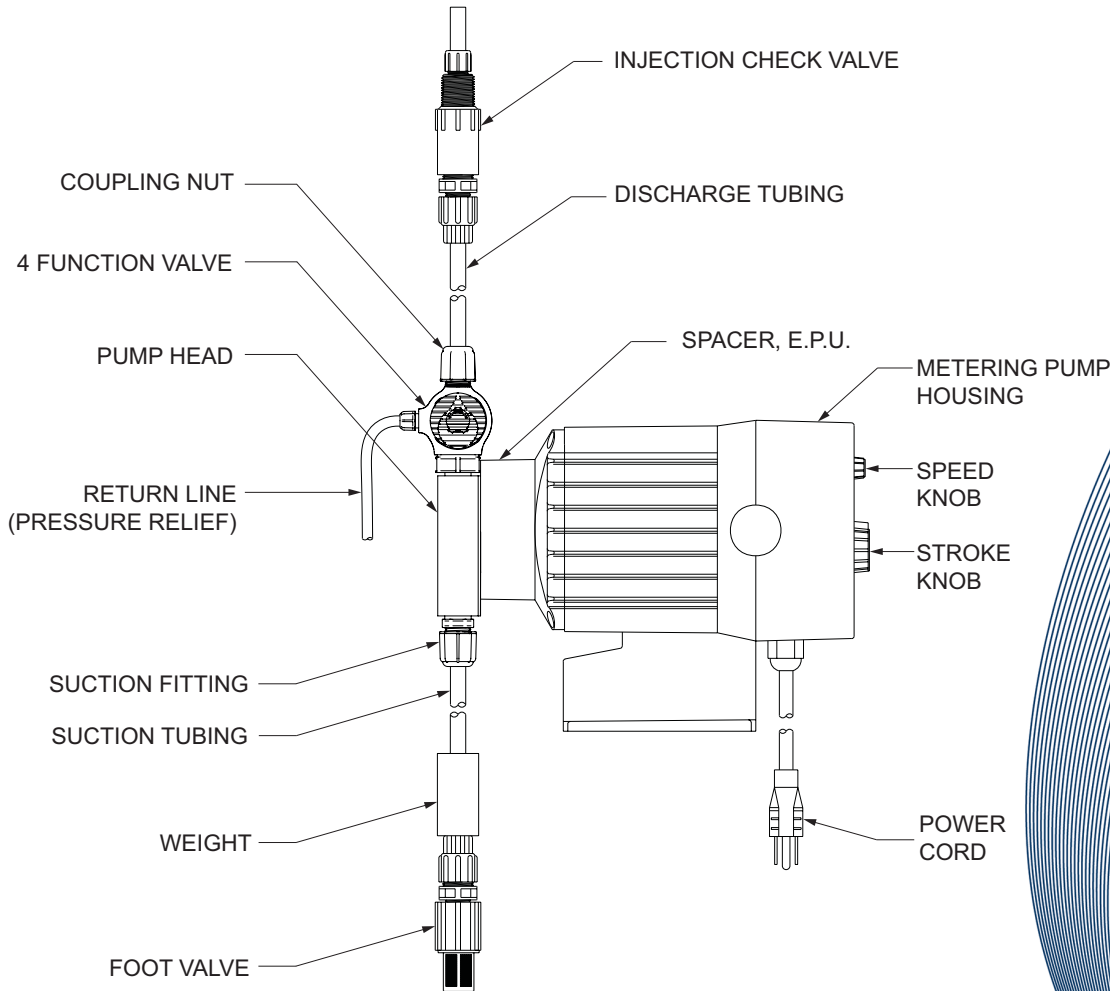




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Metering Pump Component Diagram

Series C1

Electronic Metering Pump

Specification Sheet and Assembly Details

Manual No : 1619, 1829

Rev. : G, D

Rev. Date : 6/09, 10/2015

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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 carrier¹. All exposed fasteners shall be stainless steel. Chemical metering pump valves shall be ball type, with ceramic balls². Valve seat and seal ring shall be renewable by replacing the combination seat-seal ring³ or cartridge valve assembly. Pump head shall be of transparent acrylic⁴ material capable of resisting the pumped chemical. Fittings and connections at pump head shall be PVC⁵.

CHECK VALVES AND TUBING

A total of 16 ft (4.8 m) of polyethylene tubing⁶ 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.

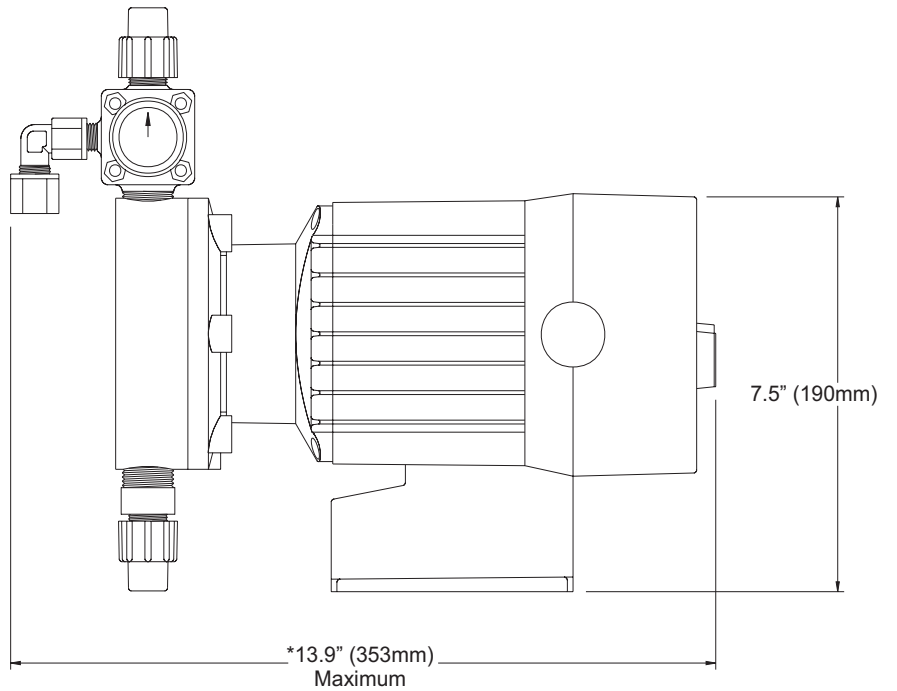
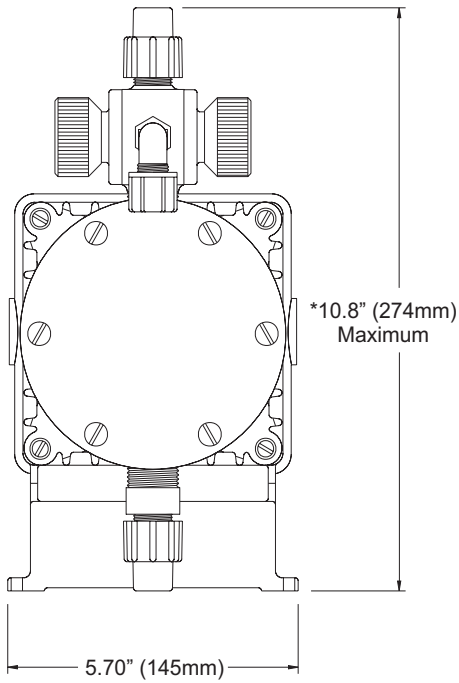
(* - Not UL or CUL Approved)

Notes:

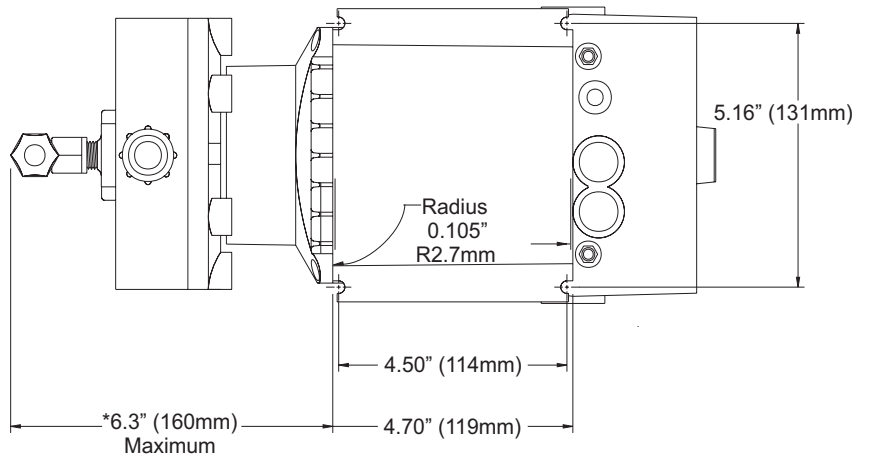
1. With plastic coated cast iron EPU carrier for Series C 76, C77 and C78.
2. Type 316 stainless steel or PTFE may be specified.
3. Hypalon®, PTFE, Viton® or Polyprel® may be specified.
4. PVC, Polypropylene, PDVF or Type 316 stainless steel may be specified.
5. PVDF, Polypropylene, or Type 316 stainless 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.



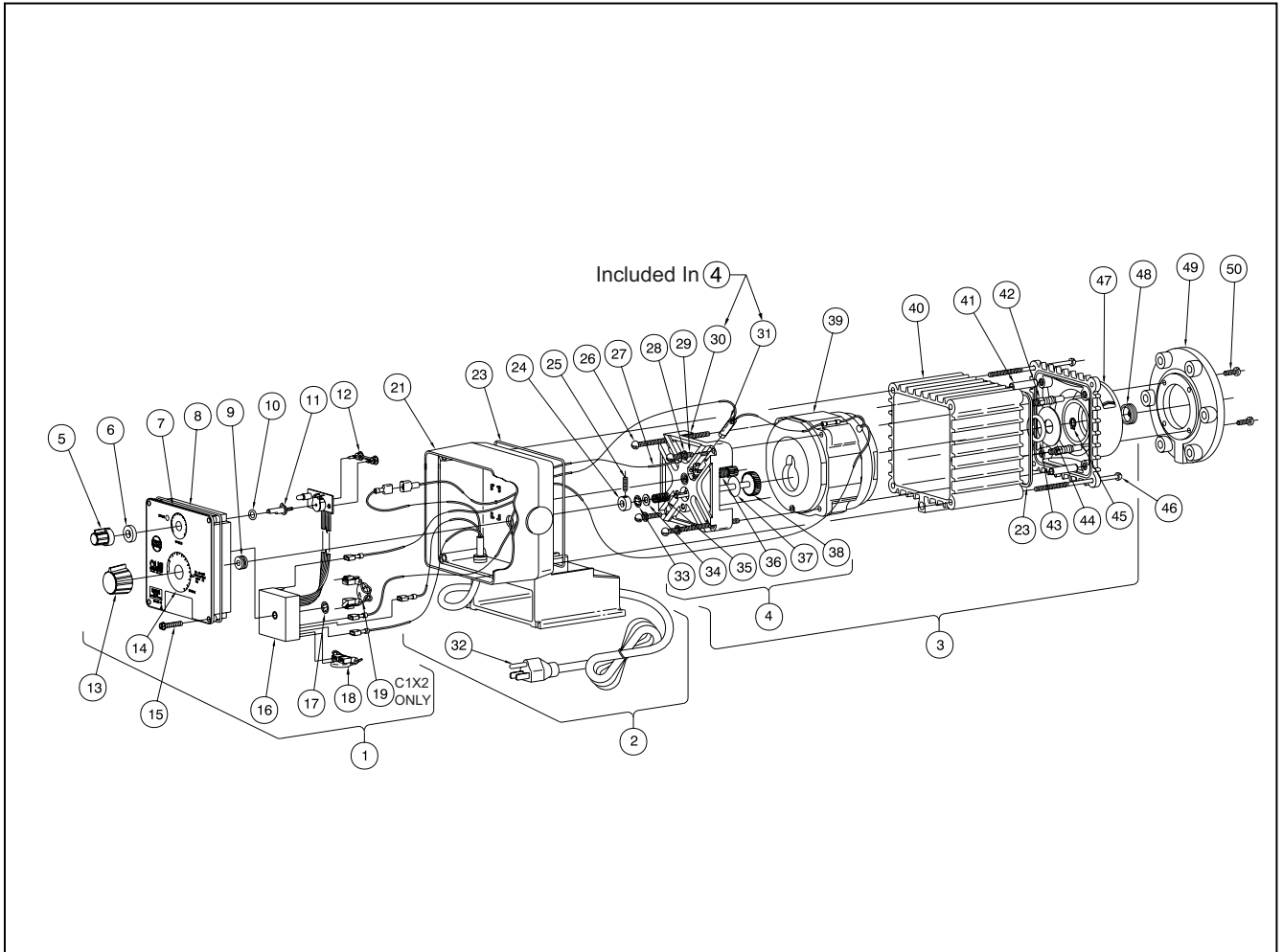
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*Dimensions shown are maximum for largest liquid end available. These dimensions vary depending on the liquid end selected.



SERIES C1 DRIVE ASSEMBLY EXPLODED VIEW DIAGRAM



SERIES C1 DRIVE ASSEMBLY PARTS LIST

Key Number	Model Series	Part Number	Description	Qty
1	C101, C111	36237	Control Panel Assembly, 115V	1
	C102, C112	36238	Control Panel Assembly, 230V US	1
	C103, C105, C106, C107, C113, C115, C116, C117	36239	Control Panel Assembly, 230-250V	1
	C121	36240	Control Panel Assembly, 115V	1
	C122	36241	Control Panel Assembly, 230V US	1
	C123, C125, C126, C127	36242	Control Panel Assembly 230-250V	1
	C131	36243	Control Panel Assembly, 115V	1
	C132	36244	Control Panel Assembly, 230V US	1
	C133, C135, C136, C137	36245	Control Panel Assembly, 230-250V	1
	C141	36246	Control Panel Assembly, 115V	1
	C142	36247	Control Panel Assembly, 230V US	1
	C143, C145, C146, C147	36248	Control Panel Assembly, 230-250V	1
2	C101, C111, C121, C131, C141	32407	Housing Assembly, 115V	1
	C102, C112, C122, C132, C142	32408	Housing Assembly, 230V US	1
	C103, C113, C123, C133, C143	32409	Housing Assembly, 230V DIN	1
	C105, C115, C125, C135, C145	32410	Housing Assembly, 240V UK	1
	C106, C116, C126, C136, C146	32411	Housing Assembly, 250V AUST	1
	C107, C117, C127, C137, C147	32412	Housing Assembly, 230V SWISS	1
3	C101	32532	EPU & Spacer w/Stroke Adj., 115V, 0.9SI	1
	C102, C103, C105, C106, C107	32533	EPU & Spacer w/Stroke Adj., 230V, 0.9SI	1
	C111, C121	32534	EPU & Spacer w/Stroke Adj., 115V, 1.8SI	1
	C112, C113, C115, C116, C117, C122, C123, C125, C126, C127	32535	EPU & Spacer w/Stroke Adj., 230V, 1.8SI	1
	C131, C141	32536	EPU & Spacer w/Stroke Adj., 115V, 3.0SI	1
	C132, C133, C135, C136, C137, C142, C143, C145, C146, C147	32537	EPU & Spacer w/Stroke Adj., 230V, 3.0SI	1
4	C1	32251	Stroke Bracket Assembly	1
5	C1	30709	Speed Knob	1
6	C1	30803	Gasket	1
7	C1	36256	Panel with Nameplate	1
8	C1	10166	O-Ring	1
9	C1	10465	Grommet	1
10	C1	34497	O-Ring	1
11	C1	35743	Speed Shaft	1
12	C1	35744	Dual Pin	1
13	C1	31891	Stroke Knob Assembly	1

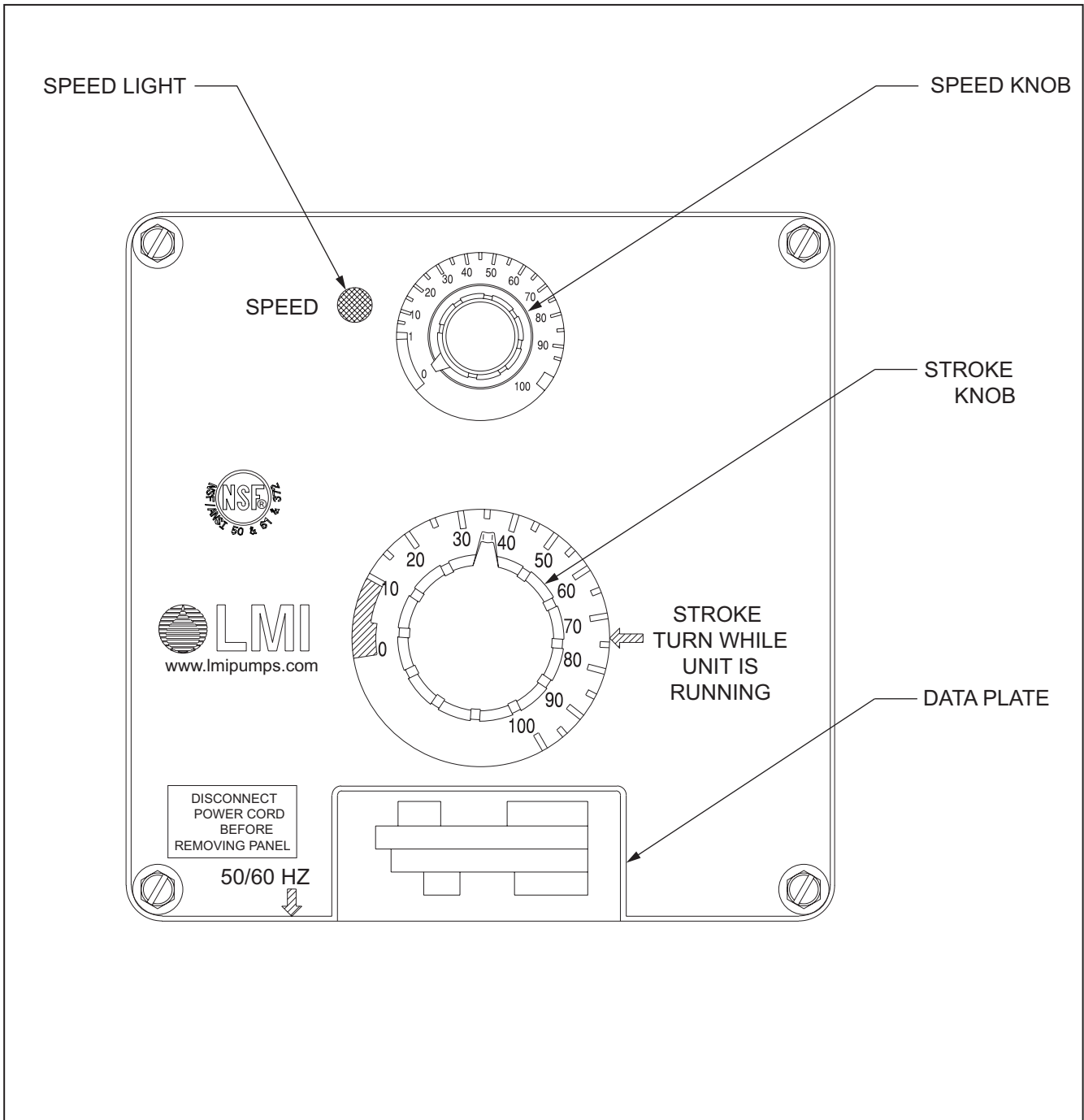

SERIES C1 DRIVE ASSEMBLY PARTS LIST

Key Number	Model Series	Part Number	Description	Qty
14	C10, C11	32465	Stroke dial	1
	C12	32466	Stroke dial	1
	C13	32467	Stroke dial	1
	C14	32468	Stroke dial	1
15	C1	30306	Screw	4
16	C1	36255	Pulser	1
17	C1	10422	Retaining Ring	1
18	C101, C111, C121, C131, C141	10626	Varistor Assembly, 115V	1
	C102, C112, C122, C132, C142, C103, C113, C123, C133, C143, C105, C115, C125, C135, C145, C106, C116, C126, C136, C146, C107, C117, C127, C137, C147	10627	Varistor Assembly, 230-250V	1
19	C102, C112, C122, C132, C142	25268	Varistor Assembly, 230V US	1
21	C1	35398	Housing	1
23	C1	35269	O-Ring	2
24	C1	25424	Collar	1
25	C1	25423	Set Screw	1
26	C1	27552	Screw, 10-24x4.0	2
27	C1	27693	Ground Wire Assembly	1
28	C1	10415	Washer, Conical	4
29	C1	27551	Screw, 10-24X 1.25	2
30	C1	12064	Bracket (Without mating parts)	1
31	C1	27501	Thermostat	1
32	C101, C111, C121, C131, C141	26293	Power Cord Assembly, 115V	1
	C102, C112, C122, C132, C142	26296	Power Cord Assembly, 230V US	1
	C103, C113, C123, C133, C143	26297	Power Cord Assembly, 230V DIN	1
	C105, C115, C125, C135, C145	26817	Power Cord Assembly, 240V UK	1
	C106, C116, C126, C136, C146	26818	Power Cord Assembly, 250V AUST	1
	C107, C117, C127, C137, C147	27701	Power Cord Assembly, 230V SWISS	1
33	C1	10462	Retaining Ring	1
34	C1	32302	Washer	1
35	C1	32221	Spring	1
36	C1	32578	Pinion	1
37	C1	25121	Gasket	1
38	C1	31770	Shaft Assembly	1

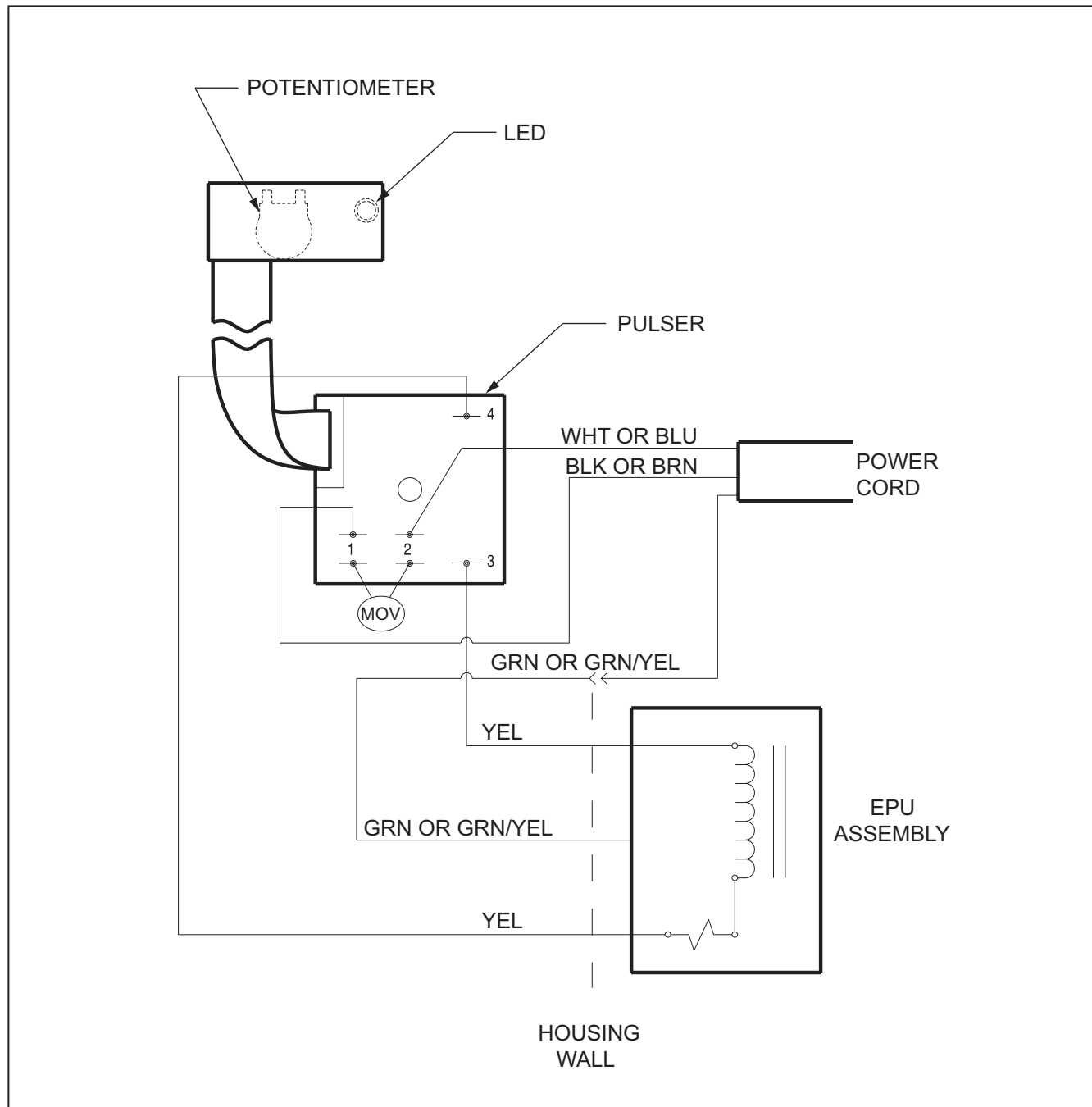
SERIES C1 DRIVE ASSEMBLY PARTS LIST

Key Number	Model Series	Part Number	Description	Qty
39	C111, C121, C131, C141	38390	EPU Assembly, 115V (38390 - C101)	1
	C112, C122, C132, C142, C113, C123, C133, C143, C115, C125, C135, C145, C116, C126, C136, C146, C117, C127, C137, C147	32159	EPU Assembly, 230V (38391 - C10X)	1
40	C1	25068	EPU Sleeve	1
41	C1	27187	Spacing Stud	2
42	C11, C12	27641	Stud Assembly (37963 - C10)	4
	C13, C14	27641-1	Stud Assembly	4
43	C1	26983	O-Ring	1
44	C1	27586	Shim	1
45	C1	27253	Retaining Ring	1
46	C1	25127	Screw, 10-24 X 4.5 SS	4
47	C10	38303	Spacer, 0.9 SI	1
	C11, C12	35394	Spacer, 1.8 SI	1
	C13, C14	35395	Spacer, 3.0 SI	1
48	C1	10973	Seal	1
49	C14	38856	Adapter, 6.0	1
50	C14	10598	Screw, 10-24 X 0.62	4

SERIES C1 CONTROL PANEL DETAIL



SERIES C1 WIRING DIAGRAM



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