

# OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

# 844000

RELEASED: 9-13-99

REVISED: 5-14-10

(REV. D)

## PULSATION DAMPENER



**READ THIS MANUAL CAREFULLY BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.**

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

### PULSATION DAMPENER DATA

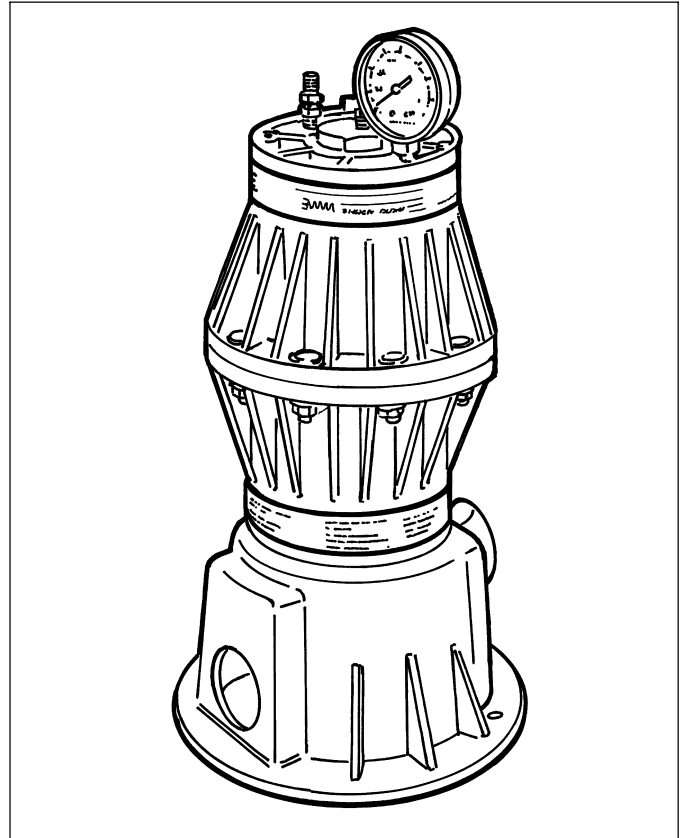
<b>Models</b> .....	844000
<b>Pump Type</b> .....	Non-metallic
<b>Material</b> .....	Conductive Acetal
<b>Weight</b> .....	5 lbs (2.3 kgs)
<b>Maximum Fluid Inlet Pressure</b> .....	100 p.s.i.g. (6.9 bar)
<b>Maximum Air Charge Pressure</b> .....	100 p.s.i.g. (6.9 bar)
<b>Maximum Temperature Limits</b>	
Conductive Acetal .....	10° to 180° F (-12° to 82° C)
PTFE .....	40° to 225° F (4° to 107° C)
<b>Dimensional Data</b> .....	see page 6
<b>Material Inlet</b> (standard) .....	1 - 11-1/2 N.P.T.F. - 1 (female)
(fitting included) .....	1 - 11-1/2 B.S.P. (female)
<b>Air Inlet</b> .....	Air Chuck Style Valve
<b>Accessories</b> .....	873193 Mounting Pedestal

### GENERAL DESCRIPTION

The Bink's pulsation dampener is designed to work with 1:1 ratio pumps having an outlet pressure not exceeding 100 p.s.i. (6.9 bar). The pulsation dampener will effectively reduce material pressure variations, surges and shock to piping and delivery in fluid systems during pump reversal. It can significantly contribute to pulse reduction in low pressure spray applications.

The pulsation dampener uses a single air pressurized, flexible bladder working against the fluid line pressure. It requires manual pressurization on initial start-up. An air pressure gauge is standard to monitor the air side internal chamber pressure.

Pulsation dampener units can also be added in series to provide additional dampening on the material.



### MODEL DESCRIPTION CHART

	<b>84400 0</b>
<b>Bladder Material</b>	
0 - PTFE	



CCN 99867038

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## OPERATING AND SAFETY PRECAUTIONS

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READ, UNDERSTAND AND FOLLOW THIS INFORMATION TO AVOID INJURY AND PROPERTY DAMAGE.

**⚠️ WARNING EXPLOSION HAZARD.** Do not exceed maximum fluid inlet pressure of 100 p.s.i. (6.9 bar). Operating at higher pressure can cause explosion resulting in property damage or severe injury.

**⚠️ WARNING USE ONLY WITH COMPRESSED AIR.** Do not use bottled gas products to run the pulsation dampener. Unregulated high pressure bottled gas has the potential for over-pressurization. Certain gasses such as Nitrogen can cause unpredictable results. The pressure source MUST BE REGULATED.

**⚠️ WARNING TEMPERATURE LIMITATIONS.** Do not exceed maximum temperature limits of 180° F (82° C). Excessive operating temperatures can weaken the body material. Limits are based on mechanical stress only.

**⚠️ WARNING CHEMICAL COMPATIBILITY HAZARD.** Do not use with certain fluids. Incompatible fluids may attack and weaken the housing causing rupture or explosion which can result in property damage or severe injury. See manufacturers information on fluid compatibility.

**⚠️ WARNING DISASSEMBLY HAZARD.** Do not disassemble this unit when it is under pressure. Relieve all material pressure in the pumping system before attempting service or disassembly. Disconnect air lines and carefully bleed any pressure off the system. Be certain the system is not maintaining pressure due to a material restriction in the hose, line, dispensing device, or the spray or extru-

sion tip. Failure to relieve pressure both up stream and downstream may result in an injury upon disassembly.

**⚠️ WARNING MATERIAL ATOMIZATION.** The relief / exhaust valve must be piped away from the work area. In the event of a diaphragm rupture, the material can be atomized and forced out the relief / exhaust valve.

**⚠️ CAUTION CHARGE WITH AIR BEFORE INTRODUCING MATERIAL.** Failure to charge with air first can damage diaphragm. Air charge should not exceed 80% of the material inlet pressure.

**⚠️ CAUTION NOT FOR STRUCTURAL SUPPORT.** Do not use this product to support other system components or use as a step. Improper support can result in fracture of the housing, causing damage. Plumbing must be supported to prevent stresses upon it. Install using the mounting hardware supplied.

**⚠️ WARNING** = Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

**⚠️ CAUTION** = Hazards or unsafe practices which could result in minor personal injury, product or property damage.

**NOTICE** = Important installation, operation or maintenance information.

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## OPERATING INSTRUCTIONS

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**⚠️ WARNING HEED WARNINGS AS SHOWN IN “OPERATING AND SAFETY PRECAUTIONS” ABOVE.**

### AIR REQUIREMENTS

Clean, dry air should be used to charge the unit. Use a filter capable of filtering out particles larger than 50 microns on the air supply.

### INSTALLATION INSTRUCTIONS

Position the pulsation dampener as close to the pump discharge as possible.

Use the ground lug and 873067 grounding cable kit in applications where flammable fluids are used, to help guard against static spark hazard resulting in possible fire or explosion. The terminal on the end of the ground wire must be removed and the wire stripped back 1/2” (13 mm) to be accepted by the pulsation dampener ground fitting.

Mount the pulsation dampener in one of the recommended positions as illustrated in the views in figure 1, page 3.

Different materials affect the mounting configuration. For best performance and typical applications, mount the pulsation dampener upright versus horizontally. Heavier particles in some fluids may settle out, gravity will help discharge heavier particles when mounted vertically.

In many situations, mounting the unit directly to the pump outlet would not be advisable due to the added weight of the unit. It should be independently mounted and plumbed using flexible tubing and not expected to physically support other components.

The material flow should be in the direction of the pulsation dampener, not passing by at right angles for best results (see figure 1).

Use the mounting base as provided and additional 873193 mounting kit is also available to gain extra vertical height. This may be necessary when using pumps outlets 1” and larger, because of the increased size and space requirements of the fittings. The second mounting kit is inverted to provide an elevated base (see figure 6, page 6).

When connecting pipe, cut or press the “knock-out” panels from the pedestal base as needed to accommodate piping. Do not alter or cut out other parts of the pedestal.

Pulsation dampeners used in series should be installed as illustrated in figure 1.

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## OPERATION

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1. Charge the shock blocker with 100 p.s.i. (6.9 bar) air pressure.
2. Operate the pump to generate material pressure.

**NOTE: THE PULSATION DAMPENER INNER PRESSURE MUST BE BELOW THE MATERIAL OPERATING PRESSURE FOR PROPER RESULTS.**

3. MONITOR THE GAUGE PRESSURE. RELIEVE OR ADD AIR PRESSURE AS NEEDED to balance the pressure needed to deliver the best pulsation dampening action. Best results will be obtained when the dampener pressure is 80% of the material pressure.
4. Operate the system a few minutes between pressure adjustments allowing for system equalizing.

**NOTE: IF THE PRESSURE IS CHANGED, THE AIR SIDE MUST BE ADJUSTED ACCORDINGLY.**

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## SERVICE

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**NOTE: BE CERTAIN TO DISCONNECT THE AIR SUPPLY AND RELIEVE FLUID PRESSURE BEFORE ATTEMPTING SERVICE OR DISASSEMBLY.**

**⚠️ CAUTION RELIEVING AIR CHARGE WILL NOT AFFECT THE FLUID SYSTEM PRESSURE. THE GAUGE READING COULD FALSELY REPRESENT ANY RESIDUAL FLUID PRESSURE.**

# INSTALLATION MOUNTING CONFIGURATIONS

Installation Note: The material flow should flow directly towards the pulsation dampener, not at a right angle to the flow path.

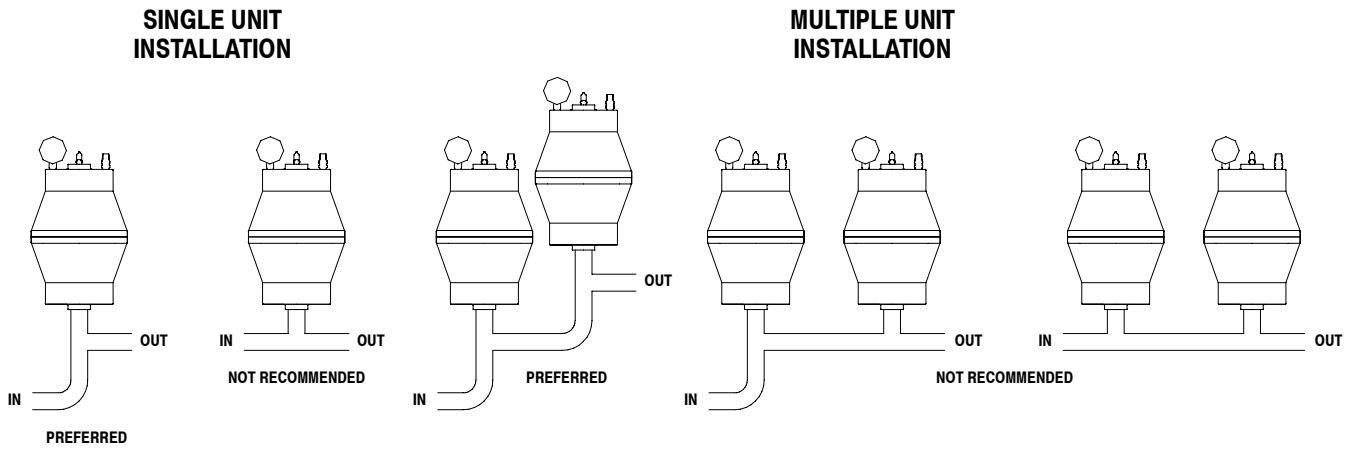


Figure 1

## PULSATION DAMPENER PERFORMANCE

**1" PUMP WITHOUT PULSATION DAMPENER**  
(From center chart at right)



**1" PUMP WITH PULSATION DAMPENER**  
(From center chart at right)

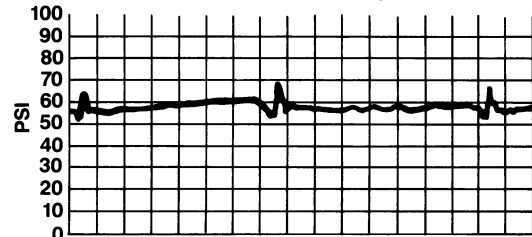


Figure 2

1/2" PUMP		% REDUCTION IN PULSATION			
Fluid Pressure PSI Back Pressure	20	94	81	70	65
	40	92	83		70
	60	91	85		
		1	2	3	4 5 10 12
		Flow (G.P.M.)			

1" PUMP		% REDUCTION IN PULSATION					
Fluid Pressure PSI Back Pressure	20	90	80	70			60
	40	90	75				70
	60	85	80	*			75
	80	85					80
		1	5	10	15	20	25 30
		Flow (G.P.M.)					

1-1/2" & 2" PUMP		% REDUCTION IN PULSATION							
Fluid Pressure PSI Back Pressure	20	80		70					60
	40	90		70					65
	60	70							65
	80	70							70
		1		10	20	30	40	50	60 70 80
		Flow (G.P.M.)							

## PARTS LIST

Item	Description (size)	Qty	Part No.	[Mtl]
1	Top Adapter	(1)	873205	[GA]
2	Top End Cap	(1)		[GA]
3	Bottom End Cap	(1)		[GA]
4	Bottom Adapter (1 - 11-1/2 N.P.T. - 1)	(1)	873206	[GA]
5	Ground Lug	(1)		[Co]
6	Self-Tapping Screw (1/4" - 20 x 1")	(4)		[C]
7	Square Ring	(1)	873204	[B]
8	Bellows	(1)	873203	[T]
9	Valve Assembly	(1)	873328	[C]
10	Gauge (0 - 100 p.s.i. / 0 - 7 bar)	(1)		
11	"O" Ring (9/64" x 1-57/64" o.d.)	(1)	873207	[B]
12	Relief Valve (1/4 - 18 N.P.T.)	(1)	873329	[Br]
13	Bolt (M10 - 1.5 x 45 mm)	(10)		[SS]
14	Washer (13/32" i.d.)	(10)		[SS]
15	Nut (M10 - 1.5)	(10)		[SS]
16	"O" Ring (9/64" x 1-31/32" o.d.)	(2)	873208	[T]
17	Mounting Stand (see "A", page 6)	(1)	873193	[Pe]
18	Bottom Adapter (1 - 11-1/2 B.S.P.P.L.)	(1)		[GA]
19	Self-Tapping Screw (1/4" - 20 x 1")	(1)		[C]
20	Tube Seal (1/4" i.d. x 1-3/8" long)	(2)		[N]
21	Ground Kit (not shown)	(1)	873067	

### MATERIAL CODE

[B] = Nitrile  
 [Br] = Brass  
 [C] = Carbon Steel  
 [Co] = Copper  
 [GA] = Groundable Acetal  
 [N] = Neoprene  
 [Pe] = Polyethylene  
 [SS] = Stainless Steel  
 [T] = PTFE

## TROUBLE SHOOTING

### No dampening effect or erratic performance.

- Check for bladder rupture.
- Check for blocked or restricted outlet hoses.
- Check for a solid object lodged in the fluid inlet or in the bladder area.
- Check to see that the air charge is 80% of the system pressure.

### Fluid or air leakage at the top.

- Check for bladder rupture.
- Check for defective pressure relief valve.
- Check for damaged (11) "O" ring.
- Check the tightness of the flange bolts (50 - 60 in. lbs / 5.6 - 6.8 Nm).

### Cracks in the housing.

- Discontinue use. This would indicate possible fluid incompatibility with the pulsation dampener body material.

## TYPICAL SYSTEM VIEW

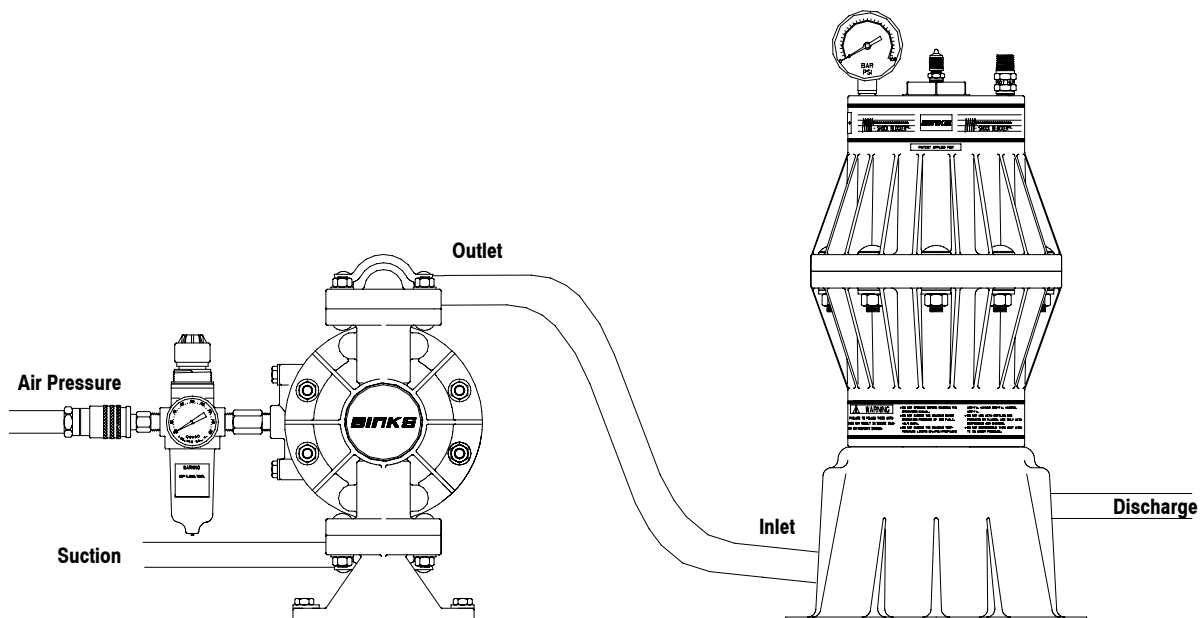
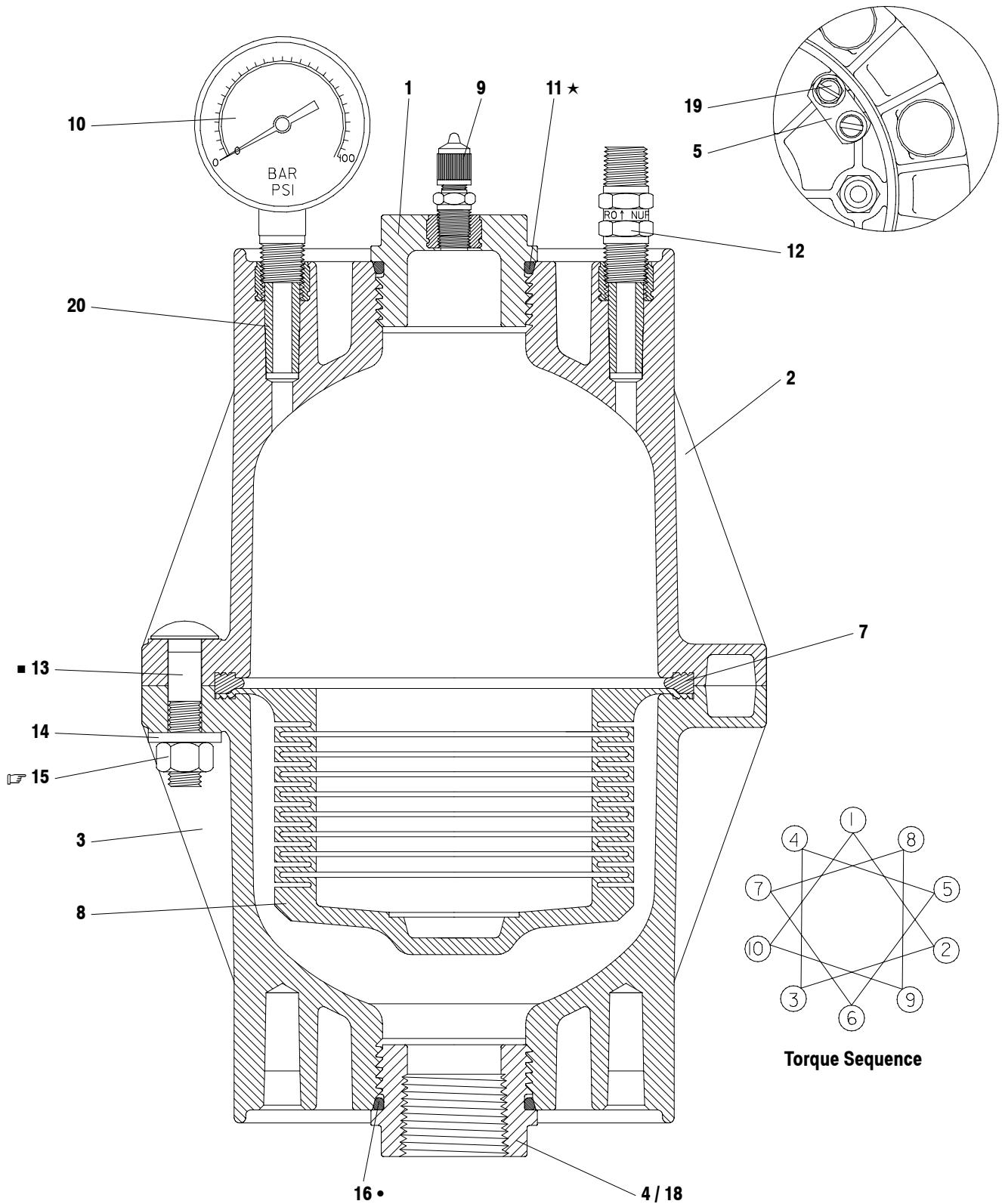


Figure 3

# PARTS LIST



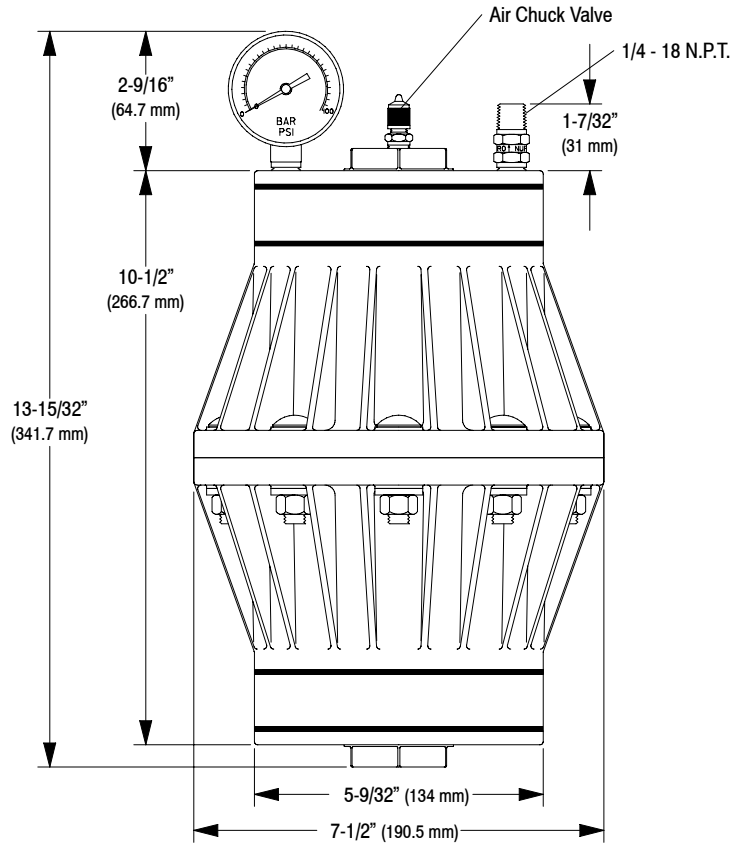
**Torque Requirements**  
 (15) 50 - 60 in. lbs (5.6 - 6.8 Nm). Torque twice. Do not over-tighten fasteners.

**Lubrication**  
 ★ Apply Key-Lube grease.  
 ● Apply Key-Lube grease upon assembly if Key-Lube is compatible with the fluid being pumped.  
 ■ Apply anti-seize compound to threads before assembly.

Figure 4

## DIMENSIONAL DATA

All dimensions are given in inches and (millimeters).

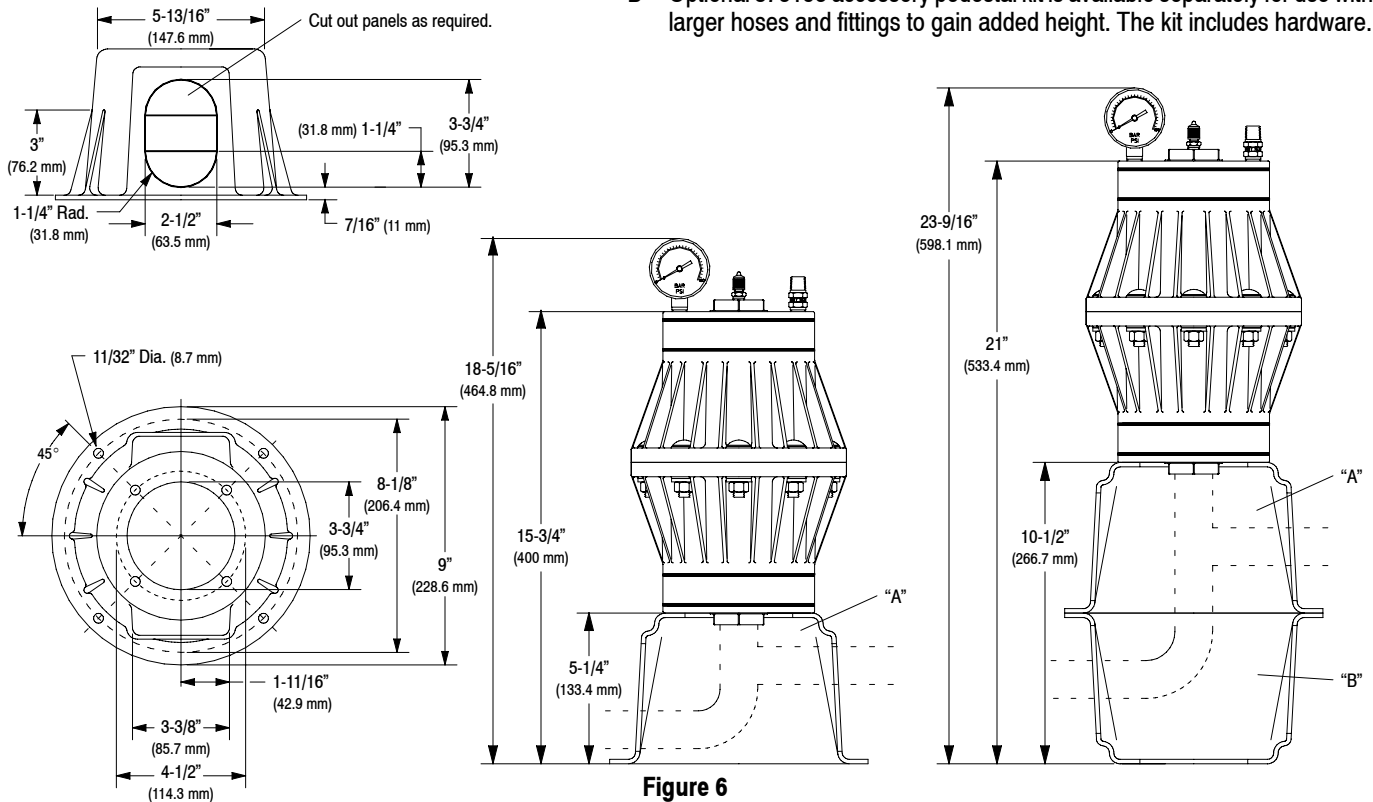


**Figure 5**

## PEDESTAL DIMENSIONAL DATA

### OPTIONAL 873193 PEDESTAL KIT

- "A" A single pedestal is included along with four (6) screws with each unit.
- "B" Optional 873193 accessory pedestal kit is available separately for use with larger hoses and fittings to gain added height. The kit includes hardware.



**Figure 6**



