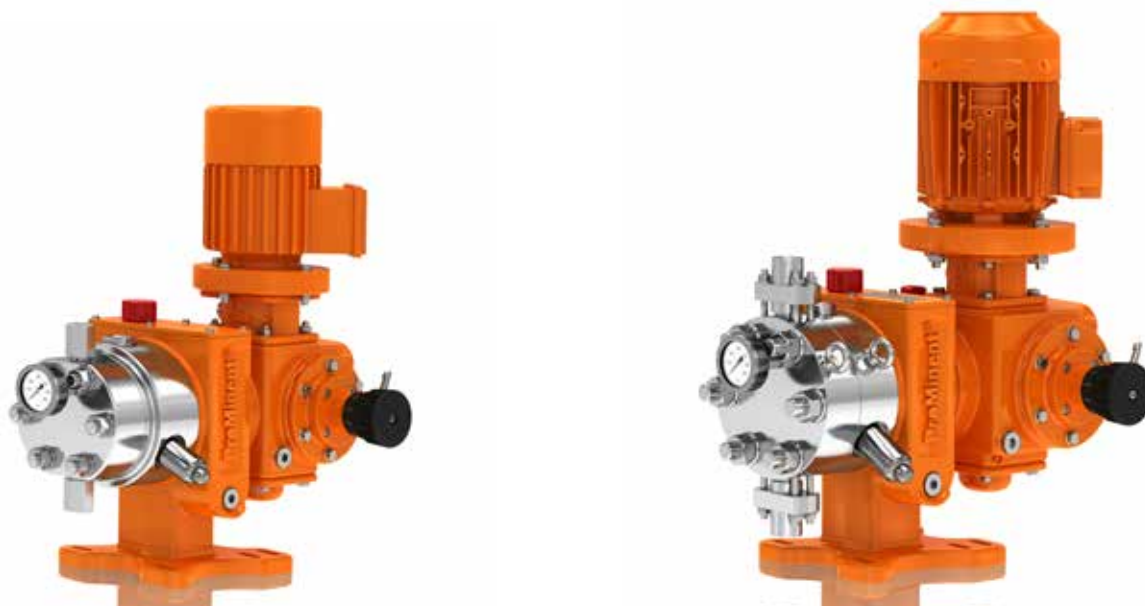


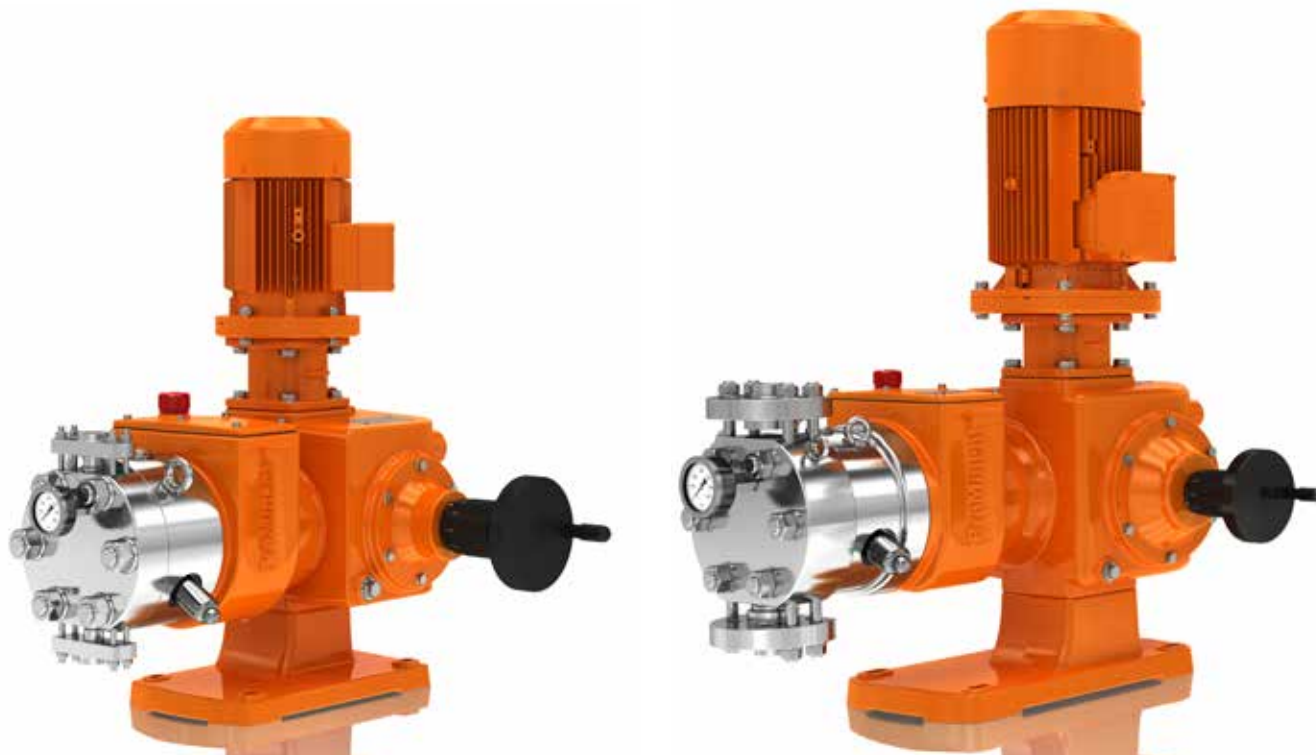
# ProMinent Evolution Series

Hydraulic Diaphragm Metering Pumps

ProMinent®



Evolution 1 & 2



Evolution 3 & 4

# Evolution Series

## The Evolution Series

- The **ProMinent® Evolution Series** pumps are API 675, 3rd Edition compliant and meet the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump design.

## Standard Features

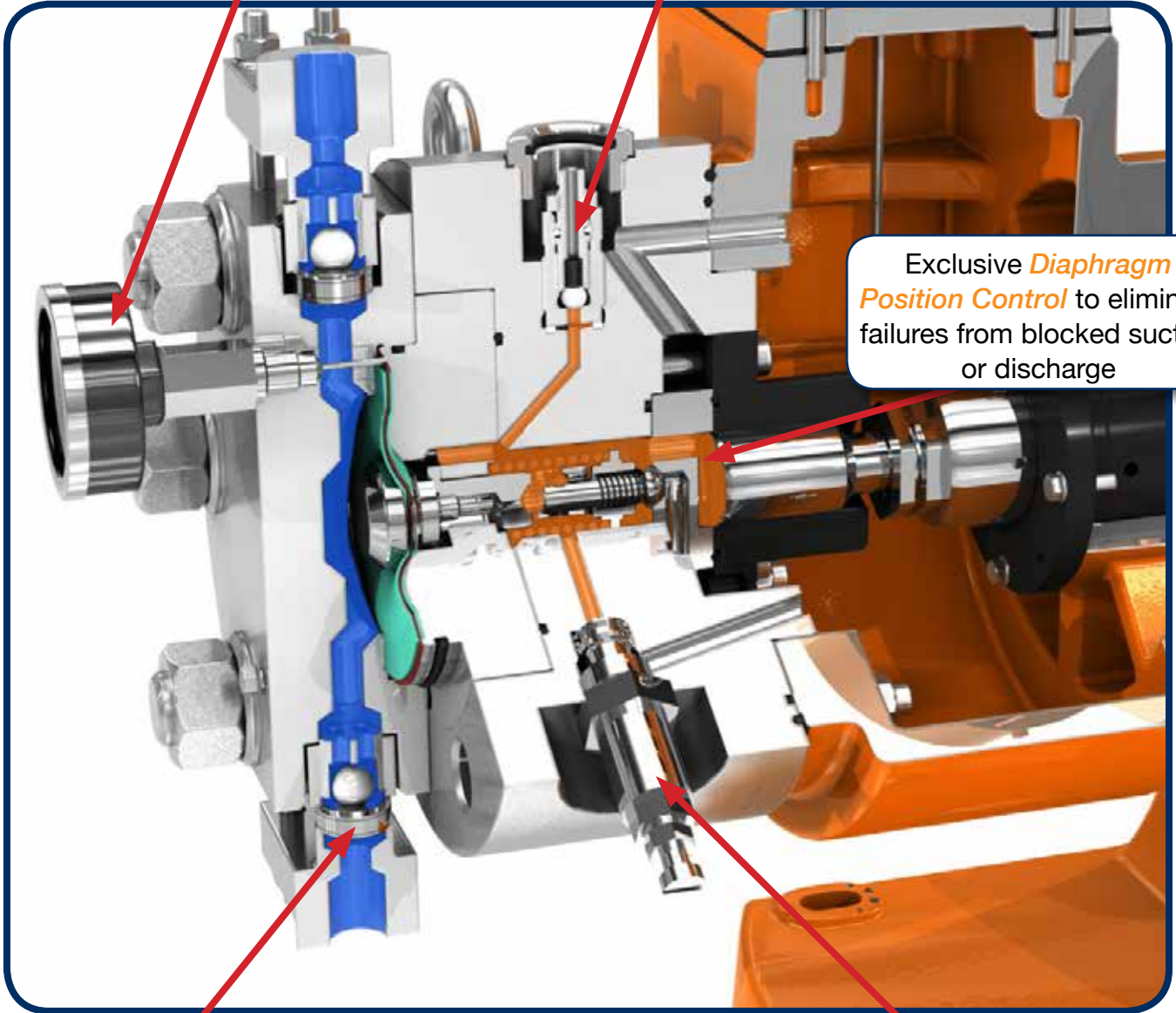
- Flow rates from 0.79 to 1,955 gph per head
- Operating Pressures up to 5800 psig
- Variable eccentric drive for accurate, robust operation and a smaller footprint
- Four frame sizes to cover a broad range of applications
- PTFE multi-layer diaphragm with integral diaphragm rupture warning system is standard on all pumps
- Liquid End Materials in 316ss and Alloy 20, additional materials available on demand
- **Exclusive Diaphragm Position Control** protects the pump against operating faults (e.g no damage in the event of a blockage on either the suction or discharge side). This advance in pump design technology means a more reliable metering pump in every application
- Metering reproducibility is better than  $\pm 1\%$  within the 10 – 100 % stroke length range under defined conditions and with correct installation
- Continuous bleeding of the hydraulic oil chamber ensures reliable operation
- Integral adjustable internal hydraulic pressure relief valve with features that allow for oil cooling during extended periods of process upset conditions
- Excellent flexibility
- The Evolution's modular compact construction allows for a wide range of applications
- Up to five (5) metering units of identical or varying pump capacities can be multiplexed for the greatest application adaptability
- A rotatable drive housing allows for installation of motor in a vertical or horizontal position to better meet specific footprint requirements
- Custom designs are possible to meet a variety of application demands

## Available Options

- Electronic stroke control (4-20mA, BUS Interfaces, etc.)
- Diaphragm leak detection
  - Gauge only (Standard)
  - Pressure Switches
  - Pressure Transmitters
  - Suitable for Classified Areas
- Check valve configurations
  - Ball (single and double)
  - Cone type
  - Plate type
- Custom painting per specification
- Custom wetted materials (Hastelloy, Monel, Zirconium, etc.)
- Flanged and threaded connections to meet most ANSI or DIN/ISO requirements
- Pump selections for high or low temperature applications

Double diaphragm leak detection standard

Hydraulic oil air bleed valve for reliable service



Exclusive *Diaphragm Position Control* to eliminate failures from blocked suction or discharge

Ball or cone check valves for a variety of services

Internal pressure relief for process safety and control

## Technical data for EF1a & EF2a single pump 60 Hz

EF1a								
Plunger Ø	Stroke Volume	Pump capacity in gph at strokes/min (60 Hz & 1800 rpm)					Maximum Discharge Pressure	Maximum Motor Power
		Strokes per minute	88	116	139	174		
mm	ml/stroke	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	psig	HP
8	0.75	0.8	1.1	1.3	1.6	1.9	5800	1/2
10	1.18	1.4	1.9	2.2	2.8	3.2	4245	1/2
12	1.70	1.9	2.6	3.1	3.8	4.4	2940	1/2
14	2.31	2.2	3.0	3.6	4.4	5.1	2160	1/2
17	3.40	3.6	4.8	5.8	7.2	8.2	1460	1/2
21	5.20	5.3	7.0	8.4	10.5	11.9	955	1/2
25	7.36	8.4	11.1	13.3	16.7	19.0	680	1/2
29	9.91	12.4	16.5	19.7	24.6	28.0	505	1/2
32	12.06	14.9	19.8	23.7	29.6	33.7	420	1/2
38	17.01	22.0	29.2	34.9	43.6	49.7	290	1/2
39	17.92	23.1	30.7	36.8	46.0	52.3	275	1/2
44	22.81	28.2	37.5	44.8	56.0	63.7	215	1/2
50	29.45	37.2	49.5	59.1	73.9	84.1	170	1/2

(1) Capacities are based on operating pressures up to 1500 psig. Derate flow 1.1% for each 100 psig over 1500 psig

EF2a								
mm	ml/stroke	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	psig <sup>1</sup>	HP <sup>2</sup>
12	1.70	2.1	2.8	3.4	4.2	4.8	5800	1/3
14	2.31	2.6	3.5	4.1	5.2	5.9	5800	1/3
17	3.40	3.9	5.2	6.2	7.8	8.9	5085	1/2
21	5.20	6.0	7.9	9.5	11.9	13.5	3450	3/4
25	7.36	8.5	11.3	13.5	16.8	19.2	2260	1
29	9.91	12.2	16.2	19.3	24.2	27.5	1725	1-1/2
32	12.06	14.5	19.3	23.0	28.8	32.7	1275	1-1/2
38	17.01	21.5	28.6	34.2	42.7	48.6	1040	1-1/2
44	22.81	27.3	36.3	43.4	54.3	61.8	765	1-1/2
50	29.45	37.0	49.1	58.7	73.4	83.5	650	1-1/2
58	39.63	53.1	70.5	84.3	105.4	119.9	520	2

(1) Capacities are based on operating pressures up to 1500 psig. Derate flow 0.5% for each 100 psig over 1500 psig

(2) Motor horsepower is based on maximum flow rate at 1500 psig discharge pressure. For pressures above 1500 psig or flows lower than the maximum consult the factory for horsepower required.

## Technical data for EF3a & EF4a single pump 60 Hz

EF3a								
Plunger Ø	Stroke Volume	Pump capacity in gph at strokes/min (60 Hz & 1800 rpm)					Maximum Discharge Pressure	Maximum Motor Power
		Strokes per minute	88	116	139	174		
mm	ml/stroke	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	psig <sup>1</sup>	HP <sup>2</sup>
16	5.03	6	8	10	12	14	5800	3/4
17	5.67	7	9	11	14	16	4085	3/4
21	8.66	11	14	17	22	25	3045	1
24	11.31	14	19	22	28	32	2185	1-1/2
29	16.51	21	28	33	42	47	1635	2
34	22.70	29	38	46	57	65	1275	3
42	34.64	45	59	71	89	101	840	5
46	41.55	54	72	86	107	122	590	5
56	61.58	81	108	129	162	184	405	7.5

(1) Capacities are based on operating pressures up to 1500 psig. Derate flow 0.5% for each 100 psig over 1500 psig

(2) Motor horsepower is based on maximum flow rate at 1500 psig discharge pressure. For pressures above 1500 psig or flows lower than the maximum consult the factory for horsepower required.

EF4a								
mm	ml/stroke	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	gph <sup>1</sup>	psig <sup>1</sup>	HP <sup>2</sup>
22	15.21	19	25	30	37	43	5800	2
25	19.63	22	29	35	44	50	2505	3
28	24.63	26	35	42	52	59	2000	3
30	28.27	28	38	45	56	64	1360	3
40	50.27	63	83	100	125	142	1160	5
50	78.54	103	136	163	204	232	810	5
60	113.10	148	196	235	293	334	590	5
70	153.94	203	270	323	403	459	390	5
90	254.47	339	451	539	674	767	315	7.5
110	380.13	512	680	814	1017	1157	245	7.5
140	615.75	829	1102	1318	1647	1875	145	7.5

(1) Capacities are based on operating pressures up to 1500 psig. Derate flow 0.9% for each 100 psig over 1500 psig

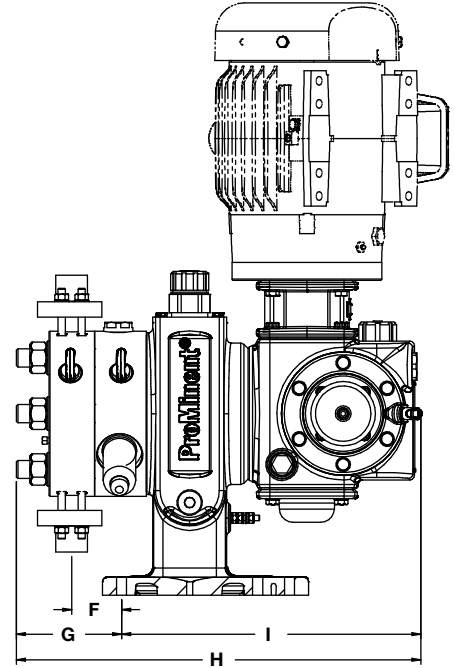
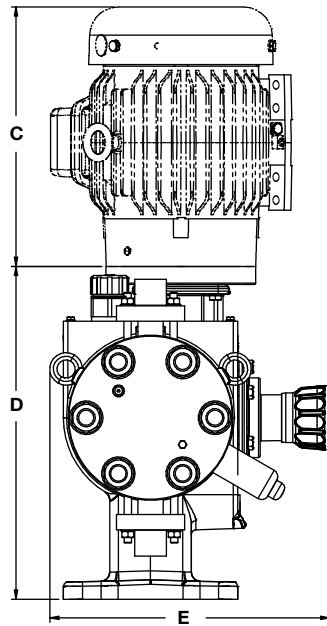
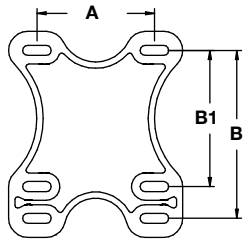
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### Important Note:

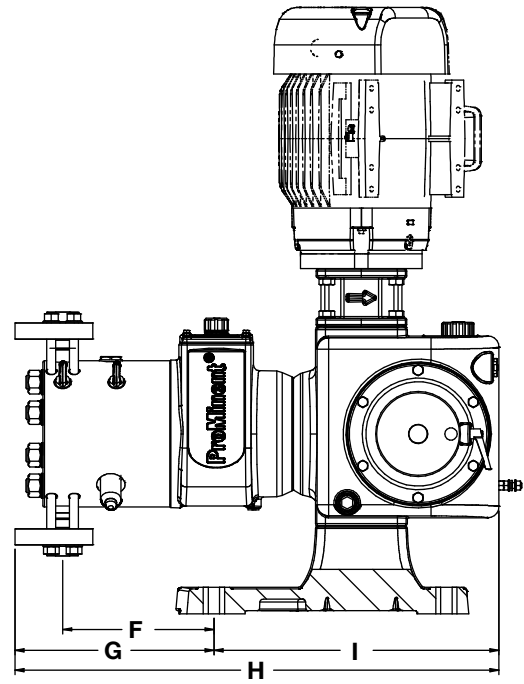
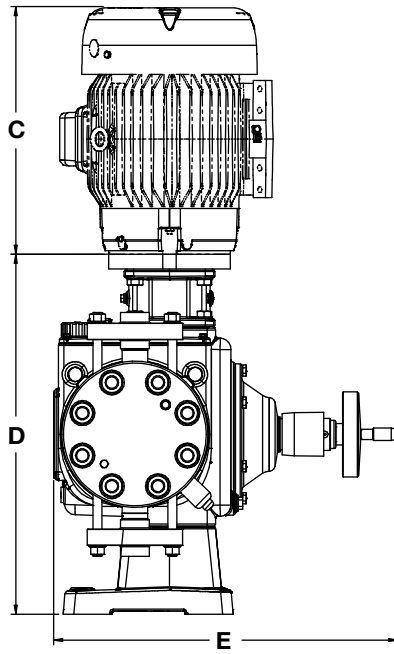
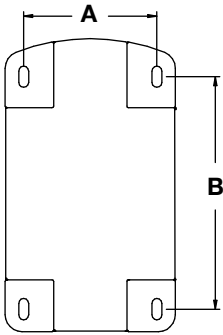
All the above is an abridged version of the available product range. Contact ProMinent if specific capacities are needed for your application

# Evolution Series

## Evolution 1 and 2



## Evolution 3 and 4



Evolution	A	B	B1	C	D	E	F	G	H	I	Approx. WT (lbs)
1	5.1	7.3	5.9	*	14.4	11.5-12.2	2.1-3.8	5.9-7.7	18.8-20.7	13.0	143-198
2	5.1	7.3	5.9	*	14.8	12.0-13.0	2.1-5.3	6.2-9.8	20.6-24.2	14.4	197-283
3	6.9	12.2	-	*	20.0	23.3-24.3	7.1-9.2	11.1-13.8	25.9-28.6	14.8	396-506
4	9.2	16.1	-	*	25.0	24.5-24.9	9.8-12.5	14.3-17.8	34.1-37.5	19.8	836-1067

**Note:** all measurements are in inches

\* Motor dimensions are project dependent



**Additional ProMinent Process Pump Solutions**

In addition to the Evolution Series pumps ProMinent® still offers several other process oriented chemical metering pump lines including:

- **Orlita MfS Series** – Flows up to 2,200 gph @ pressures ranging up to 9,000 psig. Teflon diaphragm, API 675 compliant pump .....



- **Orlita MhS Series** – Flows up to 200 gph @ pressures ranging up to 11,000 psig and with some designs up to 42,000 psig. Metal diaphragm, API 675 compliant pump.....



- **Orlita DR Series** – Specialty rotating piston pump for use with high viscosity fluids (up to 1,000,000 cp) .....



- **Hydro Series** - Flows up to 380 gph @ pressures ranging up to 1,450 psi. Teflon diaphragm, API 675 compliant pump .....



- **ProMus Series** - Flows up to 100 gph @ pressure ranging up to 3,500 psig. Teflon diaphragm, API 675 compliant pump .....



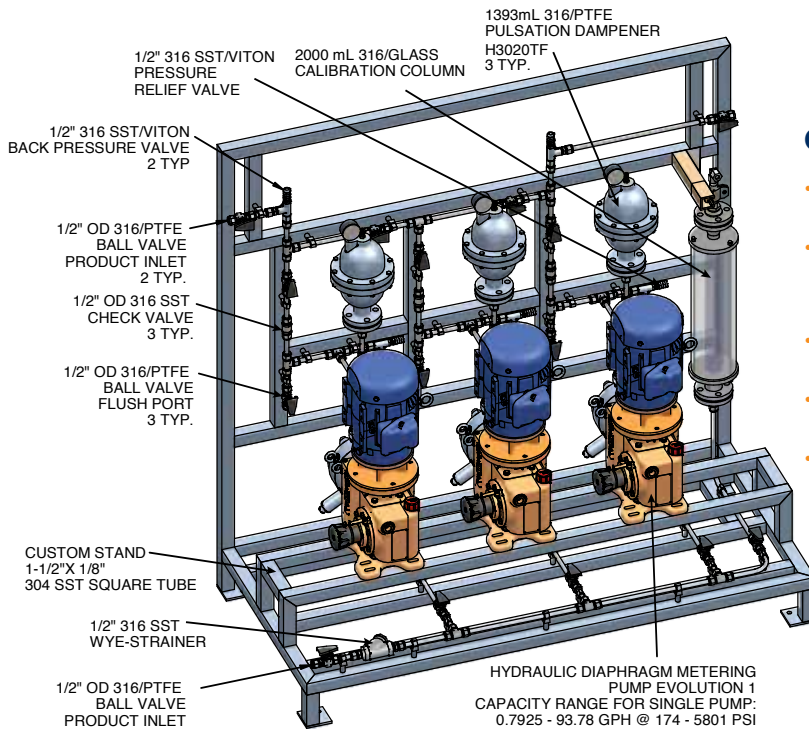
- **Extronic Series** – Flows up to 15 gph @ pressure ranging up to 232 psig. Explosion proof rated solenoid pump .....



• Please scan the QR Code to view Animated videos of the ProMinent® Evolution Pump in action

# Evolution Series

## Custom Chemical Feed Systems/ Evolution 1, Three Pump Feed System



### Complete Chemical Feed Systems

- Interconnecting piping, valves, & fittings
- Materials in 316ss, Alloy 20, Hastelloy, PVC, CPVC, Kynar and others
- All chemical feed system accessories
- UL 508 Control Panels
- Single source responsibility

### Additional ProMinent® Equipment

Solenoid driven feed pumps:

beta® b, gamma/ X, delta® .....



Motor driven feed pumps:

Sigma Series, Makro .....



Process Analyzers:

DACa, AEGIS II .....



Polymer makedown systems:

ProMix Series, PolyRex .....



Dry feed systems:

Tomal Feeders, ProMdry® .....

