

# **PULSAFEEDER<sup>®</sup>**

## **Mechanical Metering Pump Selection**



**PULSAtron<sup>®</sup>**  
**Series M Product**

Effective 01/01/16

# IMPORTANT INFORMATION WHEN PLACING AN ORDER

1. Fax, mail or telephone orders directly to the Customer Service Department:  
Pulsafeeder Incorporated—A Unit of IDEX Corporation  
Standard Product Operations Main Office & Manufacturing Facility  
27101 Airport Road, Punta Gorda, Florida, USA 33982-2462 E-Mail: [pulsaspo.cs@idexcorp.com](mailto:pulsaspo.cs@idexcorp.com)  
Telephone: 800-333-6677 or 941-575-3800 Fax: 800-456-4085 or 941-575-4085  
[www.pulsatron.com](http://www.pulsatron.com)
  2. Please have the following information available when placing an order:
 

Account Name	Special Tags or Marks (if needed)
Billing Zip Code	Item(s) Being Ordered
Purchase Order Number	Quantity of Each Item
Ship To Address	Pricing
Payment Terms	Shipping Information
  3. Orders are entered upon receipt. Our ability to change in house orders is limited. Please be certain your orders are complete when placed. Any order cancellation or change request is subject to a cancelation fee.
  4. Orders are assigned standard lead times based on the size of the order and product mix.  
Orders requiring expedited shipping (sooner than the standard lead times) are subject to a expedite charge.  
Unless the order clearly requests expedited shipping, the order will be treated as a routine order. When expedited shipping is requested a designated carrier must be selected. Orders that need to ship the same day must be received by 2:00 PM EST. Same day and next working day shipping is generally available for larger orders but not guaranteed, please verify with customer service. Pulsafeeder shall have no liability if it is unable to provide expedited shipping of an order.
  5. Repairs and returns are coordinated through our Customer Service Department. All orders returned must have factory authorization and are subject to a 25% restocking charge for standard product.
  6. Other Locations:
 

<b>PULSAFEEDER-Europe</b> Via Kennedy, 12-20090 Segrate—Milano— Italy Tel: +0039 377 706 6300	<b>Far East (Office Only)</b> Room 3502-3504, Zhao Feng Plaza No. 1027 Changning Rd Shanghai 200050, China Tel: 86-2163906367 Fax: 86-2163863338
<b>Latin America (Office Only)</b> Mario Pani 400, Piso 1, Oficina 111 Col. Lomas de Santa Fe, Cuajimalpa de Morelos C.P 05300, México, D.F. Tel: 52-55-4738-4124	<b>IDEX India Private Ltd.</b> S14, First Floor Solitaire Corporate Park, 167, Guru Hargovindji Marg, Chakala Andheri (East) Mumbai 400 093, India Tel: 91-22-66435500 Fax: 91-22-66780055
- Prices are subject to change without notice and are effective when order is accepted and acknowledged at point of shipment.
  - When ordering, specify your P.O. number, model number, quantity, price, shipping and/or billing address and order date.
  - Standard terms are NET 30 days from date of invoice for approved domestic accounts on open account and NET 60 days from date of invoice for approved international accounts.
  - WE ACCEPT VISA AND MASTERCARD.
  - PAYMENT BY CREDIT CARD WILL NOT RECEIVE AN ADDITIONAL DISCOUNT.
  - All prices are FCA, Shippers Dock, Punta Gorda, FL.
  - Custom product sales are final.
  - Charges for export documentation may apply an very by requirements.
  - Expedite fees may apply. Orders requiring expedited shipping (sooner than the standard lead times) are subject to an expedite charge
  - Fees for changes to or cancellation of orders may apply.
  - Minimum factory order of \$30.
  - Possession of price schedule does not guarantee right to purchase direct from factory.

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## **Application Benefits:**

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

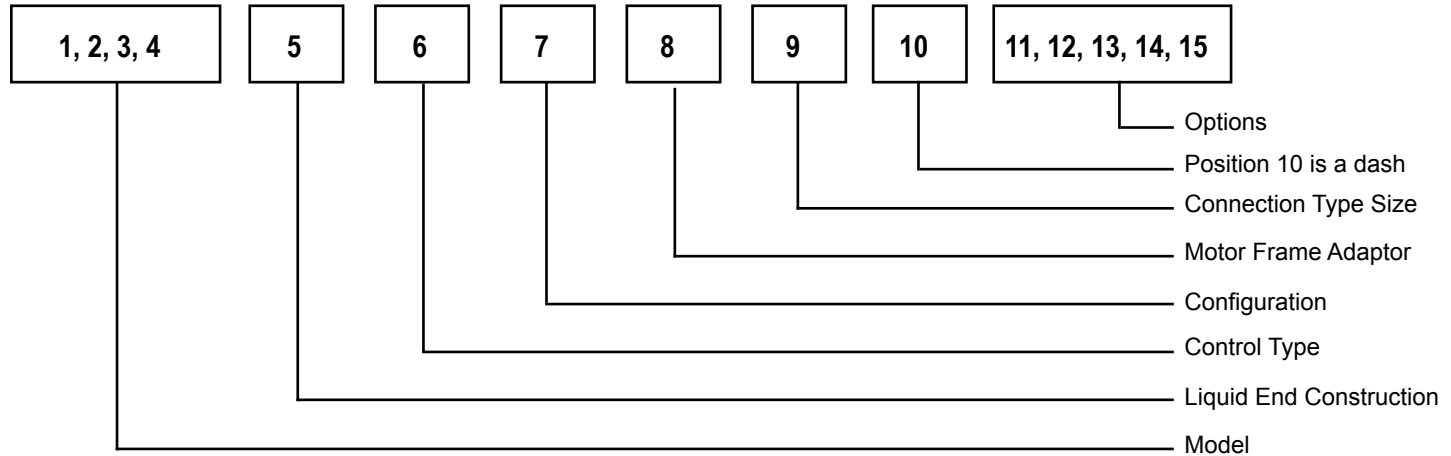
Follow the step by step approach presented in this guide to select the features you need.  
When you're through you will have the exact model number for the PULSAtron Series M pump you want.

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

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

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## Model Selection Guide



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

L2 Required HP 1/4 or .18 Kw

L6 Required HP 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							
					Conn. Size, Inch		
PSIG	BAR	GPH	LPH	SPM	Suct.	Disch.	Model
305	21.0	2.7	10.0	58	0.25	0.25	L2F7
305	21.0	3.9	14.9	86	0.25	0.25	L2F8
305	21.0	5.3	19.9	115	0.25	0.25	L2F9
305	21.0	6.4	24.2	140	0.5	0.5	L2G1
305	21.0	7.9	30.0	173	0.5	0.5	L2G2
250	17.2	8.1	30.5	58	0.5	0.5	L6R6
250	17.2	11.9	45.2	86	0.5	0.5	L6R7
250	17.2	16.0	60.5	115	0.5	0.5	L6R8
250	17.2	19.4	73.6	140	0.5	0.5	L6R9
250	17.2	24.0	91.0	173	0.5	0.5	L6S1
160	11.0	6.1	23.2	58	0.5	0.5	L2G3
160	11.0	9.2	34.9	58	0.5	0.5	L2G8
160	11.0	12.2	46.1	115	0.5	0.5	L2G5
160	11.0	13.7	51.7	86	0.5	0.5	L2G9
160	11.0	14.8	56.1	140	0.5	0.5	L2G6
160	11.0	18.3	69.1	115	0.5	0.5	L2H1
160	11.0	22.2	84.1	140	0.5	0.5	L2H2
160	11.0	27.5	104.0	173	0.75	0.75	L2H3
150	10.3	14.5	54.7	58	0.5	0.5	L6S2
150	10.3	21.4	81.2	86	0.5	0.5	L6S3
150	10.3	24.1	91.2	58	0.5	0.5	L6S7
150	10.3	28.7	109.0	115	0.75	0.75	L6S4
150	10.3	35.7	135.0	86	0.75	0.75	L6S8
150	10.3	43.1	163.0	173	0.75	0.75	L6S6
150	10.3	47.8	181.0	115	0.75	0.75	L6S9
150	10.3	58.2	220.0	140	1.0	1.0	L6T1
150	10.3	71.9	272.0	173	1.0	1.0	L6T2

Metal Construction							
					Conn. Size, Inch		
PSIG	BAR	GPH	LPH	SPM	Suct.	Disch.	Model
305	21.0	2.8	10.8	58	0.25	0.25	L2C1
305	21.0	4.2	16.0	86	0.25	0.25	L2C2
305	21.0	5.6	21.3	115	0.25	0.25	L2C3
305	21.0	6.9	26.0	140	0.5	0.5	L2C4
305	21.0	8.5	32.1	173	0.5	0.5	L2C5
250	17.2	8.6	32.7	58	0.5	0.5	L6K7
250	17.2	12.8	48.4	86	0.5	0.5	L6K8
250	17.2	17.1	64.8	115	0.5	0.5	L6K9
250	17.2	20.8	78.9	140	0.5	0.5	L6L1
250	17.2	25.7	97.5	173	0.75	0.75	L6L2
160	11.0	6.5	24.7	58	0.5	0.5	L2C6
160	11.0	9.8	37.0	58	0.5	0.5	L2D2
160	11.0	12.9	49.0	115	0.5	0.5	L2C8
160	11.0	14.5	54.9	86	0.5	0.5	L2D3
160	11.0	15.7	59.6	140	0.5	0.5	L2C9
160	11.0	19.4	73.4	115	0.5	0.5	L2D4
160	11.0	23.6	89.4	140	0.5	0.5	L2D5
160	11.0	29.2	110.0	173	0.75	0.75	L2D6
150	10.3	15.4	58.2	58	0.5	0.5	L6L3
150	10.3	22.8	86.2	86	0.5	0.5	L6L4
150	10.3	25.6	96.9	58	0.75	0.75	L6L8
150	10.3	30.5	115.0	115	0.75	0.75	L6L5
150	10.3	38.0	144.0	86	0.75	0.75	L6L9
150	10.3	45.8	173.0	173	0.75	0.75	L6L7
150	10.3	50.8	192.0	115	0.75	0.75	L6M1
150	10.3	61.8	234.0	140	1.0	1.0	L6M2
150	10.3	76.4	289.0	173	1.0	1.0	L6M3

## PRESSURE AND CAPACITY @ 60 HZ, 1725 RPM

Plastic Construction							
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model
					Suct.	Disch.	
75	5.2	53.1	201	58	0.75	0.75	L6T3
75	5.2	78.7	298	86	1.0	1.0	L6T4
75	5.2	105	398	115	1.5	1.0	L6T5
75	5.2	128	485	140	1.5	1.0	L6T6
75	5.2	158	599	173	1.5	1.0	L6T7

Metal Construction							
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model
					Suct.	Disch.	
75	5.2	55.3	210	58	0.8	0.8	L6M4
75	5.2	82.1	311	86	1.0	1.0	L6M5
75	5.2	109	416	115	1.5	1.0	L6M6
75	5.2	134	506	140	1.5	1.0	L6M7
75	5.2	165	625	173	1.5	1.0	L6M8

## PRESSURE AND CAPACITY @ 50 HZ, 1425 RPM

Plastic Construction							
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model
					Suct.	Disch.	
305	21.0	2.2	8.3	48	0.25	0.25	L2D7
305	21.0	3.2	12.3	71	0.25	0.25	L2D8
305	21.0	4.3	16.5	95	0.25	0.25	L2D9
305	21.0	5.2	19.7	114	0.25	0.25	L2E1
305	21.0	6.5	24.8	143	0.5	0.5	L2E2
305	21.0	8.1	30.8	178	0.5	0.5	L2E3
250	17.2	6.7	25.2	48	0.5	0.5	L6M9
250	17.2	9.9	37.3	71	0.5	0.5	L6N1
250	17.2	13.2	50	95	0.5	0.5	L6N2
250	17.2	15.8	59.9	114	0.5	0.5	L6N3
250	17.2	19.9	75.2	143	0.5	0.5	L6N4
250	17.2	24.7	93.6	178	0.75	0.75	L6N5
160	11.0	5.1	19.2	48	0.5	0.5	L2E4
160	11.0	7.6	28.8	48	0.5	0.5	L2F1
160	11.0	10.1	38.1	95	0.5	0.5	L2E6
160	11.0	11.3	42.7	71	0.5	0.5	L2F2
160	11.0	12.1	45.7	114	0.5	0.5	L2E7
160	11.0	15.1	57.1	95	0.5	0.5	L2F3
160	11.0	18.1	68.5	114	0.5	0.5	L2F4
160	11.0	18.8	71.3	178	0.5	0.5	L2E9
160	11.0	22.7	85.9	143	0.5	0.5	L2F5
160	11.0	28.3	107	178	0.75	0.75	L2F6
150	10.3	12.0	45.3	48	0.5	0.5	L6N6
150	10.3	17.7	67	71	0.5	0.5	L6N7
150	10.3	19.9	75.5	48	0.5	0.5	L6P3
150	10.3	23.7	89.7	95	0.5	0.5	L6N8
150	10.3	28.4	108	114	0.75	0.75	L6N9
150	10.3	29.5	112	71	0.75	0.75	L6P4
150	10.3	35.7	135	143	0.75	0.75	L6P1
150	10.3	39.5	149	95	0.75	0.75	L6P5
150	10.3	44.4	168	178	0.75	0.75	L6P2
150	10.3	47.4	179	114	0.75	0.75	L6P6
150	10.3	59.4	225	143	1.0	1.0	L6P7
150	10.3	74.0	280	178	1.0	1.0	L6P8

Metal Construction							
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model
					Suct.	Disch.	
305	21.0	2.4	8.9	48	0.25	0.25	L2A1
305	21.0	3.5	13.2	71	0.25	0.25	L2A2
305	21.0	4.7	17.6	95	0.25	0.25	L2A3
305	21.0	5.6	21.2	114	0.25	0.25	L2A4
305	21.0	7.0	26.5	143	0.5	0.5	L2A5
305	21.0	8.7	33	178	0.5	0.5	L2A6
250	17.2	7.1	27	48	0.5	0.5	L6W1
250	17.2	10.6	40	71	0.5	0.5	L6W2
250	17.2	14.1	54	95	0.5	0.5	L6W3
250	17.2	17.0	64.2	114	0.5	0.5	L6W4
250	17.2	21.3	80.6	143	0.5	0.5	L6W5
250	17.2	26.5	100	178	0.75	0.75	L6W6
160	11.0	5.4	20.4	48	0.5	0.5	L2A7
160	11.0	8.1	30.6	48	0.5	0.5	L2B4
160	11.0	10.7	40.4	95	0.5	0.5	L2A9
160	11.0	12.0	45.3	71	0.5	0.5	L2B5
160	11.0	12.8	48.5	114	0.5	0.5	L2B1
160	11.0	16.0	60.7	95	0.5	0.5	L2B6
160	11.0	19.2	72.8	114	0.5	0.5	L2B7
160	11.0	20.0	75.8	178	0.5	0.5	L2B3
160	11.0	24.1	91.3	143	0.75	0.75	L2B8
160	11.0	30.0	114	178	0.75	0.75	L2B9
150	10.3	12.7	48.1	48	0.5	0.5	L6W7
150	10.3	18.8	71	71	0.5	0.5	L6W8
150	10.3	21.2	80.2	48	0.5	0.5	L6J4
150	10.3	25.2	95.3	95	0.75	0.75	L6W9
150	10.3	30.2	114	114	0.75	0.75	L6J1
150	10.3	31.3	119	71	0.75	0.75	L6J5
150	10.3	37.9	143	143	0.75	0.75	L6J2
150	10.3	41.9	159	95	0.75	0.75	L6J6
150	10.3	47.2	178	178	0.75	0.75	L6J3
150	10.3	50.3	191	114	0.75	0.75	L6J7
150	10.3	63.1	239	143	1.0	1.0	L6J8
150	10.3	78.6	298	178	1.0	1.0	L6J9

## PRESSURE AND CAPACITY @ 50 HZ, 1425 RPM

Plastic Construction								Metal Construction							
PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model	PSIG	BAR	GPH	LPH	SPM	Conn. Size, Inch		Model
					Suct.	Disch.							Suct.	Disch.	
75	5.2	43.9	166	48	0.75	0.75	L6P9	75	5.2	45.8	173	48	0.75	0.75	L6K1
75	5.2	65.0	246	71	1.0	1.0	L6R1	75	5.2	67.8	256	71	1.0	1.0	L6K2
75	5.2	87.0	329	95	1.0	1.0	L6R2	75	5.2	90.7	344	95	1.0	1.0	L6K3
75	5.2	104	395	114	1.5	1.0	L6R3	75	5.2	108	412	114	1.5	1.0	L6K4
75	5.2	131	496	143	1.5	1.0	L6R4	75	5.2	137	517	143	1.5	1.0	L6K5
75	5.2	163	617	178	1.5	1.0	L6R5	75	5.2	170	643	178	1.5	1.0	L6K6

1. **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.

2. **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 multiplexing configurations of three or more pumps, consult factory.

### POSITION 5 = Liquid End Construction

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

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

M - Manual

### POSITION 7 = Configuration

S - Simplex (Standard-gearbox on left)

D - Duplex (Driver)

E - Duplex (Driven)\*

L - Simplex (Gearbox on right)

\*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

A - 56C

D - 143 TC OR 145 TC

B - 71 (Metric)

C - 80 (Metric)

X - No Gearbox/Motor Adaptor

### POSITION 9 = Connection Type (1)

P - Threaded Female (NPT)

B - Threaded Female (BSPT)

F - Flanged (ANSI) (2)

G - Flanged (DIN) (2)

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

Flanged Connections Suct. x Disch.	List Price Adder to NPT		
	Flanged, ANSI or DIN		
	PVC	PVDF	316
0.5" x 0.5"			
0.75" x 0.75"			
1.0" x 1.0"			
1.5" x 1.0"			

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

### POSITION 11-15 = Options

XXXXX

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
L2	1/4 HP	NP500033-000	115/208/230	1	60	AC	1725	56C	TEFC
L2	1/4 HP	NP500034-000	208/230/460	3	60	AC	1725	56C	TEFC
L2	1/4 HP	NP500035-000	115/208/460	1	60	AC	1725	56C	XP (3)
L2	1/4 HP	NP500036-000	208/230/460	3	60	AC	1725	56C	XP (3)
L2	1/2 HP	NP500197-000	230/460 or 190/380	3	60 or 50	AC	1725 or 1425	56C	Inv Ready (2)
L2	1/3 HP	NP500045-000	110/220	1	50	AC	1425	56C	TEFC/IP54
L2	1/4 HP	NP500044-000	220/380/440	3	50	AC	1425	56C	TEFC/IP54
L6	3/4 HP	NP500003-000	115/208/230	1	60	AC	1725	56C	TEFC
L6	3/4 HP	NP500007-000	208/230/460	3	60	AC	1725	56C	TEFC
L6	3/4 HP	NP500011-000	115/208/230	1	60	AC	1725	56C	XP (3)
L6	3/4 HP	NP500015-000	208/230/460	3	60	AC	1725	56C	XP (3)
L6	3/4 HP	NP500021-000	115/208/230	1	60	AC	1725	56C	Wash Down
L6	1 HP	NP500199-000	230/460 or 190/380	3	60 or 50	AC	1725 or 1425	56C	Inv Ready (2)
L6	3/4 HP	NP500047-000	220/380/440	3	50	AC	1425	56C	TEFC/IP54
L6	.55 kW	NP500057-000	220-240 or 380-415	3	50	AC	1425	80M	IP55

NOTES: (1) No power cord supplied, Direct wiring required.

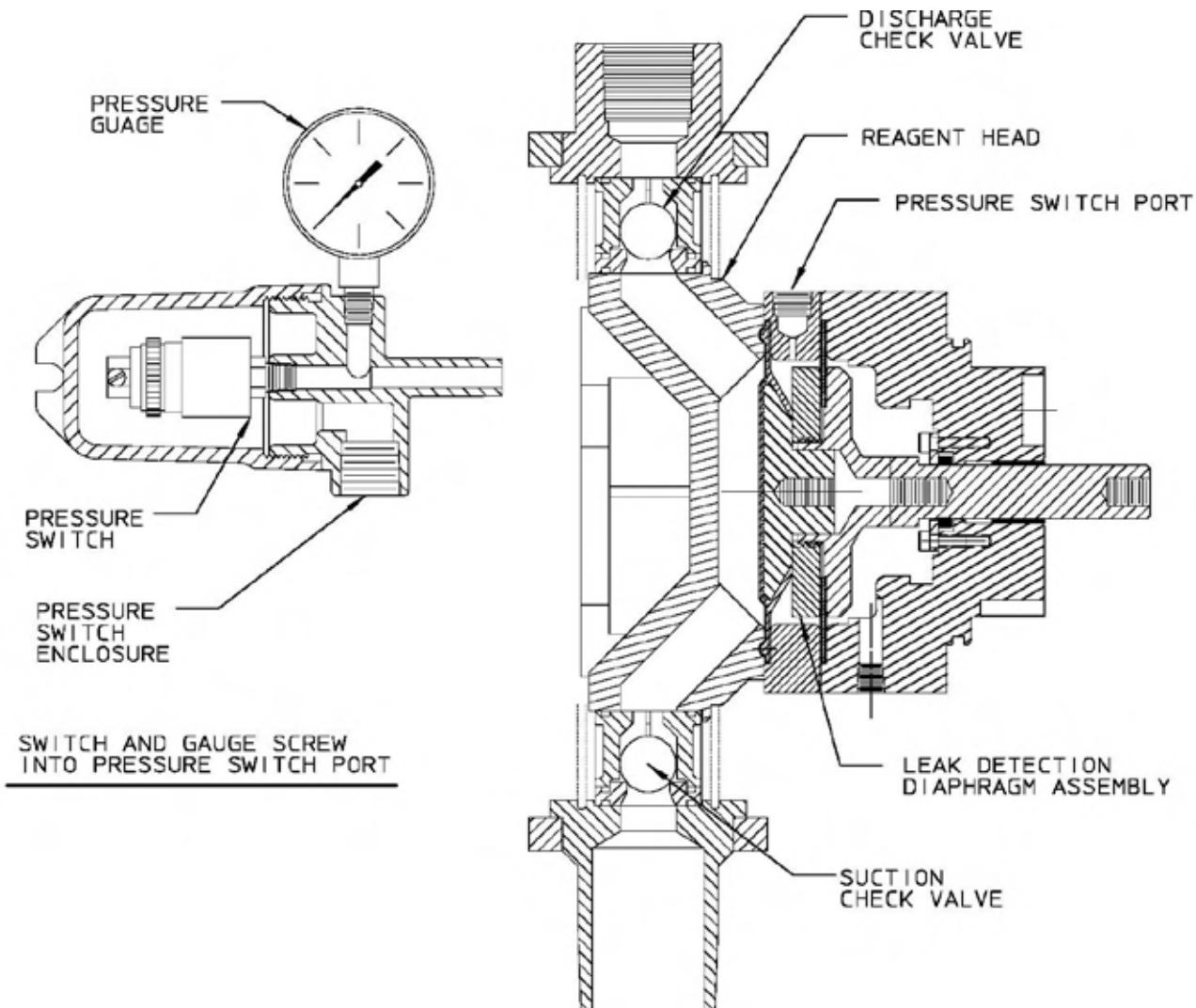
(2) Inverter Ready motors provide a 4:1 speed turndown with a separate AC inverter

(3) XP Motors are suitable for Class 1 Division 1 Group D only.



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

Notice that 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.



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					
NLK002					
NLK003					
NLK004					
NLK005					
NLK006					
NLK007					
NLK008					
NLK009					
NLK010					

## KOPkit List Price

### 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

## Policies and Procedures

### 1. Manufacturer's Equipment Warranty

- a. Pulsafeeder warrants all pumps and controllers of its manufacture to be free of defects in material or workmanship. Liability under this policy extends for 24 months from the date of shipment. The manufacturer's liability is limited to repair or replacement of any failed equipment or part which is proven defective in material or workmanship upon manufacturer's examination. This warranty does not include removal or installation costs and in no event shall the manufacturer's liability exceed the selling price of such equipment or part.
- b. The manufacturer disclaims all liability for damage to its products through improper installation, maintenance, use or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any other unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries or expense incurred through the use of its products.
- c. The above warranty is in lieu of any other warranty, whether expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to provide any warranty other than the above.

### 2. Pulsafeeder's Parts and Accessory Warranty

- a. Pulsafeeder, Inc. warrants parts and accessories provided to be free of defects in material or workmanship. Unless otherwise noted below, liability under this policy extends for 90 days from date of shipment from the factory when sold as service parts. (Replaceable elastomeric parts (PTFE) are expendable and are not covered by any warranty either expressed or implied.)
- b. This policy is extended to a full 12 months from the date of installation or 18 months from shipment from the factory whichever comes first on the following accessories:
 

Digital Glycol Feeders	Pre-Engineered Systems	Corrosion Coupon Racks
Analog Timers	Water Meters	Flow Controllers
- c. MicroTrac and MicroVision toroidal probes are warranted for 24 months from date of shipment from the factory when purchased in conjunction with the controller.  
All other electrodes/probes and sensors are considered maintenance items and such are warranted for six (6) months from the date of shipment when purchased in conjunction with the controller.  
Any electrodes/probes other than toroidal and sensors purchased as spare parts are warranted for 90 days from date of shipment.
- d. The manufacturer's liability is limited to repair or replacement of any failed equipment or part which is proven defective in material or workmanship upon manufacturer's examination. This warranty does not include removal or installation costs and in no event shall the manufacturer's liability exceed the selling price of such equipment or part.
- e. The manufacturer disclaims all liability for damages to its products through improper installation, maintenance, use or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries or expense incurred through the use of its products.
- f. The above warranty is in lieu of any other warranty, whether expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to provide any warranty other than the above.

### 3. Process for All Returned Goods (Warranty Items)

- a. Please contact our Technical Service Department to request a RMA (Return Material Authorization) number prior to returning any goods. The following information will be required:  
Billing and ship-to address  
Model number and serial number  
Contact name and phone number  
Reason for return  
Purchase order (where applicable)  
A packing slip will be provided to the shipper and MUST accompany the product being returned. Packages received without our proper packing list will be refused by the receiver.
- b. All material must be returned freight prepaid.
- c. All material must be properly packaged to prevent damage in shipment.
- d. All products used in a chemical application MUST accompany an MSDS
- e. All products MUST be wiped and flushed clean of any and all chemicals, solvents or buffers and be warranted to be safe for handling. You will be requested to acknowledge the condition of the product being returned on our packing list. Any product received that is deemed to be unsafe for handling or without this acknowledgement will be refused by our receiver.
- f. All warranty repairs will follow the 2 year warranty policy and will refer to the original purchase date.

### 4. Non-Warranty Return Procedure (Charge Repair)

- a. If you are experiencing a concern with your Pulsafeeder product, first consult the distributor, dealer or Regional Sales Manager or the operation and maintenance manual for assistance. If service of your non-warranty unit is necessary, you must request a return material authorization. A RMA form will be issued and must be used as the packing list attached to the outside of the box. Please send the unit freight prepaid with the RMA number visibly displayed on the outside of the carton. All products MUST be wiped and flushed clean of any and all chemicals, solvents or buffers and be warranted to be safe for handling. You will be requested to acknowledge the condition of the product being returned on our packing list. Any product received that is deemed to be unsafe for handling or without this acknowledgement will be refused by our receiver.
- b. All products used in a chemical application MUST accompany an MSDS
- c. The charges listed in the following table will apply.

Product	Repair Cost
Pumps and Pump Accessories – within 5 years of sale date	Current List Price x .50 x Part Discount Multiplier
Controllers and Controller Accessories within 5 years of sale date	Current List Price x .50 x Part Discount Multiplier
Any item older than 5 years from date of sale	With purchase order, \$50 bench fee to evaluate. The \$50 bench fee may be applied towards repair cost of unit or towards a new controller

**All Charge Repairs have a 90 day warranty from date of repair**

## Policies and Procedures continued

- 5. Credit for Return of New, Unused Equipment**
- a. No equipment will be accepted beyond six months after date of shipment from factory for credit.
  - b. Only new, unused and undamaged standard equipment will be accepted for return to stock.
  - c. All credits are based on evaluation and acceptance of material as new and unused by Pulsafeeder. You will be requested to acknowledge the condition of the product being returned on our packing list. Any product received that is deemed to be unsafe for handling or without this acknowledgement will be refused by our receiver.
  - d. A restocking fee of 25% will apply to returned goods. When a PO is provided for a replacement item at the time of the return request the restocking fee will be 15%. Note: any product mounted on a panel or skid will be charged a 50% re-stocking fee.
  - e. A request for a Returned Material Authorization (RMA) number must be made prior to returning product to Pulsafeeder.
  - f. All equipment shall be returned with the RMA Packing List form attached to the outside of the box.
  - g. If any chemical, solvent or buffer has been introduced into the product it must be wiped and flushed clean of any and all substances prior to returning to Pulsafeeder.
  - h. All material shall be returned freight prepaid.
  - i. Private label products or Engineered Panel Mount Systems are not returnable.
- 6. Pricing Errors**
- a. Pulsafeeder does their very best to avoid errors in billing. You will receive a confirmation of your order within 24 hours of order entry. If upon review the customer feels there is a discrepancy, they should contact Pulsafeeder Customer Service as soon as possible to resolve.
  - b. Should an invoice be received that the customer believes to have incorrect pricing, they should notify Pulsafeeder Customer Service to investigate.
- 7. Missing Items**
- a. If a product is received by the customer with an item missing the customer must notify Pulsafeeder Customer Service within 7 days of receipt of the product by the end user. A replacement item will be sent at no charge as quickly as possible.
  - b. If a shipment is received by the customer with a line item missing they must notify Pulsafeeder Customer Service within 7 days of receipt of the product by the end user. If the customer had been billed for that item, a credit will be issued against the original Sales Order and a new Sales Order will be created for the replacement product.
- 8. Damaged Items**
- a. Should the customer receive an order that was damaged in transit, the customer must notify the carrier directly to initiate a claim on the day of delivery.
  - b. Should the customer receive a product with damaged components due to improper packaging they should notify Pulsafeeder Customer Service within 7 days of receipt of product by end user. A replacement item will be sent at no charge as quickly as possible.
- 9. Technical Support Services Available**
- a. Pulsafeeder's Sales Support team available all your and support. *The principle mission of this group is to sell and support our customer base in a timely and effective manner. This includes the ability to provide in-field service training, assistance in start-up of our products and perform field repair of goods when required.*
  - b. Scope  
Pulsafeeder, Inc. factory Field Service Technicians are available throughout the World for field services on all Pulsafeeder products. Services include:
    - i. Maintenance Training Seminars, including Classroom slide presentations and or Hands-on Training. The seminar will take approximately four to five hours, and if time permits minor repair and or adjustments may be made to the customer's pumps, controllers or accessories.
    - ii. Pre-start up inspections and start up testing/calibration of pumps, controllers and accessories.
    - iii. Field repairs of pumps controllers and accessories
    - iv. Diagnosing and recommending solutions to systems problems.

Fee Schedule	Service Rate (1)
<b>Field Repairs and Start-Ups</b>	
Normal 8 hour day	\$125.00 / hour
Overtime (in excess of 8 hrs each day)	\$175.00 / hour
Sundays, National Holiday	\$225.00 / hour
Travel time to job site and return	\$115.00 / hour
Travel expenses (air fare, hotel, car and meals)	Chargeable to customer at cost.
Minimum charge	4 hour labor, plus travel time and expenses
<b>End User Training Seminars</b>	
Normal work day	\$1000.00 / day plus expenses (air fare, car rental, hotel and meals at cost)
Sundays, National Holiday	\$1800.00 / day plus expenses (air fare, car rental, hotel and meals at cost)

<sup>(1)</sup> All rates listed in this section are actual hourly and daily rates, not reference rates

## TERMS &amp; 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 up on 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 up on Purchaser and Seller, and on their successors and assigns.
- 2 . PROPOSAL OR QUOTATION. A proposal shall not become binding up on 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. All quotations are valid for 30 days unless stated different on the written quotation.
- 3 . ORDER PLACEMENT. All orders shall be subject to acknowledgement by Pulsafeeders and shall be subject to Pulsafeeder's terms and conditions in effect on the date the order is accepted. No modifications to the terms and conditions referred to or contained in any request for proposal, order, or other document from a customer shall apply unless negotiated and approved via written documentation with Pulsafeeder SPO. Any order cancellation or change request is subject to a cancelation / change fee.  
The minimum order amount is US\$30.00 based on Pulsafeeders list prices in effect at the time the order is received.  
All orders must be submitted with correct pricing and shipping information. Orders submitted without correct pricing and shipping information may be rejected or delayed.
- 4 . 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 unfilled 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.
- 5 . 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.
- 6 . INTEREST AND COSTS. Purchaser agrees to pay interest at 1.5% 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.
- 7 . 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.
- 8 . 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, lock outs, 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.
- 9 . CANCELLATION. If Purchaser desires to cancel or change any portion of this Contract, the purchaser 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. **Any order cancellation is subject to a cancelation fee.**
- 10 . 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.
- 11 . 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.
- 12 . 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.
- 13 . 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. All shipments are Free Carrier (FCA) or EX Works( EXW) (Incoterms 2010) shippers dock Punta Gorda FL.  
On all customer arranged freight (will advise) the customer has 48 hours after Pulsafeeder has advised them that the shipment is complete and ready for shipment to arrange pickup. If the shipment has not left Pulsafeeder within the 48 hour period the customer will be charged 1% of the shipment invoice value for each 24 hour period that the shipment remains at the Pulsafeeder facility. Pulsafeeder may also place the shipment in a public storage at the customer's expense and without liability to Pulsafeeder.  
**Any expedited order will be subject to a expedite fee.**

Unless the order clearly requests expedited shipping, the order will be treated as a routine order. When expedited shipping is requested a designated carrier must be selected. Orders that need to ship the same day must be received by 2:00 PM EST. Same day and next working day shipping is generally available for larger orders but not guaranteed, please verify with customer service. Pulsafeeder shall have no liability if it is unable to provide expedited shipping of an order.

14 . TITLE. Title to products transfers up on shipment from the Pulsafeeder facility according to FCA Shippers Dock or EXW Punta Gorda FL (Incoterms 2010). 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.

15 . 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 FCA or EXW 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.

16 . 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.

17 . 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 up on the degree of salability of products accepted in opinion of Seller.

18 . 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.

19 . WARRANTY : LIMITATION OF LIABILITY. Seller warrants title to each individual product sold under this Contract and further warrants for a period of twenty four (24 ) months from ship date, 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 THERE OF. 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 there under.

20 . LAW . This order shall be governed by and shall be construed by the law of the State of New York .

21 . 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.

22 . 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 there under. 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 up on. 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 up on us and agrees to indemnify us and hold harmless from any such liability and costs or expenses in connection therewith.







# Parts & Accessories



A **KOPkit (Keep On Pumping)** can help you cut downtime and put you back in business fast. Use KOPkits for preventive maintenance and to ensure continuous high performance from your Pulsafeeder metering pump.

## Pressure Relief Valves

prevent an overpressurization situation from ever damaging your pumps or pipes. Overpressurization can occur when a valve is closed or a blockage occurs. They are always recommended equipment for any pump or skid system.



Pulsafeeder's **Pulsation Dampeners** improve pump system efficiency by removing pulsating flows from positive displacement pumps.



## Calibration Columns

These columns are constructed of clear PVC tubes with PVC end caps or an option for Borosilicate glass with Teflon end caps and should be sized for a 30-second draw down.



## Pressure Gauges

are relied on to measure pressure in the system. Proper pressure is necessary to insure flow. Pulsafeeder Pressure Gauges are accurate and reliable.



**PulsaLube** is the only oil Pulsafeeder recommends for use in metering and transfer pumps. Pulsalube is a superior blend of oils designed to provide optimal lubrication and extend equipment life.



**Back Pressure Valves** provide positive back pressure for systems with less than the minimum required pressure difference between the discharge and suction side of the metering pump to assure best metering performance.



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An ISO 9001 Certified Company

PLM001 A16

