

# BlackStone Chemical Dosing Pumps

## Versatility

BlackStone pumps have been designed to meet the ever changing needs of industry. With their broad, flat base and mounting holes for tank, shelf or floor mounting (horizontal), the pumps can be easily mounted anywhere in your plant. The rear of the pump housing also provides mounting holes to facilitate vertical mounting: wall, tank or machine. Since the pump valve assembly and controls for the unit are located on the front of the pump, there is never a problem with installation or flow adjustments.

## Simple Operation

BlackStone pumps are equipped with a single control for pump output. The external flow rate control (potentiometer) on the face of the pump allows you to adjust the percentage of flow from 0 to 100% of the pump's rated capacity. This feature eliminates the need to worry about stroke lengths and power settings. An LED indicator lights up each time a stroke begins, allowing the user to assess the stroke rate from a distance.

## High Quality Materials

BlackStone pumps have been manufactured with the highest level of mechanical precision from materials chosen for their inherent ability to resist the effects of aggressive chemicals. When you select a Blackstone pump, you are eliminating the time consuming effort involved in picking the right material for your application. Blackstone pumps are supplied with the highest quality material as standard equipment—not optional. The diaphragm utilizes one-piece construction of PTFE, which unlike conventional laminated diaphragms, will stand up to the test of time and wear. Ball valves are constructed in glass.

The pumphead and O-rings are made of PVDF, PTFE and FPM/FKM which offer unsurpassed resistance. The chemical resistance chart (right) shows how well PVDF and PTFE stand up to some of the most aggressive chemicals.



## Chemical Resistance Guide\*

Chemical	PVC	PP	Hypalon	FPM/ FKM	PVDF	PTFE
Acetic Acid, 80%	D	B	A	E	A	A
Bleach	A	B	A	A	A	B
Citric Acid	A	A	A	A	A	A
Copper Cyanide	A	A	X	B	A	A
Copper Sulfate	A	A	B	B	A	A
Ferric Chloride	A	A	B	B	A	A
Ferric Sulfate	A	A	B	B	A	A
Hydrazine	X	X	B	B	A	A
Hydrochloric Acid (concentrated)	A	A	B	B	A	A
Hydrochloric Acid (diluted)	A	A	B	B	A	A
Hydrofluoric Acid (diluted)	D	B	D	A	A	A
Hydrogen Sulfide	C	A	B	B	A	A
Magnesium Nitrate	A	A	A	A	A	A
Magnesium Sulfate	A	A	A	A	A	A
Nitric Acid, 50%	A	C	E	A	A	A
Phosphoric Acid	B	B	A	B	A	A
Plating Baths	A	A	C	A	A	A
Potassium Cyanide	A	A	B	B	A	A
Potassium Nitrate	A	A	B	B	A	A
Propyl Alcohol	C	X	B	B	A	A
Soaps	A	A	B	B	A	A
Sodium Bicarbonate	A	A	A	A	A	A
Sodium Bisulfite	A	A	A	A	A	A
Sodium Hydroxide, 50%	A	A	B	E	A	A
Sodium Hypochlorite, 18%	A	A	A	D	A	A
Sulfuric Acid (concentrated)	A	A	B	A	A	A
Tanning Reagents	A	A	A	X	A	A
Trichlorethane	E	C	E	A	A	A

\* PARTIAL LISTING

### Symbol Key

A - Excellent	B - Good	C - Fair	D - Acceptable (limited use)	E - Not recommended	X - Unknown
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## BL Series Dosing Pumps

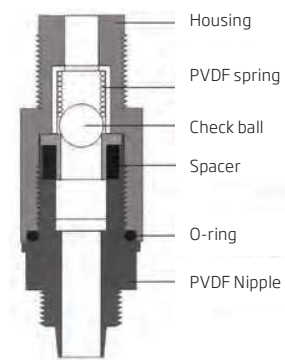
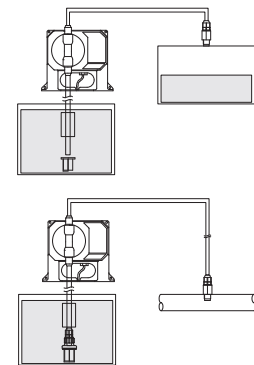
BlackStone's positive displacement solenoid driven pumps use a minimum number of moving parts, therefore reducing the chance of mechanical failure. Part wear and oiling associated with motor driven pumps (ball-bearings, gear drives and cams) are not a concern with these pumps. Blackstone pumps are more accurate than standard pumps due to the positive displacement design ensuring each stroke is identical to the strokes before and after it, thus keeping the flow rate consistent.

A wide range of BlackStone pumps with different dosing capacities are available for your specific dosing needs. Each pump is supplied with discharge and suction valves.

### Rugged Design

Blackstone pumps are completely sealed during assembly and offer IP65 protection against splashes and spills providing excellent protection even in hostile environments. The fiber-reinforced polypropylene housing stands up to aggressive chemicals while offering superior strength under tough industrial conditions.

### Typical Installations



Part Number	Max Output	Rated Pressure	Dosing Frequency strokes/min
With Large Diaphragm			
BL20	18.3 lph (4.8 gph)	0.5 bar (7.4 psi)	120
BL15	15.2 lph (4.0 gph)	1 bar (14.5 psi)	120
BL10	10.8 lph (2.9 gph)	3 bar (43.5 psi)	120
BL7	7.6 lph (2.0 gph)	3 bar (43.5 psi)	120
With Small Diaphragm			
BL5	5.0 lph (1.3 gph)	7 bar (101.5 psi)	120
BL3	2.9 lph (0.8 gph)	8 bar (116 psi)	120
BL1.5	1.5 lph (0.4 gph)	13 bar (188.5 psi)	120

Specifications	BL Series
Max Output	see table above
Pump Casing	fiber-reinforced polypropylene
Materials	pumphead in PVDF, diaphragm in PTFE, glass ball valves and O-rings in FPM/FKM, polyethylene 5 x 8 mm tubing
Self-priming	max height: 1.5 m (5 feet)
Power Supply	110/115 VAC or 220/240 VAC, 50/60Hz
Max Power Consumption	approximately 200 W
Protection	IP65
Environment	0 to 50°C (32 to 122°F); RH max 95% non-condensing
Dimensions	194 x 165 x 121 mm (7.6 x 6.5 x 4.8")
Weight	approx. 3 kg (6.6 lb.)

### Ordering Information

<b>BL1.5-1</b>	1.5 LPH flow rate	<b>BL7-2</b>	7.6 LPH flow rate
<b>BL1.5-2</b>	1.5 LPH flow rate	<b>BL10-1</b>	10.8 LPH flow rate
<b>BL3-1</b>	2.9 LPH flow rate	<b>BL10-2</b>	10.8 LPH flow rate
<b>BL3-2</b>	2.9 LPH flow rate	<b>BL15-1</b>	15.2 LPH flow rate
<b>BL5-1</b>	5.0 LPH flow rate	<b>BL15-2</b>	15.2 LPH flow rate
<b>BL5-2</b>	5.0 LPH flow rate	<b>BL20-1</b>	18.3 LPH flow rate
<b>BL7-1</b>	7.6 LPH flow rate	<b>BL20-2</b>	18.3 LPH flow rate

-1 = 110/115 VAC power supply  
-2 = 220/240 VAC power supply

### Accessories

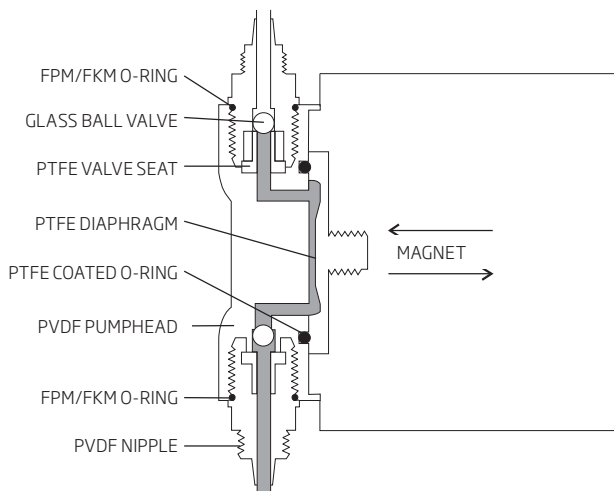
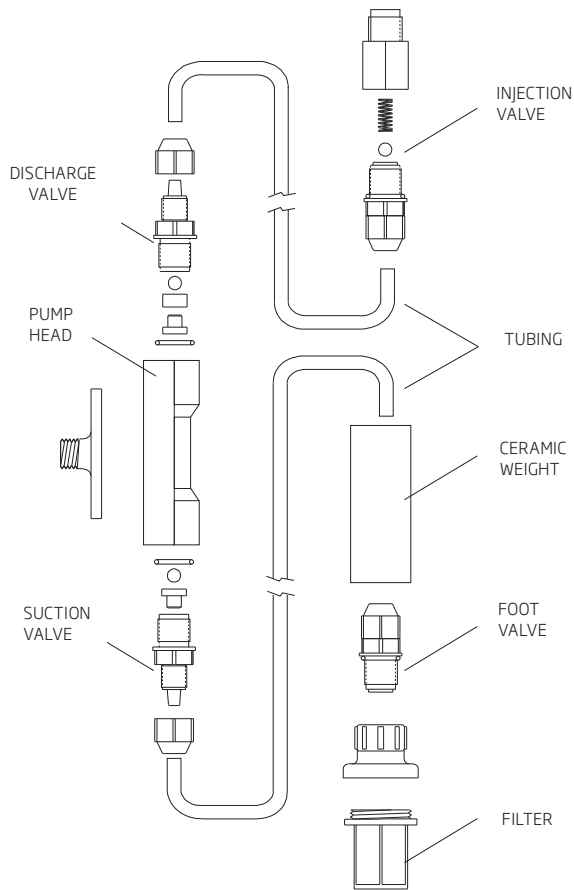
<b>HI721004**</b>	Injection valve assembly
<b>HI721005**</b>	Foot valve assembly
<b>HI721101</b>	Pumphead, O-ring, screws and washer
<b>HI721102</b>	Discharge valve assembly
<b>HI721103</b>	Suction valve assembly
<b>HI721008</b>	Ceramic weight (4)
<b>HI721104</b>	Small diaphragm for BL pumps
<b>HI721106</b>	BlackStone pump head assembly

\*\* Required for operation

# Replacement Parts

for BlackStone Chemical Dosing Pumps

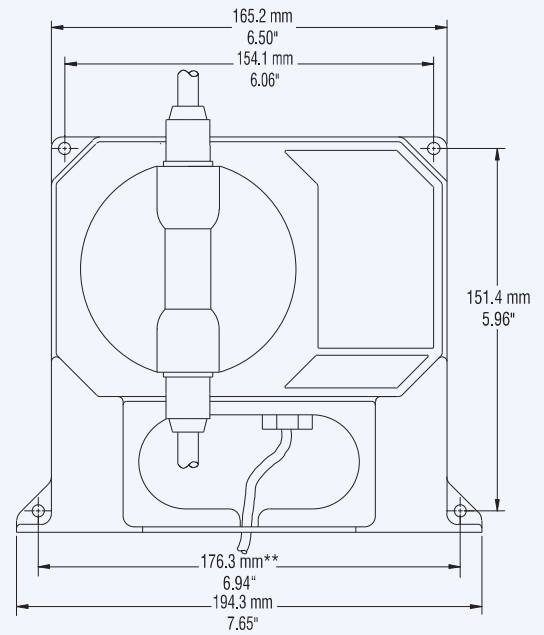
## Assembly Diagram



# Mechanical Dimensions

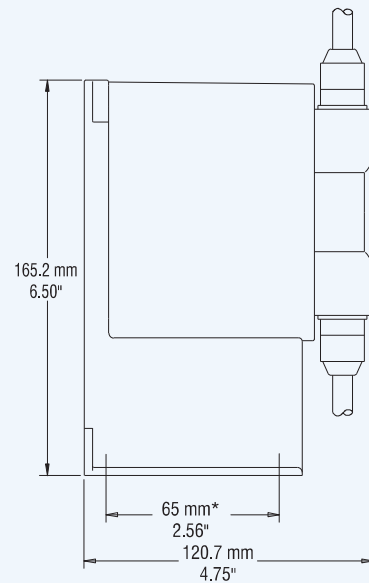
for BlackStone Chemical Dosing Pumps

Front View



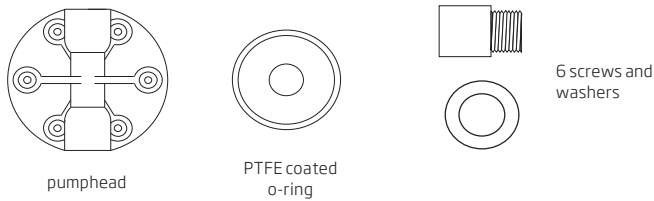
\*\* Dimensions for floor and wall mounting

Side View

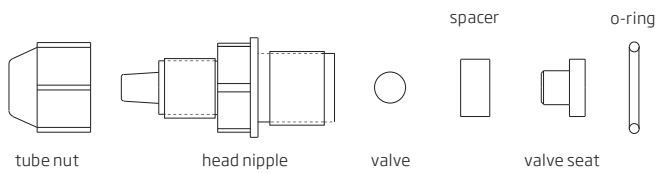


\* Dimensions for floor mounting

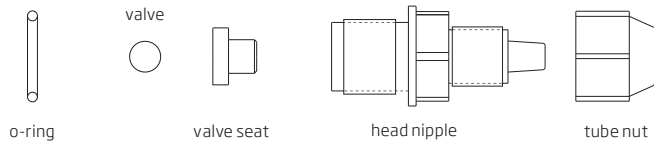
## HI721101



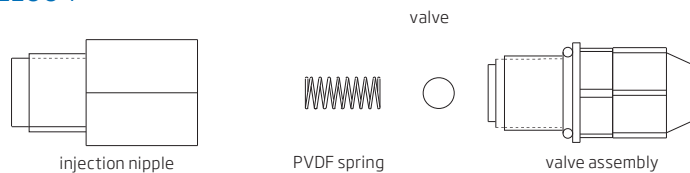
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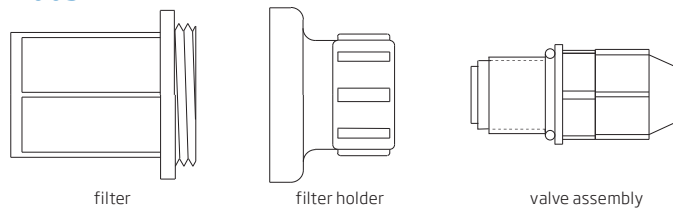
## HI721103



## HI721004



## HI721005



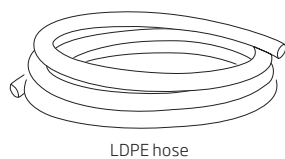
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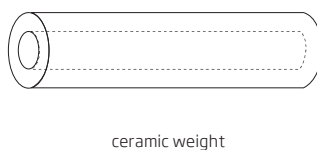
## HI721006



## HI720032



## HI721008



## Ordering Information

**HI721101**

This kit contains the PVDF pumphead, PTFE coated O-ring, 6 screws and washers.

**HI721102**

This kit contains all the necessary replacement parts for your discharge valve assembly. Complete with a FPM/FKM O-ring, glass valve ball, the valve spacer and seat, head nipple and the tube nut to secure the assembled parts.

**HI721103**

Suction valve assembly, complete with a FPM/FKM O-ring, glass valve ball, the valve spacer and seat, head nipple and the tube nut to secure the assembled parts.

**HI721004**

Complete with an injection nipple, PTFE coated spring, glass valve ball and a valve assembly.

**HI721005**

This kit contains a filter with a filter holder and a valve assembly.

**HI721003**

This kit contains 10 glass balls and 10 valve O-rings.

**HI721006**

This kit contains 4 PVDF springs.

**HI720029**

LDPE hose, 3 m (9.9').  
Inside diameter 4.71 mm  
Outside diameter 7.87 mm

**HI720030**

LDPE hose, 10 m (33').  
Inside diameter 4.71 mm  
Outside diameter 7.87 mm

**HI720031**

LDPE hose, 50 m (165').  
Inside diameter 4.71 mm  
Outside diameter 7.87 mm

**HI720032**

LDPE hose, 100 m (333').  
Inside diameter 4.71 mm  
Outside diameter 7.87 mm

**HI721008**

This kit contains 4 ceramic weights.