

**Metering Pump Component Diagram** 

# Series P1 Electronic Metering Pump

**Specification Sheet and Assembly Details** 

Manual No : 1934, 1842

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# Specification Sheet

# **Series P**

#### **GENERAL**

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

P02, P12	-	0.21 GPH	(0.79 liters per hour)
P03, P13	-	0.42 GPH	(1.6 liters per hour)
P04, P14, P74	-	0.58 GPH	(2.2 liters per hour)
P05, P15, P75	-	1.0 GPH	(3.8 liters per hour)
P06, P16, P76	-	2.0 GPH	(7.6 liters per hour)
P08, P18, P78	-	3.2 GPH	(12.1 liters per hour)

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

P02, P12	- 150psig	(10.3 Bar)
P03, P13	- 110psig	(7.6 Bar)
P04, P14, P74	- 250psig	(17.3 Bar)
P05, P15, P75	- 110psig	(7.6 Bar)
P06, P16, P76	- 50psig	(3.5 Bar)
P08, P18, P78	- 22psig	(1.5 Bar)

#### **SERIES P0**

The stroke frequency will be fixed at the following rates.

P02, P03 - 60 strokes per minute P04, P05, P06, P08 - 100 strokes per minute

Stroke length shall be adjustable by readily accessible dial knob located opposite the liquid handling end.

#### **SERIES P1**

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

#### **SERIES P7**

Control of Series P7 metering pumps shall be selectable between internal and external pulsing by means of a switch integral with frequency control knob. "External" position to be below lowest internally paced frequency setting. Stroke length shall be adjustable by means of readily accessible dial knob. When in external pulsed mode, Series P7 units shall accept signals without the use of electrical timer or internal timer.

#### **DRIVE**

The pump drive shall be totally enclosed with no exposed moving parts. Solid state electronic pulser shall be fully 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 22 watts per hour under full speed and maximum pressure conditions. Pump weight shall not exceed 14 lbs (6.5 kg).

#### **AUTOMATIC PRESSURE RELIEF**

To eliminate need for pressure relief valve, Liquifram<sup>TM</sup> 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. All exposed fasteners shall be stainless steel. Chemical metering pump valves shall be ball type, with ceramic balls<sup>1</sup>. Valve seat and seal ring shall be renewable by replacing the combination seat-seal ring<sup>2</sup> or cartridge valve assembly. Pump head shall be of transparent acrylic<sup>3</sup> material capable of resisting the pumped chemical. Fittings and connections at pump head shall be PVC<sup>4</sup>.

#### **CHECK VALVES AND TUBING**

A total of 16 ft (4.8 m) of polyethylene tubing<sup>5</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 ½" 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.

#### **Notes:**

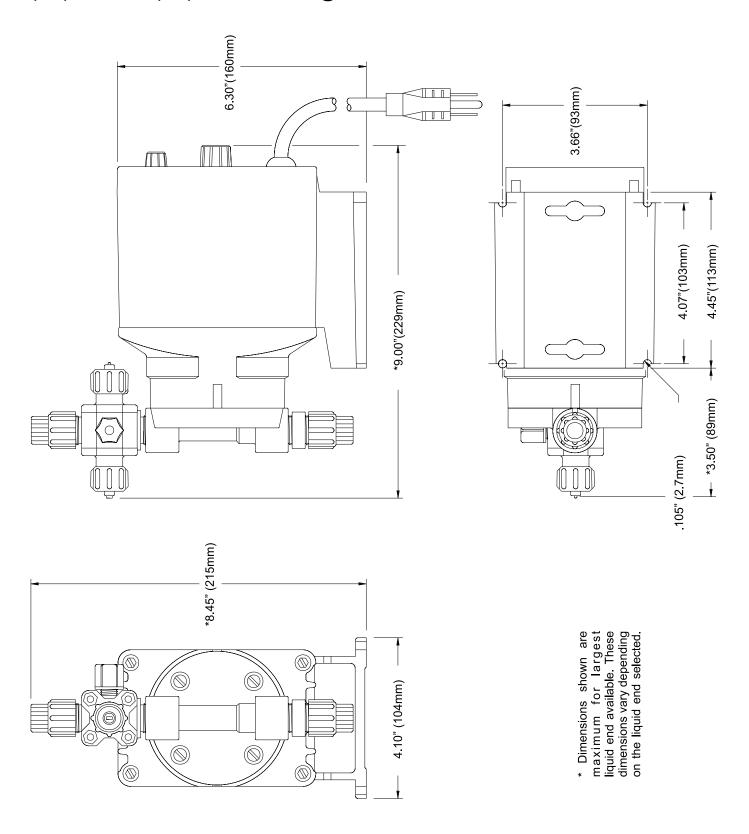
- 1. Type 316 stainless steel or PTFE may be specified.
- 2. Hypalon®, PTFE or Polyprel® may be specified.
- 3. PVDF, PVC, Polypropylene, or Type 316 stainless steel may be specified.4. PVDF, Polypropylene, or Type 316 stainless steel may be specified.
- 5. 6 ft. (1.8 m) of vinyl suction tubing may be specified in place of polyethylene for the suction side only. 1/4" pipe thread may be specified.



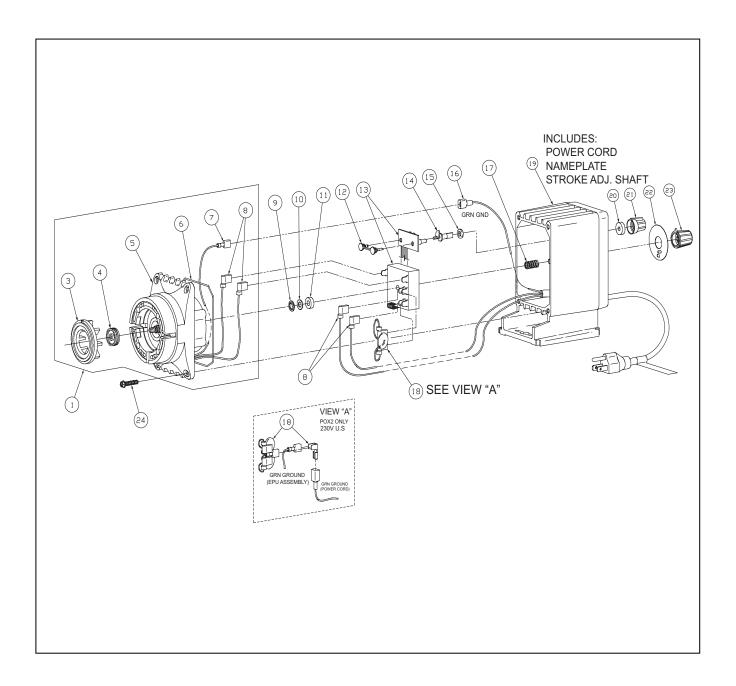
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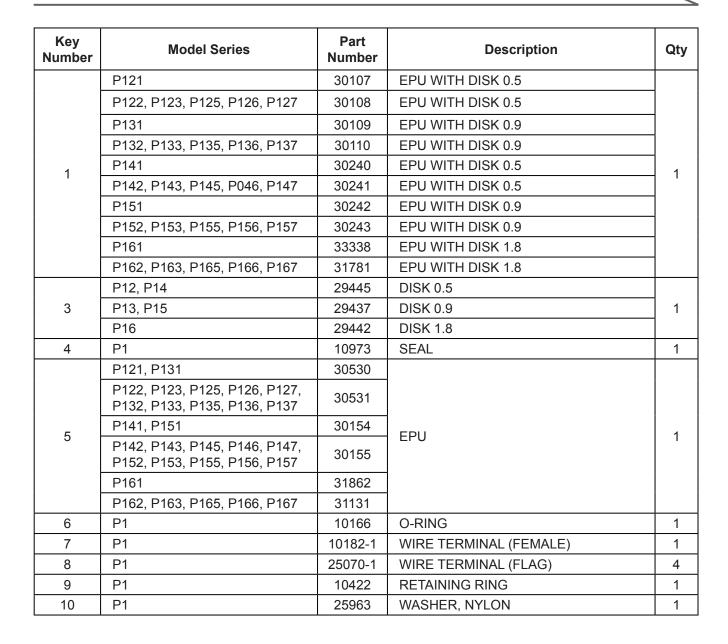
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# SERIES P1 DRIVE ASSEMBLY EXPLODED VIEW DIAGRAM



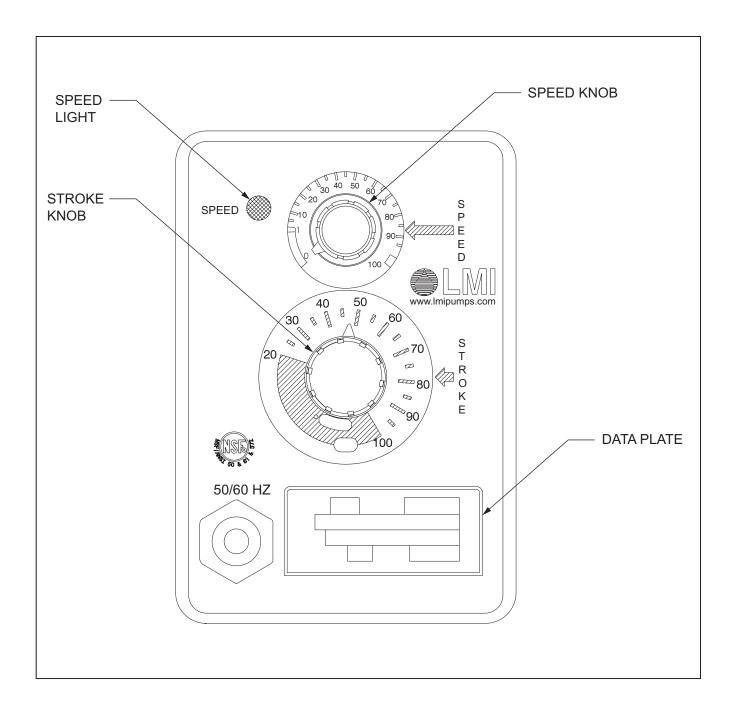
### SERIES P1 DRIVE ASSEMBLY PARTS LIST



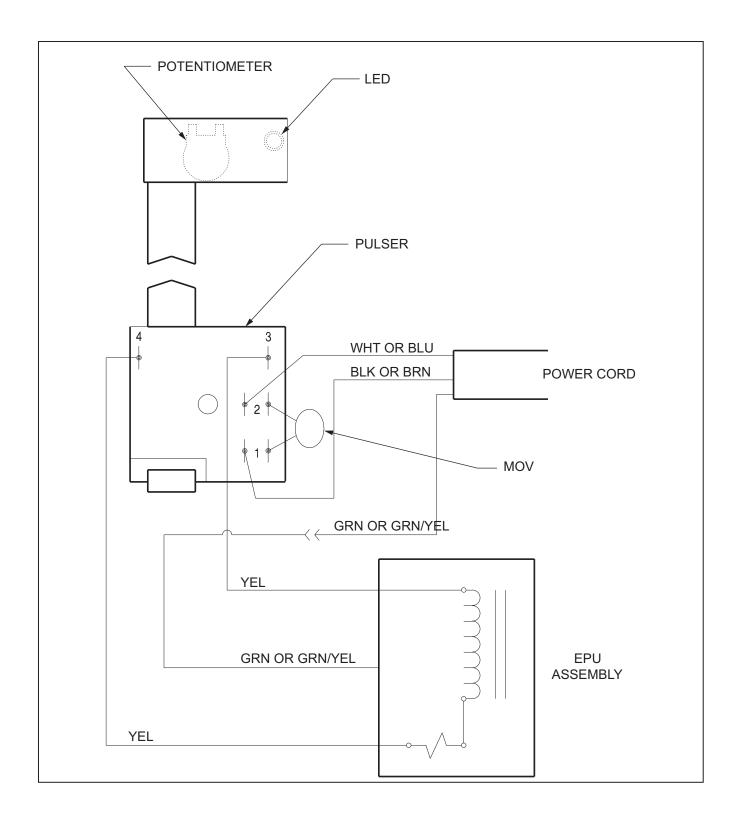
# **SERIES P1 DRIVE ASSEMBLY PARTS LIST**

Key Number	Model Series	Part Number	Description	Qty	
11	P1	30391	WASHER, RUBBER	1	
12	P1	35744	DUAL PIN	1	
13	P1	36255	PULSER	1	
14	P1	35743	SPEED SHAFT	1	
15	P1	34497	O-RING		
16	P1	10368-1	WIRE TERMINAL (MALE)	1	
17	P1	25414	SPRING	1	
18	P121, P131, P141, P151, P161	10626	VARISTOR ASSEMBLY, 115V	1	
	P122, P132, P142, P152, P162	31255	VARISTOR ASSEMBLY, 230V US	1	
	P123, P133, P143, P153, P163, P125, P135, P145, P155, P165, P126, P136, P146, P156, P166, P127, P137, P147, P157, P167	10627	VARISTOR ASSEMBLY, 230-250V	1	
19	P121, P131, P141, P151, P161	38411	HOUSING ASSEMBLY, 115V		
	P122, P132, P142, P152, P162	38412	HOUSING ASSEMBLY, 230V US		
	P123, P133, P143, P153, P163	38413	HOUSING ASSEMBLY, 230V DIN	1	
	P125, P135, P145, P155, P165	38414	HOUSING ASSEMBLY, 240V UK		
	P126, P136, P146, P156, P166	38415	HOUSING ASSEMBLY, 250V AUST		
	P127, P137, P147, P157, P167	38416	HOUSING ASSEMBLY, 230V SWISS		
20	P1	30803	GASKET	1	
21	P1	30709	SPEED KNOB	1	
18	P12	30418			
	P13	31545	STROKE DIAL		
	P16	31127			
19	P1	31891	STROKE KNOB	1	
20	P1	30306	SCREW	4	

# **SERIES P1 CONTROL PANEL DETAIL**



# **SERIES P1 WIRING DIAGRAM**



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