

PULSAFEEDER®

Systems & Accessories



Product

Effective 01/01/19

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Discount structure is noted on the bottom right of each table for that product.

Discount Structure Table	
1	Pump Accessory Discount
2	Controller Accessory Discount
3	PES Discount
4	Controller Discount
5	Pulstron Pump Discount
6	Chem-Tech Pump Discount

IMPORTANT INFORMATION WHEN PLACING AN ORDER

1. Fax, mail or telephone orders directly to the Customer Service Department:
 Pulsafeeder Incorporated
 27101 Airport Road, Punta Gorda, Florida, USA 33982-2462
 E-Mail: ppgpulsaspo.cs@idexcorp.com
 Telephone: 800-333-6677 or 941-575-3800
 Fax: 800-456-4085 or 941-575-4085
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 \$50.00 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) may be subject to a \$50 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 **12:00 PM EST**. Same day and next working day shipping is generally available for larger orders, 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. Orders can also be placed using PULSAshop, a secure webshop. Place orders where and when you want. Please register or log in at <https://pulsashop.pulsatron.com/pulsafeeder/login>.
7. Other Important Information:
 - 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 FCA, Shippers Dock, Punta Gorda, FL.
 - Custom product sales are final.
 - Charges for export documentation may apply. Fees vary by requirements.
 - Expedite fees may apply. **Orders requiring expedited shipping (sooner than the standard lead times) may be subject to an expedite charge**
 - **Minimum factory order of \$30.**
 - Fees for changes to or cancellation of orders may apply
 - Possession of price schedule does not guarantee right to purchase direct from factory.
 - Pulsafeeder has the right to ship any order when it is complete or partially complete unless the order is marked do not ship before the request date.

Systems

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Polymer Makedown Systems

for Electronic Metering Pumps

Turn-Key Packages for Water Clarification Applications

The Pulsafeeder PULSAblend Polymer Makedown Systems feature a Proprietary Static Blending System which provides excellent dilution without harming the polymer chains. These rugged fabricated assemblies offer turn-key simplicity and industrial-grade durability.

The UV-stabilized, high-grade HDPE frame is lightweight, corrosion resistant and offers structural rigidity.

Each system is factory assembled and hydrostatically tested prior to shipment.



Polymer Makedown Injection Guide

Water Flow Rate (GPM)	Neat Polymer Injection Pump Flow Rate (GPH) to Reach Percent Makedown																			
	0.2%	0.4%	0.6%	0.8%	1.0%	1.2%	1.4%	1.6%	1.8%	2.0%	2.2%	2.4%	2.6%	2.8%	3.0%	3.2%	3.4%	3.6%	3.8%	4.0%
0.2	0.02	0.05	0.07	0.10	0.12	0.14	0.17	0.19	0.22	0.24	0.26	0.29	0.31	0.34	0.36	0.38	0.41	0.43	0.46	0.48
0.4	0.05	0.10	0.14	0.19	0.24	0.29	0.34	0.38	0.43	0.48	0.53	0.58	0.62	0.67	0.72	0.77	0.82	0.86	0.91	0.96
0.6	0.07	0.14	0.22	0.29	0.36	0.43	0.50	0.58	0.65	0.72	0.79	0.86	0.94	1.01	1.08	1.15	1.22	1.30	1.37	1.44
0.8	0.10	0.19	0.29	0.38	0.48	0.58	0.67	0.77	0.86	0.96	1.06	1.15	1.25	1.34	1.44	1.54	1.63	1.73	1.82	1.92
1.0	0.12	0.24	0.36	0.48	0.60	0.72	0.84	0.96	1.08	1.20	1.32	1.44	1.56	1.68	1.80	1.92	2.04	2.16	2.28	2.40
1.2	0.14	0.29	0.43	0.58	0.72	0.86	1.01	1.15	1.30	1.44	1.58	1.73	1.87	2.02	2.16	2.30	2.45	2.59	2.74	2.88
1.4	0.17	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	1.85	2.02	2.18	2.35	2.52	2.69	2.86	3.02	3.19	3.36
1.6	0.19	0.38	0.58	0.77	0.96	1.15	1.34	1.54	1.73	1.92	2.11	2.30	2.50	2.69	2.88	3.07	3.26	3.46	3.65	3.84
1.8	0.22	0.43	0.65	0.86	1.08	1.30	1.51	1.73	1.94	2.16	2.38	2.59	2.81	3.02	3.24	3.46	3.67	3.89	4.10	4.32
2.0	0.24	0.48	0.72	0.96	1.20	1.44	1.68	1.92	2.16	2.40	2.64	2.88	3.12	3.36	3.60	3.84	4.08	4.32	4.56	4.80
2.2	0.26	0.53	0.79	1.06	1.32	1.58	1.85	2.11	2.38	2.64	2.90	3.17	3.43	3.70	3.96	4.22	4.49	4.75	5.02	5.28
2.4	0.29	0.58	0.86	1.15	1.44	1.73	2.02	2.30	2.59	2.88	3.17	3.46	3.74	4.03	4.32	4.61	4.90	5.18	5.47	5.76
2.6	0.31	0.62	0.94	1.25	1.56	1.87	2.18	2.50	2.81	3.12	3.43	3.74	4.06	4.37	4.68	4.99	5.30	5.62	5.93	6.24
2.8	0.34	0.67	1.01	1.34	1.68	2.02	2.35	2.69	3.02	3.36	3.70	4.03	4.37	4.70	5.04	5.38	5.71	6.05	6.38	6.72
3.0	0.36	0.72	1.08	1.44	1.80	2.16	2.52	2.88	3.24	3.60	3.96	4.32	4.68	5.04	5.40	5.76	6.12	6.48	6.84	7.20
3.2	0.38	0.77	1.15	1.54	1.92	2.30	2.69	3.07	3.46	3.84	4.22	4.61	4.99	5.38	5.76	6.14	6.53	6.91	7.30	7.68
3.4	0.41	0.82	1.22	1.63	2.04	2.45	2.86	3.26	3.67	4.08	4.49	4.90	5.30	5.71	6.12	6.53	6.94	7.34	7.75	8.16
3.6	0.43	0.86	1.30	1.73	2.16	2.59	3.02	3.46	3.89	4.32	4.75	5.18	5.62	6.05	6.48	6.91	7.34	7.78	8.21	8.64
3.8	0.46	0.91	1.37	1.82	2.28	2.74	3.19	3.65	4.10	4.56	5.02	5.47	5.93	6.38	6.84	7.30	7.75	8.21	8.66	9.12
4.0	0.48	0.96	1.44	1.92	2.40	2.88	3.36	3.84	4.32	4.80	5.28	5.76	6.24	6.72	7.20	7.68	8.16	8.64	9.12	9.60
4.2	0.50	1.01	1.51	2.02	2.52	3.02	3.53	4.03	4.54	5.04	5.54	6.05	6.55	7.06	7.56	8.06	8.57	9.07	9.58	10.08
4.4	0.53	1.06	1.58	2.11	2.64	3.17	3.70	4.22	4.75	5.28	5.81	6.34	6.86	7.39	7.92	8.45	8.98	9.50	10.03	10.56
4.6	0.55	1.10	1.66	2.21	2.76	3.31	3.86	4.42	4.97	5.52	6.07	6.62	7.18	7.73	8.28	8.83	9.38	9.94	10.49	11.04
4.8	0.58	1.15	1.73	2.30	2.88	3.46	4.03	4.61	5.18	5.76	6.34	6.91	7.49	8.06	8.64	9.22	9.79	10.37	10.94	11.52
5.0	0.60	1.20	1.80	2.40	3.00	3.60	4.20	4.80	5.40	6.00	6.60	7.20	7.80	8.40	9.00	9.60	10.20	10.80	11.40	12.00
5.2	0.62	1.25	1.87	2.50	3.12	3.74	4.37	4.99	5.62	6.24	6.86	7.49	8.11	8.74	9.36	9.98	10.61	11.23	11.86	12.48
5.4	0.65	1.30	1.94	2.59	3.24	3.89	4.54	5.18	5.83	6.48	7.13	7.78	8.42	9.07	9.72	10.37	11.02	11.66	12.31	12.96
5.6	0.67	1.34	2.02	2.69	3.36	4.03	4.70	5.38	6.05	6.72	7.39	8.06	8.74	9.41	10.08	10.75	11.42	12.10	12.77	13.44
5.8	0.70	1.39	2.09	2.78	3.48	4.18	4.87	5.57	6.26	6.96	7.66	8.35	9.05	9.74	10.44	11.14	11.83	12.53	13.22	13.92
6.0	0.72	1.44	2.16	2.88	3.60	4.32	5.04	5.76	6.48	7.20	7.92	8.64	9.36	10.08	10.80	11.52	12.24	12.96	13.68	14.40
6.2	0.74	1.49	2.23	2.98	3.72	4.46	5.21	5.95	6.70	7.44	8.18	8.93	9.67	10.42	11.16	11.90	12.65	13.39	14.14	14.88
6.4	0.77	1.54	2.30	3.07	3.84	4.61	5.38	6.14	6.91	7.68	8.45	9.22	9.98	10.75	11.52	12.29	13.06	13.82	14.59	15.36
6.6	0.79	1.58	2.38	3.17	3.96	4.75	5.54	6.34	7.13	7.92	8.71	9.50	10.30	11.09	11.88	12.67	13.46	14.26	15.05	15.84
6.8	0.82	1.63	2.45	3.26	4.08	4.90	5.71	6.53	7.34	8.16	8.98	9.79	10.61	11.42	12.24	13.06	13.87	14.69	15.50	16.32
7.0	0.84	1.68	2.52	3.36	4.20	5.04	5.88	6.72	7.56	8.40	9.24	10.08	10.92	11.76	12.60	13.44	14.28	15.12	15.96	16.80
7.2	0.86	1.73	2.59	3.46	4.32	5.18	6.05	6.91	7.78	8.64	9.50	10.37	11.23	12.10	12.96	13.82	14.69	15.55	16.42	17.28
7.4	0.89	1.78	2.66	3.55	4.44	5.33	6.22	7.10	7.99	8.88	9.77	10.66	11.54	12.43	13.32	14.21	15.10	15.98	16.87	17.76
7.6	0.91	1.82	2.74	3.65	4.56	5.47	6.38	7.30	8.21	9.12	10.03	10.94	11.86	12.77	13.68	14.59	15.50	16.42	17.33	18.24
7.8	0.94	1.87	2.81	3.74	4.68	5.62	6.55	7.49	8.42	9.36	10.30	11.23	12.17	13.10	14.04	14.98	15.91	16.85	17.78	18.72
8.0	0.96	1.92	2.88	3.84	4.80	5.76	6.72	7.68	8.64	9.60	10.56	11.52	12.48	13.44	14.40	15.36	16.32	17.28	18.24	19.20
8.2	0.98	1.97	2.95	3.94	4.92	5.90	6.89	7.87	8.86	9.84	10.82	11.81	12.79	13.78	14.76	15.74	16.73	17.71	18.70	19.68
8.4	1.01	2.02	3.02	4.03	5.04	6.05	7.06	8.06	9.07	10.08	11.09	12.10	13.10	14.11	15.12	16.13	17.14	18.14	19.15	20.16
8.6	1.03	2.06	3.10	4.13	5.16	6.19	7.22	8.26	9.29	10.32	11.35	12.38	13.42	14.45	15.48	16.51	17.54	18.58	19.61	20.64
8.8	1.06	2.11	3.17	4.22	5.28	6.34	7.39	8.45	9.50	10.56	11.62	12.67	13.73	14.78	15.84	16.90	17.95	19.01	20.06	21.12
9.0	1.08	2.16	3.24	4.32	5.40	6.48	7.56	8.64	9.72	10.80	11.88	12.96	14.04	15.12	16.20	17.28	18.36	19.44	20.52	21.60
9.2	1.10	2.21	3.31	4.42	5.52	6.62	7.73	8.83	9.94	11.04	12.14	13.25	14.35	15.46	16.56	17.66	18.77	19.87	20.98	22.08
9.4	1.13	2.26	3.38	4.51	5.64	6.77	7.90	9.02	10.15	11.28	12.41	13.54	14.66	15.79	16.92	18.05	19.18	20.30	21.43	22.56
9.6	1.15	2.30	3.46	4.61	5.76	6.91	8.06	9.22	10.37	11.52	12.67	13.82	14.98	16.13	17.28	18.43	19.58	20.74	21.89	23.04
9.8	1.176	2.352	3.528	4.704	5.88	7.056	8.232	9.408	10.584	11.76	12.936	14.112	15.288	16.464	17.64	18.816	19.992	21.168	22.344	23.52
10.0	1.2	2.4	3.6	4.8	6	7.2	8.4	9.6	10.8	12	13.2	14.4	15.6	16.8	18	19.2	20.4	21.6	22.8	24

Guide	LVB3	LVF4	LVG4	LVG5	LVH7	Not Covered by HV Pumps
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Automatic PLC Control

Part Number	Neat Polymer Injection Pump	Incoming Water Flow	Pressure Regulator	Tank ¹	Tank Mixer	Multi Point Level Control ²	Description
PESMAAVSD8FC-XXX	0.50 GPH - LVB3 - 150 PSI Max	0 - 5 GPM	Yes	85 Gallon	Propeller Mixer ⁴	Yes	Standard
PESMAEVS9WC-XXX	10.0 GPH - LVH7 - 80 PSI Max	5 - 10 GPM	No	110 Gallon	Paddlewheel Mixer ³	Yes	Standard
PESMANVSD3FC-XXX	Non-standard: See order for details	0 - 5 GPM	Yes	30 Gallon	Propeller Mixer ⁴	Yes	Standard
PESMANVSE8FC-XXX	Non-standard: See order for details	5 - 10 GPM	Yes	85 Gallon	Propeller Mixer ⁴	Yes	Standard

1. Conical Bottom with Stand

2. Multi-Point Level Control Sized to Tank Option

3. VFD Motor (45-135 RPM)

4. 90 RPM Fixed Speed Motor

Manual Control

Part Number	Neat Polymer Injection Pump	Incoming Water Flow	Pressure Regulator	Tank	Tank Mixer	Options
PESMCAVSADNN-XXX	0.50 GPH - LVB3 - 150 PSI Max	0 - 5 GPM	No	Direct Feed	No	Standard
PESMCAVSDDNN-XXX	0.50 GPH - LVB3 - 150 PSI Max	0 - 5 GPM	Yes	Direct Feed	No	Standard
PESMCBVSADNN-XXX	1.00 GPH - LVF4 - 150 PSI Max	0 - 5 GPM	No	Direct Feed	No	Standard
PESMCCVSADNN-XXX	2.00 GPH - LVG4 - 110 PSI Max	0 - 5 GPM	No	Direct Feed	No	Standard
PESMCNVSDNN-XXX	Non-standard: See order for details	0 - 5 GPM	Yes	Direct Feed	No	Standard
PESMCNVSEDNN-XXX	Non-standard: See order for details	5 - 10 GPM	Yes	Direct Feed	No	Standard

Dry Contact Control

Part Number	Neat Polymer Injection Pump	Incoming Water Flow	Pressure Regulator	Tank ¹	Tank Mixer	Options
PESMEAVSADNN-XXX	0.50 GPH - LVB3 - 150 PSI Max	0 - 5 GPM	No	Direct Feed	No	Standard
PESMEAVSCDNN-FSW	0.50 GPH - LVB3 - 150 PSI Max	10+ GPM	No	Direct Feed	No	Incoming Water Low Flow Cutoff Switch
PESMECVSADNN-FSW	2.00 GPH - LVG4 - 110 PSI Max	0 - 5 GPM	No	Direct Feed	No	Incoming Water Low Flow Cutoff Switch
PESMECVSADNN-XXX	2.00 GPH - LVG4 - 110 PSI Max	0 - 5 GPM	No	Direct Feed	No	Standard
PESMECVSD1NN-FSW	2.00 GPH - LVG4 - 110 PSI Max	0 - 5 GPM	Yes	15 Gallon	No	Incoming Water Low Flow Cutoff Switch
PESMEDVSADNN-XXX	4.00 GPH - LVG5 - 110 PSI Max	0 - 5 GPM	No	Direct Feed	No	Standard
PESMEDVSDDNN-FSW	4.00 GPH - LVG5 - 110 PSI Max	0 - 5 GPM	Yes	Direct Feed	No	Incoming Water Low Flow Cutoff Switch
PESMEEVSBDNN-XXX	10.00 GPH - LVH7 - 80 PSI Max	5 - 10 GPM	No	Direct Feed	No	Standard
PESMENVSDDNN-XXX	Non-standard: See order for details	0 - 5 GPM	Yes	Direct Feed	No	Standard
PESMENVSEDNN-XXX	Non-standard: See order for details	5 - 10 GPM	Yes	Direct Feed	No	Standard

Elastomer: Viton O-rings and Seats

For 230V Contact Factory

Pre-Engineered Systems

Systems Pre-Engineered Solutions

for Electronic Metering Pumps

Turn-Key Packages for Metering Applications

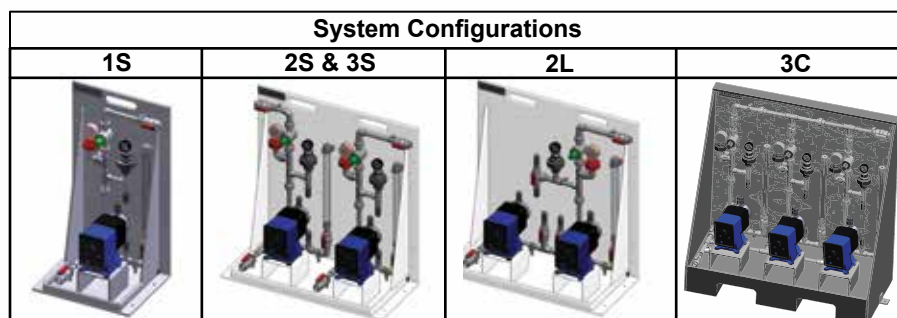
Pulsafeeder's Pre-Engineered Systems are designed to provide complete chemical feed solutions for all electronic metering applications. From stand alone simplex pH control applications to full-featured, redundant sodium hypochlorite disinfection metering, these rugged fabricated assemblies offer turn-key simplicity and industrial-grade durability.

The UV-stabilized, high-grade HDPE frame offers maximum chemical compatibility and structural rigidity.

Each system is factory assembled and hydrostatically tested prior to shipment. Pre-Engineered Systems for PulsaTron metering pumps include a compact, rugged High Density Polyethylene frame providing structure for a single or dual metering pumps and inlet and discharge piping assemblies with full 1" drip rim perimeter. The piping assemblies utilize Schedule 80 piping, isolation ball valves and unions throughout. The inlet piping assembly includes a clear Y-strainer and calibration column for easy maintenance and measurement. The discharge piping assemblies incorporate pulsation dampeners, pressure gauge with isolator and discrete back pressure and pressure-relief valves.



System Configurations



System Part Number	No. of Pumps	Maximum Pressure	Nominal Thickness	Containment Lip	Nominal Pipe Size	Inlet Valve	Y-Strainer	Calibration Column *	Pulsation Dampener	Pressure Gauge	Back Pressure Valve	Pressure Relief Valve	Interconnected Piping	Discharge Valve	3 Way Pump Select Valve	Height	Width	Depth	Approx. Wt (no Pumps & Plastic Pipe)	Approx. Wt (no Pumps & SS Pipe)
PES1S	1	150 psi	1/2"	✓	1/2"	1	1	1	1	1	1	1		1		36"	20"	16"	32 lbs	38 lbs
PES2S	2	150 psi	1/2"	✓	1/2"	2	2	2	2	2	2	2		2		36"	36"	16"	62 lbs	70 lbs
PES3S	3	150 psi	1/2"	✓	1/2"	3	3	3	3	3	3	3		3		42"	46"	21.5"	100 lbs.	112 lbs
PES2C	2	150 psi	1/2"	✓	1/2"	1	1	2	2	2	2	2	✓	1		36"	36"	16"	62 lbs	70 lbs
PES3C	3	150 psi	1/2"	✓	1/2"	1	1	3	3	3	3	3	✓	1		42"	46"	21.5"	100 lbs.	112 lbs.
PES2L	2	150 psi	1/2"	✓	1/2"	1	1	1	1	1	1	1	✓	2		36"	36"	16"	65 lbs	72 lbs

* Note: Calibration column size is 200mL on standard systems and 1000mL on HF systems.

Single Pump, Standard System

Model Number	Nominal Elastomer for Components	Auto Fill Calibration Column	Description
PES1S-VCF	Viton	PVC	Standard
PES1S-VHFCF	Viton	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES1S-ECF	EPDM	PVC	Standard
PES1S-EHFCF	EPDM	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES1S-VKCF	Viton	Kynar	Standard
PES1S-VHFKCF	Viton	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES1S-EKCF	EPDM	Kynar	Standard
PES1S-EHFKCF	EPDM	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps

Dual Pump, Redundant Piping, Not Connected			
Model Number	Nominal Elastomer for Components	Auto Fill Calibration Column	Description
PES2S-VCF	Viton	PVC	Standard
PES2S-VHFCF	Viton	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2S-ECF	EPDM	PVC	Standard
PES2S-EHFCF	EPDM	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2S-VKCF	Viton	Kynar	Standard
PES2S-VHFKCF	Viton	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2S-EKCF	EPDM	Kynar	Standard
PES2S-EHFKCF	EPDM	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
Dual Pump, Redundant Piping, Connected, Common S & D			
Model Number	Nominal Elastomer for Components	Auto Fill Calibration Column	Description
PES2C-VCF	Viton	PVC	Standard
PES2C-VHFCF	Viton	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2C-ECF	EPDM	PVC	Standard
PES2C-EHFCF	EPDM	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2C-VKCF	Viton	Kynar	Standard
PES2C-VHFKCF	Viton	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2C-EKCF	EPDM	Kynar	Standard
PES2C-EHFKCF	EPDM	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
Dual Pump, Lead/Backup, Single Pipe System			
Model Number	Nominal Elastomer for Components	Auto Fill Calibration Column	Description
PES2L-VHFCF	Viton	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2L-ECF	EPDM	PVC	Standard
PES2L-EHFCF	EPDM	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2L-VKCF	Viton	Kynar	Standard
PES2L-VHFKCF	Viton	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES2L-EKCF	EPDM	Kynar	Standard
PES2L-EHFKCF	EPDM	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps

Three Pump, Redundant Piping, Not Connected			
Model Number	Nominal Elastomer for Components	Auto Fill Calibration Column	Description
PES3S-VHFCF	Viton	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES3S-ECF	EPDM	PVC	Standard
PES3S-EHFCF	EPDM	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES3S-VKCF	Viton	Kynar	Standard
PES3S-VHFKCF	Viton	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES3S-EKCF	EPDM	PVC	Standard
PES3S-EHFKCF	EPDM	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
Three Pump, Redundant Piping, Connected, Common S & D			
Model Number	Nominal Elastomer for Components	Auto Fill Calibration Column	Description
PES3C-VCF	Viton	PVC	Standard
PES3C-VHFCF	Viton	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps
PES3C-ECF	EPDM	PVC	Standard
PES3C-EHFCF	EPDM	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES3C-VKCF	Viton	Kynar	Standard
PES3C-VHFKCF	Viton	Kynar	High Flow, Required for H7, J7, K7 & H8 Pumps
PES3C-EKCF	EPDM	PVC	Standard
PES3C-EHFKCF	EPDM	PVC	High Flow, Required for H7, J7, K7 & H8 Pumps

Pre-Engineered Systems

Pre-Engineered Systems for BLACKLINE Pumps

Pulsafeeder's Pre-Engineered Systems are designed to provide complete chemical feed solutions for a wide range of metering applications. From stand alone pH control applications to full-featured, sodium hypochlorite disinfection metering. These rugged fabricated assemblies offer installation simplicity and industrial-grade durability.

The UV-stabilized, high-grade HDPE frame offers maximum chemical compatibility and structural rigidity.

Each system is factory assembled and hydrostatically tested prior to shipment.

Pre-Engineered Systems for BLACKLINE metering pumps include single or dual metering pump configurations with inlet and discharge piping assemblies available in both 1/2" and 1" sizes. The piping assemblies utilize Schedule 80 PVC or UHP PVDF piping. Every system includes ball valves and unions throughout, suction side Y-strainers and calibration columns. The discharge piping assemblies incorporate pulsation dampeners, pressure gauge with isolators, and discrete back pressure and pressure-relief valves






Key Features

Pre-Configured System: Rigid frame with pre-plumbed piping assemblies; schedule 80 PVC or UHP PVDF piping.

Easy to Install and Operate: All of the most common metering pump accessories are included.

Mounting flexibility: The rigid 1/2" frame incorporates mounting holes and brackets for anchoring to the floor.

Quick Delivery: Systems available within 2 weeks of order!

System Configurations		
1S	2S	2L
		

Applications

Municipal Water: Disinfection systems with Sodium Hypochlorite, pH Adjustment, Fluoride addition.

Municipal Wastewater: Fume Scrubbers, General Odor Control, pH adjustment, Residual Disinfectant Management

Food & Beverage: Clean-In-Place, Clean-Off-Line, Sterilizer Water Treatment

Institutional: Cooling Tower Water Treatment, Boiler Water Treatment, Closed Loop Systems

System Part Number	Nominal Pipe Size	Pump Mounts	Maximum Pressure	Containment Lip	Inlet Valve	Y-Strainer	Calibration Column *	Pulsation Dampener	Pressure Gauge	Back Pressure Valve	Pressure Relief Valve	Interconnected Piping	Discharge Valve	3 Way Pump Select Valve	Height inch	Width inch	Depth inch	Approx. Wt (no Pumps)
PES1S	1/2"	1	150 psi	✓	1	1	1	1	1	1	1	1	1		47	21	24	79
PES2S	1/2"	2	150 psi	✓	2	2	2	2	2	2	2		2		47	42	24	128
PES2L	1/2"	2	150 psi	✓	1	1	1	1	1	1	1	✓	2	✓	47	42	24	111
PES1S	1"	1	150 psi	✓	1	1	1	1	1	1	1		1		63	25	29	127
PES2S	1"	2	150 psi	✓	2	2	2	2	2	2	2		2		63	49	29	210
PES2L	1"	2	150 psi	✓	1	1	1	1	1	1	1	✓	2	✓	63	49	29	179

* Note: Calibration column size is 1000mL on standard systems and 4000mL on HF systems.

Single Pump, Standard System For BLACKLINE Pump			
Model Number	Nominal Elastomer for Components	Piping	Description
PES1S-VBLA	Viton	PVC ½"	Flow up to 35 gph
PES1S-VKBLA	Viton	PVDF ½"	Flow up to 35 gph
PES1S-EBLA	EPDM	PVC ½"	Flow up to 35 gph
PES1S-VBLHF	Viton	PVC 1"	High Flow, up to 132 gph
PES1S-VKBLHF	Viton	PVDF 1"	High Flow, up to 132 gph
PES1S-EBLHF	EPDM	PVC 1"	High Flow up to 132 gph
Dual Pump, Redundant Piping, Not Connected For BLACKLINE Pumps			
Model Number	Nominal Elastomer for Components	Description	Description
PES2S-VBLA	Viton	PVC ½"	Flow up to 35 gph
PES2S-VKBLA	Viton	PVDF ½"	Flow up to 35 gph
PES2S-EBLA	EPDM	PVC ½"	Flow up to 35 gph
PES2S-VBLHF	Viton	PVC 1"	High Flow, up to 132 gph
PES2S-VKBLHF	Viton	PVDF 1"	High Flow up to 132 gph
PES2S-EBLHF	EPDM	PVC 1"	High Flow up to 132 gph
Dual Pump, Lead/Backup, Single Pipe System For BLACKLINE Pumps			
Model Number	Nominal Elastomer for Components	Description	Description
PES2L-VBLA	Viton	PVC ½"	Flow up to 35 gph
PES2L-VKBLA	Viton	PVDF ½"	Flow up to 35 gph
PES2L-EBLA	EPDM	PVC ½"	Flow up to 35 gph
PES2L-VBLHF	Viton	PVC 1"	High Flow, up to 132 gph
PES2L-VKBLHF	Viton	PVDF 1"	High Flow, up to 132 gph
PES2L-EBLHF	EPDM	PVC 1"	High Flow up to 132 gph

Digital Glycol Feeders

Pulsafeeder's Digital Glycol Feeder provides a consistent operating pressure in closed loop systems. This allows a controlled percentage of glycol solution to be fed from the 55 gallon tank. The Digital Glycol Feeder is available in two models; the DGF1 for single loop and the DGF2 for dual loop systems. The control unit utilizes an 8-bit microcontroller for precise feed system control. The NEMA4X enclosure can be wired conduit or prewire for easy startup. The pre-plumbed assembly includes a pressure gauge, pressure switch, and pressure relief valve to prevent excessive pressure build up. A low liquid level switch with optional audible alarm prevents the gear pump from operating when the solution is low.

Each Digital Glycol Feeder is fully piped and wired with the following components:

Suction Assembly includes:

- Schedule 80 PVC tubing and fittings
- PVC ball valve
- Clear poly bowl strainer

Discharge Assembly Includes:

- Schedule 80 PVC pipe and fittings
- PVC ball valve
- PVC check valve
- Pressure gauge
- Brass relief valve with return to tank tubing



DIGITAL GLYCOL FEEDER Selection Guide		DGF							
CLOSED LOOPS Position 4	1 = Single Loop 2 = Dual Loop								
CONDUIT / PREWIRE Position 5	A = Conduit B = Prewire								
AUDIBLE ALARM Position 6	A = without Audible Alarm B = with Audible Alarm								
ALARM OUTPUT OPTION Position 7	X = None A = Dry Contact, Single B = Dry Contact, Dual C = AC Output, Single D = AC Output, Dual E = Dry Contact, Single & AC Output, Single								
PRESSURE SWITCH OPTION Position 8	A = Standard pressure switch, 30 to 50 psi (adjustable to 80 psi) B = Low pressure switch, 5 to 10 psi (adjustable to 35 psi) C = One standard and one low pressure switch (DGF2 only)								
PUMP AND VOLTAGE RATING Position 9	A = 115VAC no pump C = 115VAC 60Hz 1.50GPM @ 100psi E = 115VAC 60Hz 3.75GPM @ 100 psi								
AGENCY APPROVAL Position 10	X = None								
PANEL ASSEMBLY Position 11	B = Assembled (must ship via freight)								

Pump Accessories

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Pulsation Dampeners

Pulsafeeder's Pulsation Dampeners improve pump system efficiency by removing pulsating flows from positive displacement pumps, insuring a smooth and continuous fluid flow and metering accuracy, eliminating pipe vibration and protecting gaskets and seals. The result is a longer lasting safer system.



150 PSI Pulsation Dampeners - Chargeable				
Volume	Body	Bladder	Connection	Part Number
10 cubic inches	POLY	EPDM	3/8" FNPT	NA601038-FPPE
		CSPE	3/8" FNPT	NA601038-FPPC
		TFE	3/8" FNPT	NA601038-FPPT
		Viton	3/8" FNPT	NA601038-FPPV
		CSPE	1/2" FNPT	NA601050-FPPC
		TFE	1/2" FNPT	NA601050-FPPT
	PVC	Viton	1/2" FNPT	NA601050-FPPV
		CSPE	1/2" FNPT	NA601050-PVCC
		TFE	1/2" FNPT	NA601050-PVCT
	PVDF	Viton	1/2" FNPT	NA601050-PVCV
		EPDM	3/8" FNPT	NA601038-PVDE
		CSPE	3/8" FNPT	NA601038-PVDC
85 cubic inches	POLY	TFE	3/8" FNPT	NA601038-PVDT
		Viton	3/8" FNPT	NA601038-PVDV
		EPDM	3/8" FNPT	NA601038-316E
		CSPE	3/8" FNPT	NA601038-316C
		TFE	3/8" FNPT	NA601038-316T
		Viton	3/8" FNPT	NA601038-316V
	PVDF	EPDM	3/4" FNPT	NA608575-FPPE
		CSPE	3/4" FNPT	NA608575-FPPC
		TFE	3/4" FNPT	NA608575-FPPT
		Viton	3/4" FNPT	NA608575-FPPV
		EPDM	3/4" FNPT	NA608575-PVDE
		CSPE	3/4" FNPT	NA608575-PVDC
36 cubic inches	POLY	TFE	3/4" FNPT	NA608575-PVDT
		Viton	3/4" FNPT	NA608575-PVDV
		EPDM	3/4" FNPT	NA608575-316E
		CSPE	3/4" FNPT	NA608575-316C
		TFE	3/4" FNPT	NA608575-316T
		Viton	3/4" FNPT	NA608575-316V
175 cubic inches	POLY	EPDM	2" FNPT	NA617520-FPPE
		CSPE	2" FNPT	NA617520-FPPC
		TFE	2" FNPT	NA617520-FPPT
		Viton	2" FNPT	NA617520-FPPV
		EPDM	2" FNPT	NA617520-PVDE
		CSPE	2" FNPT	NA617520-PVDC
370 cubic inches	POLY	TFE	2" FNPT	NA617520-PVDT
		Viton	2" FNPT	NA617520-PVDV
		EPDM	2" FNPT	NA617520-316E
		CSPE	2" FNPT	NA617520-316C
		TFE	2" FNPT	NA617520-316T
		Viton	2" FNPT	NA617520-316V
85 cubic inches	POLY	EPDM	3/4" FNPT	NA603675-FPPE
		CSPE	3/4" FNPT	NA603675-FPPC
		TFE	3/4" FNPT	NA603675-FPPT
		Viton	3/4" FNPT	NA603675-FPPV
		EPDM	3/4" FNPT	NA603675-PVDE
		CSPE	3/4" FNPT	NA603675-PVDC
370 cubic inches	POLY	TFE	3/4" FNPT	NA603675-PVDT
		Viton	3/4" FNPT	NA603675-PVDV
		EPDM	3/4" FNPT	NA603675-316E
		CSPE	3/4" FNPT	NA603675-316C
		TFE	3/4" FNPT	NA603675-316T
		Viton	3/4" FNPT	NA603675-316V
370 cubic inches	POLY	EPDM	2" FNPT	NA637020-FPPE
		CSPE	2" FNPT	NA637020-FPPC
		TFE	2" FNPT	NA637020-FPPT
		Viton	2" FNPT	NA637020-FPPV
		EPDM	2" FNPT	NA637020-PVDE
		CSPE	2" FNPT	NA637020-PVDC
370 cubic inches	POLY	TFE	2" FNPT	NA637020-PVDT
		Viton	2" FNPT	NA637020-PVDV
		EPDM	2" FNPT	NA637020-316E
		CSPE	2" FNPT	NA637020-316C
		TFE	2" FNPT	NA637020-316T
		Viton	2" FNPT	NA637020-316V
370 cubic inches	POLY	EPDM	2" FNPT	NA637020-316V
		CSPE	2" FNPT	NA637020-316V
		TFE	2" FNPT	NA637020-316V
		Viton	2" FNPT	NA637020-316V
		EPDM	2" FNPT	NA637020-316V
		CSPE	2" FNPT	NA637020-316V

150 PSI Pulsation Dampeners - Chargeable				
Volume	Body	Bladder	Connection	Part Number
10 cubic inches	POLY	EPDM	3/8" FNPT	NA601038-FPPE
		CSPE	3/8" FNPT	NA601038-FPPC
		TFE	3/8" FNPT	NA601038-FPPT
		Viton	3/8" FNPT	NA601038-FPPV
		CSPE	1/2" FNPT	NA601050-FPPC
		TFE	1/2" FNPT	NA601050-FPPT
85 cubic inches	POLY	Viton	1/2" FNPT	NA601050-FPPV
		CSPE	1/2" FNPT	NA601050-PVCC
		TFE	1/2" FNPT	NA601050-PVCT
		Viton	1/2" FNPT	NA601050-PVCV
		EPDM	3/8" FNPT	NA601038-PVDE
		CSPE	3/8" FNPT	NA601038-PVDC
36 cubic inches	POLY	TFE	3/8" FNPT	NA601038-PVDT
		Viton	3/8" FNPT	NA601038-PVDV
		EPDM	3/8" FNPT	NA601038-316E
		CSPE	3/8" FNPT	NA601038-316C
		TFE	3/8" FNPT	NA601038-316T
		Viton	3/8" FNPT	NA601038-316V
370 cubic inches	POLY	EPDM	3/4" FNPT	NA608575-FPPE
		CSPE	3/4" FNPT	NA608575-FPPC
		TFE	3/4" FNPT	NA608575-FPPT
		Viton	3/4" FNPT	NA608575-FPPV
		EPDM	3/4" FNPT	NA608575-PVDE
		CSPE	3/4" FNPT	NA608575-PVDC
370 cubic inches	POLY	TFE	3/4" FNPT	NA608575-PVDT
		Viton	3/4" FNPT	NA608575-PVDV
		EPDM	3/4" FNPT	NA608575-316E
		CSPE	3/4" FNPT	NA608575-316C
		TFE	3/4" FNPT	NA608575-316T
		Viton	3/4" FNPT	NA608575-316V
370 cubic inches	POLY	EPDM	2" FNPT	NA617520-FPPE
		CSPE	2" FNPT	NA617520-FPPC
		TFE	2" FNPT	NA617520-FPPT
		Viton	2" FNPT	NA617520-FPPV
		EPDM	2" FNPT	NA617520-PVDE
		CSPE	2" FNPT	NA617520-PVDC
370 cubic inches	POLY	TFE	2" FNPT	NA617520-PVDT
		Viton	2" FNPT	NA617520-PVDV
		EPDM	2" FNPT	NA617520-316E
		CSPE	2" FNPT	NA617520-316C
		TFE	2" FNPT	NA617520-316T
		Viton	2" FNPT	NA617520-316V

Specifications: 150 PSI Maximum Pressure

Water Meters - Contacting Head Water Meters

Multi-Jet Meters:

3/4 in. to 2 in., are designed for use in conjunction with a pulse timer to proportionally control pumps, valves etc. Typical applications include water treatment in cooling tower and boiler systems, water chlorination, car washes and other industrial processes which require proportional control. The Multi-Jet chamber of the water meter assures accuracy over a wide range of flows with low head loss. To prevent wear and maintain accuracy the load is equally distributed on the impeller.

Turbine Meters:

3 inch to 6 inch operate continuously with exceptional accuracy. Each meter incorporates a highly efficient horizontal turbine that essentially floats on the water. The turbine is attached to a Tungsten steel shaft riding in Jewel bearings. The rotation of the turbine is transmitted through a magnetic drive to a sealed odometer register.



Lead Free Brass Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR100-G	.25 - 20 GPM	.75" NPT	Totalizer
MTR101-G	.25 - 20 GPM	.75" NPT	0.1 GPC
MTR102-G	.25 - 20 GPM	.75" NPT	0.25 GPC
MTR103-G	.25 - 20 GPM	.75" NPT	0.5 GPC
MTR104-G	.25 - 20 GPM	.75" NPT	1 GPC
MTR107-G	.25 - 20 GPM	.75" NPT	10 GPC
MTR300-G	.75 - 50 GPM	1" NPT	Totalizer
MTR301-G	.75 - 50 GPM	1" NPT	0.1 GPC
MTR302-G	.75 - 50 GPM	1" NPT	0.25 GPC
MTR304-G	.75 - 50 GPM	1" NPT	1 GPC
MTR307-G	.75 - 50 GPM	1" NPT	10 GPC
MTR310-G	.75 - 50 GPM	1" NPT	100 GPC
MTR400-G	1.5 - 100 GPM	1.5" NPT	Totalizer
MTR402-G	1.5 - 100 GPM	1.5" NPT	0.25 GPC
MTR404-G	1.5 - 100 GPM	1.5" NPT	1 GPC
MTR407-G	1.5 - 100 GPM	1.5" NPT	10 GPC
MTR410-G	1.5 - 100 GPM	1.5" NPT	100 GPC
MTR504-G	2 - 160 GPM	2" NPT	1 GPC
MTR507-G	2 - 160 GPM	2" NPT	10 GPC
MTR510-G	2 - 160 GPM	2" NPT	100 GPC

3/4" - 2" Meters have male Epoxy Coated NPT Bronze Bodies with unions,

Rated for 150 PSI max, 105 F max.

NSF/ANSI 61 for these models only

Brass Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR200	.5 - 20 GPM	.75" NPT	Totalizer
MTR201	.5 - 20 GPM	.75" NPT	0.1 GPC
MTR202	.5 - 20 GPM	.75" NPT	0.25 GPC
MTR203	.5 - 20 GPM	.75" NPT	0.50 GPC
MTR204	.5 - 20 GPM	.75" NPT	1 GPC
MTR207	.5 - 20 GPM	.75" NPT	10 GPC
MTR210	.5 - 20 GPM	.75" NPT	100 GPC
MTR300	.75 - 50 GPM	1" NPT	Totalizer
MTR302	.75 - 50 GPM	1" NPT	0.25 GPC
MTR304	.75 - 50 GPM	1" NPT	1 GPC
MTR307	.75 - 50 GPM	1" NPT	10 GPC
MTR310	.75 - 50 GPM	1" NPT	100 GPC
MTR400	1.5 - 100 GPM	1.5" NPT	Totalizer
MTR404	1.5 - 100 GPM	1.5" NPT	1 GPC
MTR407	1.5 - 100 GPM	1.5" NPT	10 GPC
MTR410	1.5 - 100 GPM	1.5" NPT	100 GPC
MTR504	2 - 160 GPM	2" NPT	1 GPC
MTR507	2 - 160 GPM	2" NPT	10 GPC
MTR510	2 - 160 GPM	2" NPT	100 GPC

3/4" - 2" Meters have male Epoxy Coated NPT Bronze

Bodies with unions, rated for 150 PSI max, 105 F max.

Plastic Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR100-P	.25 - 20 GPM	.75" NPT	Totalizer
MTR101-P	.25 - 20 GPM	.75" NPT	0.1 GPC
MTR102-P	.25 - 20 GPM	.75" NPT	0.25 GPC
MTR104-P	.25 - 20 GPM	.75" NPT	1 GPC
MTR104-P-L	.25 - 20 GPM	.75" NPT	1 LPC
MTR107-P	.25 - 20 GPM	.75" NPT	10 GPC
MTR300-P	.75 - 50 GPM	1" NPT	Totalizer
MTR301-P	.75 - 50 GPM	1" NPT	0.1 GPC
MTR302-P	.75 - 50 GPM	1" NPT	0.25 GPC
MTR304-P	.75 - 50 GPM	1" NPT	1 GPC
MTR304-P-L	.75 - 50 GPM	1" NPT	1 LPC
MTR307-P	.75 - 50 GPM	1" NPT	10 GPC
MTR400-P	1.5 - 100 GPM	1.5" NPT	Totalizer
MTR402-P	1.5 - 100 GPM	1.5" NPT	0.25 GPC
MTR404-P	1.5 - 100 GPM	1.5" NPT	1 GPC
MTR407-P	1.5 - 100 GPM	1.5" NPT	10 GPC

Rated for 100 PSI max, 120 F max.

NSF/ANSI 61 for these models only

Turbine Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR610	440 GPM	3" Flanged	100 GPC
MTR613	440 GPM	3" Flanged	1,000 GPC
MTR710	660 GPM	4" Flanged	100 GPC
MTR810	1650 GPM	6" Flanged	100 GPC
MTR813	1650 GPM	6" Flanged	1,000 GPC

3", 4" & 6" Meters have Epoxy Coated Ductile Iron Flanged

Bodies, rated for 200 PSI max, 105 F max.

Water Meters get a pump accessory discount

Mixers

Mounts

Bracket Mount: two rugged steel brackets with four stainless steel bolts for mounting on a flat surface.

Thread Mount: provides a 2" threaded nipple for direct mounting on the bung of a supply drum or other threaded connector.

Flange Mount: a steel flange with four stainless steel bolts for mounting the mixer directly over the shaft hole.

Horsepower and Motor Types

Open: 1/3 and 1/2 horsepower motors are 1725 rpm, 115 volt, 60 cycle, split phase, sleeve bearing. 1 horsepower motors are 1725 rpm, 115/230 volt, 60 cycle, capacitor start, sleeve bearing.

Totally Enclosed: 1/20 horsepower motors are 1500 rpm, 115 volt, 60 cycle, ball bearing, shaded pole, totally enclosed air open.

Prewired: 6', 3 wire 18 gauge SJ cord and plug installed at factory

Vinyl Coated: Special vinyl corrosion resistant coating for stainless steel impeller and shaft required for sodium hypochlorite.

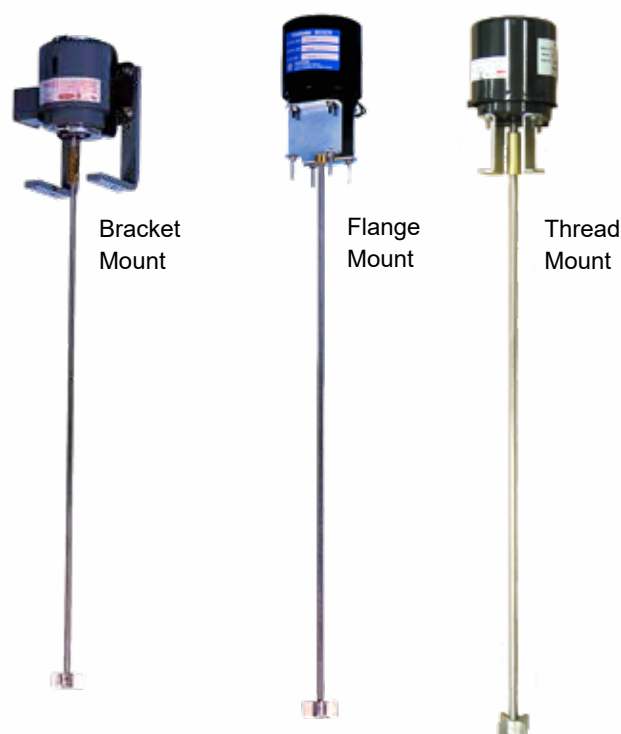
Optional Features

Suction Tube Shield Assembly: 1" PVC tube. Prevents pump suction tubing from entangling with mixer blade.

Part Number

28655 = 29" - 55 gal. (See page 21 for table)

28656 = 20" - 35 gal. (See page 21 for table)



Mixers					
Mount	Motor Type	Model Number	Description	HP	Shaft Length
Bracket Mount	Totally Enclosed Air Open	42747	115V ONLY	1/20	28"
		42844	115V / Prewired	1/2	36"
		J64080	230V/50Hz / Vinyl Coated	1/2	36"
		42779	115V/230V/60Hz / Vinyl Coated	1/2	44"
		42733	115V	1	48"
Clamp Mount	Totally Enclosed Air Open	42738	115V/230/60Hz	1/4	34"
		42737	115V/230/60Hz	1/2	44"
Flange Mount	Totally* Enclosed Air Open	J64013	115V / Prewired	1/20	24"
		J64027	115V / Vinyl Coated & Prewired	1/20	24"
		42748	115V	1/20	28"
		42753	115V / Prewired	1/20	28"
		42827	230V/50Hz / Prewired	1/20	28"
		42829	230V/60Hz / Prewired	1/20	28"
		42821	115V / Vinyl Coated & Prewired	1/20	28"
		J64017	230V/50Hz / Vinyl Coated & Prewired	1/20	28"
		J42887	230V/60Hz / Vinyl Coated & Prewired	1/20	28"
Thread Mount	Open	J42898	230V/60Hz / Prewired (UK)	1/20	28"
		42729	115V / Prewired	1/3	36"

All Mixers are equipped with 308SS impeller

WHEN MIXING SODIUM HYPOCHLORITE, ORDER VINYL SHAFT COATING.

No Mixer on 15 gallon Tank.

For explosion proof motor consult factory.

* Use only Tank Model 40365 or J40366 with 1/20 hp Mixers.

Material Specifications	Description
Shaft Materials	316 Stainless Steel
Standard Shaft O.D. and Length	1/20 horsepower 5/16" x 28"
	1/4 horsepower 1/2" x 34"
	1/3 horsepower 1/2" x 36"
	1/2 horsepower 1/2" x 44"
	1 horsepower 5/8" x 48"
Shaft Motor/Coupling Mounts	Brass with Stainless Steel set screws. All mounts are steel with corrosion resistant paint. All bolts are 18/8 Stainless Steel.
Impellers	Impeller sizes vary with each horsepower motor to provide maximum mixing action with each model. 316 Stainless Steel recommended for non abrasive solutions that accept 316 Stainless Steel.

Solution Tanks

Tank Systems are a rugged line of tanks designed to fit most solution handling needs. All tanks are constructed of polyethylene (PE) and come in a variety of sizes.

Light Duty Linear Tanks

Our Light Duty Linear Tanks come in sizes from 15 to 75 gallons. The 15 gallon tanks are translucent with 5 gallon increments and feature child resistant black caps. 30 gallon tanks are HDPE Cream and 40 gallon tanks are HDPE White. The 75 gallon tanks are HDPE Black and feature a integral molded top with a 4 inch diameter opening.

Heavy Duty Tapered Tanks

Tapered HDPE tanks feature rigid covers which allow the top mounting of Chem-Tech 100, 200 and most PULSAtron pump models. 1/20 HP Flange Mount Mixers may also be mounted on the cover. Tanks available in 35 and 50 gallon capacities are translucent with 5 gallon graduations. (Not suitable for use with 1/3 HP Flange Mount Mixers.)

Industrial Duty Tank Systems

Tanks and covers are constructed of translucent PE with tank stands constructed of heavy gauge steel with a black corrosion resistant finish. The space conserving base for pump mounting under tank prevents loss of prime by maintaining a flooded suction. Industrial Duty Tank Systems come completely piped with PVC bulkhead, ball valve, Y strainer and suction tubing. Tank features graduated increments in both U.S. gallons and liters.



				Stand Options		
	Size Gallons	Wall	Tank Model	Series 100	Series C, C+, A+ & E*	Series E+ & E (LE33, LE34 & LE44)
Light Duty	15	0.078"	40375	39320	J39373	J39378
	30	0.094"	J40360	39322	J39374	J39379
	40	0.094"	J40361			
	75	0.125"	J40362	39324	J39377	J39382
Heavy Duty	35	0.125"	40365	39323	J39375	J39380
	50	0.125"	J40366	39321	J39376	J39379

* Note: All Series E pumps except (LE33, LE34 & LE44)

	Size Gallons	Height Tank Only	Dia at Base	Dia at Top	Wall Thk.	Material	Lid / Cover Type	Pump Mounting Options	Part Number
Heavy Wall	30	21.75"	21"	24.5"	0.25"	PE Translucent	Rigid PE Cover	Cover Mount	42400
	55	33.75"	21"	24.5"	0.25"				42401
Industrial	30	32"	18"	21"	0.25"	PE Translucent	FRP w/ White Gelcoat	Base Mount	42402
	55	32"	24"	27"	0.25"				42396
	100	37"	30"	33"	0.31"				42397
	150	54"	30"	33"	0.31"				42398
	200	56"	34"	37"	0.31"				42399

Double Wall Containment Tanks

Dual Containment Tank Systems are designed for chemical feed and water treatment applications. All prices include standard access openings and threaded connections making these tanks ready to place in service as equipped. All of our tanks meet or exceed the EPA's requirements for secondary containment under 40-CFR 264.175. Standard Openings— 8" (16" on 300 gal.-up) Twist Lid, 2" & 1" female NPT top connections (plugged).



Double Wall Containment Tank							
Item Type	Size Gallons	Height	Diameter	Material	Lid / Cover Type	Pump Mounting Options	Part Number
Dual Wall w/ Fill Top & Pump Mount Pad	15	25.25"	19.5"	Blue PE	4" Fill Cap	None	42403
	20	23"	23.25"		8" Fill Cap	Top Mount	42404
	40	40.5"	23.25"				42405
	62	38.25"	25"				42406
	120	47"	32"				42407
	220	47"	48"		42408		
	300	60"	48"		16" Fill Cap	42409	
	500	61"	60"			42410	

Integrated Tank Systems

The ITS System is a completely integrated tank system constructed of high density UV resistant polyethylene (PE) with a 15 gallon capacity. This tank system is translucent with 5 gallon increments and the tank's low level indicator allows visual monitoring of chemicals without opening the tank. The tight fitting child proof lid keeps the chemical free of contaminants and protects the surrounding area from chemical fumes.

The ITS System also allows for easy access to the liquid end and control panel of the mounted pump.

A system consists of a chemical tank with lid and bulkhead fittings, a liquid level indicator, float assembly and feeder mounting hardware.



ITS Tank Systems					
Size Gallons	Pump Type	Pump Series	Housing	Tube Conn. Size	System Part No.
15	Chem-Tech	XP	N/A	1/4"	J63063
		Series 100		3/8"	J40489
				1/2"	J40490
	PULSAtron	"1" or "J" conn.	Series A+, C, C+, E (except below)	3/8"	J40492
		"A" conn.		1/2"	J40493
		"1" or "J" conn.	E (LE33-44) and E+	3/8"	J40495
		#3 conn.		1/2"	J40496

1

Tank, Stand & Feed Pump Tank Systems

The TSF System is a complete compact feed system with from 7.5 up to 15 gallon capacity. The chemical storage tank and metering pump both mount on a common, fitted base for a precise, secure installation. The 15 gallon tank has a low level indicator that allows visual monitoring of supply without opening the tank.



TSF Selection Table				
Size Gallons	Pump Type	Pump Series	Tube Conn. Size	System Part No.
15	Chem-Tech	Series 100	1/2"	J40442
			3/8"	J40443
	PULSAtron	"A" conn.	1/2"	J40444
		#1 conn.	3/8"	J40445
		"J" conn.	5/16"	J40482

1

PVC Tank Accessories

PVC Tank Accessories		
Tube Size	Component	Part Number
1/2"	Y - Strainer	40085
	Shut-Off Valve	41558
	Bulkhead Assembly	26861

1

Spill Containment - Pallet & Accessories

Safely store your Chemical Drums on our 1, 2 or 4 Drum Spill Containment Pallets. These rugged polyethylene pallets are available with or without covers and exceed the EPA's requirements for secondary containment in 40-CFR 264.175.



Spill Containment	
Part Number	Description
42420	1 Drum Containment Pallet, 12" x 40" x 40", PE
42421	1 Drum Spill Containment Unit with Hardtop, 66" x 36" x 36"
42422	2 Drum Containment Pallet, 8.75" x 40" x 65.5"
42423	2 Drum Spill Containment Unit with Hardtop, 74" x 41.25" x 67.25"
42424	4 Drum Containment Pallet, 11.75" x 53" x 53"
42426	Loading ramp for 1 and 4 drum spill pallets w/o cover
42427	Caster dolly for 1 drum unit with cover

1

Pump Containment Shelf

The Pump Containment Shelf is designed to safely and securely mount your metering pumps on a wall or level surface and contain any potential spills caused by pump or tubing leaks. The Pump Containment Shelf has a 1/4" FPT drain connection on the base that can be connected to a drum or other container to automatically catch any potential leaks that may occur. The pump base is elevated and removable for the easy installation and servicing of your pumps. The cover protects your equipment from the elements and tampering by unauthorized personnel. The view window allows visual inspection of the enclosures interior while the lid is secured. Designed for up to 2 standard Pulsatron or Chem-Tech metering pumps.



1 or 2 Pump Containment Shelf - PE

Part Number	Description
42411	Pump Containment Shelf with Cover - 22"H x 19"W x 19"D

1

Static Inline Mixer

The inline static mixer uses ordinary line pressure to create turbulence which provides good chemical mixing in the process line.

PVC construction

Accommodates flow rates from 3 to 25 GPM

1" NPT inlet and outlet

1/2" diameter chemical port inlet

140 psi

Weight: 1 lb.

10.0" long, 2.8" OD



Static Inline Mixer

Part Number	Description
STM100-PVC	Static Inline Mixer

1

Bulkhead Fitting Assemblies

Installation of a metering pump in a flooded suction installation requires the installation of a bulkhead fitting through the side wall of the tank in order to connect the suction and bleed valve to the return tubing. The 3/8" bulkhead is typically used for the bleed valve return line which is why it is supplied without a strainer.



Bulkhead Fitting Assemblies

Tube Size	Strainer	Part Number (Kit Only)	Part Number (Assembled in Tank)**
5/16"	Yes	J26906	
		26860	26860AT
3/8"	No	J26885	J26885AT
1/2"	Yes	26859	26859AT

1

** Fitting will be pre-assembled when ordered with this part number and a 15 - 75 gallon tank.

Flow Meter

Easy to install, easy to maintain flow meters. Calibrated in GPM/LPM with easy to read numbering. Available 1" to 4" pipe size. Durable acrylic construction at economical prices. Rated at 120 PSI max.



Visual Flow Meters

Part Number	Description	GPM	LPM	Accuracy
U8800424	1" Flowmeter	5-35 GPM	20-130 LPM	5-10%
U8800438	1 1/4" Flowmeter	10-60 GPM	40-220 LPM	5-10%
U8800439	1 1/2" Flowmeter	20-80 GPM	80-300 LPM	5-10%
U8800440	2" Flowmeter	30-140 GPM	120-550 LPM	5-10%
U8800441	2 1/2" Flowmeter	40-200 GPM	160-750 LPM	5-10%
U8800442	3" Flowmeter	80-350 GPM	300-1300 LPM	5-10%
U8800443	4" Flowmeter	150-600 GPM	600-2200 LPM	5-10%

1

Liquid Level Wands

The Level Wand is designed to be inserted into a chemical container with a 2" bung hole. The wand can then be adjusted to the proper level and secured in place. A low voltage cable connects the control box to the level wand. When a low level condition occurs the monitor deactivates the metering pump control relay and at the same time activates the alarm output relay.



Liquid Level Wands	
Part Number	Description
16-171-81-4	Level Wand - Level adjustable up to 60". Switch contacts 28 VDC 50 mA. Order 16-171-81-3 when using PULSAtron Pumps with the Stop Function Feature.
16-171-81-1	Level Wand - Level adjustable up to 42". Switch contacts 28 VDC 50 mA. Order 16-171-81-3 when using PULSAtron Pumps with the Stop Function Feature.
16-171-81-2	Level Wand - Level adjustable up to 26". Switch contacts 28 VDC 50 mA. Order 16-171-81-3 when using PULSAtron Pumps with the Stop Function Feature.
16-171-81-3	10' cable w/ connector for 16-171-81-1, 16-171-81-2 & 16-171-81-4 to use w/ PULSAtron Pumps with the Stop Function Feature

1

NOTE: When utilizing a Pump Model w/ external/stop feature, order 16-171-81-4, 16-171-81-1 or 16-171-81-2 in addition to 16-171-81-3.

Flow Controller

The versatile Flow Controller may be used to establish flow/no-flow control of metering pumps in various applications. Each unit comes prewired with an eight-foot, three-wire power cord for easy installation. A test switch is also provided for manual circuit tests.



Flow Controllers	
Model No.	Description
FC2000	Flow Controller - Standard flow controller has 3/4" PVC threaded connections with 3/4" PVC slip adaptors to use if needed. 1 GPM minimum flow required for activation
FC2000C	Flow Controller - Standard flow controller w/ 1 PVC slip connectors; 1 GPM min. flow required for activation.
Available options for FC2000 & FC2000C:	
Receptacle functions (Standard--both on with flow)	
1	Both on with no flow
2	One on with flow, other on no flow
3	One on with flow, other service
4	One on with no flow, other service

1

Adjustable Back Pressure & Pressure Relief Valves

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. Select to match the pumps' discharge connection size. In installations where the injection point is lower than the level of chemical in the supply tank the potential for gravity feeding of chemical is a possible concern. Back Pressure valves prevent this from occurring and can be easily added to most chemical feed pumps.



Back Pressure & Pressure Relief Valves - 150 PSI			
Component	Size NPT	Material	Part Number
Pressure Relief Valves	1/2"	PVC/TFE	NA100001-PVC
	1/2"	PVDF/TFE	NA100001-PVD
	1/2"	SS/TFE	NA100001-316
	1"	PVC/TFE	NA100002-PVC
	1"	PVDF/TFE	NA100002-PVD
	1"	SS/TFE	NA100002-316
	1.5"	PVC/TFE	NA100003-PVC
Back Pressure Valves	1.5"	PVDF/TFE	NA100003-PVD
	1/2"	PVC/TFE	NA200001-PVC
	1/2"	PVDF/TFE	NA200001-PVD
	1/2"	SS/TFE	NA200001-316
	1"	PVC/TFE	NA200002-PVC
	1"	PVDF/TFE	NA200002-PVD
	1"	SS/TFE	NA200002-316
	1.5"	PVC/TFE	NA200003-PVC
	1.5"	PVDF/TFE	NA200003-PVD

1

PULSAtron 1" Flow Meters

Pulsafeeder's PULSAtron 1" Flow Meter without the controller shown on pg can be used as a standalone Hall effect meter for use with XPV Series and MicroVision Series products as well as any product that has a Hall effect input. The meter is available with a controller that has a 4-20mA output.



PULSAtron 1" Flow Meter

Part Number	Description
04-610-10	1" Flow Meter 28" Cord
04-610-11	1" Flow Meter 15" Cord

PULSAtron 1" Flow Meter with Controller

Part Number	Description
04-610-12	1" Flow Meter with Controller 28" Cord
04-610-13	1" Flow Meter with Controller 15" Cord

1

Flow Indicator

The Pulsafeeder flow indicator meets the revised NSF standard requirement for a visual signal to determine that a pump is delivering a solution. The indicator is easily attached to the supply line or discharge line and a ball visually indicates that the solution is being delivered by its position in the indicator. The flow indicator is reliable, easily observed and virtually nonsusceptible to functional failures.



Flow Indicators

Part Number	Description
U7012309	Flow Indicator 1/4" x 3/8" Acrylic Body (100 PSI max)
U7012383	Flow Indicator 1/8" x 1/4" Acrylic Body (100 PSI max)

1

Tube Shield

The Suction tubing shield protects the metering pumps suction line from tank mounted mixer impellers and also insures the tubing remain vertical in the tank.



Tube Shield

Model Number	Description
28655 29" - 55 gal.	Suction Tube Shield Assembly. 1" PVC tube. Prevents pump suction tubing from entangling with mixer blade.
28656 20" - 35 gal.	

1

Strainer Assembly



Strainer Assembly

Part Number	Description
J60576	Strainer Assembly FPP/TFE/C 1/2"OD
J60716	Strainer Assembly PVD/TFE/C 3/8"OD
J60728	Strainer Assembly PVD/TFE/C 1/2"OD

1

Calibration Columns & Kits

Calibration columns are used on the supply side of the pump to permit flow calibration. Never subject the column to vacuum or pressure. The calibration kits includes compression fittings for connecting them to pumps with tubing connections, and isolation valves. To determine the minimum column capacity (mL); Multiply the pumps' rated flow rate, GPH x draw down time, sec. x 0.00028 x 3785.



Calibration Kits		
Size	Column	Assembled Part Number
3/8" OD	200 mL	L9908502-001
1/2" OD		L9908503-001

Calibration Columns		
Size	Column	Part Number
1/2"	PVC 100mL	NA300001-PVC
1/2"	PVC 200mL	NA300002-PVC
3/4"	PVC 500mL	NA300003-PVC
3/4"	PVC 1000mL	NA300004-PVC
1"	PVC 2000mL	NA300005-PVC
1"	PVC 4000mL	NA300006-PVC
2"	PVC 10,000mL	NA300007-PVC
2"	PVC 20,000mL	NA300008-PVC
1/2"	Glass/PVD 100mL	NA300009-PVD
1/2"	Glass/PVD 200mL	NA300010-PVD
3/4"	Glass/PVD 500mL	NA300011-PVD
3/4"	Glass/PVD 1000mL	NA300012-PVD
1"	Glass/PVD 2000mL	NA300013-PVD
1"	Glass/PVD 4000mL	NA300014-PVD

Five Function Valve

This easily installed valve allows simple, one-handed operation. Upgrades Chem-Tech Series 100 and Series 200 metering pumps, plus all pulsatron models up to 240 GPD

Relieves Pressure
Controls Back Pressure

Aids Priming
Prevents Siphoning

Drains Discharge Line



Five Function Valve Selection Guide			L380	-	-	--	---
Five Function Valve	L380	= Five Function Valve					
Max Pressure Rating	B	= 50 PSI					
	D	= 100 PSI					
	F	= 150 PSI					
	K	= 250 PSI					
O-Ring Material	T	= TFE					
Connection Size	01	= 3/8" (0.95 cm) OD Tubing Connection					
	02	= 1/4" (0.635 cm) Male MNPT Connection					
	03	= 1/2" (1.27 cm) OD Tubing Connection					
	0P	= 4 x 6 mm					
	0N	= 4 x 10 mm					
	0S	= 6 x 10 mm					
	0Y	= 6 x 12 mm					
	0Q	= 10 x 14 mm					
Body Materials	PVD	= Polyvinylidene Fluoride (PVDF or Kynar)					

Five Function Valve

This easily installed valve allows simple, one-handed operation. Upgrades Chem-Tech Series 100 and Series 200 metering pumps, plus all pulsatron models up to 240 GPD

Relieves Pressure
Controls Back Pressure

Aids Priming
Prevents Siphoning

Drains Discharge Line



Five Function/Degas Valve Selection Guide			L385	-	-	--	---
Five Function Valve	L385	= Five Function Degas Valve					
Max Pressure Rating	K	= 250 PSI					
O-Ring Material	V	= Viton					
	H	= CSPE					
Connection Size	01	= 3/8" (0.95 cm) OD Tubing Connection					
	02	= 1/4" (0.635 cm) Male MNPT Connection					
	03	= 1/2" (1.27 cm) OD Tubing Connection					
	0P	= 4 x 6 mm					
	0N	= 4 x 10 mm					
	0S	= 6 x 10 mm					
	0Y	= 6 x 12 mm					
	0Q	= 10 x 14 mm					
Body Materials	PVD	= Polyvinylidene Fluoride (PVDF or Kynar)					

6" Injectors

When injecting into a water line, it's desirable to have the tip of the injection valve close to the center of flow to ensure adequate chemical dispersion. Pulsafeeder 6" injectors can be trimmed to accommodate various pipe sizes. Another alternative is to use a Pulsafeeder corporation stop assembly see page 24.



6" Injectors

Size	Material	Part Number
3/8" OD	PVC-CSPE-C w/ Ball Check Assy	41705
1/2" OD		41698
3/8" OD	PVC-Viton-C w/ Ball Check Assy	41699
1/2" OD		41700
3/8" OD	FPP-Viton-C w/ Ball Check Assy	41701
1/2" OD		41702

In-line Anti-siphon Valve

In installations where the injection point is lower than the level of chemical in the supply tank the potential for gravity feeding of chemical is a possible concern. The inline anti-siphon valves prevent this from occurring and can be easily added to most chemical feed pumps.



In-Line Anti-Siphon Valve

Part Number	Description
U8800406	In-Line Anti-Siphon Valve 3/8" OD PVC
U8800489	In-Line Anti-Siphon Valve 1/4" OD PVC
U8801263	In-Line Check Valve PVC/Viton 1/4"OD

Tubing - 100 Foot Rolls

Periodic replacement of a metering pump's suction tubing is recommended to ensure optimum system performance. Easily stock extra tubing with these convenient 100 foot rolls. Clear PVC tubing is used on the suction side and is rated up to 50 PSI, PE tubing can be used on the discharge and return lines and is rated up to 150 PSI. Other tubing materials are also available, consult the factory for more information.



Tubing - 100 Ft. Rolls

Tube Size	Description	Part Number
3/8" OD	Clear PVC Suction	J41444
1/2" OD		J41445
3/8" OD	Translucent PE Discharge	J41447
1/2" OD		J41448
1/4" OD	Black PE - Disc.	J41452
	White PE - Disc.	U0811307

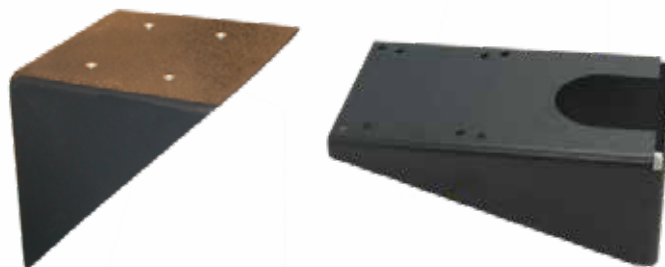
Wall Mounting Bracket

The rugged, Pulsafeeder wall mounting brackets provide for easy, secure installation of the metering pump in a variety of environments. Pulsafeeder has two types of materials for wall mount brackets available to suit your needs. Brackets are available in either plastic or steel. These wall mount brackets will provide a stable mounting surface for your pump with mounting hardware included, making installation simple.

Side Mount Bracket: For pumps that need to be side mounted the plastic wall mount bracket will hold a pump up to 22 pounds and Pulsafeeder's 12 gauge stainless steel wall mount bracket can hold a pump up to 50 pounds.

Forward Mount Bracket: For pumps requiring forward mount position Pulsafeeder's 14 gauge steel with black epoxy coat finish will support Pulsatron pumps with the #1 or #2 size housings.*

Pulsations with a #3 size housing are the Series MP, E+, E series models (H4, H5, H6, H7, H8, K7, J7).



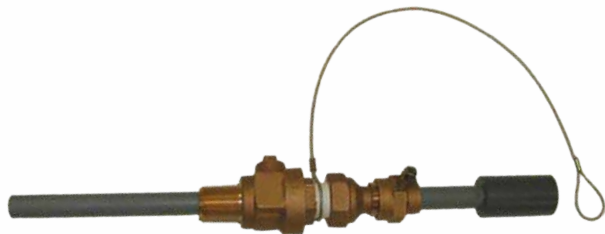
Wall Mounting Bracket Assemblies

Mount	Material - Max Pump Wt.	Part Number
Side	Plastic, 22 lbs	L9908200-000
	12 Ga. SS, 50 lbs	L9902700-000
Forward	*14 Ga. Stl, 50 lbs	L9911600-STL

*14 Gauge steel w/ black epoxy coat finish. Cannot be used w/ Series MP, E+, E series models (H4, H5, H6, H7, H8, K7, J7)

Corporation Stop

Pulsafeeder's high quality brass corporation stop and nozzle assembly disperses chemical into the center of a line for even mixing. The Corporation Stop also permits removal of the nozzle assembly and the corporation stop closed without shutting down the line that's being treated. Available in PVC or CPVC nozzles with a 7.75" nozzle insertion depth with a rated pressure of 150 psi maximum.



Corporation Stops

Thread	Desc	Reduced Lead Compliant Part No.
3/4" AWWA	w/ PVC Nozzle Assy	J61462-LF
3/4" NPT		J61135-LF
1" AWWA		J61136-LF
1" NPT		J61191-LF
3/4" AWWA	w/ CPVC Nozzle Assy	J61462-C-LF
3/4" NPT		J61135-C-LF
1" AWWA		J61136-C-LF
1" NPT		J61191-C-LF

1

Pressure Gauge

Liquid Filled Pressure Gauges in Brass or Stainless Steel 1/4" Bottom or Back Connection.



Pressure Gauge

Bottom Connection

Part Number	Description
12-130-04	Face 2", 100 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-05	Face 2", 100 PSI, Liquid Fill, 1/4" SS Bottom Connection
12-130-06	Face 2", 200 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-07	Face 2", 200 PSI, Liquid Fill, 1/4" SS Bottom Connection
12-130-08	Blk Steel Face 2", 100 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-09	Blk Steel Face 2", 200 PSI, Liquid Fill, 1/4" Brass Bottom Connection

Back Connection

Part Number	Description
12-130-10	Face 2", 100 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-11	Face 2", 100 PSI, Liquid Fill, 1/4" SS Back Connection
12-130-12	Face 2", 200 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-13	Face 2", 200 PSI, Liquid Fill, 1/4" SS Back Connection
12-130-14	Blk Steel Face 2", 100 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-15	Blk Steel Face 2", 200 PSI, Liquid Fill, 1/4" Brass Back Connection

1

Controller Accessories

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Corrosion Coupon Racks

Our Corrosion Coupon Racks are hydrostatically tested for maximum system performance exceeding industry standards. These simple and reliable coupon test stations are typically installed on the side stream of re-circulating systems to allow for controlled testing of coupon samples. Samples are periodically removed and examined by a laboratory in order to calculate corrosion rates and other effects such as pitting and deposition.



Corrosion Coupon Racks - Includes PVC coupon holder, nylon screw & nut, PVC inlet ball vlv, 0.75 in (19mm) piping, Sch. 80 PVC				
Model Number	Stations	Mount	Piping	Description
CCR2	2 Station	.50" HDPE	3/4" PVC	Standard
CCR20DF5	2 Station	Unistrut	3/4" black iron	Flow control valve 5 GPM
CCR20DX7X8CF3	2 Station	Unistrut	3/4" black iron	PVC outlet ball valve, 3/4" brass gate valve 250 psi; Y Strainer; Flow control valve 3 GPM
CCR20DX7X8CF5	2 Station	Unistrut	3/4" black iron	PVC outlet ball valve, 3/4" brass gate valve 250 psi; Y Strainer; Flow control valve 5 GPM
CCR20DXSX7	2 Station	Unistrut	3/4" black iron w/ SS Holder rod	PVC outlet ball valve, 3/4" brass gate valve 250 psi
CCR20X1X4X7	2 Station	.25 " HDPE	3/4" PVC	Quick release coupon holders; 3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C); PVC outlet ball valve; 3/4" brass gate valve 250 psi
CCR20X1X7F5	2 Station	.25 " HDPE	3/4" PVC	Quick release coupon holders; PVC outlet ball valve; 3/4" brass gate valve 250 psi; Flow control valve 5 GPM
CCR20X1X4X7X8DX9Z4	2 Station	Unistrut	3/4" black iron	Quick release coupon holders; 3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C); PVC outlet ball valve; 3/4" brass gate valve 250 psi; 3/4" Polypropylene bowl strainer 30 mesh, 150 psi max at 70°F; Clear PVC pipe sections; Sample/Drain port
CCR20X4	2 Station	Unistrut	3/4" black iron	3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C).
CCR2D	2 Station	Unistrut	3/4" black iron	Standard
CCR3	3 Station	.50" HDPE	3/4" PVC	Standard
CCR4	4 Station	.50" HDPE	3/4" PVC	Standard
CCR40DX7X8CF5	4 Station	Unistrut	3/4" black iron	PVC outlet ball valve, 3/4" brass gate valve 250 psi; Y Strainer; Flow control valve 5 GPM
CCR40DXSX7	4 Station	Unistrut	3/4" black iron w/ SS Holder rod	PVC outlet ball valve, 3/4" brass gate valve 250 psi
CCR40X1X4X7	4 Station	.25 " HDPE	3/4" PVC	Quick release coupon holders; 3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C); PVC outlet ball valve; 3/4" brass gate valve 250 psi
CCR40X1X7F5	4 Station	.25 " HDPE	3/4" PVC	Quick release coupon holders; PVC outlet ball valve; 3/4" brass gate valve 250 psi; Flow control valve 5 GPM
CCR4AX1X6X7	4 Station	.50" HDPE	1" PVC	Quick release coupon holders; 1" cold water flow meter, Max. 100 psi (7 bar) @ 110°F (43°C); PVC outlet ball valve; 3/4" brass gate valve 300 psi
CCR4D	4 Station	.50" HDPE	3/4" black iron	Standard
CCR4DX4	4 Station	.50" HDPE	3/4" black iron	3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C)
CCR4EX71F5	4 Station	.50" HDPE	1" PVC clear	1" PVC outlet ball valve; 3/4" brass gate valve 300 psi; Flow control valve 5 GPM
CCR4F5	4 Station	.50" HDPE	3/4" PVC	Flow control valve 5 GPM
CCR4X1X7X8AF5	4 Station	.50" HDPE	3/4" PVC	Quick release coupon holders; PVC outlet ball valve; 3/4" brass gate valve 300 psi; Y Strainer; Flow control valve 5 GPM

2

Corrosion Rack Accessories



Coupon Rack Replacement Parts	
Part Number	Description
16-756-51-1	Quick Release coupon holder with hardware
16-756-50	PVC and CPVC holder with hardware
16-756-42	Steel on black iron holder with hardware
33-022-16	3/4" hot/cold water flow meter

2

Coupons for Corrosion Coupon Racks & Deposit Monitors	
Part Number	Description
03-220-10	Mild Steel
03-220-00	Copper
03-220-60	303 Stainless Steel
03-220-70	304 Stainless Steel
03-220-20	316 Stainless Steel
03-220-50	Nickel
03-221-30	Brass
03-221-40	Bronze
03-221-50	Aluminum

2

Hand Held Testers

The HJ series hand held testers provide reliable and accurate conductivity measurements. The easy to read dial and LED indicator make taking readings quick and simple. The HJ series also feature a low battery indicator, selectable ranges, and easy calibration. The package includes calibration solution and a 9 V battery.



Hand Held Conductivity Testers

Model No.	Description
HJ6BC	0-100, 0-1000, 0-10,000 $\mu\text{S}/\text{cm}$
HJ7B	0-50, 0-500, 0-5,000 $\mu\text{S}/\text{cm}$

2

Bowl Strainer - Cooling Tower Applications

The polypropylene bowl strainers ensure the controller's sensors are protected from debris in the sample stream piping. Rated 100 psi at 70°F.



Bowl Strainers

Part Number	Description
12-069-62	3/4" Bowl Strainer (50 MESH)
12-069-64	3/4" Bowl Strainer (80 MESH)
12-069-66	3/4" Bowl Strainer (100 MESH)

2

Pressure Gauge

Liquid Filled Pressure Gauges in Brass or Stainless Steel 1/4" Bottom or Back Connection.



Pressure Gauge

Bottom Connection

Part Number	Description
12-130-04	Face 2", 100 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-05	Face 2", 100 PSI, Liquid Fill, 1/4" SS Bottom Connection
12-130-06	Face 2", 200 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-07	Face 2", 200 PSI, Liquid Fill, 1/4" SS Bottom Connection
12-130-08	Blk Steel Face 2", 100 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-09	Blk Steel Face 2", 200 PSI, Liquid Fill, 1/4" Brass Bottom Connection

Back Connection

Part Number	Description
12-130-10	Face 2", 100 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-11	Face 2", 100 PSI, Liquid Fill, 1/4" SS Back Connection
12-130-12	Face 2", 200 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-13	Face 2", 200 PSI, Liquid Fill, 1/4" SS Back Connection
12-130-14	Blk Steel Face 2", 100 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-15	Blk Steel Face 2", 200 PSI, Liquid Fill, 1/4" Brass Back Connection

1

Solenoid Valves - Cooling Tower Applications



Standard Solenoid Valve



High Temp Solenoid Valve

Standard Solenoid Valves - 2 Way Normally Closed

Part Number	Material	MOPD- Max. Operating Press. Differential	Voltage	Mfr
12-072-62	1/4" S.S. Body with TFE Seat	150 psi MOPD at 160°F	120/60, 110/50V	ASCO
12-072-53	1/2" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60, 110/50V	ASCO
12-072-54	3/4" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60, 110/50V	ASCO
12-072-55	1" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60V	ASCO
12-072-56	1" NPT Brass Body	5 psi min - 150 psi at 180°F	120/60, 110/50V	ASCO
12-072-57	1 1/2" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60V	ASCO
12-072-58	1 1/2" NPT Brass Body	5 psi min - 150 psi at 180°F	120/60V	ASCO
12-072-59	2" NPT Brass Body	5 psi min - 150 psi; 180°F	120/60V	ASCO

High Temp Solenoid Valves - 2 Way Normally Closed

12-072-60	1/2" NPT Brass Body	1 psi min - 125 psi	120/60V	ASCO
12-072-61	3/4" NPT Brass Body	2 psi min - 125 psi at 353°F	120/60, 110/50V	ASCO
12-048-00	1/2" Brass Body, PTFE	0 psi differential, 100 psi @ 356°F	115 VAC	
12-056-00	3/4" Brass Body, PTFE	0 psi differential, 100 psi @ 356°F	115 VAC	

Motorized Ball Valves



EC Series Solenoid Valve

EC Series - Motorized Valves

Part Number	Description
Motorized Valves for Cooling Tower Applications	
Low differential pressure applications. Brass bodies. Spring return.	
12-045-00	1/2" NPT (25 psi maximum)
12-054-10	3/4" NPT (25 psi maximum)
12-057-00	1" NPT (15 psi maximum)

Motorized Capacitor Return Ball Valves

A capacitor return motorized ball valve offers a reliable alternative to a solenoid valve with a full bore design for bleed-off of cooling tower water. The motorized ball valve offers a manual override feature and low working current as well as a long service life (70,000 – 100,000 cycles).



Motorized Capacitor Return Ball Valves

Part Number	Description
12-050-00	Capacitor Return MBV, 1/2", 304SS
12-050-00-B	Capacitor Return MBV, 1/2", 304SS W/ Terminal Block
12-050-00-J	Capacitor Return MBV W/ Power Cord, 1/2"
12-050-01	Capacitor Return MBV, 3/4", 304SS
12-050-01-B	Capacitor Return MBV, 3/4", 304SS W/ Terminal Block
12-050-01-J	Capacitor Return MBV W/ Power Cord, 3/4"
12-050-02	Capacitor Return MBV, 1", 304SS
12-050-02-B	Capacitor Return MBV, 1", 304SS W/ Terminal Block
12-050-02-J	Capacitor Return MBV W/ Power Cord, 1"

Motorized Ball Valves & Valve Packages - Boiler Applications

Materials of construction: Solenoid Valves are bronze body with stainless steel pilot and valves; Motorized Ball Valves are carbon steel body with 316 stainless steel ball and stem; Throttling Valves are carbon steel body and valve; and Orifice Unions are carbon steel union with stainless steel plates.



Throttling Valve

Valve Packages	
Timed Sample Systems	
Part Number	Description
16-896-00	Up to 100 psi Package includes 1/2" solenoid valve (12-048-00) and 1" orifice union with 4 orifice plates (12-012-00 and 12-013-50).
16-896-04	Up to 300 psi Package includes 1/2" motorized ball valve with heavy duty 90 degree actuator (16-892-00) and 1/2" flow throttling valve (12-046-01).
16-896-08	Up to 450 psi Package includes 1/2" motorized ball valve with 360 degree actuator (16-892-02) and 1" orifice union with 4 orifice plates (12-012-00 and 12-013-50).
Valve Packages	
Continuous Sample Systems	
16-896-02	Up to 100 psi Package includes 3/4" solenoid valve (12-056-00) and two 1" orifice unions with 4 orifice plates each (12-012-00 and 12-013-50).
16-896-06	Up to 300 psi Package includes 3/4" motorized ball valve with 90 degree actuator (16-892-01), 3/4" flow throttling valve (12-055-01), and 1/2" flow throttling valve (12-046-01).
16-896-10	Up to 425 psi Package includes 3/4" motorized ball valve with 360 degree actuator (16-892-04) and two 1" orifice unions with 4 orifice plates each (12-012-00 and 12-013-50).
Available option:	
-2	230 VAC service

2

Note: Materials of construction: Solenoid Valves are bronze body with stainless steel pilot and valves; Motorized Ball Valves are carbon steel body with 316 stainless steel ball and stem; Throttling Valves are carbon steel body and valve; and Orifice Unions are carbon steel union with stainless steel plates.



Motorized Ball Valve

Motorized Ball Valves	
Part Number	Description
16-892-00	1/2" motorized ball valve (10-75 Worcester Actuator)
16-892-01	3/4" motorized ball valve (10-75 Worcester Actuator)
16-892-02	1/2" motorized ball valve (10-36 Worcester Actuator)
16-892-04	3/4" motorized ball valve (10-36 Worcester Actuator)
Available option:	
-2	230 VAC service
Part Number	Description
12-040-00	Worcester 10-75 actuator only
12-040-10	Worcester 10-36 actuator only

2

Motorized Ball Valve Parts	
Part Number	Description
12-043-00	Worcester 1/2" steam rated ball valve only
12-051-00	Worcester 3/4" steam rated ball valve only
12-049-00	Mounting kit for 12-051-00 & 12-040-00

2

Flow Control Valves - Boiler Applications

Flow control valves maintain sufficient back pressure in boiler blowdown lines in order to prevent flashing and to ensure adequate blowdown rates. The orifice union includes four plates, 1/16", 1/8", 1/4" and a 5/16". Flow control valves include an indexed position indicator



Flow Control Valves



Orifice Union



Orifice Plates

Flow Control Valves	
Part Number	Description
12-075-01	3/8" valve (300 psi maximum)
12-046-01	1/2" valve (300 psi maximum)
12-055-01	3/4" valve (300 psi maximum)

2

Orifice Unions & Orifice Plates	
Part Number	Description
12-012-00-1	1" orifice union with set of (4) orifice plates
12-013-50	Set of four orifice plates

2

Sample Cooler

Pulsafeeder's Sample Cooler part number 12-066-00 is a safe method of withdrawing water from boilers, steam lines or tanks containing chemicals and for cooling the withdrawn liquid for subsequent chemical analysis.



Sample Coolers

Part Number	Description
12-066-00	Sample Cooler

2

Bleed-Off Piping Assembly - Cooling Tower Applications

The pre-plumbed bleed-off assemblies make installation of a cooling tower bleed valve easy. The assemblies include a solenoid valve, Y strainer and a brass shutoff valve.



Bleed-off Piping Assembly

Part Number	Description
	Includes SVC solenoid valve, steel Y-strainer, and brass shutoff valve.
16-900-18	3/4"
16-900-12	1"

2

Sample Steam Parts

Sample Stream Parts

Part Number	Description
12-069-00	3/4" Clear PVC Y-strainer
12-070-00	Replacement mesh for 12-069-00
12-072-00	3/4" PVC ball valve
16-810-00	2 stage injection manifold
16-810-03	3 stage injection manifold
16-810-08	5 stage injection manifold
04-300-08	Sample valve assembly

2

NOTES

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.
- d. MicroVision EX when purchased as a spare a part is warranted for 24 months.

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. Toroidal probes are warranted for 24 months from date of shipment from the factory when purchased as a spare..
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 acknowledgment 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. Credit for Return of New, Unused Equipment

- a. 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 canceled, and a new request must be made by the customer to continue with the return procedure.
- b. No equipment will be accepted beyond six months after date of shipment from factory for credit.
- c. Only new, unused and undamaged standard equipment will be accepted for return to stock.
- d. 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 acknowledgment will be refused by our receiver.
- e. 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.
- f. A request for a Returned Material Authorization (RMA) number must be made prior to returning product to Pulsafeeder.
- g. All equipment shall be returned with the RMA Packing List form attached to the outside of the box.
- h. 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.
- i. All material shall be returned freight prepaid.
- j. Private label products or Engineered Panel Mount Systems and Pre-Engineered System are not returnable.

5. 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.

6. 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.

7. Damaged Items

- a. Should the customer receive an order that was damaged in transit, whoever paid the freight charges is responsible for filing the freight damage claim.
- 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.

8. 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.

Terms and Conditions

1. **AGREEMENT.** The contract of sale resulting from Seller's documentation together with these terms and conditions ("Contract") constitutes the entire agreement between the parties hereto, except as modified in writing signed by both the Seller and Purchaser. The Seller is Pulsafeeder, Inc. and the Purchaser is identified in the Contract. Any terms in a purchase order, irrespective of their materiality, which are either different from or additional to Seller's conditions of sale, are objected to and are excluded unless the Seller expressly agrees in writing to such terms. Execution of such forms by Seller to accommodate Purchaser's procurement or accounting procedures or to evidence agreed upon change orders shall not be construed as assent to Purchaser's terms. Acceptance of the goods shipped shall constitute assent to Seller's conditions of sale. This Contract shall be binding upon Purchaser and Seller, and on their successors and assigns.

2. **PROPOSAL OR QUOTATION.** A proposal shall not become binding upon Seller until it has been executed and returned by Purchaser. An oral quotation shall not be considered an offer: only a written confirmation thereof incorporating Seller's terms and conditions shall constitute an offer. All written quotations are valid for 30 days unless stated otherwise on the written quotation provided by Seller to Purchaser.

3. **ORDER PLACEMENT.** All orders shall be deemed accepted upon written acknowledgment from Seller and shall be subject to Pulsafeeder's terms and conditions in effect on the date the order is accepted. No additional different terms and conditions referred to or contained in any request for proposal, purchase order or other document from Purchaser shall apply. Any order cancellation or change is subject to a \$50.00 cancellation / change fee.

The minimum order amount is US \$30.00 based on Seller's list prices in effect at the time the order is received.

Orders requiring expedited shipping (sooner than the standard lead times) will be subject to a \$50.00 expedite charge.

Documents which require local Chamber of Commerce stamp and certification are subject to a \$50.00 per document fee.

Letters of Credit and Sight Draft's are subject to a \$1,000.00 fee.

All Credit card orders will be charged a \$50.00 transaction fee.

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, 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 be 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 \$50.00 cancellation 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) Seller's dock in Punta Gorda, Florida. Seller has the right to ship any order when it is complete or partially complete unless the order is marked do not ship before the request date.

All customer arranged freight (will advise) the Customer has 48 hours after Seller has advised them that the shipment is complete and ready for shipment. If the shipment has not left Seller within such 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 Seller facility. Seller may also place the shipment in a public storage at Customer's expense and without liability to Seller.

Orders requiring expedited production (24-hour turnaround) and to be ready for shipment (Not including shipping) will be subject to a \$50 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.

Pulsafeeder's hours of operations are 8am to 5pm eastern Monday – Friday. Orders that need to be ready for shipment 24 hours from receipt of order will be received during Pulsafeeder's hours of operation. Same day and next working day shipping is generally available for larger orders, 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 to Purchaser upon Seller's delivery of the goods to the carrier for shipment. 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 shipping terms as applicable. 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 saleability 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.



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