PULSAFEEDER®

An IDEX Water & Wastewater Business

pulsafeeder.com

Product List

Effective 01/16/12

Systems and Accessories

IMPORTANT INFORMATION

WHEN PLACING AN ORDER

1) Fax, mail or telephone orders directly to the Customer Service Department:

Pulsafeeder Incorporated—A Unit of IDEX Corporation
Standard Product Operations Main Office & Manufacturing Facility
27101 Airport Road, Punta Gorda, Florida, USA 33982-2462 E-Mail: pulsaspo.cs@idexcorp.com
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	

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

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

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

6) Repairs and returns are coordinated through our Customer Service Department. All orders returned must have factory authorization and are subject to a 25% restocking charge for standard product.

7) Other Locations:

PULSAFEEDER (Knight UK Limited)
15 Brunel Centre Newton Road
Crawley, West Sussex, England, RH10 9YU
Tel: +44 80022102210
Fax: +44 80044104410

Latin America (Office Only)
Hegel 153-602, Colonia Polanco,
11560 Mexico, D.F., Mexico
Tel: 52-555-255-1357
Fax: 52-555-255-1356

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

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

- Prices are subject to change without notice and are effective when order is accepted and acknowledged at point of shipment.
- When ordering, specify your P.O. number, model number, quantity, price, shipping and/or billing address and order date.
- **Standard terms are NET 30 days from date of invoice for approved accounts on open account.**
- **WE ACCEPT VISA AND MASTERCARD.**
- **ONE PERCENT DISCOUNT AVAILABLE FOR PAYMENT WITHIN 10 DAYS OF INVOICE DATE FOR ACCOUNTS THAT ARE CURRENT.**
- **PAYMENT BY CREDIT CARD WILL NOT RECEIVE AN ADDITIONAL DISCOUNT.**
- All prices are F.O.B. Punta Gorda, FL or factory warehouse location.
- Custom product sales are final.
- Charges for export documentation apply.
- Expediting fees may apply.
- Fees for changes to or cancellation of orders may apply.
- **Minimum factory order of $50.**
- Possession of price schedule does not guarantee right to purchase direct from factory.

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

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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

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

Systems

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PULSAFEEDER
PULSAFEEDER

SYSTEMS Pre-Engineered Feed Systems

Chem-Tech XP series Pump systems make selecting the right water meter and pump combination easy. The charts below provide the PPM Dosage ranges for each combination of the five pump outputs and each water meter. The first chart illustrates the PPM ranges using 5.25% concentration and the second chart illustrates the PPM ranges at 1.0% concentration.

First, find the peak flow rate that most closely matches that of your system. The peak flow rate is the highest possible flow rate the system can handle.

Second, find the PPM range in the table that most closely matches your target dosage. The target dosage should fall near the middle to the low side of the ranges shown. If the ranges shown are two high, select the lowest range shown for the peak flow rate and reduce the solution strength from 5.25%.

For example, if the system peak flow is 6 GPM and the target dosage is 1.5 PPM take the lowest range shown, 2.4 PPM divided by the target of 1.5 PPM = a 1.6 to 1 dilution ratio from 5.25%.

To determine the PPM range for solutions other than 5.25%, use the lower table which has PPM ranges based on a 1.0% solution strength. Simply multiply the solution strength that you have times the PPM values in any cell to determine the new values.

Example for 25% solution strength with a 6 GPM peak flow rate and a 4 GPD dosing Pump:

Minimum PPM = 0.4 x 25 = 10 PPM

Maximum PPM = 4.6 x 25 = 115 PPM

	0.10 GPC Meter	0.25 GPC Meter	0.50 GPC Meter	1.0 GPC Meter
Pump GPD	PPM Dosage ranges are show n using the 0.1 to 1 second timer			
4	2.4 to 24 PPM	.9 to 9.7 PPM	.4 to 4.9 PPM	.2 to 2.4 PPM
7	4.2 to 42 PPM	1.7 to 17 PPM	.8 to 8.5 PPM	.4 to 4.3
15	9 to 91 PPM	3.6 to 36 PPM	1.8 to 18 PPM	.9 to 9.1
23	13.9 to 139 PPM	5.5 to 55.9 PPM	2.8 to 28 PPM	1.4 to 14 PPM
30	18 to 182 PPM	7.2 to 72.9 PPM	3.6 to 36.5 PPM	1.8 to 18.2 PPM
Peak Flow Rate (GPM) 3/4"" Mete	6	15	22	X
Peak Flow Rate (GPM) 1.0" Mete	X	15	30	52

***Calculations are based on a 5.25% Chemical Concentration

	0.10 GPC Meter	0.25 GPC Meter	0.50 GPC Meter	1.0 GPC Meter
Pump GPD	PPM Dosage ranges are show n using the 0.1 to 1 second timer			
4	0.4 to 4.6 PPM	0.1 to 1.9 PPM	0.09 to 0.9 PPM	0.05 to 0.5 PPM
7	0.8 to 8.1 PPM	0.3 to 3.2 PPM	0.1 to 1.6 PPM	0.08 to 0.8 PPM
15	1.7 to 17.4 PPM	0.6 to 6.9 PPM	0.3 to 3.5 PPM	0.1 to 1.7 PPM
23	2.6 to 26.6 PPM	1 to 10.6 PPM	0.5 to 5 PPM	0.2 to 2.7 PPM
30	3.4 to 34.7 PPM	1.3 to 13.9 PPM	0.6 to 6.9 PPM	0.3 to 3.5 PPM
Peak Flow Rate (GPM) 3/4"" Mete	6	15	22	X
Peak Flow Rate (GPM) 1.0" Mete	X	15	30	52

***Calculations are based on a 1.0% Chemical Concentration

Residential and Commercial packages

Pre Engineered Feed Systems

PEFS-_ _ _ _ _ _ _ _ _ _ XXX

XP PUMPS	**04**	= XP Series 4 GPD @ 125PSI
	07	= XP Series 7 GPD @ 125 PSI
	15	= XP Series 15 GPD @ 110 PSI
	23	= XP Series 23 GPD @ 100 PSI
	30	= XP Series 30 GPD @ 80 PSI
TIMER MODE	**1**	= Fixed with a Pulse timer 0.1 to 1.0 Seconds
	2	= Fixed with a Pulse timer 0.2 to 10 Seconds
	3	= Fixed with a Pulse timer 1 to 60 Seconds
VOLTAGE	**1**	= 115 VAC
	2	= 230 VAC
WATER METER	**1**	= 3/4" NPT at 0.1 GPC
	2	= 3/4" NPT at 0.25 GPC
	3	= 3/4" NPT at 0.50 GPC
	4	= 1" NPT at 0.25 GPC
	5	= 1" NPT at 0.50 GPC
	6	= 1" NPT at 1.0 GPC
TANK	**1**	= 15 gal. ITS Tank System
	1	= 15 Gallon PE
	2	= 20 Gallon PE (Heavy duty Cover)
	3	= 30 Gallon PE
	4	= 35 Gallon PE (Heavy duty Cover)
	5	= 40 Galllon PE
	6	= 55 Gallon PE (Heavy duty Cover)
INLINE STATIC MIXER	**X**	= No Static Mixer
	1	= 3 to 18 GPM Maximum Flow
STRAINER	**X**	= No Strainer
	1	= Bowl strainer (3/4") 100 MESH
	=	
ASSEMBLY	**X**	= None
	P	= Panel Mount (pump and piping 3/4" Meters only)
	T	= Tank Mount
OPTIONS	**XXX**	= None

A completed model number should look like 'PEFS-04111111PXXX'

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 Selection Guide

PES _ _ - _ _ _ _ _ _

SYSTEM Position 4 & 5		**1B** = Single Pump, Basic System **2B** = Dual Pump, Basic System **1S** = Single Pump, Standard System **2S** = Dual Pump, Redundant Piping, Not Connected **2C** = Dual Pump, Redundant Piping, Connected, Common S & D **2A** = Dual Pump, Redundant Piping w / 3 Way Select **2L** = Dual Pump, Lead/Backup, Single Pipe System **3S** = Three Pump, Redundant Piping, Not Connected **3C** = Three Pump, Redundant Piping, Connected, Common S & D
NOMINAL ELASTOMER Posiition 6		**V** = Viton Elastomers for components **E** = EPDM Elastomers for components
AVAILABLE OPTIONS Position 7 thru 12 as needed		**HF** = High Flow , Required for H7, J7, K7 & H8 Pumps **607** = Conduit Box for Power & Signal **(ADDER PER PUMP)** **LP** = Less Pump, Undrilled Base **CP** = Competitve Pump, Mounted At Factory **(ADDER PER PUMP)**

Single Pump PES1B, PES1S	Dual Pump PES2A	Dual Pump PES2B, PES2S	Lead / Backup PES2L	Triple Pump PES3S, PES3C	**Prices In This Table Are Adders per System, Not Per Pump.** **All Prices Are Added To The Base 'SYSTEM' Price.**
	NA				**CF** = PVC - Auto Fill Calibration Column
					C = CPVC Piping
	NA				**CC** = CPVC-Auto Fill Calibration Column
					K = Kynar Piping
	NA				**KC** = Kynar - Auto Fill Calibration Column
					S = 316SS Piping
	NA				**SC** = 316SS - Auto Fill Calibration Column
					SL = Suction Lift

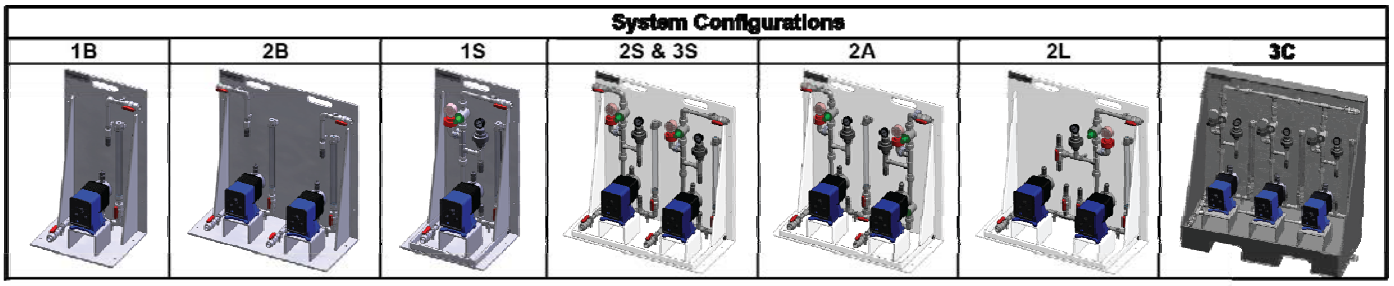
Note: Pump Selection and pricing is in addition to Pre-Engineered Systems Selection

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)
PES1B	1	150 psi	1/2"		1/2"	1	1	1						1		36"	20"	16"	28 lbs	33 lbs
PES2B	2	150 psi	1/2"		1/2"	2	2	2						2		36"	36"	16"	54 lbs	62 lbs
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.
PES2A	2	150 psi	1/2"	√	1/2"	2	2	2	2	2	2	2	√	2	1	36"	36"	16"	65 lbs	72 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.

Basic Systems Utilizing the same durable frame as the Standard Systems (but without the drip rim), providing structure for single or dual metering pumps with multi-function valves (ordered with pump). The Schedule 80 inlet piping assembly includes a clear Y-strainer and calibration column for easy maintenance and measurement. The simplified Schedule 80 discharge piping assembly is rigidly mounted to the frame and includes an isolation valve.

Standard Systems for PulsaTron metering pumps. A compact, rugged High Density Polyethylene frame provides 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.



Key Features

Pre-Configured System: Rigid, unitized frame with pre-plumbed piping assemblies; schedule 80 PVC standard, other materials are available.

Easy to Install and Operate: Turn-key system with single or multiple input and discharge connections; conduit box electrical connections are optional.

Mounting flexibility: The rigid 1/2” frame incorporates both mounting holes for floor and wall mounting configurations. Three pump skids come with raised base and fork lift pockets.

Quick Delivery: Standard, full feature systems available within 2 weeks of order!

Designed for harsh environments: Rigid, 1/2” high-density (HDPE) polyethylene fabricated frame is strong, UV-stabilized and chemically inert.

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

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 preplumbed 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** = Prew ire
AUDIBLE ALARM Position 6	**A** = w ithout Audible Alarm **B** = w ith 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 sw itch, 30 to 50 psi (adjustable to 80 psi) **B** = Low pressure sw itch, 5 to 10 psi (adjustable to 35 psi) **C** = One standard and one low pressure sw itch (DGF2 only)
PUMP AND VOLTAGE RATING Position 9	**A** = 115VAC no pump **B** = 230VAC no pump (must be conduit) **C** = 115VAC 60Hz 1.50GPM @ 100psi **E** = 115VAC 60Hz 3.75GPM @ 100 psi
AGENCY APPROVAL Position 10	**X** = None **A** = ETL Approval
PANEL ASSEMBLY Position 11	**B** = Assembled (must ship via freight)

Pump Accessories

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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 LLDPE Cream and 40 gallon tanks are LLDPE White. The 75 gallon tanks are LLDPE Black and feature a integral molded top with a 4 inch diameter opening.

Heavy Duty Tapered Tanks

Tapered MDPE 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 55 gallon capacities are translucent with 5 gallon graduations. (Not suitable for use with 1/3 HP Flange Mount Mixers.)

	Size Gallons	Wall	Tank Model	Stand Options		
				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**
	55	0.125"	**J40366**	**39321**	**J39376**	**J39379**

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

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.

	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 Transluce	Rigid PE Cover	Cover Mount	**42400**
	55	33.75"	21"	24.5"	0.25				**42401**
Industrial	30	28.5"	18"		0.25	PE Transluce nt	FRP w/ White Gelcoat	Base Mount	**42402**
	55	43"	22.5"		0.25				**42396**
	100	46.25"	26.75"		0.31				**42397**
	150	48"	31"		0.31				**42398**
	200	48"	36"		0.31				**42399**

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

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SPILL CONTAINMENT

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 49-CFR.

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"
42425	4 Drum Spill Containment Unit with Hardtop, 79" x 62" x 64.5"
42426	Loading ramp for 1 and 4 drum spill pallets w/o cover
42427	Caster dolly for 1 drum unit with cover
42428	Loading ramp for 2 & 4 drum hardtop units & 2 drum pallet w/cover

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DOUBLE WALL DUAL 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 49-CFR. 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**

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LEVEL MONITORING FOR DUAL CONTAINMENT TANKS

Keep track of your tank levels with our Manual Level Monitoring Device. The Manual Float gauge easily installs in any 2" top opening and gives you instant level of your Double Walled Tanks. Available in stainless steel or in all polyethylene models. Level listed in 1/4, 1/2, 3/4 and Full in easy to read format.

Level Gauge Manual Float Type		
Material	**Size**	**Part Number**
SST/PE	15	**42412**
SST/PE	20	**42413**
SST/PE	40	**42414**
SST/PE	62	**42415**
SST/PE	120	**42416**
SST/PE	220	**42417**
SST/PE	300	**42418**
SST/PE	500	**42419**

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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 or 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 - 19"H x 19"W x 16.5"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**	**J26906AT**	
		26860	**26860A**	
3/8"	No	**J26885**	**J26885AT**	
1/2"	Yes	**26859**	**26859A**	1

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

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	"J" conn.	Series A+, C, C+, E (except below)	3/8"	**J40491**
		#1 conn.		3/8"	**J40492**
		"A" conn.		1/2"	**J40493**
		"J" conn.	E (LE33-44) and E+	3/8"	**J40494**
		#1 conn.		3/8"	**J40495**
		#3 conn.		1/2"	**J40496**

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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.
7.5	Mec-O-Matic	Stingray	3/8"	**U8800449**
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**

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MIXERS

Select the mounting system, horsepower, motor, impeller, and options that satisfy your specific mixing requirements.

Mounts

Clamp Mount: one or two sturdy clamps secure the mixer on a tank side wall or other vertical surface. Provides four adjustable "bolt secured" positions for angle of insertion into tank.

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

Bracket Mount and Clamp Mount Mixers are available with the following standard motors: (Many other motors available on request)

Open: 1/4, 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.

Explosion Proof: 1/4, 1/3, and 1/2 horsepower motors are 1725 rpm, 115 volt, 60 cycle, split phase, ball bearing, non-ventilated. 1 horsepower motors are 115/230 volt, 60 cycle, capacitor start, automatic overload, fan cooled.

Optional Features

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

Part Number

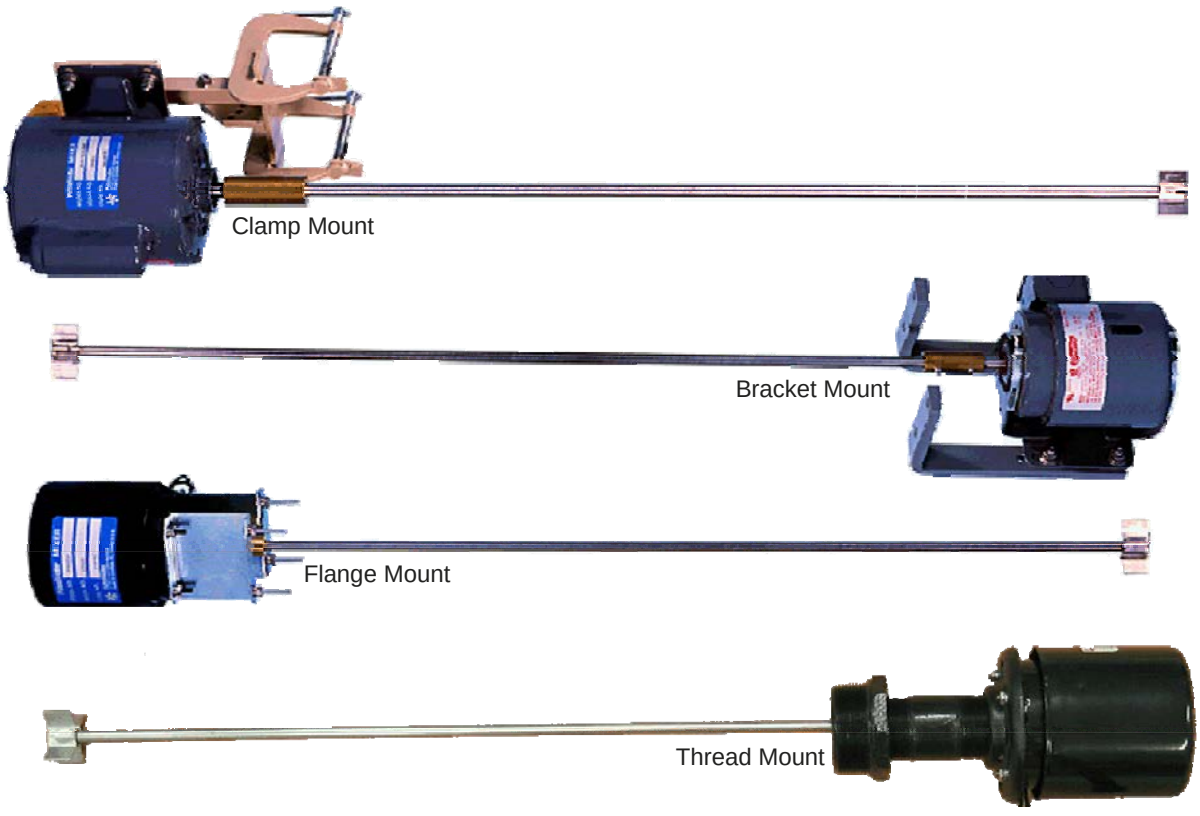
28655 = 29" - 55 gal. (See page 22 for table)

28656 = 20" - 35 gal. (See page 22 for table)

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

Epoxy: Special epoxy corrosion resistant coating for stainless steel impeller and shaft.

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



Mixers

Mount	Motor Type	Model Number	Description	HP	Shaft Length
Clamp Mount	Open	**42735**	115V	1/4	34"
		42740	115V	1/3	36"
		42736	115V	1/2	44"
		42744	115V	1	48"
	Totally Enclosed	**42745**	115V	1/20	28"
		42738	115V	1/4	34"
		42728	115V	1/3	36"
		42737	115V	1/2	44"
		42726	115V	1	48"
Bracket Mount	Open	**42742**	115V	1/4	34"
		42731	115V	1/3	36"
		42722	115V	1/2	44"
		42741	115V	1	48"
	Totally Enclosed	**42747**	115V ONLY	1/20	28"
		42809	115V / Vinyl Coated	1/20	28"
		42819	115V / Vinyl Coated & Prewired	1/20	28"
		42743	115V	1/4	34"
		42730	115V	1/3	36"
		42844	115V / Prewired	1/3	36"
		J64071	230V/50Hz / Prewired	1/3	36"
		J42872	230V/60Hz / Prewired	1/3	36"
		J42858	115V / Vinyl Coated & Prewired	1/3	36"
		42732	115V	1/2	44"
		42847	115V / Vinyl Coated & Prewired	1/2	44"
		J64080	230V/50Hz / Vinyl Coated	1/2	36"
		42779	115V/230V/60Hz / Vinyl Coated	1/2	44"
		42733	115V	1	48"
Flange Mount	Open	**42749**	115V	1/3	34"
		J64022	115V / Vinyl Coated & Prewired	1/3	28"
	Totally* Enclosed Air Open	**J64013**	115V / Prewired	1/20	24"
		J64027	115V / Vinyl Coated & Prewired	1/20	24"
		J64026	230V/60Hz / Prewired	1/20	24"
		J64058	230V/50Hz / Prewired	1/20	24"
		J64028	230V/60Hz / 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	**42729**	115V / Prewired	1/3	36"
	Totally Enclosed Air Open	**42739**	115V	1/20	28"

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All Mixers are equipped with 316SS impeller
WHEN MIXING SODIUM HYPOCHLORITE, ORDER VINYL SHAFT COATING.
No Mixer on 15 gallon Tank. Mixer shafts will be cut to length on request.
For explosion proof motor consult factory.
*** Use only Tank Model 40365 or J40366 with 1/20 hp Mixers.**

Optional Features	
Model Number	**Description**
WRD	6' 3 wire 18 guage SJ cord and plug installed at factory
Epoxy	Special epoxy corrosion resistant coating for stainless steel impeller and shaft
Vinyl Coated	**Special vinyl corrosion resistant coating for stainless steel impeller and shaft required for sodium hypochlorite**
230	230 Volt, 60 Hz Motor 1/20 hp
230	230 Volt, 1/4 hp - 1 hp

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.**

ULTRASONIC LEVEL SENSORS

General purpose non-contact ultrasonic level switch and controller for small tanks 49.2" High (1.25 m) or less. The DS14 and DL10 enables flexible design applications for system integration or retrofit of floats, conductance and pressure sensors. The rugged PVDF enclosure is well suited for a wide range of corrosive, waste, or slurry type media, and can be broadly selected for atmospheric day tank, process vessel or dispenser, pump lift station and waste dump applications. Level indication can be monitored via a local display or controlled through a PLC.

DS14

Provides switch and control capabilities

Replacement of multi-point float, conductivity and pressure level switches

Uses an innovative PC user interface that provides fast and accurate configuration

Compact sensor with 2" dead band and beam width optimized for small tank applications 49.2" High (1.25 m) or less

DL10

Provides two-wire 4-20 mA analog output

Replacement of multi-point float, conductivity and pressure level switches

Uses an innovative PC user interface that provides fast and accurate configuration

Compact sensor with 2" dead band and beam width optimized for small tank applications 49.2" High (1.25 m) or less

Ultrasonic Level Detectors	
Part Number	**Description**
DS1401	4 SPST relay - Ultrasonic Level Detector w / Fob
DL1001	4-20mA output w / fob - Ultrasonic Level Detector w / Fob

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LIQUID LEVEL CONTROLLER AND ALARM

Liquid Level Control/Alarm Monitors are designed to provide reliable level control at reasonable prices. Their unique design separates the control circuitry from the level wand, allowing the control box to be mounted on the wall to avoid contact with corrosive chemical vapors. These units are ideal for low level control of a chemical pump and/or an alarm device. The Liquid Level Monitor was designed for use with various length level wands to indicate when there is a low level condition in the chemical tank and to turn off a metering pump to prevent the pump from running dry. 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 Monitors	
Part Number	**Description**
16-171-79	Level Monitors w ith 16-171-81-4 w and 115 VAC 60 Hz 15 Amp receptacles "pump" and "alarm". Level adjustable up to 60"
16-171-80	Level Monitors w ith 16-171-81-1 w and 115 VAC 60 Hz 15 Amp receptacles "pump" and "alarm". Level adjustable up to 42"
16-171-84	Level Monitors w ith 16-171-81-2 w and 115 VAC 60 Hz 15 Amp receptacles "pump" and "alarm". Level adjustable up to 26".
16-171-85	Level Monitor only less w and 115 VAC 60 Hz 15 Amp receptacles "pump" and "alarm".
16-171-81-4	Level Wand - Level adjustable up to 60". Sw itch contacts 28 VDC 50 mA. Order 16-171-81-3 w hen using PULSAtron Pumps w ith the Stop Function Feature.
16-171-81-1	Level Wand - Level adjustable up to 42". Sw itch contacts 28 VDC 50 mA. Order 16-171-81-3 w hen using PULSAtron Pumps w ith the Stop Function Feature.
16-171-81-2	Level Wand - Level adjustable up to 26". Sw itch contacts 28 VDC 50 mA. Order 16-171-81-3 w hen using PULSAtron Pumps w ith 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 w ith the Stop Function Feature
-2	230V option add "-2" to end of the model number

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NOTE:
1. When utilizing a Pulsafeeder Pump Model that does not have an external/stop feature, order 16-171-79, 16-171-80 or
2. 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

CONTROL-MATE Proportional Adapter

Pulsafeeder's Control-Mate and Control Mate LT provide an electronic interface which permits near-proportional control to any metering pump. In water treatment systems, the Control-Mate allows a feed pump's run time to be triggered by the flow of water through a contacting water meter. As a specific volume of water passes through the meter, the Standard Control-Mate signals the feed pump to run for a predetermined amount of time - 1.2 to 60 seconds - thereby establishing a fixed ratio of solution to water. The Control Mate LT, signals the feed pump to run for a predetermined amount of time - 0.2 to 10 seconds. The Control-Mate is also valuable in systems that function in cycles or phases. When it is necessary to feed solution in conjunction with a valve opening or a pump starting, the Control-Mate and a relay switch activated by the pump or valve will signal the solution feeder to deliver a measured amount of chemical.

Control Mate	
Part Number	**Description**
U8800655	Control-Mate 115V - External Pump Control - 1.2 to 60
U8800715	Control-Mate LT 115V - 0.2 to 10 second

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TIME MATES

Time Mate- A percentage timer with independent on and off times from 6 seconds to 10 minutes

E-Z Day mate – 7 day mechanical timer with a minimum 2 hour on and off times

Day mate – 24 hour mechanical timer with a minimum 15 minute on and off times

Mates	
Part Number	**Description**
U8800657	Time-Mate 115V - % Timer w / 10 min. intervals
U8800707	E-Z Day Mate 115V - 7 day timer w / 2 hr. on/off
U8800724	Day Mate 115V - 24 hr. timer w / 15 min. intervals

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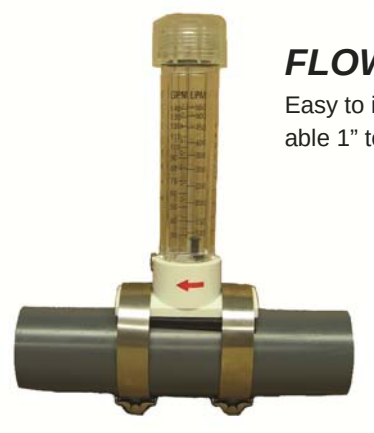

FLOW METER

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.

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

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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 w ith 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 w ith flow)
1	Both on w ith no flow
2	One on w ith flow , other on no flow
3	One on w ith flow , other service
4	One on w ith no flow , other service

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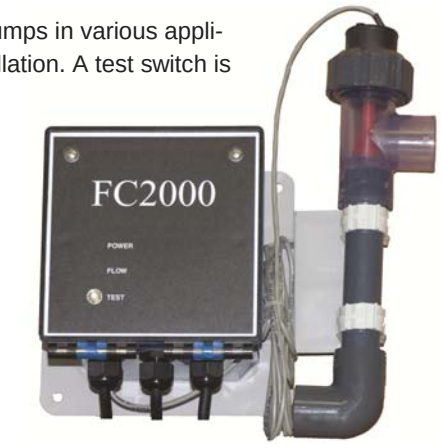

WATER METERS

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.

Contacting Water Meters - Cold Water

	Code	Rating	Reference	MTR _	_ _
Select Water Meter Size	2 =	.75" NPT	.22 - 22 GPM		
	3 =	1" NPT	.44 - 52 GPM		
	4 =	1.5" NPT	.88 - 88 GPM		
	5 =	2" NPT	2 - 132 GPM		
	6 =	3" Flanged	440 GPM		
	7 =	4" Flanged	660 GPM		
	8 =	6" Flanged	1650 GPM		

Code	Rating	Gallons Per Contact (GPC)						
		3/4"	1"	1.5"	2"	3"	4"	6"
01 =	0.1 GPC	X						
02 =	0.25 GPC	X	X					
03 =	0.5 GPC	X	X					
04 =	1 GPC	X	X	X	X			
06 =	5 GPC	X	X	X	X			
07 =	10 GPC	X	X	X	X			
09 =	50 GPC	X	X	X	X			
10 =	100 GPC	X	X	X	X	X	X	X
13 =	1,000 GPC					X	X	X

3/4" - 2" Meters have male Epoxy Coated NPT Bronze Bodies with unions, rated for 150 PSI max, 105 F max.
3", 4" & 6" Meters have Epoxy Coated Ductile Iron Flanged Bodies, rated for 200 PSI max, 105 F max.

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ADJUSTABLE BACK PRESSURE AND 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**
	1.5"	PVDF/TFE	**NA100003-PVD**
Back Pressure Valves	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**

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Pressure Relief Valves

Part Number	Description
41585	Pressure Relief Valve PVC 200 PSI, 1/4" NPT x 1/4" tubing
41587	Pressure Relief Valve 304SS 250 PSI, 1/4" NPT

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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**
10-300-07	Meter Control with Transformer
04-610-12	1" Flow Meter with Controller 28" Cord
04-610-13	1" Flow Meter with Controller 15' Cord

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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	**W777614-PPN**
		CSPE	3/8" FNPT	**W777614-PPH**
		TFE	3/8" FNPT	**W777614-PPT**
		Viton	3/8" FNPT	**W777614-PPV**
		CSPE	1/2" FNPT	**L9908300-HYP**
		TFE	1/2" FNPT	**L9908300-TFE**
		Viton	1/2" FNPT	**L9908300-VIT**
	PVC	CSPE	1/2" FNPT	**L9908400-HYP**
		TFE	1/2" FNPT	**L9908400-TFE**
		Viton	1/2" FNPT	**L9908400-VIT**
	PVDF	EPDM	3/8" FNPT	**W777614-PVN**
		CSPE	3/8" FNPT	**W777614-PVH**
		TFE	3/8" FNPT	**W777614-PVT**
		Viton	3/8" FNPT	**W777614-PVV**
	316 SS	EPDM	3/8" FNPT	**W777611-16N**
		CSPE	3/8" FNPT	**W777611-16H**
		TFE	3/8" FNPT	**W777611-16T**
		Viton	3/8" FNPT	**W777611-16V**
85 cubic inches	POLY	EPDM	3/4" FNPT	**W777616-PPN**
		CSPE	3/4" FNPT	**W777616-PPH**
		TFE	3/4" FNPT	**W777616-PPT**
		Viton	3/4" FNPT	**W777616-PPV**
	PVDF	EPDM	3/4" FNPT	**W777616-PVN**
		CSPE	3/4" FNPT	**W777616-PVH**
		TFE	3/4" FNPT	**W777616-PVT**
		Viton	3/4" FNPT	**W777616-PVV**
	316 SS	EPDM	3/4" FNPT	**W777613-16N**
		CSPE	3/4" FNPT	**W777613-16H**
		TFE	3/4" FNPT	**W777613-16T**
		Viton	3/4" FNPT	**W777613-16V**

150 PSI Pulsation Dampeners - Chargeable				
Volume	**Body**	**Bladder**	**Connection**	**Part Number**
370 cubic inches	POLY	EPDM	2" FNPT	**W777618-PPN**
		CSPE	2" FNPT	**W777618-PPH**
		TFE	2" FNPT	**W777618-PPT**
		Viton	2" FNPT	**W777618-PPV**
	PVDF	EPDM	2" FNPT	**W777618-PVN**
		CSPE	2" FNPT	**W777618-PVH**
		TFE	2" FNPT	**W777618-PVT**
		Viton	2" FNPT	**W777618-PVV**
	316 SS	EPDM	2" FNPT	**W777631-16N**
		CSPE	2" FNPT	**W777631-16H**
		TFE	2" FNPT	**W777631-16T**
		Viton	2" FNPT	**W777631-16V**
36 cubic inches	POLY	EPDM	3/4" FNPT	**W777615-PPN**
		CSPE	3/4" FNPT	**W777615-PPH**
		TFE	3/4" FNPT	**W777615-PPT**
		Viton	3/4" FNPT	**W777615-PPV**
	PVDF	EPDM	3/4" FNPT	**W777615-PVN**
		CSPE	3/4" FNPT	**W777615-PVH**
		TFE	3/4" FNPT	**W777615-PVT**
		Viton	3/4" FNPT	**W777615-PVV**
	316 SS	EPDM	3/4" FNPT	**W777612-16N**
		CSPE	3/4" FNPT	**W777612-16H**
		TFE	3/4" FNPT	**W777612-16T**
		Viton	3/4" FNPT	**W777612-16V**
175 cubic inches	POLY	EPDM	2" FNPT	**W777617-PPN**
		CSPE	2" FNPT	**W777617-PPH**
		TFE	2" FNPT	**W777617-PPT**
		Viton	2" FNPT	**W777617-PPV**
	PVDF	EPDM	2" FNPT	**W777617-PVN**
		CSPE	2" FNPT	**W777617-PVH**
		TFE	2" FNPT	**W777617-PVT**
		Viton	2" FNPT	**W777617-PVV**
	316 SS	EPDM	2" FNPT	**W777630-16N**
		CSPE	2" FNPT	**W777630-16H**
		TFE	2" FNPT	**W777630-16T**
		Viton	2" FNPT	**W777630-16V**

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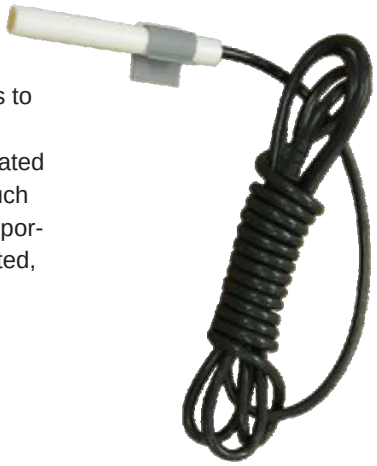
Specifications: 150 PSI Maximum Pressure

REED CAPSULE SWITCH



The reed capsule assembly enables one Pulsatron metering pump to transmit stroke signals to another, causing a corresponding stroke of the receiving pump. While the stroking rate of the receiving pump is always the same as the transmitting pump, the pumps can be of different rated capacities, stroke lengths can be individually set, and different chemicals can be pumped. Such a system is proportioning; that is, individual pump flow rates remain in the same constant proportion to one another regardless of the primary stroking rate. Pumps can be sequentially operated, or cascaded without limit.

Reed Capsule Switch	
Part Number	**Description**
L9702300-000	Reed Capsule Switch

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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**	**Part Number**
3/8" OD	100 ML	**L9908500-000**
1/2" OD		**L9908501-000**
3/8" OD	200 ML	**L9908502-000**
1/2" OD		**L9908503-000**

Calibration Columns		
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**

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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)

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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. **28656** 20" - 35 gal.	Suction Tube Shield Assembly. 1" PVC tube. Prevents pump suction tubing from entangling with mixer blade

1

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 | Aids Priming | Drains Discharge Line

Controls Back Pressure | Prevents Siphoning

Five Function Valve Selection Guide — L380 _ _ _ _ _ - _ _ _

Five Function Valve	**L380**	= Five Function Valve
Max Pressure Rating	**D**	= 100 PSI
	F	= 150 PSI
	K	= 300 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 Flouride (PVDF or Kynar)
	FPP	= Glass Filled Polypropylene

1

FIVE FUNCTION DEGAS VALVE

With the Five function De-Gas valve you don't have to give up the accuracy and control of a solenoid metering pump in order to pump gaseous solutions.

Degassing | Aids Priming | Drains Discharge Line

Controls Back Pressure | Prevents Siphoning

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 Flouride (PVDF or Kynar)

1

STRAINER ASSEMBLY

Strainer Assembly

Part Number	Description
J60586	Strainer Assembly FPP/TFE/C 3/8"OD
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

SADDLEBLOCK INJECTOR ADAPTERS

The saddleblock injector adapter saves time and effort by providing a simple means of connecting the discharge of a Pulsafeeder metering pump to system feed lines without cutting, gluing, tapping or installing a “T” in the line. the adapter is constructed of durable PVC with rubber seals and is mounted with two stainless steel clamps. The adapter is available in a variety of sizes for piping diameters ranging from 1” to 4” and may be used on plastic or metal piping with temperatures and pressures to 100°F/ 100 psig.

Injector Adapters		
Size	**Description**	**Part Number**
1"	Saddleblock Injector Adapter	**L9905000-000**
1 1/4"		**L9905100-000**
1 1/2"		**L9905200-000**
2"		**L9905300-000**
2 1/2"		**L9905400-000**
3"		**L9905500-000**
4"		**L9905600-000**

1

6” INJECTORS

When injecting into a water line, its 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 **25.**

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**

1

IN-LINE ANTI-SIPHON VALVE

In installations where the injection point is lower that 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

1

TUBING—100 FOOT ROLLS

Periodic replacement of a metering pumps 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**

1

KOPKITS: Keep-On-Pumping kits that can save you time and money

When you need a part, you've got it! A KOPkit can help you cut downtime and put you back in business fast. Use KOPkits also for preventive maintenance, to ensure continuous high performance from your Pulsafeeder metering pump.

Save money too, buying parts in KOPkits instead of ordering individual parts.

KOPkits are available for the Chem-Tech Series XP, Series CTP, Series 100 and 200, Mec-O-Matic Series Stingray, Series Dolphin, OMNI and all Pulsatron Series metering pumps. Refer to Metering Pumps And Control Systems Price List for selection and pricing.

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

1

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

SURGE PROTECTOR

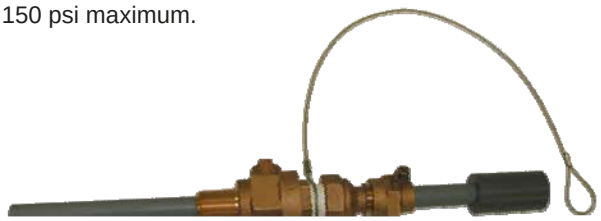
Pulsafeeder surge protectors are designed to protect Pulsatron electronically driven metering pumps from transient voltage surges and to help safeguard against damage from lightening strikes or unexpected electrical disturbances. With a response time of less than 1nS, the Pulsafeeder surge protector helps to save valuable metering equipment from permanent damage.

Surge Protector	
Part Number	**Description**
L9712200-115	Surge/Spike Protector (115V)

1

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**	**Part No.**
3/4 NPT	w/ PVC	**J61135**
1" AWWA	Nozzle	**J61136**
1" NPT	Assy	**J61191**
3/4 NPT	w/ CPVC	**J61135-C**
1" AWWA	Nozzle	**J61136-C**
1" NPT	Assy	**J61191-C**

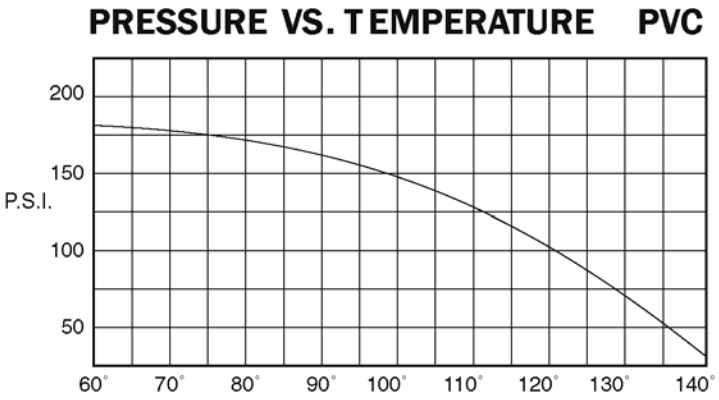
1

PADDLE WHEEL WATER METERS

Fixed-depth paddlewheel flow sensor for pipe sizes 1/2" to 8"

High-quality ruby bearings for excellent low-flow performance and long life. Pickup exerts no magnetic drag on the rotor.

The Hall Effect output can connect directly to a controller with a Hall effect input, Metering pump with a hall effect input or to a flow meter controller, MTRPFT or MTRFBT.



Specifications									
Flow Range (GPM	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"
Min	0.3	0.5	0.8	1.9	3.1	6.9	12	27	47
Max	28	50	80	190	314	691	1200	2700	4700
Sensor	Hall Effect				Current sinking pulse				
Materials									
	Sensor Body				PVC				
	Rotor				PVDF				
	Shaft				Nickel-bound tungsten carbide (zirconia ceramic -				
	Bearings				Ruby jewels				
Max. Pressure	PVC				175 psi (12 bar) at 75°F				
Max. Temperatu	PVC				130°F (55° C)				
Cable	#22 AWG 3-con, 18								
Max Cable Run	2,000' (650m)								

Paddle Wheel Meter	
Part Number	Description
MTR050HE-PVC	PVC Paddle wheel meter with 1/2" PVC TEE
MTR075HE-PVC	PVC Paddle wheel meter with 3/4" PVC TEE
MTR100HE-PVC	PVC Paddle wheel meter with 1" PVC TEE
MTR150HE-PVC	PVC Paddle wheel meter with 1-1/2" PVC TEE
MTR200HE-PVC	PVC Paddle wheel meter with 2" PVC TEE
MTR300HE-PVC	PVC Paddle wheel meter with 3" PVC Saddle
MTR400HE-PVC	PVC Paddle wheel meter with 4" PVC Saddle
MTR600HE-PVC	PVC Paddle wheel meter with 6" PVC Saddle
MTR800HE-PVC	PVC Paddle wheel meter with 8" PVC Saddle
HE3-PVC	Replacement PVC insertion paddle wheel meter for 1/2"-3" pipe)
HE8-PVC	Replacement PVC insertion paddle wheel meter for 4"-8" pipe)

Paddle Wheel Water Meter

1

FLOW METER CONTROLLERS

Batching Flow Processor with additional outputs.

Large backlit alphanumeric display

Built-in 4-20 mA analog output

User-scaled pulse output for chemical metering pumps or telemetry

Rugged cast aluminum housing

MTRBFT

4-20mA Flow Meter Controller

Pulse and 4-20 mA analog outputs, both numerically scaled by the user.

Rugged cast aluminum housing, covered with a heat-fused coating. For maximum moisture protection, the electronic components are potted solid.

MTRPFT

Flow Meter Controllers	
Part Number	Description
MTRBFT	Batch Controller
MTRPFT	120 VAC Rate/Totalizer with 4-20mA

1

Controller Accessories

Table of Contents

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. All black iron racks are supplied on unistrut for easy installation.

Corrosion Coupon Racks

Standard system includes: PVC coupon holder, nylon screw and nut, PVC inlet ball valve, 0.75 in. (19mm) piping, and Schedule 80 PVC mounted on 0.25 in. HDPE. System does not include coupons.

Model No.	Description
CCR10	1 station 12 in. H x 22 in. W (305 x 559 mm) Panel Size
CCR20	2 stations 16 in. H x 22 in. W (406 x 559 mm) Panel Size
CCR30	3 stations 20 in. H x 22 in. W (508 x 559 mm) Panel Size
CCR40	4 stations 28 in. H x 22 in. W (71 x 559 mm) Panel Size
CCR50	5 stations 32 in. H x 22 in. W (813 x 559 mm) Panel Size
CCR60	6 stations 36 in. H x 22 in. W (914 x 559 mm) Panel Size

Available optional Piping:

1" PVC piping max 150 psi (10.4 bar), 140⁰ F (60⁰C)	3/4" CPVC piping max 150 psi (10.4 bar), 212⁰ F (100⁰C)	1" CPVC piping max 150 psi (10.4 bar), 212⁰ F (100⁰C)	3/4" black iron piping max 250 psi (17 bar), 212⁰ F (100⁰C)
Model No.	Model No.	Model No.	Model No.
CCR10A	CCR10B	CCR10C	CCR10D
CCR20A	CCR20B	CCR20C	CCR20D
CCR30A	CCR30B	CCR30C	CCR30D
CCR40A	CCR40B	CCR40C	CCR40D
CCR50A	CCR50B	CCR50C	CCR50D
CCR60A	CCR60B	CCR60C	CCR60D

Available options:

Option	Description
X1	Quick release coupon holders (PVC only)
X4	3/4 hot/cold water flow meter
X6	1 cold water flow meter
X7	PVC outlet ball valve, 3/4 blk iron units use 3/4" brass gate valve 300 psi
X8A	Y Strainer for 3/4 PVC
X8B	Y Strainer for 1 PVC or CPVC
X8C	Y Strainer for 3/4 CPVC or black iron
X8D	3/4" Polypropylene bowl strainer 30 mesh, 150 psi max at 70ºF
X8E	1" Polypropylene T strainer 30 mesh, 150 psi max at 70ºF
X9	Clear PVC pipe sections. Only available on .75 in PVC models above.
F3	Flow control valve 3 GPM (3/4" only)
F5	Flow control valve 5 GPM (3/4" only)
1F5	Flow control valve 5 GPM (1" only)
1F10	Flow control valve 10 GPM (1" only)
Z4	Sample/Dain port (PVC) only

NOTE: Options X4 and X6 for max. 150 psi (10.4 bar) @ 130ºF (54ºC).

CORROSION COUPON RACKS

Corrosion Coupon Racks		
Standard system includes: PVC coupon holder, nylon screw and nut, PVC inlet ball valve, 0.75 in. (19mm) piping, and Schedule 80 PVC mounted on 0.50 in. HDPE. System does not include coupons.		
Model No.	**Description**	
CCR1	1 station	12 in. H x 22 in. W (305 x 559 mm) Panel Size
CCR2	2 stations	16 in. H x 22 in. W (406 x 559 mm) Panel Size
CCR3	3 stations	20 in. H x 22 in. W (508 x 559 mm) Panel Size
CCR4	4 stations	28 in. H x 22 in. W (71 x 559 mm) Panel Size
CCR5	5 stations	32 in. H x 22 in. W (813 x 559 mm) Panel Size
CCR6	6 stations	36 in. H x 22 in. W (914 x 559 mm) Panel Size
Available optional Piping:		

1" PVC piping max 150 psi (10.4 bar), 140⁰ F (60⁰C)	**3/4" CPVC piping max 150 psi (10.4 bar), 212⁰ F (100⁰C)**	**1" CPVC piping max 150 psi (10.4 bar), 212⁰ F (100⁰C)**	**3/4" black iron piping max 250 psi (10.4 bar), 212⁰ F (100⁰C)**
Model No.	**Model No.**	**Model No.**	**Model No.**
CCR1A	**CCR1B**	**CCR1C**	**CCR1D**
CCR2A	**CCR2B**	**CCR2C**	**CCR2D**
CCR3A	**CCR3B**	**CCR3C**	**CCR3D**
CCR4A	**CCR4B**	**CCR4C**	**CCR4D**
CCR5A	**CCR5B**	**CCR5C**	**CCR5D**
CCR6A	**CCR6B**	**CCR6C**	**CCR6D**

Available options:	
Option	**Description**
X1	Quick release coupon holders (PVC only)
X4	3/4 hot/cold water flow meter
X6	1 cold water flow meter
X7	PVC outlet ball valve std, 3/4 blk iron units use 3/4" brass gate valve 250 psi
X8A	Y Strainer for 3/4 PVC
X8B	Y Strainer for 1 PVC or CPVC
X8C	Y Strainer for 3/4 CPVC or black iron
X8D	3/4" Polypropylene bowl strainer 30 mesh, 150 psi max at 70ºF
X8E	1" Polypropylene T strainer 30 mesh, 150 psi max at 70ºF
X9	Clear PVC pipe sections. Only available on .75 in PVC models above.
F3	Flow control valve 3 GPM (3/4" only)
F5	Flow control valve 5 GPM (3/4" only)

NOTE: Options X4 and X6 for max. 150 psi (10.4 bar) @ 130ºF (54ºC).

2

Coupon Rack Replacement Parts	
Part No.	**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 & Corrosion	
Part Number	**Description**
03-220-10	Mild Steel
03-220-00	Copper
03-220-60	303 Stainless Ste
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

CORROSION DEPOSIT MONITOR

Pulsafeeder's Corrosion Deposit Monitor is a self contained, portable system for monitoring corrosion and deposition characteristics of cooling water systems. The deposit sampling unit consists primarily of a glass tube and a 600 watt cartridge heater. The heating element acts as a catalyst that increases the rate of deposition in the specimen tube. The speeding of deposition helps the user determine the amount of deposits that may be expected from the system over a longer period of time.

Corrosion Deposit Monitor	
Model No.	**Description**
DPM14	120 VAC
DPM24	230 VAC w iring

4

DEPOSIT MONITOR PARTS

Corrosion Deposit Monitor Replacement Parts	
Part Number	**Description**
03-008-00	Small Neoprene O-rings (2 required)
03-210-06	Compression fittings for end blocks (2 per block)
03-013-00	Large Neoprene O-rings (2 required)
05-047-50	Sight glass (1 required)
05-052-00	15 amp fuse (1 required)
05-051-00	Fuse holder for 05-052-00
05-047-20	Heater cartridge (1 required)
05-047-30	Left exchanger end block (1 required)
05-047-40	Right exchanger end block (1 required)
05-047-35	Center exchanger block (1 required)

Specimen Tubes for Corrosion Deposit Monitor	
Part Number	**Description**
03-223-00	Mild Steel
03-223-10	Copper
03-223-30	304 Stainless Steel
03-223-40	316 Stainless Steel
03-223-50	Nickel
03-223-60	Brass

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 µS/cm
HJ7B	0-50, 0-500, 0-5,000 µS/cm

2

SOLENOIDS & MOTORIZED BALL VALVES

Standard Solenoid Valves	
Part Number	**Description**
12-072-62	2 Way N/C 1/4" Stainless Steel Body with tefon Seat. 150 psi MOPD at 160^{O} F. 120/60, 110/50 volt - ASCO vlv
12-072-53	2 Way N/C 1/2" NPT Brass Body. 0 psi min - 150 psi MOPD at 180^{O} F. 120/60, 110/50 volt - ASCO vlv
12-072-54	2 Way N/C 3/4" NPT Brass Body. 0 psi min - 150 psi MOPD at 180^{O} F. 120/60, 110/50 volt - ASCO vlv
12-072-55	2 Way N/C 1" NPT Brass Body. 0 psi min - 150 psi MOPD at 180^{O} F. 120/60 volt - ASCO vlv
12-072-56	2 Way N/C 1" NPT Brass Body. 5 psi min - 150 psi MOPD at 180^{O} F. 120/60, 110/50 volt - ASCO vlv
12-072-57	2 Way N/C 1 1/2" NPT Brass Body. 0 psi min - 150 psi MOPD at 180^{O} F. 120/60 volt - ASCO vlv
12-072-58	2 Way N/C 1 1/2" NPT Brass Body. 5 psi min - 150 psi MOPD at 180^{O} F. 120/60 volt - ASCO vlv
12-072-59	2 Way N/C 2" NPT Brass Body. 5 psi min - 150 psi MOPD at 180^{O} F. 120/60 volt - ASCO vlv
High Temp Solenoid Valves	
12-072-60	2 Way N/C 1/2" NPT Brass Body. 1 psi min - 125 psi MOPD at 353^{O} F. 120/60 volt - ASCO vlv
12-072-61	2 Way N/C 3/4" NPT Brass Body. 2 psi min - 125 psi MOPD at 353^{O} F. 120/60, 110/50 volt - ASCO vlv
12-048-00	2 Way N/C 1/2" Brass Body, PTFE. 0 psi differential, 100 psi @ 356^{O}F. 115 VAC.
12-056-00	2 Way N/C 3/4" Brass Body, PTFE. 0 psi differential, 100 psi @ 356^{O}F. 115 VAC.

2

2

Standard Solenoid Valve

High Temp 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)

2

EC Series Motorized Valve

Dynamatic Series - Motorized Valves	
Part Number	**Description**
	Motorized Valves for Cooling Tower Applications. Brass valve, full port, with electric actuator. 300 psi max. 115 VAC
12-054-14	1/2" NPT
12-054-13	3/4" NPT
12-054-12	1" NPT
12-054-11	2" NPT

2

Dynamic Series Motorized Valve

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.

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**

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 Orfice Unions are carbon steel union with stainless steel plates.**

Throttling 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)
16-892-16	1/2" high steam rated motorized ball valve (10-36 Worcester Actuator)
16-892-18	3/4" high steam rated motorized ball valve (12-75 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

Motorized Ball Valve

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
12-041-00	Mounting kit for 12-043-00 & 12-040010
12-041-10	Mounting kit for 12-043-00 & 12-040-10
12-049-00	Mounting kit for 12-051-00 & 12-040-00
12-049-10	Mounting kit for 12-051-00 & 12-040-10
05-006-20	Limit switch for 10-36 actuator

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", ¼" and a 5/16". Flow control valves include an indexed position indictor.

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 Plates

Orifice Union

Flow Control Valves

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

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"
16-900-13	1 1/2"
16-900-14	2"
16-900-18-1	16-900-18 less solenoid valve
16-900-12-1	16-900-12 less solenoid valve
16-900-13-1	16-900-13 less solenoid valve
16-900-14-1	16-900-14 less solenoid valve

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

POOL AND WATER SYSTEM TEST KITS

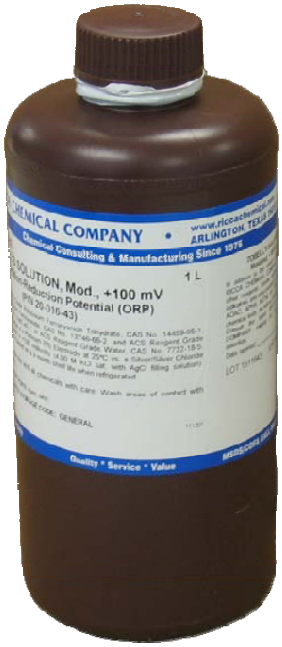
When it comes to controlling the chlorine and pH levels in a swimming pool or decorative fountain display, Pulsafeeder test kits provide a simple colorimetric test that easily confirms that your treatment program is in control -and at an affordable price.

Test Kits	
Part No.	**Description**
30260	Chlorine & pH Test Kit (tablet)
J00049	Chlorine Test Tabs, 100 ct

1

CALIBRATION SOLUTIONS

Standard solutions are available for conductivity, pH and ORP instrumentation calibration.



Calibration Solutions	
Part No.	**Description**
Conductivity Solutions (500 ml bottles)	
20-016-24	500 conductivity (6 pack)
20-016-26	2000 conductivity (6 pack)
20-016-28	5000 conductivity (6 pack)
20-016-00	500 conductivity (1 bottle)
20-016-02	2000 conductivity (1 bottle)
20-016-04	5000 conductivity (1 bottle)
pH Kit Solutions	
20-016-36	pH 4 buffer solution - 4 oz
20-016-37	pH 4 buffer solution - 32 oz
20-016-38	pH 7 buffer solution - 4 oz
20-016-39	pH 7 buffer solution - 32 oz
20-016-40	pH 10 buffer solution - 4 oz
20-016-41	pH 10 buffer solution - 32 oz
ORP Kit Solutions	
20-016-42	ORP 100 mV buffer solution - 4 oz
20-016-43	ORP 100 mV buffer solution - 32 oz
20-016-44	ORP 465 mV buffer solution - 4 oz
20-016-45	ORP 465 mV buffer solution - 32 oz
Calibration Kit / Tee	
12-043-58	Calibration Kit / Tee

2

Policies and Procedures

1. Manufacturer's Equipment Warranty

a. Pulsafeeder warrants all pumps and controllers of its manufacture to be free of defects in material or workmanship. Liability under this policy extends for 24 months from date of shipment from the factory. The manufacturer's liability is limited to repair or replacement of any failed equipment or part which is proven defective in material or workmanship upon manufacturer's examination. This warranty does not include removal or installation costs and in no event shall the manufacturer's liability exceed the selling price of such equipment or part.

b. The manufacturer disclaims all liability for damage to its products through improper installation, maintenance, use or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any other unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries or expense incurred through the use of its products.

c. The above warranty is in lieu of any other warranty, whether expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to provide any warranty other than the above.

2. Pulsafeeder's Parts and Accessory Warranty

a. Pulsafeeder, Inc. warrants parts and accessories provided to be free of defects in material or workmanship. Unless otherwise noted below, liability under this policy extends for 90 days from date of shipment from the factory when sold as service parts. (Replaceable elastomeric parts are expendable and are not covered by any warranty either expressed or implied.)

b. This policy is extended to a full 12 months from the date of installation or 18 months from shipment from the factory whichever comes first on the following accessories;
Intelliscan
Digital Glycol Feeders
Analog Timers
Water Meters
Flow Controllers

c. MicroTrac and MicroVision toroidal probes are warranted for 24 months from date of shipment from the factory when purchased in conjunction with the controller.
All other electrodes/probes and sensors are considered maintenance items and such are warranted for six (6) months from the date of shipment when purchased in conjunction with the controller.
Any electrodes/probes and sensors purchased as spare parts are warranted for 90 days from date of shipment.

d. The manufacturer's liability is limited to repair or replacement of any failed equipment or part which is proven defective in material or workmanship upon manufacturer's examination. This warranty does not include removal or installation costs and in no event shall the manufacturer's liability exceed the selling price of such equipment or part.

e. The manufacturer disclaims all liability for damages to its products through improper installation, maintenance, use or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries or expense incurred through the use of its products.

f. The above warranty is in lieu of any other warranty, whether expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to provide any warranty other than the above.

3. Process for All Returned Goods

a. Please contact our Customer Service Department to request a RMA (Return Material Authorization) number prior to returning any goods. The following information will be required:
Billing and ship-to address
Model number and serial number
Contact name and phone number
Reason for return
Purchase order (where applicable)
A packing slip will be provided to the shipper and MUST accompany the product being returned. Packages received without our proper packing list will be refused by the receiver.

b. All material must be returned freight prepaid.

c. All material must be properly packaged to prevent damage in shipment.

d. All products MUST be wiped and flushed clean of any and all chemicals, solvents or buffers and be warranted to be safe for handling. You will be requested to acknowledge the condition of the product being returned on our packing list. Any product received that is deemed to be unsafe for handling or without this acknowledgement will be refused by our receiver.

e. RMA for returning product for credit is effective for 90 days from the date of issue. After 90 days if the product has not been returned to Pulsafeeder the RMA number will be cancelled, and a new request must be made by the customer to continue with the return procedure.

4. Non-Warranty Return Procedure

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

b. The charges listed in the following table will apply.

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

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

Policies and Procedures continued

5. Credit for Return of New, Unused Equipment

a. No equipment will be accepted beyond six months after date of shipment from factory for credit.
b. Only new, unused and undamaged standard equipment will be accepted for return to stock.
c. All credits are based on evaluation and acceptance of material as new and unused by Pulsafeeder. You will be requested to acknowledge the condition of the product being returned on our packing list. Any product received that is deemed to be unsafe for handling or without this acknowledgement will be refused by our receiver.
d. A restocking fee of 25% will apply to returned goods. When a PO is provided for a replacement item at the time of the return request the restocking fee will be 15%. Note: any product mounted on a panel or skid will be charged a 50% re-stocking fee.
e. A request for a Returned Material Authorization (RMA) number must be made prior to returning product to Pulsafeeder.
f. All equipment shall be returned with the RMA Packing List form attached to the outside of the box.
g. If any chemical, solvent or buffer has been introduced into the product it must be wiped and flushed clean of any and all substances prior to returning to Pulsafeeder.
h. All material shall be returned freight prepaid.
i. Private label products or Engineered Panel Mount Systems are not returnable.

6. Pricing Errors

a. Pulsafeeder does their very best to avoid errors in billing. You will receive a confirmation of your order within 24 hours of order entry. If upon review the customer feels there is a discrepancy, they should contact Pulsafeeder Customer Service as soon as possible to resolve.
b. Should an invoice be received that the customer believes to have incorrect pricing, they should notify Pulsafeeder Customer Service to investigate.

7. Missing Items

a. If a product is received by the customer with an item missing the customer must notify Pulsafeeder Customer Service within 7 days of receipt of the product by the end user. A replacement item will be sent at no charge as quickly as possible.
b. If a shipment is received by the customer with a line item missing they must notify Pulsafeeder Customer Service within 7 days of receipt of the product by the end user. If the customer had been billed for that item, a credit will be issued against the original Sales Order and a new Sales Order will be created for the replacement product.

8. Damaged Items

a. Should the customer receive an order that was damaged in transit, the customer must notify the carrier directly to initiate a claim on the day of delivery.
b. Should the customer receive a product with damaged components due to improper packaging they should notify Pulsafeeder Customer Service within 7 days of receipt of product by end user. A replacement item will be sent at no charge as quickly as possible.

9. Technical Support Services Available

a. Pulsafeeder's Technical Sales Support team is available *to provide all your sales and support needs. The principle mission of this group is to sell and support our customer base in a timely and effective manner. This includes the ability to provide in-field service training, assistance in start-up of our products and perform field repair of goods when required.*
b. Scope

Pulsafeeder, Inc. factory Field Service Technicians are available throughout the World for field services on all Pulsafeeder products. Services include:

i. Maintenance Training Seminars, including Classroom slide presentations and or Hands-on Training. The seminar will take approximately four to five hours, and if time permits minor repair and or adjustments may be made to the customer's pumps, controllers or accessories.
ii. Pre-start up inspections and start up testing/calibration of pumps, controllers and accessories.

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

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

[1] *All rates listed in this section are actual hourly and daily rates, not reference rates*

TERMS & CONDITIONS

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

2 . PROPOSAL OR QUOTATION. A proposal shall not become binding up on Seller until it has been executed and returned by Purchaser. An oral quotation shall not be considered an offer: only a written confirmation thereof incorporating Seller's terms and conditions shall constitute an offer.

3 . CREDIT. Credit terms of payment must have the approval of Seller's Credit Department and must be specified in writing on Seller's invoice or in the Contract. If Purchaser's credit is found by Seller to be unsatisfactory . Seller may rescind or terminate this Contract. If at any time during the term of this Contract Purchaser's financial responsibility becomes impaired or unsatisfactory to Seller, Seller reserves the right to stop shipment on notification to Purchaser, project owner and surety with a demand for payment in advance or at time of delivery for future deliveries or to require other security satisfactory to Seller and in the absence thereof, to cancel the 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.

4 . PAYMENT. Specific terms of payment for this order shall be set forth on the reverse side of this Contract or identified and appended hereto. Purchaser agrees to make payment at Seller's location specified in this Contract in lawful money of the United States. Purchaser further agrees to make all payments when due to Seller in accordance with the agreed terms of payment in this Contract without reference to Purchaser's agreement with or payments by the owner and with no right of retention.

5 . INTEREST AND COSTS. Purchaser agrees to pay interest at 1.5% per month (to the extent permitted by law) on all delinquent balances if and when assessed by Seller, and any attorney's fees or court costs arising out of and made necessary in collection of its obligation to Seller created by this Contract.

6 . TAXES. Any federal, state or local tax assessment, fee, duty or charge hereafter imposed on or measured by the products purchased hereunder shall be for Purchaser's account unless Purchaser furnishes Seller an acceptable exemption certificate from such tax, fee, duty or charge prior to shipment.

7 . FORCE MAJEURE. Seller shall make delivery in accordance with the terms of this Contract or within a reasonable time in the absence of any commitment, but Seller shall not be liable for delays or defaults in delivery caused by floods, fires, storms, or other acts of God, by war or act of public enemy (or civil disturbance), strikes, lock outs, shortages of labor or raw materials and supplies (including fuel) or production facilities, transportation service or equipment shortages or failures, action of any governmental authority or other conditions beyond Seller's reasonable control.

8 . CANCELLATION. If Purchaser desires to cancel or change any portion of this Contract, he must make such request in writing to Seller. Seller may, in its sole discretion, accept or reject any such request. If accepted, the Purchaser nonetheless must take delivery and make payment to Seller for all material manufactured and in process of manufacture at time of notice, and all special materials ordered at time of notice and for which Seller must take delivery , unless otherwise agreed by Seller in writing. All such materials must be removed from Seller's premises within 30 days after payment and payment will due at time of notice. Seller also reserves the right to make a cancellation charge in the event of cancellation by the Purchaser of an order p laced in Seller's shipping schedule and acknowledged by Seller.

9 . INSPECTION AND TESTING . Seller's standard specifications and tests apply to all orders. All charges for inspections or tests not regularly furnished are for Purchaser's account and subject to prior negotiation. All inspections shall be conducted at Seller's plant, and failure of Purchaser to avail himself of inspection privileges shall be deemed a waiver of such privileges.

1 0 . 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.

1 1 . 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.

1 2 . 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.

1 3 . TITLE. Title to products transfers up on delivery to Purchaser at the F.O.B. point of delivery which will be clearly set forth in the shipment terms of this Contract. On receipt of title, Purchaser is then responsible for proper protection of product, placement, compliance with all regulations and ordinances, and will indemnify Seller against all claims for personal injuries or property damage arising from the storage, use or handling of such products.

1 4 . IN TRANSIT CLAIMS. Claims for damage or shortage in transit must be made against the carrier by the owner of the shipment according to the F.O.B. terms of the Contract. Purchaser has the responsibility to inspect shipments before or during unloading to identify any such damage or shortage and see that appropriate notation is made on the delivery tickets or an inspection report furnished by the local agent of the carrier in order to support a claim.

1 5 . 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.

1 6 . RETURNS. Returned goods shall be accepted for credit only if in salable condition and only with evidence of Seller's prior written consent. Seller will assess charges for freight both ways and any costs necessary to restore such goods to the regular plant inventory . The amount of credit given will depend further up on the degree of salability of products accepted in opinion of Seller.

1 7 . 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.

1 8 . WARRANTY : LIMITATION OF LIAB ILITY . 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.

1 9 . LAW . This order shall be governed by and shall be construed by the law of the State of New York .

2 0 . 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.

TERMS & CONDITIONS continued

2 1 . 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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