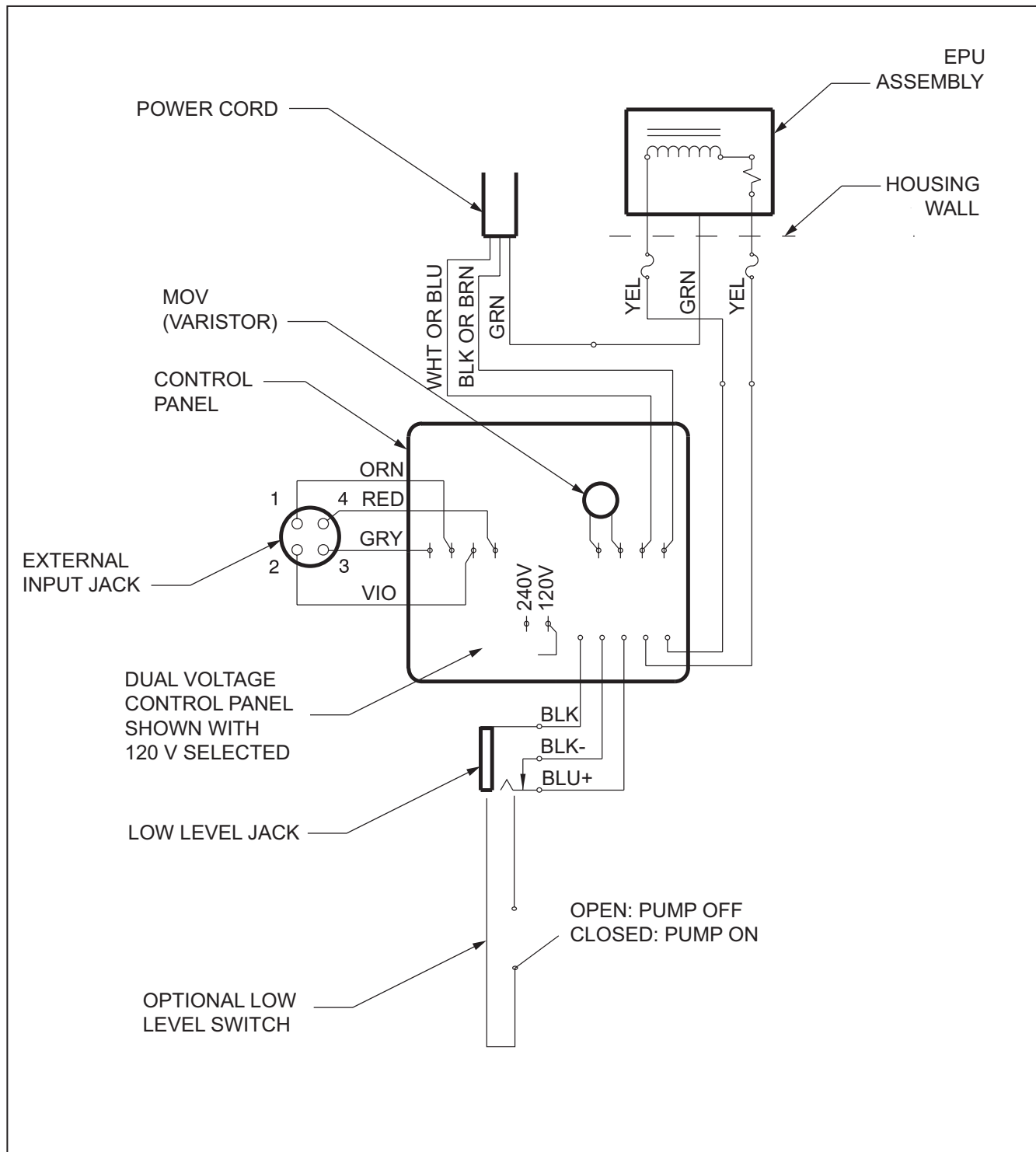
## SERIES C7 CONTROL PANEL DETAIL



- \* To adjust pressure control: Remove yellow cap. With small screwdriver, and the pump running, turn the pressure control adjustment slowly counterclockwise until pump just begins to stall. From this stall point, turn clockwise approximately 30 degrees. This is the optimum pressure control setting for your application.



## SERIES C7 WIRING DIAGRAM





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