

Model Selection Guide & Product List

Effective Date 01/16/12



PULSAtron[®] Series M
Mechanical Metering Pumps

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
27101 Airport Road, Punta Gorda, Florida, USA 33982-2462 E-Mail: pulsaspo.cs@idexcorp.com
Telephone: 800-333-6677 or 941-575-3800 Fax: 800-456-4085 or 941-575-4085

Engineered Products Operations
2883 Brighton Henrietta Town Line Road, Rochester, New York, USA 14623
Telephone: 585-292-8000 Fax: 585-424-5619
www.pulsafeeder.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 | |

- 3) Orders are immediately entered into the computer upon receipt. Our ability to change in house orders is limited. Please be certain your orders are complete when placed.

- 4) For assistance or to order a "special" pump model not available in the price schedule, please contact our Technical Support Department.

- 5) Orders are assigned standard lead times based on the size of the order and the time required to manufacture the particular products. Requests to expedite orders may be routed through our Customer Service Department.

- 6) 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.

- 7) Other Locations:

PULSAFEEDER (Knight UK Limited)

15 Brunel Centre Newton Road
Crawley, West Sussex, England, RH10 9YU
Tel: +44 80022102210
Fax: +44 80044104410

Far East (Office Only)

Room 3403, South Tower, Hong Kong Plaza
No 283 Huai Hai Zhong Road
Shanghai 200021, China
Tel: 86-2163906367
Fax: 86-2163863338

Latin America (Office Only)

Hegel 153-602, Colonia Polanco,
11560 Mexico, D.F., Mexico
Tel: 52-555-255-1357
Fax: 52-555-255-1356

IDEX India Private Ltd.

202 Matharu Arcade
32, Subhash Road, Vile Parie (East),
Mumbai-400 057, India
Tel: 91-22-66976631
Fax: 91-22-66976633

- 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 accounts on open account.**
- **WE ACCEPT VISA AND MASTERCARD.**
- **ONE PERCENT DISCOUNT AVAILABLE FOR PAYMENT WITHIN 10 DAYS OF INVOICE DATE FOR ACCOUNTS THAT ARE CURRENT.**
- **PAYMENT BY CREDIT CARD WILL NOT RECEIVE AN ADDITIONAL DISCOUNT.**
- All prices are F.O.B. Punta Gorda, FL or factory warehouse location.
- Custom product sales are final.
- Charges for export documentation apply.
- Expediting fees may apply.
- Fees for changes to or cancellation of orders may apply.
- **Minimum factory order of \$50.**
- Possession of price schedule does not guarantee right to purchase direct from factory.

DUE TO CONTINUOUS IMPROVEMENT OF OUR PRODUCTS, WE RESERVE THE RIGHT TO UPDATE THE INFORMATION CONTAINED IN THIS CATALOG WITHOUT NOTICE.

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Application Benefits:

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

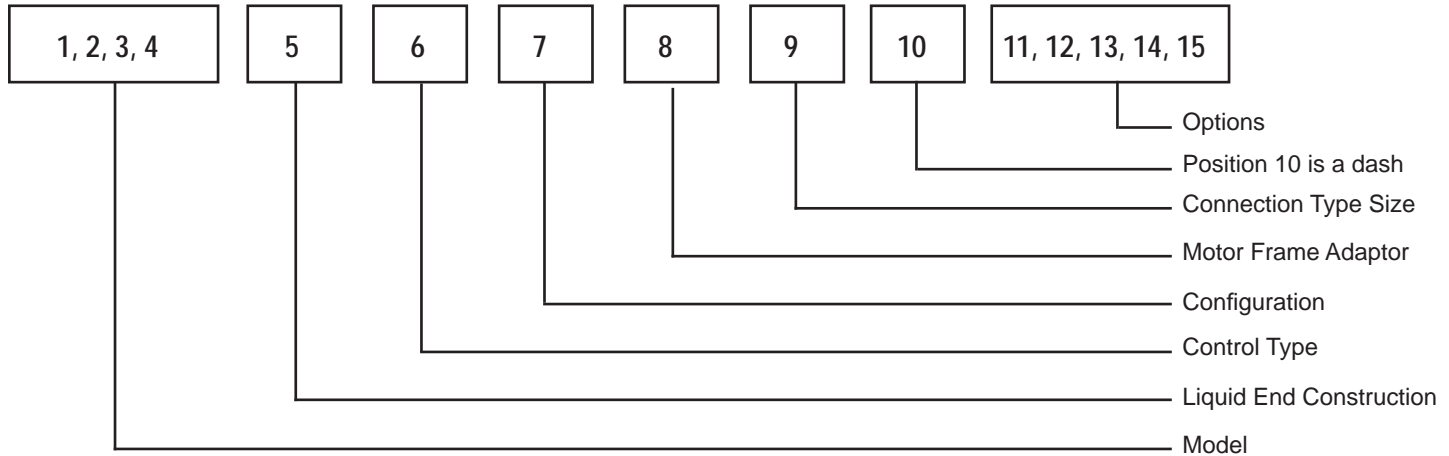
Follow the step by step approach presented in this guide to select the features you need.
When you're through you will have the exact model number for the PULSAtron Series M pump you want.

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

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

Pulsafeeder, Incorporated
2883 Brighton-Henrietta Townline Road
P.O. Box 22909 (P.O. Zip 14692)
Rochester, New York USA 14623
(585) 292-8000/Fax (585) 424-5619
<http://www.pulsa.com>
e-mail: pulsa@idexcorp.com

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. 1501-300 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
- P - MPC w/ Flow Indicator (Nema 4X), IP56

POSITION 7 = Configuration

- S - Simplex (Standard-gearbox on left)
- D - Duplex (Driver)
- E - Duplex (Driven)*
- P - Simplex w/ MPC
- 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
- E - 63 (Metric)
- 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⁾

| 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" | | | |

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 "-"

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 (4) |
| L2 | 1/4 HP | NP500036-000 | 208/230/460 | 3 | 60 | AC | 1725 | 56C | XP (4) |
| L2 | 1/4 HP | NP500037-000 | 208/230/460 | 3 | 60 | AC | 1725 | 56C | Chem Duty |
| L2 | 1/2 HP | NP500197-000 | 230/460 or 190/380 | 3 | 60 or 50 | AC | 1725 or 1425 | 56C | Inv Ready (2) |
| L2 | 1/2 HP | NP500208-000 | 230/460 | 3 | 60.0 | AC | 1725 | 56C | Inv Duty (3) |
| 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 |
| L2 | .18 kW | NP500048-000 | 220 | 1 | 50 | AC | 1425 | 63M | IP54 |
| L2 | .18 kW | NP500054-000 | 220-240 or 380-415 | 3 | 50 | AC | 1425 | 63M | IP55 |
| L2 | 1/3 HP | NP500216-000 | 110/220 | 1 | 50 | AC | 1425 | 56C | XP (4) |
| 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 (4) |
| L6 | 3/4 HP | NP500015-000 | 208/230/460 | 3 | 60 | AC | 1725 | 56C | XP (4) |
| L6 | 3/4 HP | NP500018-000 | 208/230/460 | 3 | 60 | AC | 1725 | 56C | Chem Duty |
| 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 | 1 HP | NP500209-000 | 230/460 | 3 | 60 | AC | 1725 | 56c | Inv Duty (3) |
| L6 | 3/4 HP | NP500046-000 | 110/220 | 1 | 50 | AC | 1425 | 56C | TEFC/IP54 |
| L6 | 3/4 HP | NP500047-000 | 220/380/440 | 3 | 50 | AC | 1425 | 56C | TEFC/IP54 |
| L6 | .55 kW | NP500049-000 | 220 | 1 | 50 | AC | 1425 | 80M | IP54 |
| L6 | .55 kW | NP500057-000 | 220-240 or 380-415 | 3 | 50 | AC | 1425 | 80M | IP55 |
| L6 | 3/4 HP | NP500219-000 | 220/380/440 | 3 | 50 | AC | 1425 | 56C | XP (4) |

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 8
- Add this MPC model number to the order
- Select MPC price adder from the pricing table on page 9

Select motor from table on page 9 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 1&2:

| Character | Denotes |
|-----------|---------|
| 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 9:

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= 50 / 60Hz
 B = 230= 50 / 60Hz

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 |
|--------------------|------------------|-------|----------------------------|-----------------------|
| L2F7 | L2C1 | 58.0 | 0 | NP500201-000 |
| L2F8 | L2C2 | 86.0 | 0 | NP500201-000 |
| L2F9 | L2C3 | 115.0 | 0 | NP500201-000 |
| L2G1 | L2C4 | 140 | 0 | NP500201-000 |
| L2G3 | L2C6 | 58 | 0 | NP500201-000 |
| L2G5 | L2C8 | 115 | 0 | NP500201-000 |
| L2G6 | L2C9 | 140 | 0.25 | NP500201-000 |
| L2G8 | L2D2 | 58 | 0.25 | NP500201-000 |
| L2G9 | L2D3 | 86 | 0.25 | NP500201-000 |

| | | | | |
|------|------|-----|------|--------------|
| L2G2 | L2C5 | 173 | 0.33 | NP500196-000 |
| 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 |
| 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 |
| 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 |
| L6T2 | L6M3 | 173 | 1 | NP500199-000 |
| L6T6 | L6M7 | 140 | 1 | NP500199-000 |
| L6T7 | L6M8 | 173 | 1.5 | NP500200-000 |

* Pricing Includes Motor - Motor must be supplied by Pulsafeeder for MPC

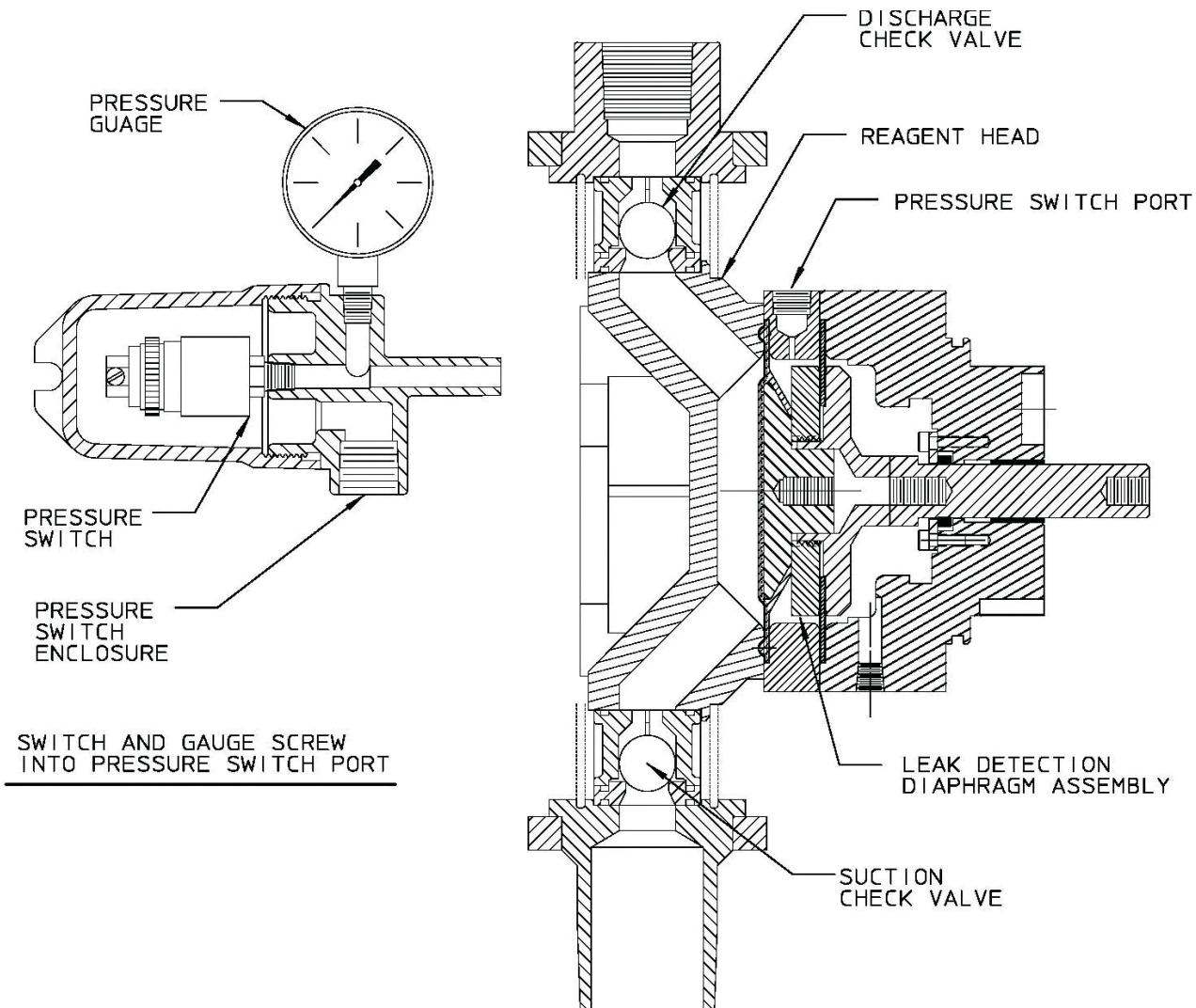
MPC cannot be used on multiplex pumps

ADDER

Cable= List/foot

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 eighth 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 date of shipment from the factory. 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 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;
 - Intelliscan
 - Digital Glycol Feeders
 - 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 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**
 - a. Please contact our Customer 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 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.
 - e. RMA for returning product for credit is effective for 90 days from the date of issue. After 90 days if the product has not been returned to Pulsafeeder the RMA number will be cancelled, and a new request must be made by the customer to continue with the return procedure.
4. **Non-Warranty Return Procedure**
 - 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.

| 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 |

- b. The charges listed in the following table will apply.
- c. Extended warranty on repair goods will be offered only when the repairs were made by the factory on non-warranty units.
 - i. Microprocessor Controls – 1 year from date of shipment
 - ii. Electronic Controls – 6 months from date of shipment (excluding electronic parts)
 - iii. Standard metering pumps – 3 months from date of shipment

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 Technical Sales Support team is available to provide all your sales and support needs. 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.

| Fee Schedule | |
|--|---|
| Field Repairs and Start-ups | Service Rate (1) |
| Normal 8 hour day | \$98.00/hour |
| Overtime (in excess of 8 hrs, each day) | \$148.00/hour |
| Sundays, National Holiday | \$195.00/hour |
| Travel time to job site and return | \$87.00/hour |
| Travel expenses (air fare, hotel, car and meals) | Chargeable to customer at cost |
| Minimum charge | 4 hours labor, plus travel time and expenses |
| End User Training Seminars | |
| Normal work day | \$750.00/day plus expenses (air fare, car rental, hotel and meals at cost) |
| Sundays, National Holiday | \$1495.00/day plus expenses (air fare, car rental, hotel and meals at cost) |

- iii. Field repairs of pumps controllers and accessories
- iv. Diagnosing and recommending solutions to systems problems.

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

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 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.
- 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 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.
- 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, 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.
- 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 up on 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 up on 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 twenty four (24) months from ship date or one (1) year from date of installation, whichever comes first, 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.
- 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 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.



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.



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.



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 sided 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.



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.