

## SERIES M

### MECHANICAL METERING PUMPS MODEL SELECTION GUIDE

#### Application Benefits:

- Reliable Metering Performance
- Simple Installation
- Robust Design
- Environmental Design
- Low Cost of Ownership

Follow the step by step approach presented in this guide to select the features you need. When you're through you will have the exact model number for the PULSAtron Series M pump you want.

Applications assistance is available through our Application Engineering Department, Rochester, NY. USA.

Standard Lead Time is two weeks. Consult factory for expedited delivery.

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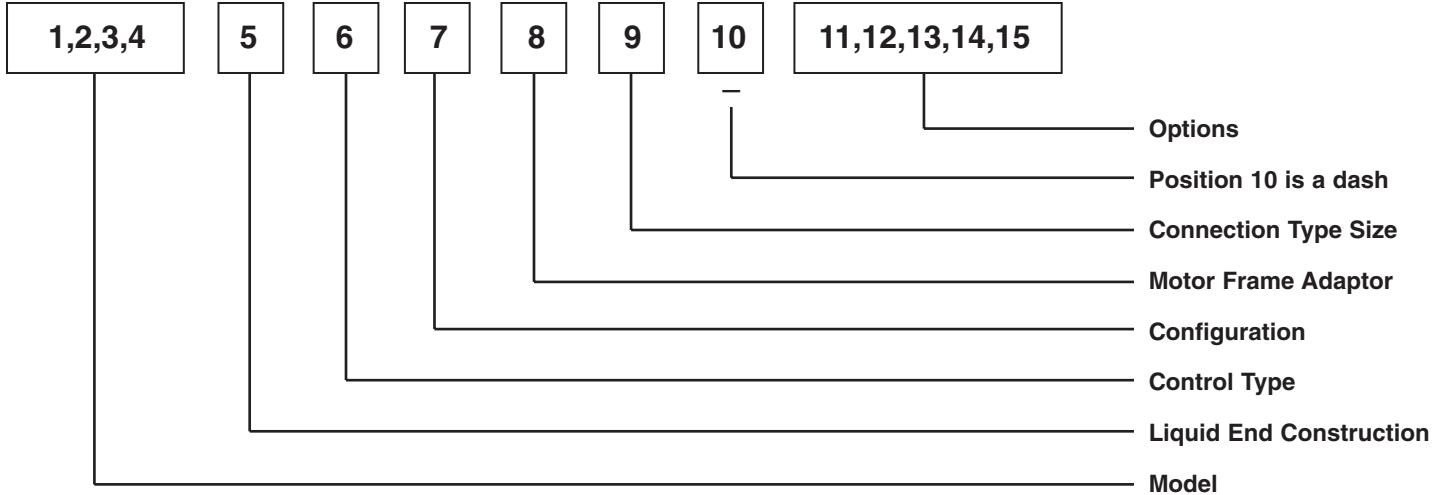
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# MODEL SELECTION GUIDE



**POSITION 1, 2, 3, 4 = Model (pressure & capacity)**

- L2 Required HP  $\frac{1}{4}$  or .18 Kw
- L6 Required HP  $\frac{3}{4}$  or .55 Kw

Note: See notes on viscosity and multiplexing at the end of this section.

## PRESSURE AND CAPACITY @ 60 HZ, 1725 RPM

Plastic Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor	
					Suct.	Disch.		PVC	PVDF
305	21.0	2.7	10.0	58	0.25	0.25	L2F7	\$2,057	\$2,846
305	21.0	3.9	14.9	86	0.25	0.25	L2F8	\$2,057	\$2,846
305	21.0	5.3	19.9	115	0.25	0.25	L2F9	\$2,057	\$2,846
305	21.0	6.4	24.2	140	0.5	0.5	L2G1	\$2,057	\$2,846
305	21.0	7.9	30.0	173	0.5	0.5	L2G2	\$2,057	\$2,846
250	17.2	8.1	30.5	58	0.5	0.5	L6R6	\$2,345	\$3,136
250	17.2	11.9	45.2	86	0.5	0.5	L6R7	\$2,345	\$3,136
250	17.2	16.0	60.5	115	0.5	0.5	L6R8	\$2,345	\$3,136
250	17.2	19.4	73.6	140	0.5	0.5	L6R9	\$2,345	\$3,136
250	17.2	24.0	91.0	173	0.5	0.5	L6S1	\$2,345	\$3,136
160	11.0	6.1	23.2	58	0.5	0.5	L2G3	\$2,270	\$2,985
160	11.0	9.2	34.9	58	0.5	0.5	L2G8	\$2,270	\$2,985
160	11.0	12.2	46.1	115	0.5	0.5	L2G5	\$2,270	\$2,985
160	11.0	13.7	51.7	86	0.5	0.5	L2G9	\$2,270	\$2,985
160	11.0	14.8	56.1	140	0.5	0.5	L2G6	\$2,270	\$2,985
160	11.0	18.3	69.1	115	0.5	0.5	L2H1	\$2,270	\$2,985
160	11.0	22.2	84.1	140	0.5	0.5	L2H2	\$2,270	\$2,985
160	11.0	27.5	104	173	0.75	0.75	L2H3	\$2,270	\$2,985
150	10.3	14.5	54.7	58	0.5	0.5	L6S2	\$2,797	\$3,450
150	10.3	21.4	81.2	86	0.5	0.5	L6S3	\$2,797	\$3,450
150	10.3	24.1	91.2	58	0.5	0.5	L6S7	\$2,797	\$3,450
150	10.3	28.7	109	115	0.75	0.75	L6S4	\$2,797	\$3,450
150	10.3	35.7	135	86	0.75	0.75	L6S8	\$2,797	\$3,450
150	10.3	43.1	163	173	0.75	0.75	L6S6	\$2,797	\$3,450
150	10.3	47.8	181	115	0.75	0.75	L6S9	\$2,797	\$3,450
150	10.3	58.2	220	140	1.0	1.0	L6T1	\$2,797	\$3,450
150	10.3	71.9	272	173	1.0	1.0	L6T2	\$2,797	\$3,450

Metal Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor	
					Suct.	Disch.		316 SS	
305	21.0	2.8	10.8	58	0.25	0.25	L2C1	\$2,208	
305	21.0	4.2	16.0	86	0.25	0.25	L2C2	\$2,208	
305	21.0	5.6	21.3	115	0.25	0.25	L2C3	\$2,208	
305	21.0	6.9	26.0	140	0.5	0.5	L2C4	\$2,208	
305	21.0	8.5	32.1	173	0.5	0.5	L2C5	\$2,208	
250	17.2	8.6	32.7	58	0.5	0.5	L6K7	\$2,659	
250	17.2	12.8	48.4	86	0.5	0.5	L6K8	\$2,659	
250	17.2	17.1	64.8	115	0.5	0.5	L6K9	\$2,659	
250	17.2	20.8	78.9	140	0.5	0.5	L6L1	\$2,659	
250	17.2	25.7	97.5	173	0.75	0.75	L6L2	\$2,659	
160	11.0	6.5	24.7	58	0.5	0.5	L2C6	\$2,433	
160	11.0	9.8	37.0	58	0.5	0.5	L2D2	\$2,433	
160	11.0	12.9	49.0	115	0.5	0.5	L2C8	\$2,433	
160	11.0	14.5	54.9	86	0.5	0.5	L2D3	\$2,433	
160	11.0	15.7	59.6	140	0.5	0.5	L2C9	\$2,433	
160	11.0	19.4	73.4	115	0.5	0.5	L2D4	\$2,433	
160	11.0	23.6	89.4	140	0.5	0.5	L2D5	\$2,433	
160	11.0	29.2	110	173	0.75	0.75	L2D6	\$2,433	
150	10.3	15.4	58.2	58	0.5	0.5	L6L3	\$3,198	
150	10.3	22.8	86.2	86	0.5	0.5	L6L4	\$3,198	
150	10.3	25.6	96.9	58	0.75	0.75	L6L8	\$3,198	
150	10.3	30.5	115	115	0.75	0.75	L6L5	\$3,198	
150	10.3	38.0	144	86	0.75	0.75	L6L9	\$3,198	
150	10.3	45.8	173	173	0.75	0.75	L6L7	\$3,198	
150	10.3	50.8	192	115	0.75	0.75	L6M1	\$3,198	
150	10.3	61.8	234	140	1.0	1.0	L6M2	\$3,198	
150	10.3	76.4	289	173	1.0	1.0	L6M3	\$3,198	

## PRESSURE AND CAPACITY @ 60 HZ, 1725 RPM

Plastic Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor	
					Suct.	Disch.		PVC	PVDF
75	5.2	53.1	201	58	0.75	0.75	L6T3	\$3,073	\$3,787
75	5.2	78.7	298	86	1.0	1.0	L6T4	\$3,073	\$3,787
75	5.2	105	398	115	1.5	1.0	L6T5	\$3,073	\$3,787
75	5.2	128	485	140	1.5	1.0	L6T6	\$3,073	\$3,787
75	5.2	158	599	173	1.5	1.0	L6T7	\$3,073	\$3,787

Metal Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor	
					Suct.	Disch.		316 SS	316 SS
75	5.2	55.3	210	58	0.75	0.75	L6M4	\$3,512	\$3,512
75	5.2	82.1	311	86	1.0	1.0	L6M5	\$3,512	\$3,512
75	5.2	109	416	115	1.5	1.0	L6M6	\$3,512	\$3,512
75	5.2	134	506	140	1.5	1.0	L6M7	\$3,512	\$3,512
75	5.2	165	625	173	1.5	1.0	L6M8	\$3,512	\$3,512

## PRESSURE AND CAPACITY @ 50 HZ, 1425 RPM

Plastic Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor	
					Suct.	Disch.		PVC	PVDF
305	21.0	2.2	8.3	48	0.25	0.25	L2D7	\$2,057	\$2,784
305	21.0	3.2	12.3	71	0.25	0.25	L2D8	\$2,057	\$2,784
305	21.0	4.3	16.5	95	0.25	0.25	L2D9	\$2,057	\$2,784
305	21.0	5.2	19.7	114	0.25	0.25	L2E1	\$2,057	\$2,784
305	21.0	6.5	24.8	143	0.5	0.5	L2E2	\$2,057	\$2,784
305	21.0	8.1	30.8	178	0.5	0.5	L2E3	\$2,057	\$2,784
250	17.2	6.7	25.2	48	0.5	0.5	L6M9	\$2,345	\$3,136
250	17.2	9.9	37.3	71	0.5	0.5	L6N1	\$2,345	\$3,136
250	17.2	13.2	50.0	95	0.5	0.5	L6N2	\$2,345	\$3,136
250	17.2	15.8	59.9	114	0.5	0.5	L6N3	\$2,345	\$3,136
250	17.2	19.9	75.2	143	0.5	0.5	L6N4	\$2,345	\$3,136
250	17.2	24.7	93.6	178	0.75	0.75	L6N5	\$2,345	\$3,136
160	11	5.1	19.2	48	0.5	0.5	L2E4	\$2,270	\$2,985
160	11	7.6	28.8	48	0.5	0.5	L2F1	\$2,270	\$2,985
160	11	10.1	38.1	95	0.5	0.5	L2E6	\$2,270	\$2,985
160	11	11.3	42.7	71	0.5	0.5	L2F2	\$2,270	\$2,985
160	11	12.1	45.7	114	0.5	0.5	L2E7	\$2,270	\$2,985
160	11	15.1	57.1	95	0.5	0.5	L2F3	\$2,270	\$2,985
160	11	18.1	68.5	114	0.5	0.5	L2F4	\$2,270	\$2,985
160	11	18.8	71.3	178	0.5	0.5	L2E9	\$2,270	\$2,985
160	11	22.7	85.9	143	0.5	0.5	L2F5	\$2,270	\$2,985
160	11	28.3	107	178	0.75	0.75	L2F6	\$2,270	\$2,985
150	10.3	12.0	45.3	48	0.5	0.5	L6N6	\$2,797	\$3,450
150	10.3	17.7	67.0	71	0.5	0.5	L6N7	\$2,797	\$3,450
150	10.3	19.9	75.5	48	0.5	0.5	L6P3	\$2,797	\$3,450
150	10.3	23.7	89.7	95	0.5	0.5	L6N8	\$2,797	\$3,450
150	10.3	28.4	108	114	0.75	0.75	L6N9	\$2,797	\$3,450
150	10.3	29.5	112	71	0.75	0.75	L6P4	\$2,797	\$3,450
150	10.3	35.7	135	143	0.75	0.75	L6P1	\$2,797	\$3,450
150	10.3	39.5	149	95	0.75	0.75	L6P5	\$2,797	\$3,450
150	10.3	44.4	168	178	0.75	0.75	L6P2	\$2,797	\$3,450
150	10.3	47.4	179	114	0.75	0.75	L6P6	\$2,797	\$3,450
150	10.3	59.4	225	143	1.0	1.0	L6P7	\$2,797	\$3,450
150	10.3	74.0	280	178	1.0	1.0	L6P8	\$2,797	\$3,450

Metal Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor	
					Suct.	Disch.		316 SS	316 SS
305	21.0	2.4	8.9	48	0.25	0.25	L2A1	\$2,208	\$2,208
305	21.0	3.5	13.2	71	0.25	0.25	L2A2	\$2,208	\$2,208
305	21.0	4.7	17.6	95	0.25	0.25	L2A3	\$2,208	\$2,208
305	21.0	5.6	21.2	114	0.25	0.25	L2A4	\$2,208	\$2,208
305	21.0	7.0	26.5	143	0.5	0.5	L2A5	\$2,208	\$2,208
305	21.0	8.7	33.0	178	0.5	0.5	L2A6	\$2,208	\$2,208
250	17.2	7.1	27.0	48	0.5	0.5	L6W1	\$2,659	\$2,659
250	17.2	10.6	40.0	71	0.5	0.5	L6W2	\$2,659	\$2,659
250	17.2	14.1	53.5	95	0.5	0.5	L6W3	\$2,659	\$2,659
250	17.2	17.0	64.2	114	0.5	0.5	L6W4	\$2,659	\$2,659
250	17.2	21.3	80.6	143	0.5	0.5	L6W5	\$2,659	\$2,659
250	17.2	26.5	100	178	0.75	0.75	L6W6	\$2,659	\$2,659
160	11.0	5.4	20.4	48	0.5	0.5	L2A7	\$2,433	\$2,433
160	11.0	8.1	30.6	48	0.5	0.5	L2B4	\$2,433	\$2,433
160	11.0	10.7	40.4	95	0.5	0.5	L2A9	\$2,433	\$2,433
160	11.0	12.0	45.3	71	0.5	0.5	L2B5	\$2,433	\$2,433
160	11.0	12.8	48.5	114	0.5	0.5	L2B1	\$2,433	\$2,433
160	11.0	16.0	60.7	95	0.5	0.5	L2B6	\$2,433	\$2,433
160	11.0	19.2	72.8	114	0.5	0.5	L2B7	\$2,433	\$2,433
160	11.0	20.0	75.8	178	0.5	0.5	L2B3	\$2,433	\$2,433
160	11.0	24.1	91.3	143	0.75	0.75	L2B8	\$2,433	\$2,433
160	11.0	30.0	114	178	0.75	0.75	L2B9	\$2,433	\$2,433
150	10.3	12.7	48.1	48	0.5	0.5	L6W7	\$3,198	\$3,198
150	10.3	18.8	71.2	71	0.5	0.5	L6W8	\$3,198	\$3,198
150	10.3	21.2	80.2	48	0.5	0.5	L6J4	\$3,198	\$3,198
150	10.3	25.2	95.3	95	0.75	0.75	L6W9	\$3,198	\$3,198
150	10.3	30.2	114	114	0.75	0.75	L6J1	\$3,198	\$3,198
150	10.3	31.3	119	71	0.75	0.75	L6J5	\$3,198	\$3,198
150	10.3	37.9	143	143	0.75	0.75	L6J2	\$3,198	\$3,198
150	10.3	41.9	159	95	0.75	0.75	L6J6	\$3,198	\$3,198
150	10.3	47.2	178	178	0.75	0.75	L6J3	\$3,198	\$3,198
150	10.3	50.3	191	114	0.75	0.75	L6J7	\$3,198	\$3,198
150	10.3	63.1	239	143	1.0	1.0	L6J8	\$3,198	\$3,198
150	10.3	78.6	298	178	1.0	1.0	L6J9	\$3,198	\$3,198

## PRESSURE AND CAPACITY @ 50 HZ, 1425 RPM

Plastic Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor	
					Suct.	Disch.		PVC	PVDF
75	5.2	43.9	166	48	0.75	0.75	<b>L6P9</b>	\$3,073	\$3,787
75	5.2	65.0	246	71	1.0	1.0	<b>L6R1</b>	\$3,073	\$3,787
75	5.2	87.0	329	95	1.0	1.0	<b>L6R2</b>	\$3,073	\$3,787
75	5.2	104	395	114	1.5	1.0	<b>L6R3</b>	\$3,073	\$3,787
75	5.2	131	496	143	1.5	1.0	<b>L6R4</b>	\$3,073	\$3,787
75	5.2	163	617	178	1.5	1.0	<b>L6R5</b>	\$3,073	\$3,787

Metal Construction									
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	List Price Less Motor 316 SS	
					Suct.	Disch.			
75	5.2	45.8	173	48	0.75	0.75	<b>L6K1</b>	\$3,512	
75	5.2	67.8	256	71	1.0	1.0	<b>L6K2</b>	\$3,512	
75	5.2	90.7	344	95	1.0	1.0	<b>L6K3</b>	\$3,512	
75	5.2	108	412	114	1.5	1.0	<b>L6K4</b>	\$3,512	
75	5.2	137	517	143	1.5	1.0	<b>L6K5</b>	\$3,512	
75	5.2	170	643	178	1.5	1.0	<b>L6K6</b>	\$3,512	

- VISCOSITIES:** For viscosities up to 3000 cp, select the pump stroking rates as follows:  
 0-50 CP = 178 SPM Max.      51-500 CP = 115 SPM Max.      501-1500 CP = 95 SPM Max.      1501 - 3000 CP = 71 SPM Max.
- MULTIPLEXING:** For duplexing, select the same stroking rate (SPM) for both pumps. The power requirement for a duplex is one motor size larger than the normal motor size required largest pump of the two. If both pumps discharge to a common line, the rated discharge pressure will be the lowest of the pump pair. For multiplex configurations of three or more pumps, consult factory.

### POSITION 5 = Liquid End Construction

NOTE: Select standard design (A,B,E,G,F) OR leak detection design (H through V) only.

Liquid End Construction Code	Price	Reagent Head	Diaphragm	CHECK VALVES				Temp. Range °F, °C	Liquid End Construction with Leak Detection Diaphragm, List Price Adders			
				Ball	Seat	Gasket	Valve Cap		With Gauge Only (3)		With Gauge & Switch (4)	
									<53 gph (201 lph) / >53 gph (201 lph)	<53 gph (201 lph) / >53 gph (201 lph)	<53 gph (201 lph) / >53 gph (201 lph)	<53 gph (201 lph) / >53 gph (201 lph)
<b>A</b>	NC	316 SS	TFE Faced	316 SS	316 SS	PTFE	316 SS	0-158° -18-70°C	H	\$1,112 / \$1,857	Q	\$1,954 / \$2,749
<b>B</b>	\$63	16 SS (1)	TFE Faced	HCO	020 SS	PTFE	316 SS	0-158° -18-70°C	J	\$1,112 / \$1,857	Q	\$1,954 / \$2,749
<b>E</b>	NC	PVC	TFE Faced	ALA	PVC	PTFE	PVC	0-104° -18-40°C	M	\$1,112 / \$1,857	Q	\$1,954 / \$2,749
<b>G</b>	\$63	PVC (2)	TFE Faced	HCO	PVC	PTFE	PVC	0-104° -18-40°C	P	\$1,112 / \$1,857	Q	\$1,954 / \$2,749
<b>F</b>	NC	PVDF	TFE Faced	HCO	PVDF	PTFE	PVDF	0-158° -18-70°C	N	\$1,112 / \$1,857	Q	\$1,954 / \$2,749

NOTES: (1) Recommended for applications handling commercial concentrated sulfuric acid (66° Be / 93+%). (2) Recommended for applications handling sodium hypochlorite. (3) Pressure gauge: 316 SS, 0-300 psig, 0-21 bar range. (4) Switch: NEMA 7, IP66, EExd plus same gauge as above.

### POSITION 6 - Control Type

- STROKE LENGTH CONTROL List Price Adders  
**M** - Manual .....NC  
**P** - MPC (Nema 4X), IP56 .....see p 6

### POSITION 7 - Configuration

- List Price Adders  
**S** - Simplex (Standard-gearbox on left) ..NC  
**D** - Duplex (Driver) .....NC  
**E** - Duplex (Driven)\* .....deduct \$135  
**L** - Simplex (Gearbox on right) .....NC  
 \*When "E" is selected in position 7, place an "X" in position 8. Also, select the driven pump to have the same SPM (Strokes per Minute) as the driver pump.

### POSITION 8 - Motor Frame Adapter

- List Price Adders  
**A** - 56C .....NC  
**D** - 143 TC or 145 TC .....NC  
**E** - 63 (Metric) .....NC  
**B** - 71 (Metric) .....NC  
**C** - 80 (Metric) .....NC  
**X** - No Gearbox/Motor Adaptor .....NC

4

### POSITION 9 - Connection Type <sup>(1)</sup>

- List Price Adders  
**P** - Threaded Female (NPT) .....NC  
**B** - Threaded Female (BSPT) .....NC  
**F** - Flanged (ANSI) <sup>(2)</sup>  
**G** - Flanged (DIN) <sup>(2)</sup>

Flanged Connections Suct. x Disch.	List Price Adder to NPT Flanged, ANSI or DIN		
	PVC	PVDF	316
0.5" x 0.5"	\$652	CF	\$828
0.75" x 0.75"	\$731	CF	\$907
1.0" x 1.0"	\$835	CF	\$988
1.5" x 1.0"	\$887	CF	\$1068

- Connection Type Notes:  
 (1) PVC & PVDF threaded connections use cartridge valves. All other selections use 3-component valves with tie bars.  
 (2) Standard 0.25" x 0.25" threaded connections are increased to 0.5" x 0.5" for the flanged connections option, use the price adder for 0.5" x 0.5" for flanged connections.  
 (3) CF = Consult Factory

### POSITION 10 - Is a dash "-"

### POSITIONS 11-15 - Options

- List Price Adders  
 XXXXX - No Options .....NC  
 Options codes assigned by factory .....CF

## Standard Motor Selections RECOMMENDED POWER AND SPEED

Model L2 – 1/4 HP, .18 kW; 1725 RPM, 1425 RPM

Model L6 – 3/4 HP, .55 kW; 1725 RPM, 1425 RPM

Pump Model	Power	Part No.	Motor Voltage	Phase	Hz	AC/DC	RPM	Frame	Enclosure	List Price
L2	1/4 HP	NP500033-000	115/208/230	1	60	AC	1725	56C	TEFC	\$287
L2	1/4 HP	NP500034-000	208/230/460	3	60	AC	1725	56C	TEFC	\$259
L2	1/4 HP	NP500035-000	115/208/460	1	60	AC	1725	56C	XP (4)	\$780
L2	1/4 HP	NP500036-000	208/230/460	3	60	AC	1725	56C	XP (4)	\$890
L2	1/4 HP	NP500037-000	208/230/460	3	60	AC	1725	56C	Chem Duty	\$581
L2	1/2 HP	NP500197-000	230/460 or 190/380	3	60 or 50	AC	1725 or 1425	56C	Inv Ready (2)	\$494
L2	1/2 HP	NP500208-000	230/460	3	60	AC	1725	56C	Inv Duty (3)	\$622
L2	1/3 HP	NP500045-000	110/220	1	50	AC	1425	56C	TEFC/IP54	\$379
L2	1/4 HP	NP500044-000	220/380/440	3	50	AC	1425	56C	TEFC/IP54	\$326
L2	.18 kW	NP500048-000	220	1	50	AC	1425	63M	IP54	\$769
L2	.18 kW	NP500054-000	220-240 or 380-415	3	50	AC	1425	63M	IP55	\$533
L2	1/3 HP	NP500216-000	110/220	1	50	AC	1425	56C	XP (4)	\$1017
L6	3/4 HP	NP500003-000	115/208/230	1	60	AC	1725	56C	TEFC	\$387
L6	3/4 HP	NP500007-000	208/230/460	3	60	AC	1725	56C	TEFC	\$329
L6	3/4 HP	NP500011-000	115/208/230	1	60	AC	1725	56C	XP (4)	\$675
L6	3/4 HP	NP500015-000	208/230/460	3	60	AC	1725	56C	XP (4)	\$699
L6	3/4 HP	NP500018-000	208/230/460	3	60	AC	1725	56C	Chem Duty	\$565
L6	3/4 HP	NP500021-000	115/208/230	1	60	AC	1725	56C	Wash Down	\$506
L6	1 HP	NP500199-000	230/460 or 190/380	3	60 or 50	AC	1725 or 1425	56C	Inv Ready (2)	\$553
L6	1 HP	NP500209-000	230/460	3	60	AC	1725	56c	Inv Duty (3)	\$1417
L6	3/4 HP	NP500046-000	110/220	1	50	AC	1425	56C	TEFC/IP54	\$494
L6	3/4 HP	NP500047-000	220/380/440	3	50	AC	1425	56C	TEFC/IP54	\$446
L6	.55 kW	NP500049-000	220	1	50	AC	1425	80M	IP54	\$999
L6	.55 kW	NP500057-000	220-240 or 380-415	3	50	AC	1425	80M	IP55	\$639
L6	3/4 HP	NP500219-000	220/380/440	3	50	AC	1425	56C	XP (4)	\$1133

- Notes: (1) No power cord supplied, Direct wiring required.  
(2) Inverter Ready motors provide a 4:1 speed turndown with a separate AC inverter  
(3) Inverter Duty motors provide 10:1 speed turndown with a separate AC inverter  
(4) XP Motors are suitable for Class 1 Division 1 Group D only.

### To add an MPC to the pump, please follow these steps:

- Select type of MPC in Position 6 of the pump configuration
- Configure an MPC as shown on page 6
- Add this MPC model number to the order
- Select MPC price adder from the pricing table on page 8

Select motor from table on page 7 and add to the order as a line item with \$0.

## METERING PUMP CONTROLLER

### MPC - Automatic Flow Controller for Series M Pumps

The MPC is a speed based automatic flow controller designed to be compact, simple to commission and use, and provide flexibility for control of a metering pump.

Selecting an MPC Model Number:

The MPC Model Number is a 15 digit number. MP\_\_\_\_\_ - \_\_\_\_\_

Position Character		Denotes
1 & 2	MP	MPC

Position 3: Enclosure Type – Identifies the enclosure rating of the pump mounted controller (base unit)  
C = NEMA 4X

Position 4: Pump Model  
P = Series M Mechanical Diaphragm Pump

Position 5: Motor Power Input – Selected by the table on page 7:

A = 1/4 hp (0.18 kW)  
D = 1/3 hp (0.25 kW)  
F = 1/2 hp (0.37 kW)  
G = 3/4 hp (0.55 kW)  
H = 1 hp (0.75 kW)  
J = 1.5 hp (1.1 kW)

Position 6: Gear Ratio of the Pump – Select the gear ratio of the pump

H = 30:1 (58 spm)  
G = 20:1 (86 spm)  
F = 15:1 (115 spm)  
K = 12.5:1 (140 spm)  
D = 10:1 (173 spm)

Note: All MPC pumps will run at 60 hz, independent of the voltage of the country. Therefore, the 8:1 gear ratio (178 spm) normally available on pumps for 50hz only, is not available with the MPC.

Position 7: Voltage and Frequency – Single phase input only

A = 115/60  
B = 230/60  
C = 115/50  
D = 230/50

Position 8: Approval Level

C = CE (Must be 230VAC selection in Position 7 only)  
X = None

Position 9: Language – The MPC will be shipped in the language of choice below:

E = English  
F = French  
G = German  
S = Spanish

Position 10: Flow Indication:

M = Flow indication – Calibrated flow of pump shows in GPH or LPH on the LCD  
(see price adder on following pg)

Position 12 – 15 - Options

XXXX = No options  
CABL = Indicates extra cable will be ordered with the pump to connect the remote to the pump.  
The part number is shown below.

EXTRA CABLE: The MPC remote can be located up to 1000 feet (305m) away from the pump. To order extra cable with the pump just add the line item part number NP530147-000 per foot to the order.

Example: If you want 62 ft of cable, order 62 pieces of NP530147-000.

PANEL MOUNT: The MPC remote is already a NEMA 4X (IP56) rated enclosure. Instead of integrating this into a control panel, we suggest mounting the remote “as is” on the outside of a panel or next to a panel on the wall. The bracket for wall or panel mounting is the same bracket that comes as standard on the pump. There is no chassis mount available.

NOTES:

1. MPC not available in NEMA 7 currently.
2. MPC is supplied with a Pulsafeeder selected inverter rated motor.
3. MPC cannot be used on multiplex pumps.

### MPC PRICING TABLE

Model Plastic Head	Model Metal Head	SPM	Required MPC Motor Size Hp	MPC Motor Part Number	MPC List Price Adder*
L2F7	L2C1	58	0.25	NP500201-000	\$1,843
L2F8	L2C2	86	0.25	NP500201-000	
L2F9	L2C3	115	0.25	NP500201-000	
L2G1	L2C4	140	0.25	NP500201-000	
L2G3	L2C6	58	0.25	NP500201-000	
L2G5	L2C8	115	0.25	NP500201-000	
L2G6	L2C9	140	0.25	NP500201-000	
L2G8	L2D2	58	0.25	NP500201-000	
L2G9	L2D3	86	0.25	NP500201-000	

\*Pricing Includes Motor – Motor must be supplied by Pulsafeeder for MPC  
MPC cannot be used on multiplex pumps

**ADDER**

Cable = \$2.00 List/foot

L2G2	L2C5	173	0.33	NP500196-000	\$1,843
L2H1	L2D4	115	0.33	NP500196-000	
L6R6	L6K7	58	0.33	NP500196-000	
L6R7	L6K8	86	0.33	NP500196-000	
L6S2	L6L3	58	0.33	NP500196-000	
L6S3	L6L4	86	0.33	NP500196-000	

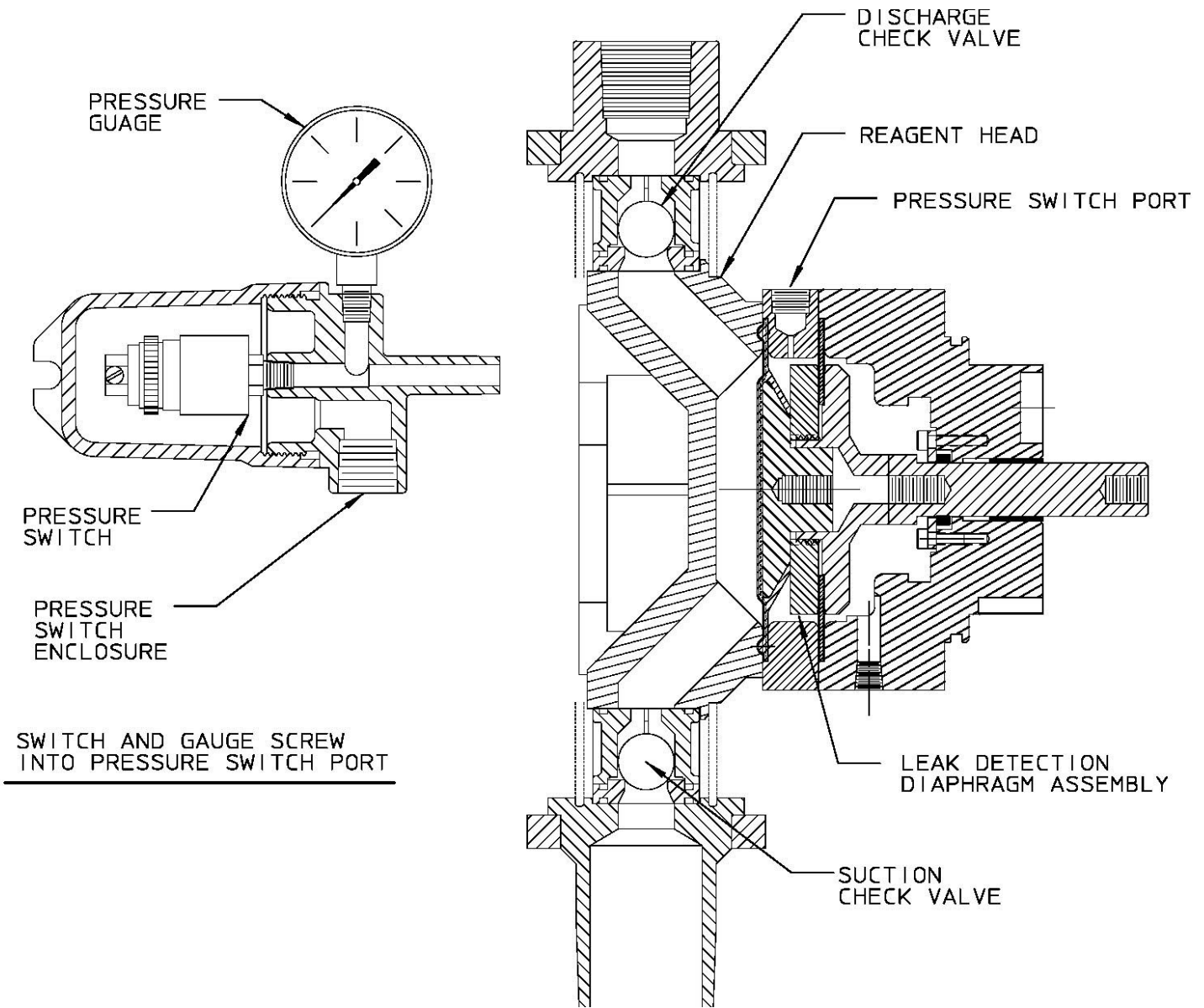
L2H2	L2D5	140	0.5	NP500197-000	\$1,843
L2H3	L2D6	173	0.5	NP500197-000	
L6R8	L6K9	115	0.5	NP500197-000	
L6S4	L6L5	115	0.5	NP500197-000	
L6S7	L6L8	58	0.5	NP500197-000	
L6T3	L6M4	58	0.5	NP500197-000	

L6R9	L6L1	140	0.75	NP500198-000	\$1948 (3/4 hp) & \$2054 (1hp)
L6S1	L6L2	173	0.75	NP500198-000	
L6S6	L6L7	173	0.75	NP500198-000	
L6S8	L6L9	86	0.75	NP500198-000	
L6S9	L6M1	115	1	NP500199-000	
L6T4	L6M5	86	0.75	NP500198-000	
L6T5	L6M6	115	1	NP500199-000	

L6T1	L6M2	140	1	NP500199-000	\$2054 (1hp) &
L6T2	L6M3	173	1	NP500199-000	\$2159 (1.5hp)
L6T6	L6M7	140	1	NP500199-000	
L6T7	L6M8	173	1.5	NP500200-000	

**LEAK DETECTION: This illustration indicates the arrangement of the leak detection offering.**

Noticethat the pressure switch is located behind the reagent head and does NOT thread into the reagent head.



**KOPkits® KEEP ON PUMPING Kits Save You Money and Time**

Pulsafeeder has built a reputation for superior reliability by supplying carefully designed, high quality equipment. Even the best equipment, however, requires a minimal amount of maintenance. KOPkits are designed to guard against unnecessary down-time and assure you of the highest level of efficient service from your PULSAR Series M pumps. KOPkits contain all the parts which experience has shown require periodic replacement to assure reliable operation.

**The PULSAtron Series M KOPkit Item Number:**

The KOPkit number for Series M pumps is an 8 digit number. This number is found on the pump nameplate. A KOPkit number can be created as follows: the first 3 digits are always **NLK**. The next 3 digits correspond to the model and size (see tables that follow) the seventh digit is the liquid end construction code, which is position 5 of the pump model number. The eight digit is the connection type, which is position 9 of the pump model number.



**KOPkit List Price**

**Liquid End Construction Selection**

KOPkit # Less Material Code and Conn. Type	A,H,Q 316	B,J,R 316 (1)	E,M,U PVC	G,P,W PVC (2)	F,N,V PVDF
NLK001	\$450	\$511	\$366	\$420	\$536
NLK002	\$512	\$570	\$409	\$468	\$582
NLK003	\$540	\$601	\$432	\$491	\$638
NLK004	\$580	\$639	\$465	\$525	\$692
NLK005	\$618	\$678	\$492	\$553	\$702
NLK006	\$672	\$731	\$536	\$597	\$754
NLK007	\$764	\$824	\$612	\$672	\$840
NLK008	\$867	\$928	\$694	\$754	\$897
NLK009	\$961	\$1021	\$788	\$828	\$988
NLK010	\$961	\$1021	\$788	\$828	\$988

**Notes:**

See previous page for instructions.

For pumps with **leak detection**, order the same kits listed here. The secondary (rear) diaphragm may be ordered separately.

- (1) Recommended for applications handling commercial concentrated sulfuric acid (66° Be / 93+%).
- (2) Recommended for applications handling sodium hypochlorite.

**Example:**

Pump: M2F7EMSAP - XXXXX

KOPkit: NLK001EP

Pump Model	KOPkit #Less Material Code and Conn. Type
L2A1	NLK001
L2A2	NLK001
L2A3	NLK001
L2A4	NLK001
L2A5	NLK002
L2A6	NLK002
L2A7	NLK003
L2A9	NLK003
L2B1	NLK003
L2B3	NLK003
L2B4	NLK003
L2B5	NLK003
L2B6	NLK003
L2B7	NLK003
L2B8	NLK004
L2B9	NLK004
L2C1	NLK001
L2C2	NLK001
L2C3	NLK001
L2C4	NLK002
L2C5	NLK002
L2C6	NLK003
L2C8	NLK003
L2C9	NLK003
L2D2	NLK003
L2D3	NLK003
L2D4	NLK003
L2D5	NLK003
L2D6	NLK004
L2D7	NLK001
L2D8	NLK001
L2D9	NLK001
L2E1	NLK001
L2E2	NLK002
L2E3	NLK002
L2E4	NLK003

Pump Model	KOPkit #Less Material Code and Conn. Type
L2E6	NLK003
L2E7	NLK003
L2E9	NLK003
L2F1	NLK003
L2F2	NLK003
L2F3	NLK003
L2F4	NLK003
L2F5	NLK003
L2F6	NLK004
L2F7	NLK001
L2F8	NLK001
L2F9	NLK001
L2G1	NLK002
L2G2	NLK002
L2G3	NLK003
L2G5	NLK003
L2G6	NLK003
L2G8	NLK003
L2G9	NLK003
L2H1	NLK003
L2H2	NLK003
L2H3	NLK004
L6J1	NLK006
L6J2	NLK006
L6J3	NLK006
L6J4	NLK005
L6J5	NLK006
L6J6	NLK006
L6J7	NLK006
L6J8	NLK007
L6J9	NLK007
L6K1	NLK008
L6K2	NLK009
L6K3	NLK009
L6K4	NLK010
L6K5	NLK010

Pump Model	KOPkit #Less Material Code and Conn. Type
L6K6	NLK010
L6K7	NLK003
L6K8	NLK003
L6K9	NLK003
L6L1	NLK003
L6L2	NLK004
L6L3	NLK005
L6L4	NLK005
L6L5	NLK006
L6L7	NLK006
L6L8	NLK006
L6L9	NLK006
L6M1	NLK006
L6M2	NLK007
L6M3	NLK007
L6M4	NLK008
L6M5	NLK009
L6M6	NLK010
L6M7	NLK010
L6M8	NLK010
L6M9	NLK003
L6N1	NLK003
L6N2	NLK003
L6N3	NLK003
L6N4	NLK003
L6N5	NLK004
L6N6	NLK005
L6N7	NLK005
L6N8	NLK006
L6N9	NLK006
L6P1	NLK006
L6P2	NLK006
L6P3	NLK005
L6P4	NLK006
L6P5	NLK006
L6P6	NLK006

Pump Model	KOPkit #Less Material Code and Conn. Type
L6P7	NLK007
L6P8	NLK007
L6P9	NLK008
L6R1	NLK009
L6R2	NLK009
L6R3	NLK010
L6R4	NLK010
L6R5	NLK010
L6R6	NLK003
L6R7	NLK003
L6R8	NLK003
L6R9	NLK003
L6S1	NLK003
L6S2	NLK005
L6S3	NLK005
L6S4	NLK006
L6S6	NLK006
L6S7	NLK005
L6S8	NLK006
L6S9	NLK006
L6T1	NLK007
L6T2	NLK007
L6T3	NLK008
L6T4	NLK009
L6T5	NLK010
L6T6	NLK010
L6T7	NLK010
L6W1	NLK003
L6W2	NLK003
L6W3	NLK003
L6W4	NLK003
L6W5	NLK003
L6W6	NLK004
L6W7	NLK005
L6W8	NLK005
L6W9	NLK006

## TERMS & CONDITIONS

- 1. AGREEMENT.** The contract of sale resulting from Seller's documentation together with these terms and conditions ("Contract") constitutes the entire agreement between the parties hereto, except as modified in writing signed by both the Seller and Purchaser. The Seller is Pulsafeeder, Inc. and the Purchaser is identified in the Contract. Any terms in a purchase order, irrespective of their materiality, which are either different from or additional to Seller's conditions of sale, are objected to and are excluded unless the Seller expressly agrees in writing to such terms. Execution of such forms by Seller to accommodate Purchaser's procurement or accounting procedures or to evidence agreed upon change orders shall not be construed as assent to Purchaser's terms. Acceptance of the goods shipped shall constitute assent to Seller's conditions of sale. This Contract shall be binding upon Purchaser and Seller, and on their successors and assigns.
- 2. PROPOSAL OR QUOTATION.** A proposal shall not become binding upon Seller until it has been executed and returned by Purchaser. An oral quotation shall not be considered an offer: only a written confirmation thereof incorporating Seller's terms and conditions shall constitute an offer.
- 3. CREDIT.** Credit terms of payment must have the approval of Seller's Credit Department and must be specified in writing on Seller's invoice or in the Contract. If Purchaser's credit is found by Seller to be unsatisfactory, Seller may rescind or terminate this Contract. If at any time during the term of this Contract Purchaser's financial responsibility becomes impaired or unsatisfactory to Seller, Seller reserves the right to stop shipment on notification to Purchaser, project owner and surety with a demand for payment in advance or at time of delivery for future deliveries or to require other security satisfactory to Seller and in the absence thereof, to cancel the unfulfilled portion of the Contract. Seller will notify Purchaser promptly of its decision to stop shipments and give an advance notice to the extent this is possible. In the absence of credit terms, sales are for cash.
- 4. PAYMENT.** Specific terms of payment for this order shall be set forth on the reverse side of this Contract or identified and appended hereto. Purchaser agrees to make payment at Seller's location specified in this Contract in lawful money of the United States. Purchaser further agrees to make all payments when due to Seller in accordance with the agreed terms of payment in this Contract without reference to Purchaser's agreement with or payments by the owner and with no right of retention.
- 5. INTEREST AND COSTS.** Purchaser agrees to pay interest at 12% per month (to the extent permitted by law) on all delinquent balances if and when assessed by Seller, and any attorney's fees or court costs arising out of and made necessary in collection of its obligation to Seller created by this Contract.
- 6. TAXES.** Any federal, state or local tax assessment, fee, duty or charge hereafter imposed on or measured by the products purchased hereunder shall be for Purchaser's account unless Purchaser furnishes Seller an acceptable exemption certificate from such tax, fee, duty or charge prior to shipment.
- 7. FORCE MAJEURE.** Seller shall make delivery in accordance with the terms of this Contract or within a reasonable time in the absence of any commitment, but Seller shall not be liable for delays or defaults in delivery caused by floods, fires, storms, or other acts of God, by war or act of public enemy (or civil disturbance), strikes, lockouts, shortages of labor or raw materials and supplies (including fuel) or production facilities, transportation service or equipment shortages or failures, action of any governmental authority or other conditions beyond Seller's reasonable control.
- 8. CANCELLATION.** If Purchaser desires to cancel or change any portion of this Contract, he must make such request in writing to Seller. Seller may, in its sole discretion, accept or reject any such request. If accepted, the Purchaser nonetheless must take delivery and make payment to Seller for all material manufactured and in process of manufacture at time of notice, and all special materials ordered at time of notice and for which Seller must take delivery, unless otherwise agreed by Seller in writing. All such materials must be removed from Seller's premises within 30 days after payment and payment will due at time of notice. Seller also reserves the right to make a cancellation charge in the event of cancellation by the Purchaser of an order placed in Seller's shipping schedule and acknowledged by Seller.
- 9. INSPECTION AND TESTING.** Seller's standard specifications and tests apply to all orders. All charges for inspections or tests not regularly furnished are for Purchaser's account and subject to prior negotiation. All inspections shall be conducted at Seller's plant, and failure of Purchaser to avail himself of inspection privileges shall be deemed a waiver of such privileges.
- 10. PRICES.** Prices are subject to change without notice. Orders based on published prices and accepted for scheduled shipment will be invoiced at Seller's applicable price in effect on the scheduled date of shipment, unless otherwise specifically noted on the order acknowledgment. All prices will be in accordance with applicable government regulations. Orders specifying palletizing or special packaging will involve special charges.
- 11. DELAYS.** All orders are accepted subject to Seller's ability to make delivery at the time and in the quantities specified, and Seller shall not be liable for damages for failure to make partial or complete shipment or for any delay in making shipments. Purchaser shall be liable for any added expenses incurred by Seller because of Purchaser's delay in furnishing requested information to Seller, delay resulting from order changes by Purchaser, or delay in unloading shipments at delivery point.
- 12. SHIPMENT.** Seller will select method of shipment and routing when transportation charges are for account of Seller. When shipping instructions are specified by the Purchaser, all costs will be for the account of the Purchaser. The foregoing includes, but is not limited to, carriers charges for notification prior to delivery, demurrage, delay in unloading, diversion, or reconsignment.
- 13. TITLE.** Title to products transfers upon delivery to Purchaser at the F.O.B. point of delivery which will be clearly set forth in the shipment terms of this Contract. On receipt of title, Purchaser is then responsible for proper protection of product, placement, compliance with all regulations and ordinances, and will indemnify Seller against all claims for personal injuries or property damage arising from the storage, use or handling of such products.
- 14. IN TRANSIT CLAIMS.** Claims for damage or shortage in transit must be made against the carrier by the owner of the shipment according to the F.O.B. terms of the Contract. Purchaser has the responsibility to inspect shipments before or during unloading to identify any such damage or shortage and see that appropriate notation is made on the delivery tickets or an inspection report furnished by the local agent of the carrier in order to support a claim.
- 15. CLAIMS.** Notice of Claims against Seller hereunder for any reason, must be made to Seller in writing promptly after discovery and within any applicable warranty period. Failure to give such notice to Seller shall constitute a waiver by Purchaser of any right later to assert such a claim.
- 16. RETURNS.** Returned goods shall be accepted for credit only if in salable condition and only with evidence of Seller's prior written consent. Seller will assess charges for freight both ways and any costs necessary to restore such goods to the regular plant inventory. The amount of credit given will depend further upon the degree of salability of products accepted in opinion of Seller.
- 17. PATENTS.** Seller agrees to defend, and to protect Purchaser against loss or damage arising out of any legal action for patent infringement in connection with the manufacture of its products sold to Purchaser, provided Seller is notified promptly of any such action with complete information and is given an opportunity to defend.
- 18. WARRANTY: LIMITATION OF LIABILITY.** Seller warrants title to each individual product sold under this Contract and further warrants for a period of one (1) year from date of shipment, but only to the extent and limit of the purchase price paid for such individual product, that such product conforms to the specifications set forth in the Contract and is free from defects in material and workmanship under normal service and use for which it was designed. Seller's sole obligation and Purchaser's exclusive remedy under this warranty shall be limited to one of the following, as selected by Seller: delivering to Purchaser a replacement for any product or part thereof determined by Seller to be defective, repairing such product or part, or refunding the purchase price (or an equitable portion thereof) paid for such product or part by Purchaser. SELLER MAKES NO WARRANTY OF FITNESS OR MERCHANTABILITY, AND NO OTHER WARRANTY, WHETHER EXPRESS OR ARISING BY OPERATION OF LAW, COURSE OF DEALING, USAGE OF TRADE OR OTHERWISE IMPLIED SHALL EXIST IN CONNECTION WITH SELLER'S PRODUCTS OR ANY SALE OR USE THEREOF. Purchaser must notify Seller promptly and within the warranty period of any claim under this warranty. Seller's warranty extends only to the first purchaser of a product from Seller or Seller's authorized distributor. All goods not manufactured by Seller are warranted only to the extent of the warranties of the original manufacturer. Seller disclaims any liability arising from tort, including strict liability, and Seller further disclaims any liability (whether arising under this or any other provision of this Contract or otherwise) for any costs (including costs of removal or replacement), liabilities, lost profits, loss of good will or any other general, special, incidental or consequential damages incurred by Purchaser in connection with this Contract or any product purchased thereunder.
- 19. LAW.** This order shall be governed by and shall be construed by the law of the State of New York.
- 20. GOVERNMENTAL REGULATIONS.** Seller warrants that no code, law, regulation or ordinance of the United States, a state or any other governmental authority or agency or any applicable Executive Order has been violated in the manufacture or sale of the items covered by this Agreement and warrants that the equipment, supplies, and/or articles covered thereby conform with all such requirements.
- 21. NUCLEAR FINANCIAL PROTECTION.** Purchaser agrees to procure and maintain, as available to it, nuclear energy liability insurance, in a form of policy approved by the Nuclear Regulatory Commission, and protection, as available, against liability for nuclear incidents not covered by such insurance through an indemnity agreement, as provided in Section 170 of the Atomic Energy Act of 1954, as amended, or any succeeding comparable statutory provision, and the regulations thereunder. Such financial protection shall be effective prior to the time any equipment purchased from us is used or installed at or in connection with any nuclear facility and shall cover us an insured party. To the extent that such financial protection is not suitable to Purchaser, Purchaser agrees to use its best efforts to cause such financial protection to be obtained by eligible parties. We will cooperate with Purchaser and representatives of the nuclear energy insurance syndicates in complying with all underwriting requirements and with those insurance recommendations which may be mutually agreed upon. Notwithstanding any representations or warranties made by us elsewhere in these conditions of sale, we shall not be responsible for any bodily injury or property damage liability or any other public liability for any nuclear incidents, whether or not in respect of or arising in connection with use or installation of our equipment at any nuclear facility or in connection with any such facility. Purchaser hereby assumes any liability which might otherwise be imposed upon us and agrees to indemnify us and hold harmless from any such liability and costs or expenses in connection therewith.