

DYNAMIC AIR MANUALS

DC-5®
AIR SAVER CONTROL
Series 708



**INSTALLATION
AND OPERATIONS GUIDE**

Manual Number: DA030105

Revised: 09/14/19

Thank you for purchasing the DC-5® air saver control. This manual contains information that will allow you to get the best results from your equipment while operating it safely. Please read it carefully before installing and operating this equipment. It is critical that the people operating and maintaining this equipment have a copy of this manual. All information in this publication is based on the latest product information. Dynamic Air Inc. reserves the right to make changes at any time without notice and without incurring any obligation.

SAFETY MESSAGES

Your safety and the safety of others are very important. We have provided important safety messages in this manual and safety labels on the equipment. Please read these messages carefully.

A safety message alerts you to the potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol and one of three words, DANGER, WARNING, or CAUTION.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

These signal words mean:



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Each message typically identifies the type of the hazard, the consequence of not avoiding the hazard, and how to avoid the hazard.

DAMAGE PREVENTION MESSAGES



NOTICE indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

Safety

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Symbol	Typical Warning/Meaning
	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Do Not Weld
	Mandatory Action to Avoid a Hazard
	Risk of Explosion
	Pressurized Source, or Contents under Pressure

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Series 708

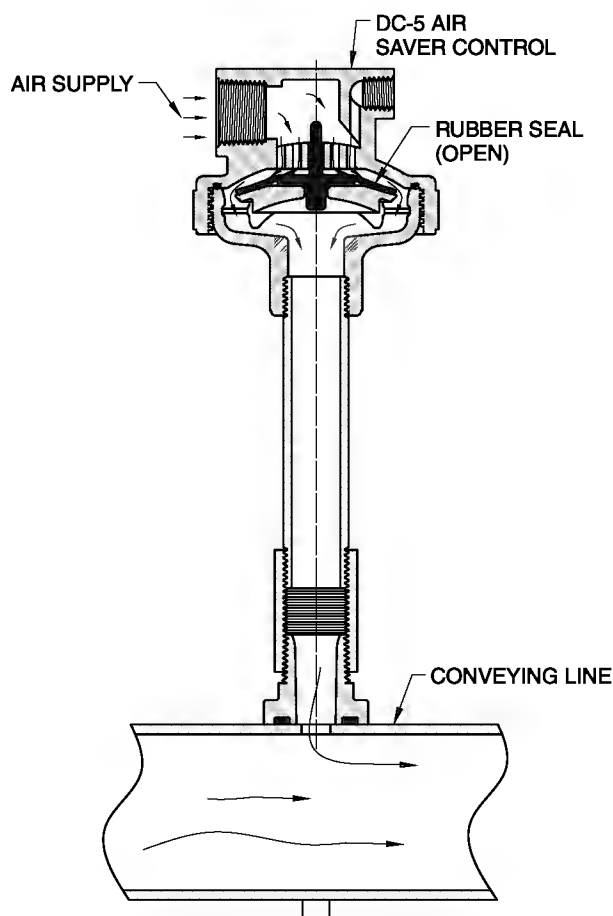
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NOTE: This section contains custom design information which supersedes the standard design.

How the DC-5® Air Saver Control Works

Air is introduced into the DC-5 air saver control through an air supply header. When the air pressure in the conveying line is lower than the air pressure in the air supply header, air flows through the air saver control into the conveying line.

Once the air pressure in the conveying line has risen, a diaphragm seal in the air saver control closes, preventing air from passing into the conveying line. The air supply continues to modulate, opening and closing to add air to the conveying line only when needed.



NOTICE



OPERATING CONDITIONS

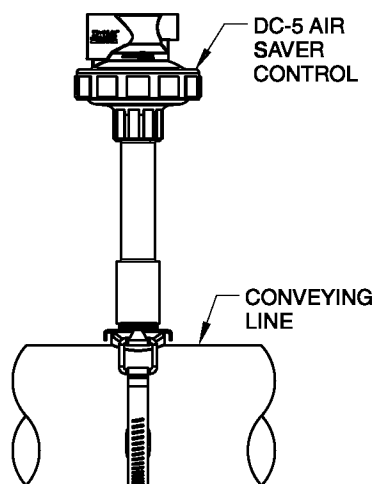
Dynamic Air's DC-5 air saver control has a well-deserved reputation for giving long and dependable service, even under severe use. However, the DC-5 air saver control is intended for specific operating conditions only with respect to air pressure and volume. Because conditions for materials handled, installation, use and maintenance of such products are controlled exclusively by the user, Dynamic Air disclaims all responsibility for damage or injury resulting from the use of the DC-5 air saver control. Therefore, the user assumes all responsibility for any and all claims arising directly or indirectly from the product and/or its use.

1. Mount the air saver control perpendicular to the conveying line when it is in the horizontal position (see Fig. 1).
2. Mount the air saver control parallel to the conveying line with a 90° elbow when it is in the vertical position (see Fig. 2).

NOTICE

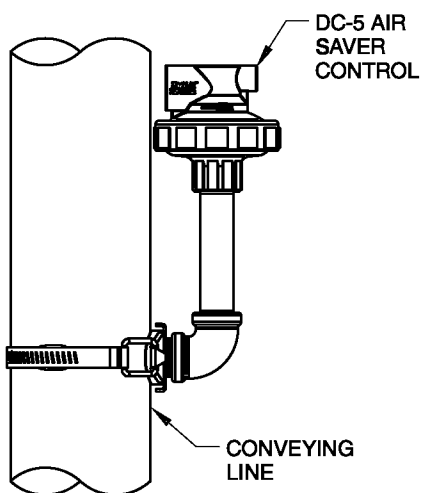


Do not weld to any part of the air saver control (see Fig. 3).



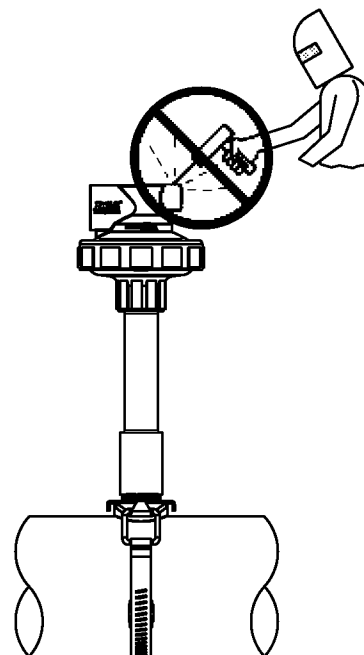
HORIZONTAL LINE

Fig. 1



VERTICAL LINE

Fig. 2



DO NOT WELD

Fig. 3

3. To install the air saver control mounting base, refer to Fig. 4 and the following instructions:
 - A. Drill a 1/2" (13 mm) diameter hole in the pipe (6) and remove any burrs around the hole.
 - B. Place the O-ring (5) into the mounting base (2).
 - C. Insert a 1/2" (13 mm) diameter by 2 1/2" (64 mm) long bolt (1) through the mounting base and into the 1/2" (13 mm) hole.
 - D. Attach the air saver control clamp (4) to the mounting bracket (3) and tighten clamp, using the 1/2" (13 mm) bolt as an alignment pin.
 - E. Remove the 1/2" (13 mm) bolt.

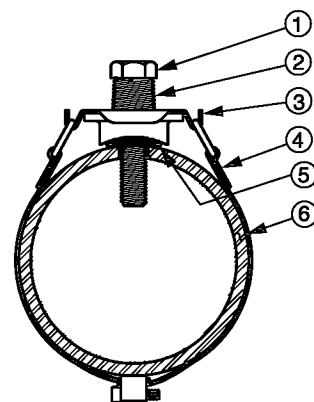


Fig. 4

4. To install Thredolet fitting, if applicable, refer to Fig. 5 and the following installation instructions:
 - A. Drill a 11/16" (18 mm) hole in pipe and remove any burrs from pipe.
 - B. Thoroughly clean both the pipe and Thredolet welding surfaces.
 - C. Locate Thredolet fitting over hole using a pin or bolt to align.
 - D. Tack weld the base joint in four points, preferably halfway between the crotch and skirt sections of the fitting (see Fig. 6).
 - E. Apply a continuous stringer bead completely around the base of the fitting, taking care to weld only the beveled portion of the Thredolet fitting.
 - F. Finally, reinforcing welds should be made, as needed, at the crotch bevel areas to provide maximum weld at the crotch tapering to the minimum at the skirt.

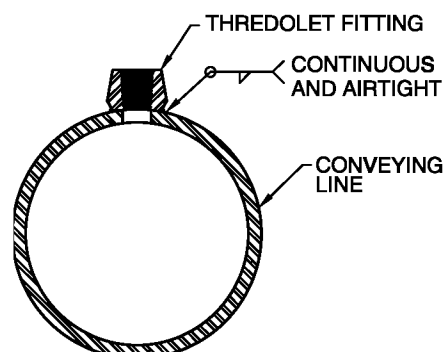


Fig. 5

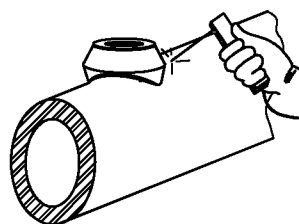


Fig. 6

5. Customer to supply clean, dry compressed air. See system design data for exact pressure requirement.
6. Prior to connecting the air supply line to the air saver control, make sure that all compressed air supply lines are blown clean of metal chips and foreign debris.
7. Make sure that the air saver control is piped according to all drawings provided.
8. The maximum operating pressure of the air saver control is 125 psig (8.6 barg) and should not be exceeded.
9. A volumetric flow valve rated for a maximum pressure of 125 psig (8.6 barg) should be used prior to each air saver control to limit the air flow to the air saver control and prevent damage of the air saver control seal.



WARNING



Do not attempt to disassemble the air saver control until the conveying line air saver header is completely depressurized.

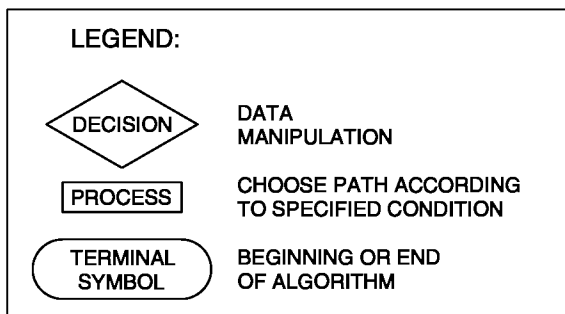
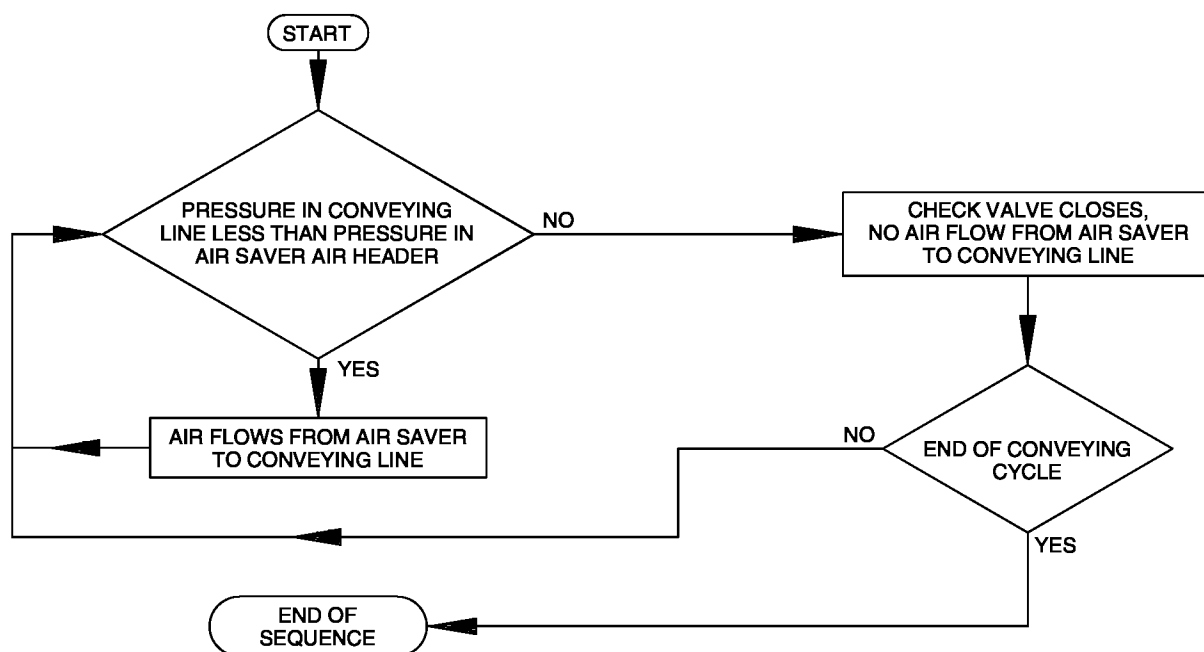
10. A volumetric flow valve shall not be used unless it is supplied by Dynamic Air or unless written approval has been obtained beforehand from Dynamic Air.
11. When the air saver control installation is complete, check for any air leaks and correct accordingly.

Sequence of Operations

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NOTE: For testing purposes, the control panel power is on and the compressed air supply is connected.

1. When the air pressure in the conveying line is lower than the pressure in the air saver control air supply header, air flows from the air saver control into the conveying line.
2. When the conveying line air pressure has risen, the air saver control diaphragm seal closes, stopping the air flow to the conveying line.
3. This process will continue as the conveying line pressure fluctuates throughout the conveying cycle.



Troubleshooting

**DC-5® Air Saver Control
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<i>Symptom</i>	<i>Problem</i>	<i>Correction</i>
DC-5 AIR SAVER CONTROL LEAKS AIR	• Compressed air supply line leaks.	• Correct compressed air supply line leaks.
	• Air saver control not properly sealed to conveying line.	• Tighten hose clamp so the saver control seals tightly against the conveying line.
	• Seal and/or O-ring is damaged.	• Replace seal and/or O-ring and retest.
AIR DOES NOT FLOW THROUGH DC-5 AIR SAVER CONTROL	• Low compressed air supply pressure.	• Check to make sure compressed air supply pressure at air saver control is at the correct pressure.
	• Compressed air supply line leaks.	• Correct compressed air supply line leaks.

Daily, Weekly, Monthly and Yearly Maintenance

WARNING

The parts and/or equipment purchased from Dynamic Air Inc. have a limited life that depends on the user's specific application and the conditions under which the user operates the equipment. Over time, parts and equipment may suffer deterioration, wear and tear, corrosion, or other failure. Therefore, the user must follow all instructions contained in this notice and in the operating manuals provided by Dynamic Air Inc. for each piece of equipment.

REQUIRED PREVENTATIVE MAINTENANCE SCHEDULES

The user of the Dynamic Air Inc. supplied parts and equipment must take adequate preventative maintenance precautions to safeguard persons, equipment and property against all conditions that may occur during operation of the equipment. The user must establish and follow a daily, weekly, monthly and yearly maintenance schedule that coincides with the actual and intended use of the equipment. The proper maintenance schedule for each situation depends on the specific type of application and materials handled. If the user has any questions about maintenance, contact the Dynamic Air Service Department (see Section 8.1 for contact information).

HAZARD AND OPERABILITY STUDY (HAZOP)

Dynamic Air Inc. has not performed a HAZOP evaluation involving the material and/or process for which this equipment was sold and/or will be used. It is the customer's sole responsibility to perform any HAZOP should it be required, in order to identify and evaluate all operating conditions and environments which represent a possible risk to any people or persons whatsoever.

REQUIRED INSPECTIONS

The user of the Dynamic Air Inc. supplied parts and equipment should visually inspect the entire system, parts or equipment at least once daily in order to detect potential problems such as leaks, stress cracks, loosening of bolts and part failures, etc.

In addition, during the first start-up of the parts or equipment, specific data and settings must be recorded in writing and be provided to all appropriate operating personnel for their safe use in operating the system. This includes, but is not limited to, the following operating data:

- Recommended air supply pressure
- Air volume settings
- Recommended air regulator settings
- Electrical interlocks
- Recommended procedures
- Weight limitations
- Temperature limitations
- Convey times
- Specific control settings
- Valve settings
- Other applicable measurements
- Motor amperage, etc.
- Timing sequences
- Batch sizes
- Weighments

The operating data should be reviewed and, if necessary, adjusted accordingly on a daily, weekly and monthly basis to insure that the parts or equipment is operating safely and properly according to all the recommendations provided by Dynamic Air Inc.

Daily, Weekly, Monthly and Yearly Maintenance

WARNING

SYSTEMS THAT REQUIRE IMMEDIATE SHUTDOWN AND INSPECTION

Whenever any unusual operating conditions or system functions or sudden changes in such conditions or functions is noticed, the parts or equipment should be shut down immediately and all air and electrical power should be shut off. Then, the equipment should be thoroughly inspected to determine the cause of such conditions or symptoms in order to protect personnel from potential injury and to protect the equipment from potential damage or unsafe operating conditions. Conditions that require immediate shutdown and inspection include but are not limited to excessive vibration, unusual equipment movement, abnormal noise, excessive heat build-up, leaks, sudden loss of air pressure, or sudden and unusual changes in temperature, noise, or an unusual amount of material handled, etc.

SERVICE REQUIREMENTS

A Dynamic Air service technician must perform a thorough service inspection and maintenance check of all Dynamic Air supplied parts or equipment at least once annually in order to maximize equipment life and performance, minimize system downtime, protect plant personnel, and minimize liability. It will be the user's responsibility to schedule these services as required. Failure to follow this requirement could cause damage to equipment and endanger plant personnel. Should the user fail to operate the system according to all instructions in the operating manuals, the warranty will be invalidated.

CHANGES TO DYNAMIC AIR SUPPLIED EQUIPMENT

Any proposed changes or repairs to the equipment furnished by Dynamic Air must be submitted in writing to the Dynamic Air engineering department for advance written approval. Should the user fail to obtain written approval before making any changes or repairs, it will invalidate the warranty and may create unsafe or dangerous operating conditions and put operating personnel at risk. The user assumes all liability for the changes made to the systems and/or equipment without Dynamic Air Inc.'s written approval.



DANGEROUS OR EXPLOSIVE MATERIALS:

The parts or equipment furnished by Dynamic Air Inc. may handle materials that may be dangerous or explosive. It is the customer's total responsibility to insure that all plant personnel are properly trained to handle dangerous/explosive materials and to follow recommended procedures provided by material suppliers and/or state and local guidelines for handling such materials. Dynamic Air Inc. assumes no responsibility or liability with regard to potential hazards in handling such material.

Daily, Weekly, and Yearly Maintenance

RECOMMENDED MAINTENANCE SCHEDULE:

Seals and O-rings

- A daily check for air leaks or air blockage should be conducted on all conveying line parts such as the DC-5 air saver controls and flow control valves. Check supply air pressure weekly.
- Regular maintenance should be scheduled to replace the air saver control seals and O-rings consistent with each application. Dynamic Air recommends that this maintenance be done once a year as a minimum.

Cleaning

If it should become necessary to clean this equipment, disconnect the unit from all power sources first. Do not use liquid cleaners, aerosols, abrasive pads, scouring powders or solvents, such as benzine or alcohol. Use a soft cloth lightly moistened with a mild detergent solution. Ensure the surface cleaned is fully dry before reconnecting power.

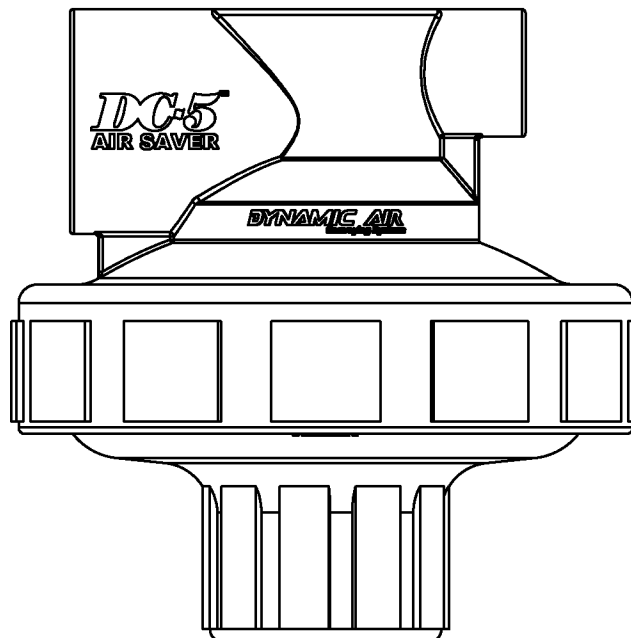
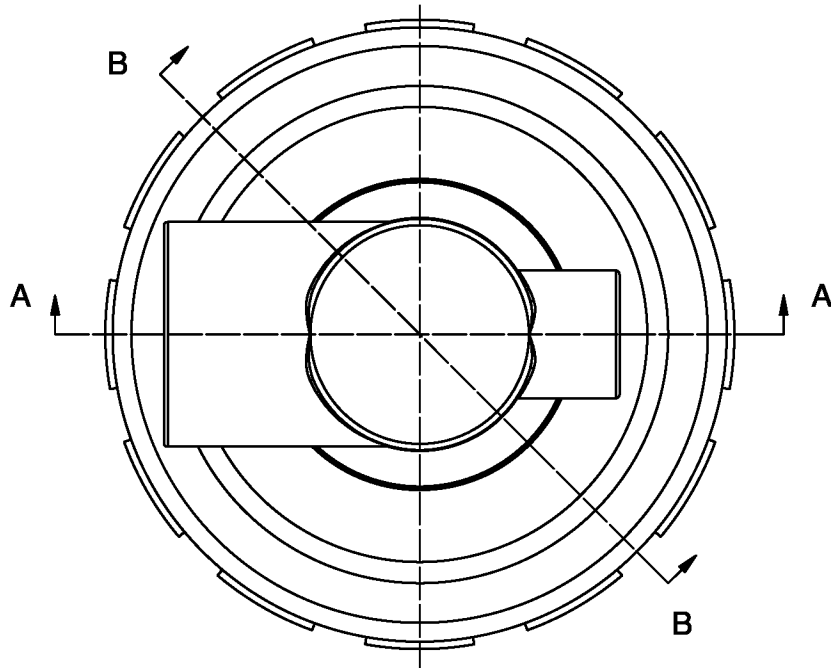
Recommended Spare Parts List

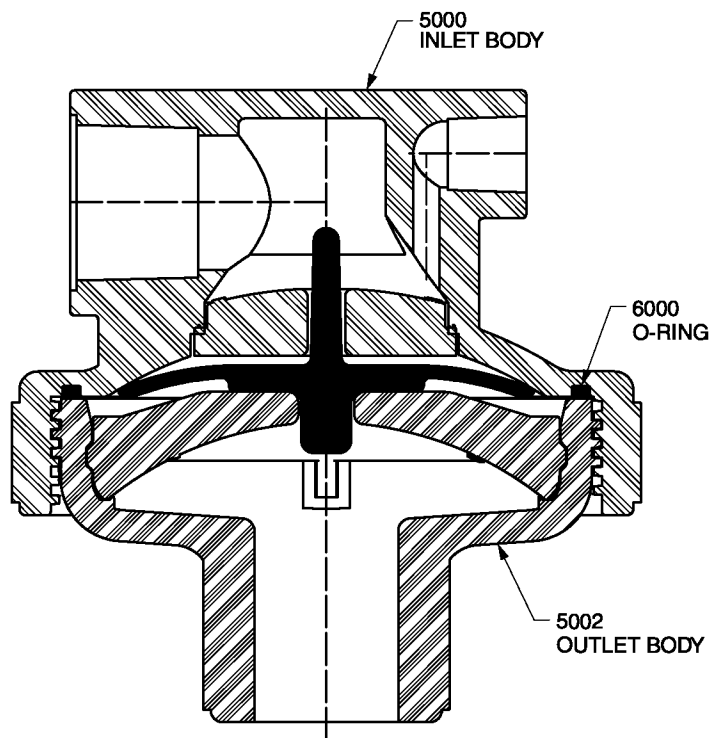
DC-5® Air Saver Control
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Description	Bubble Number	Drawing Section Number	Material List Section Number	Recommended Quantity to Stock	Highly Recommended Quantity to Stock
Mechanical Assy, Nylon					
Seal	5003	7.2 & 7.3	7.14	-	1
O-ring	6000	7.2 & 7.3	7.14	-	1
Mechanical Assy, 316SST					
Seal	5003	7.5 & 7.6	7.15	-	1
Gasket	5004	7.5 & 7.6	7.15	-	1
Mounting Parts					
Clamp End, Fixed	5002	7.7 & 7.8	7.16 & 7.17	1	-
O-ring	6000	7.7 & 7.8	7.16 & 7.18	-	1

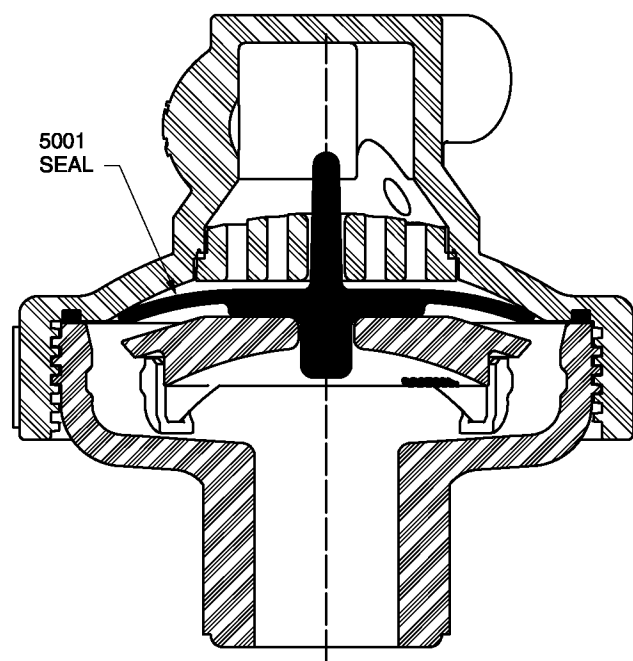
NOTE: Due to long lead times and part availability, the above material may not be in Dynamic Air's stock.

Section numbers listed above are for standard material lists only. Any custom material lists appearing in the Non-Standard section (Section 10.1) should be referenced in place of standard material lists of identical nature listed above.





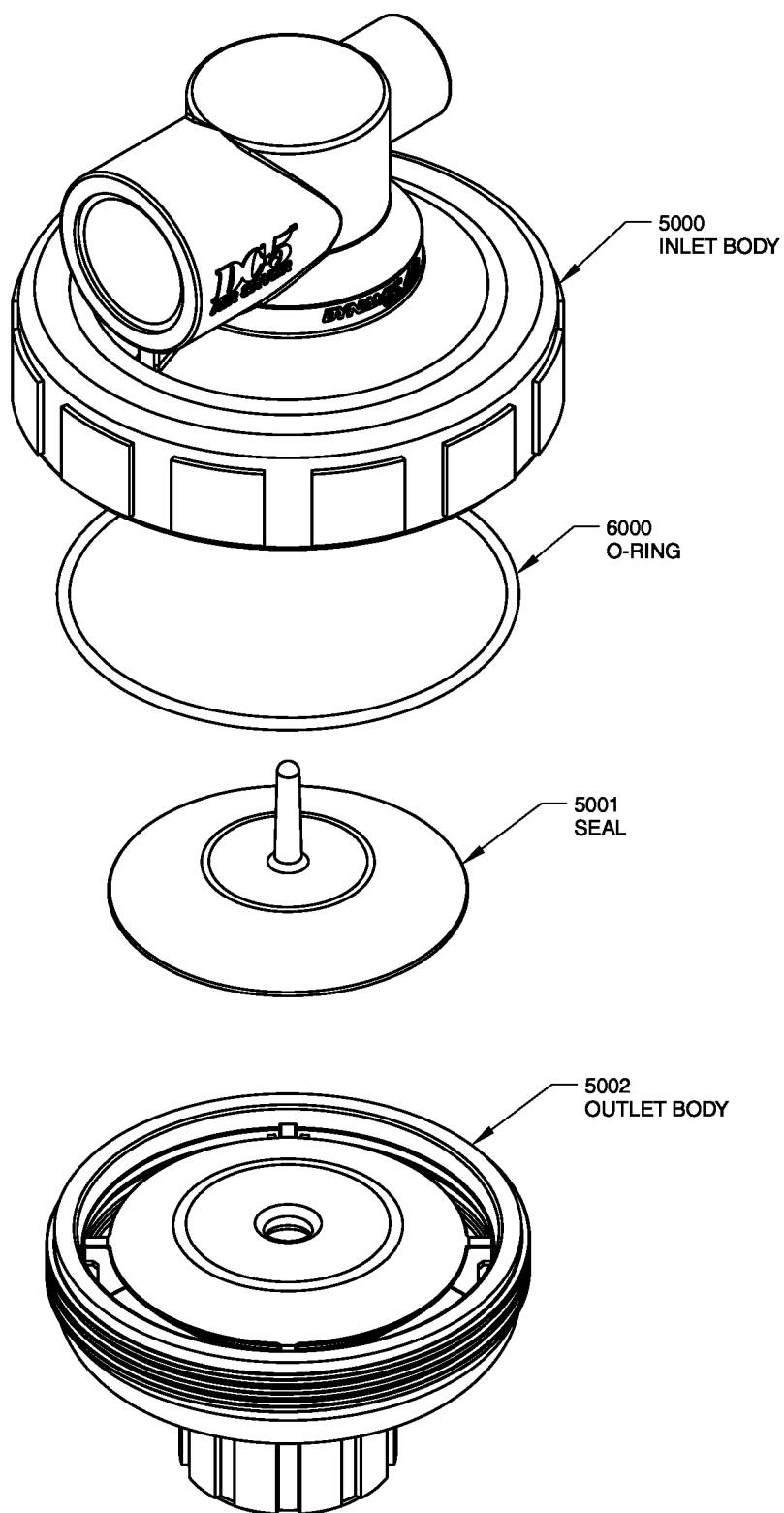
SECTION A-A

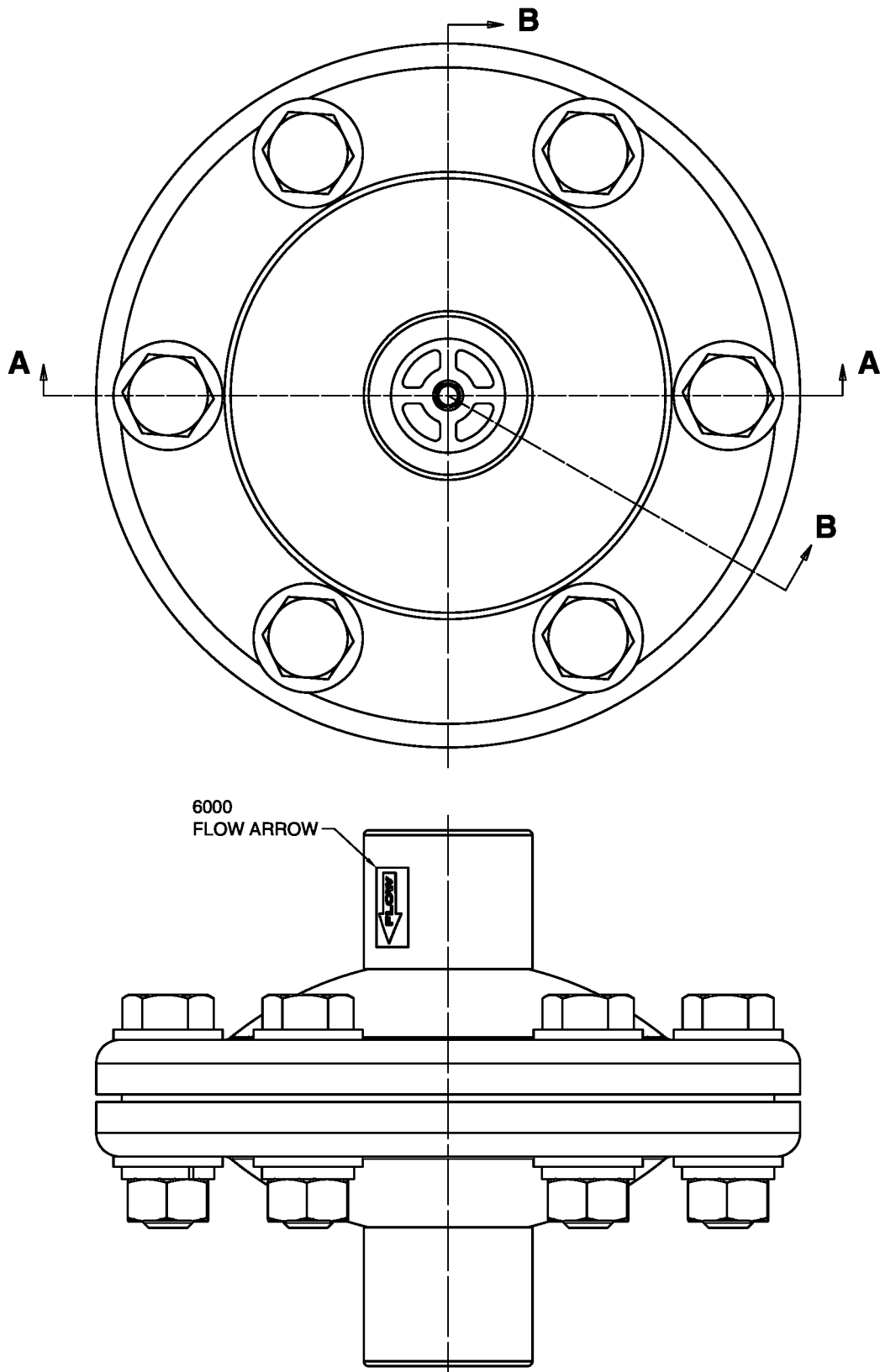


SECTION B-B

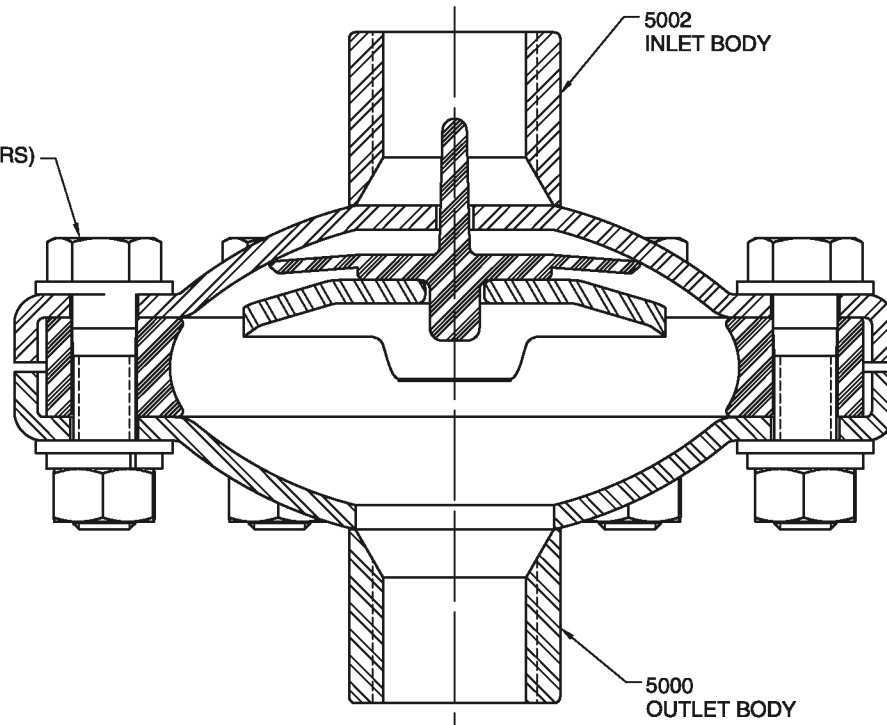
Mechanical Assembly, Nylon - Exploded

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7000, 7001,
7002, 7003
(5/16" FASTENERS)

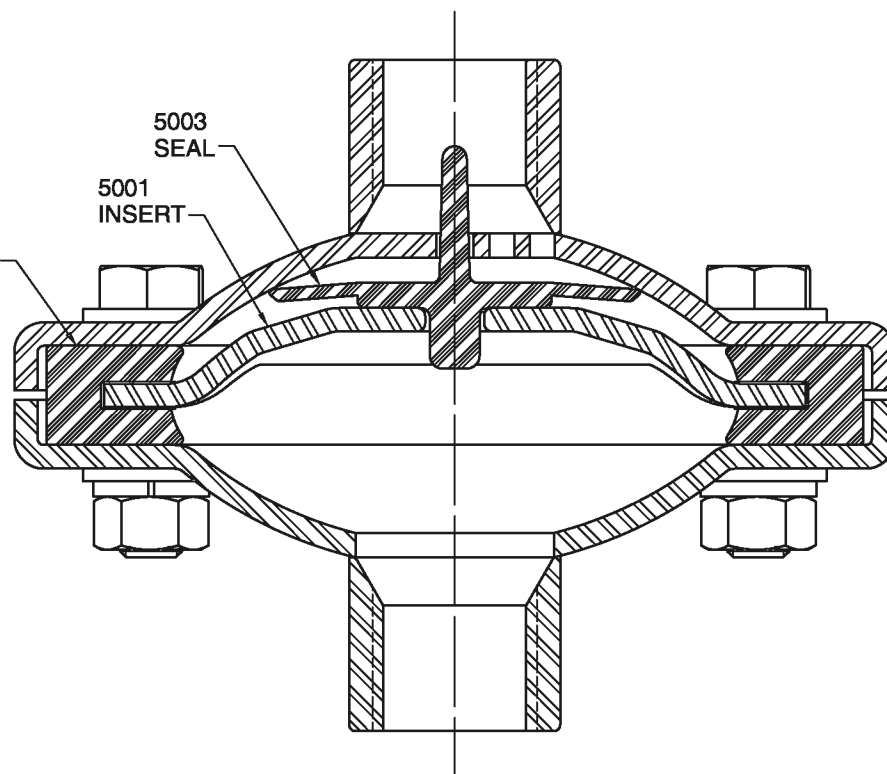


SECTION A-A

5003
SEAL

5001
INSERT

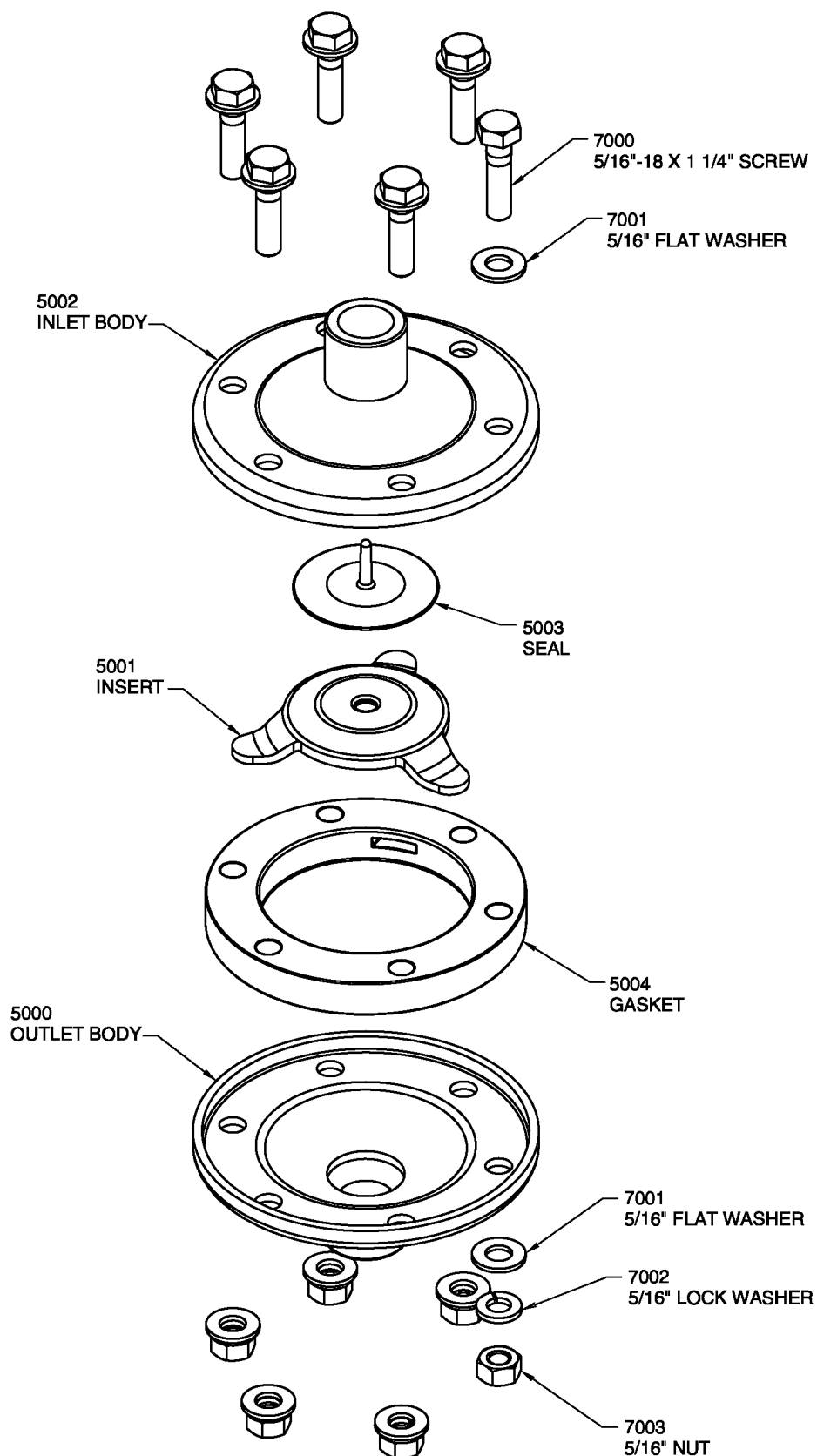
5004
GASKET



SECTION B-B

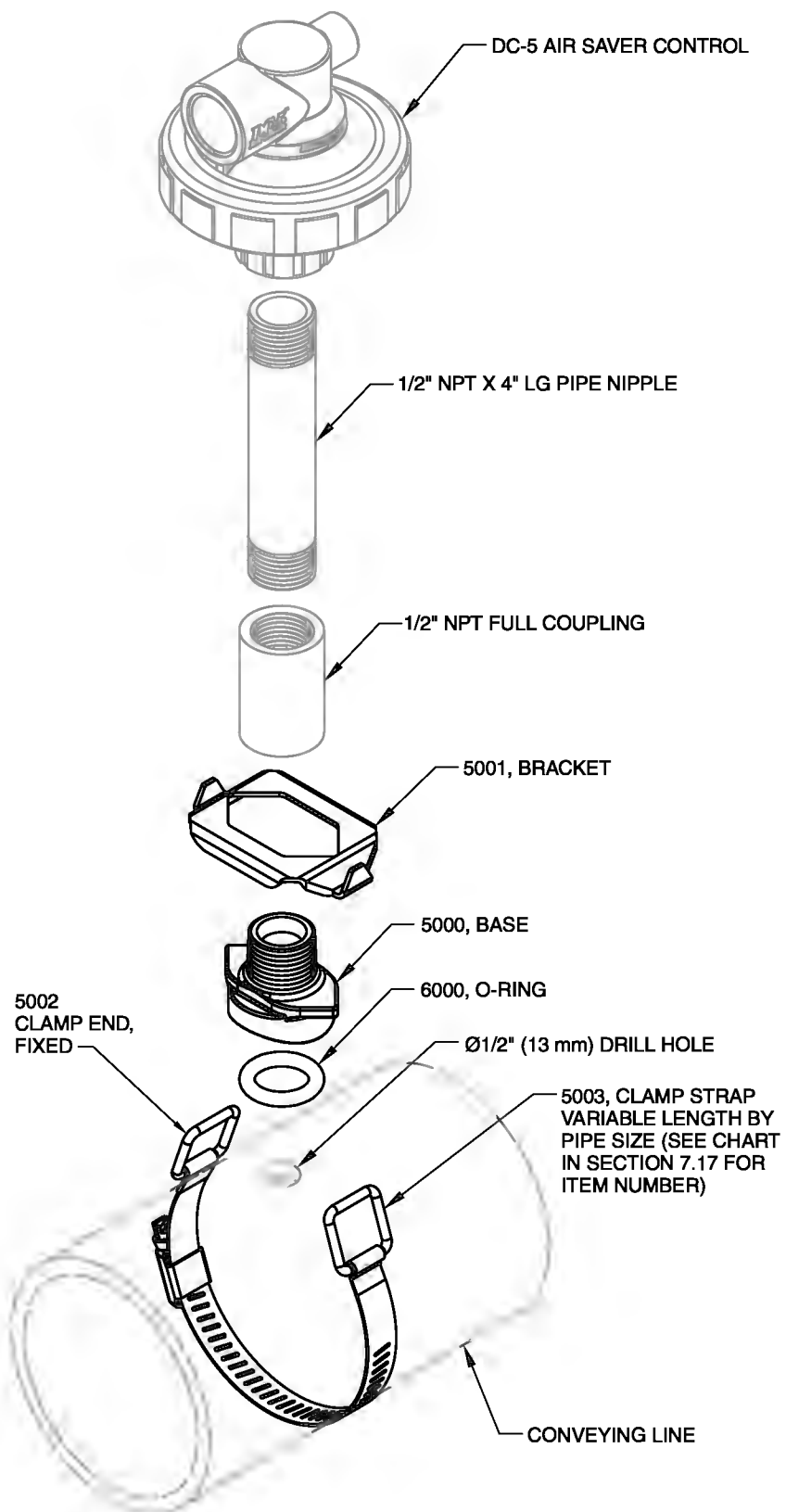
Mechanical Assembly, SST - Exploded

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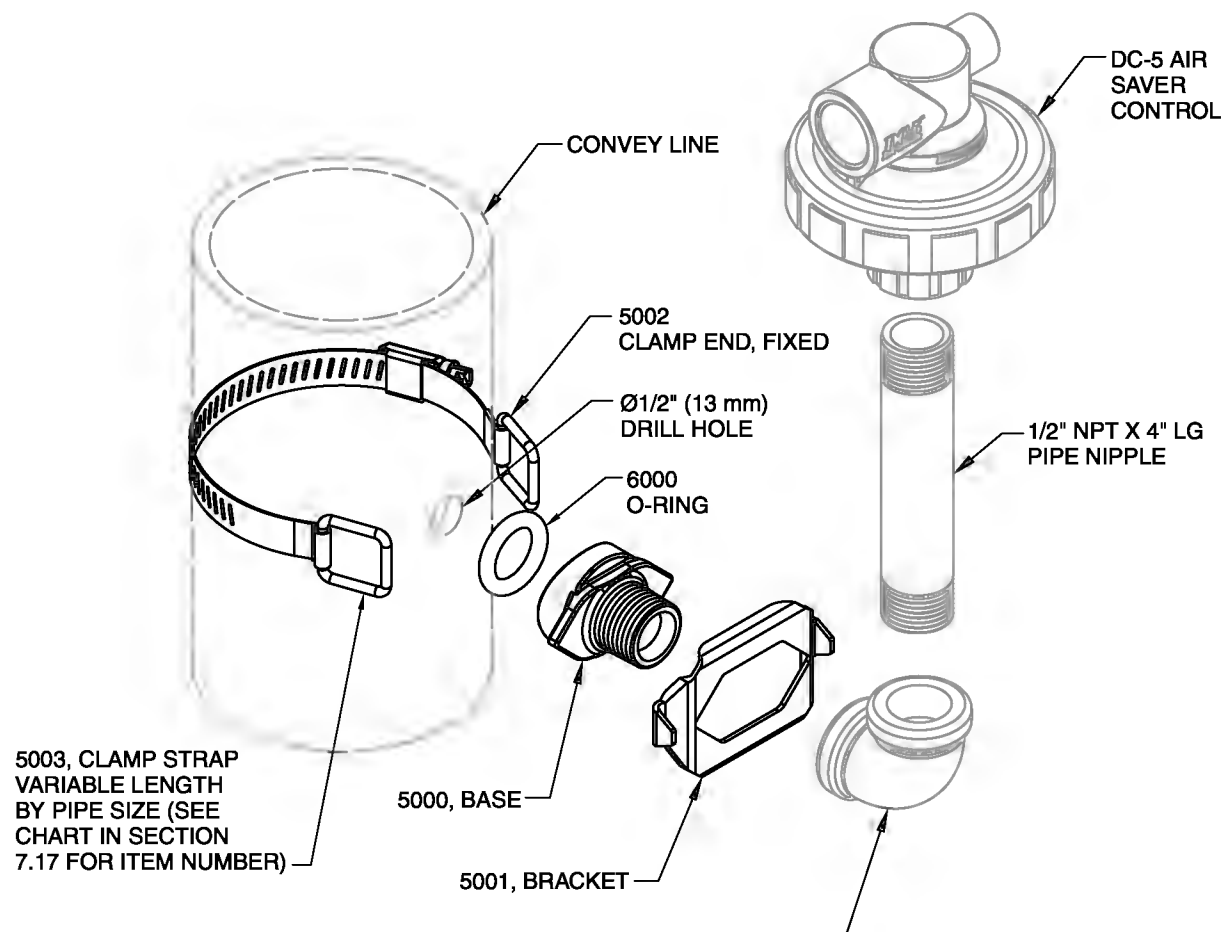
Mounting Assembly, Horizontal

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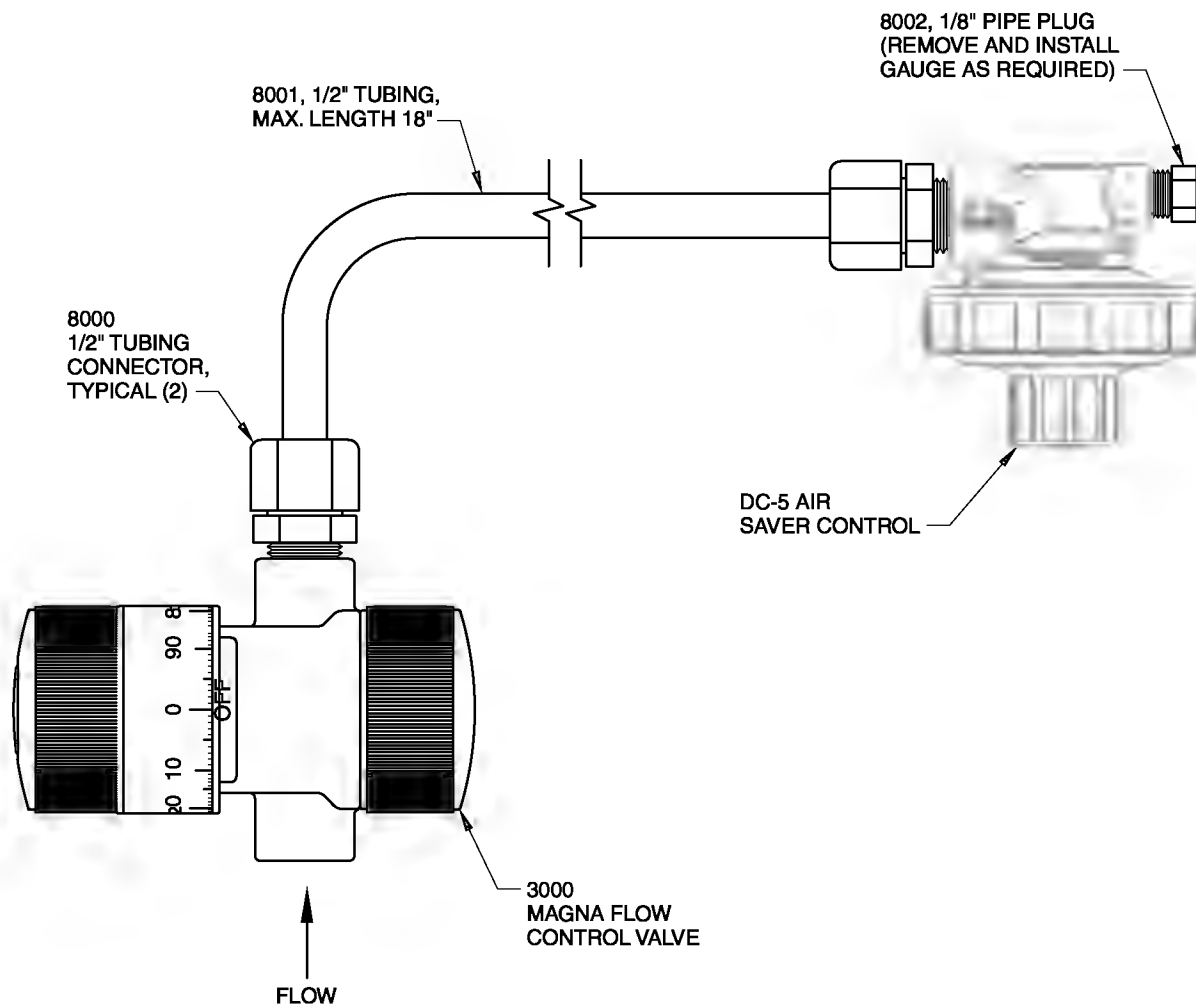
Mounting Assembly, Vertical

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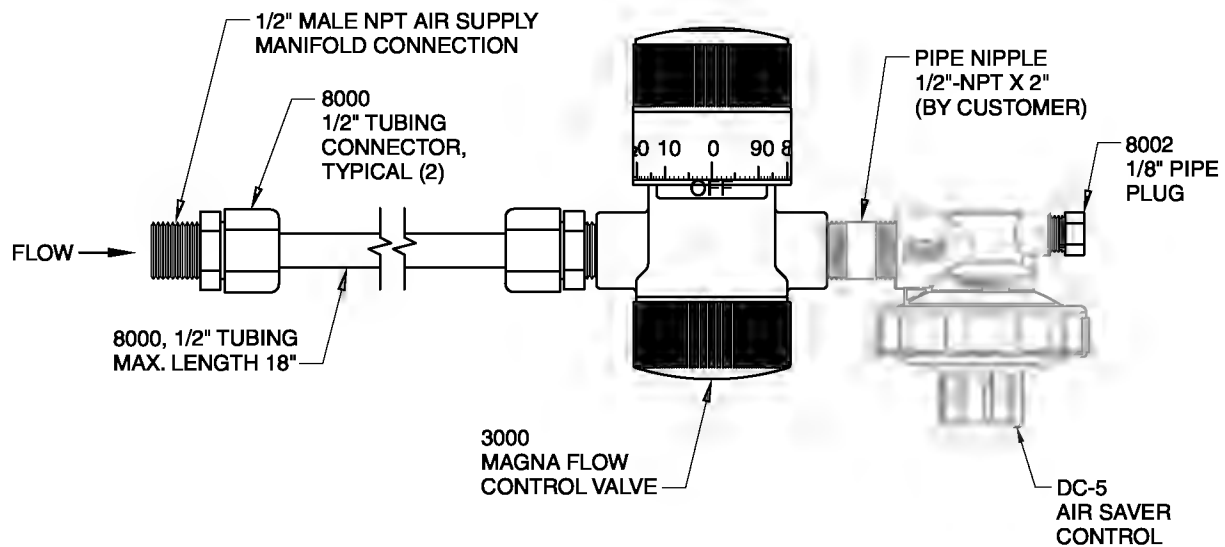
Control Assembly, Conveying Line

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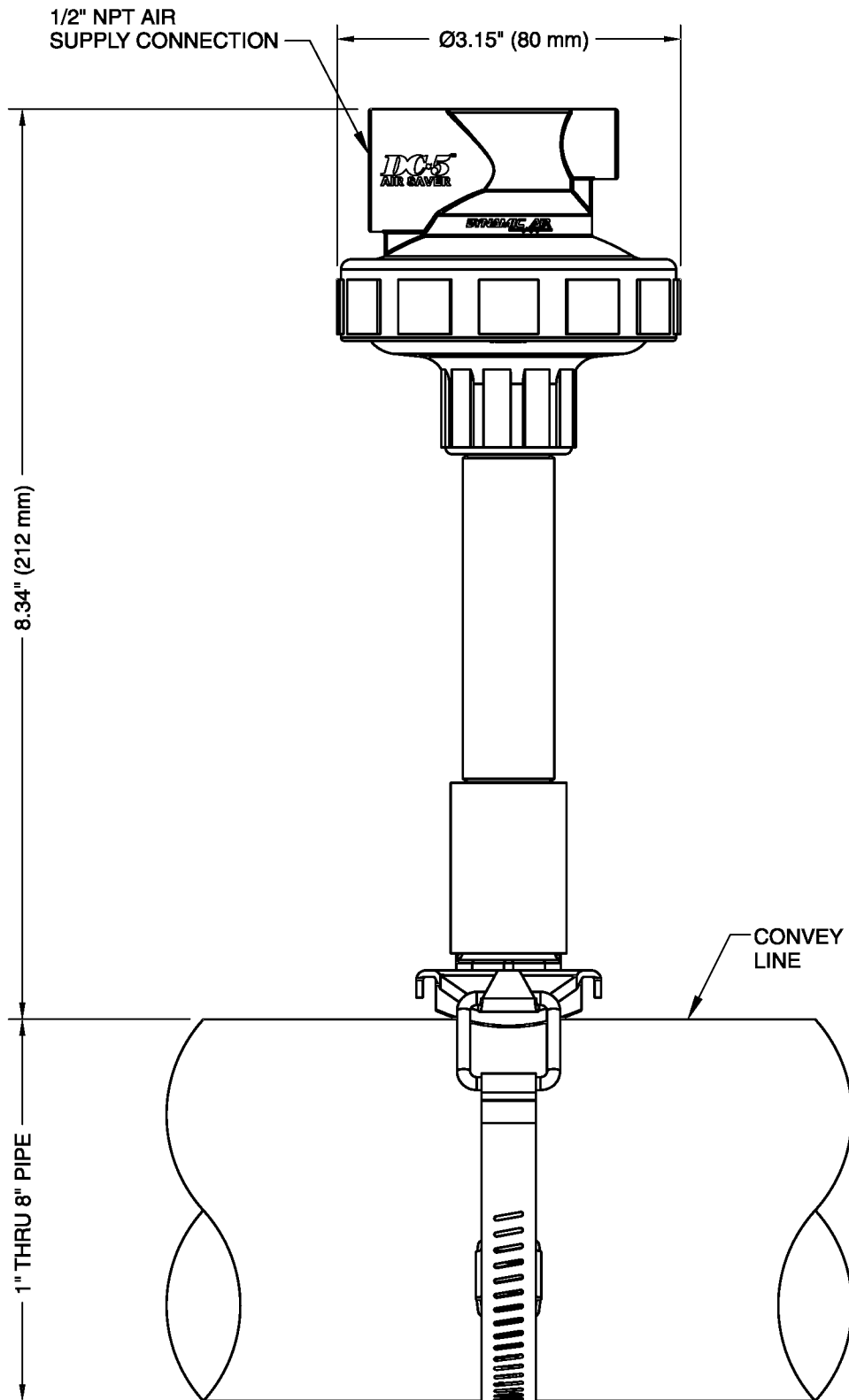
Control Assembly, Pulse-Jet

DC-5® Air Saver Control
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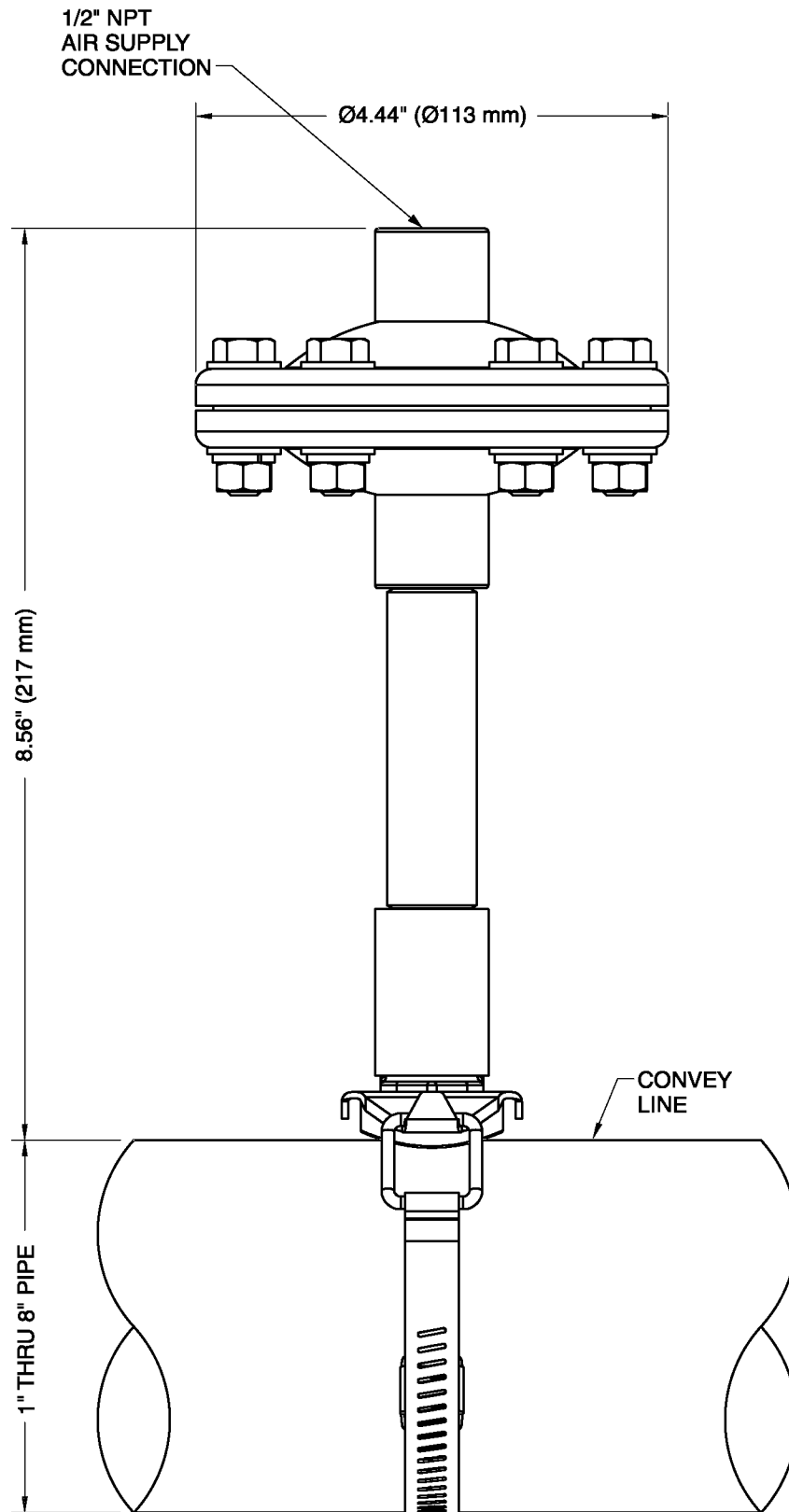
Basic Dimensions, Nylon

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Basic Dimensions, SST

DC-5® Air Saver Control
Series 708



Bill of Material

DC-5® Air Saver Control
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The following is a typical bill of material of all items which are provided by Dynamic Air. The bubble numbers shown on this printout relate to bubble numbers which will appear on its corresponding engineering drawing. Only the items shown on this bill of material will be provided by Dynamic Air, and all other items required for the installation of the DC-5 air saver control must be supplied by the customer.

BILL OF MATERIAL

④

ASSEMBLY ITEM NUMBER: ①
ASSEMBLY DESCRIPTION: ②
ENGINEERING DRAWING NUMBER: ③

BUBBLE NUMBER	QUANTITY	UNIT OF MEASURE	ITEM NUMBER	DESCRIPTION	DRAWING NUMBER
⑤	⑥	⑦	⑧	⑨	⑩

KEY TO REFERENCE NUMBERS

- | | | | |
|---|--|----|---|
| 1 | Dynamic Air item assembly number. | 6 | Quantity of item provided by Dynamic Air. |
| 2 | Item description for the assembly. | 7 | Unit of measure. |
| 3 | Engineering drawing number to be referenced for item number listed. | 8 | Dynamic Air item number of individual part. |
| 4 | Bill of Material page number. | 9 | Abbreviated item description. |
| 5 | Bubble number, to be used with the assembly's corresponding engineering drawing. | 10 | Drawing number for internal reference only. |

BILL OF MATERIAL

ITEM: 1111112
DESCRIPTION: DC-5 AIR SAVER CONTROL ASSEMBLY, NYLON
DRAWING NUMBER: I-708-24 L

BUBBLE NUMBER	QUANTITY	UNIT OF MEASURE	ITEM NUMBER	DESCRIPTION	DRAWING NUMBER
5000	1.00	EA	1110880	INLET BODY	I-708-47 A
5001	1.00	EA	1106083	SEAL	I-708-38 K
5002	1.00	EA	1110203	OUTLET BODY	I-708-46 C
6000	1.00	EA	1106854	O-RING	---

BILL OF MATERIAL

ITEM: 1100515
DESCRIPTION: DC-5 AIR SAVER CONTROL ASSEMBLY, 316SST
DRAWING NUMBER: I-708-44

BUBBLE NUMBER	QUANTITY	UNIT OF MEASURE	ITEM NUMBER	DESCRIPTION	DRAWING NUMBER
5000	1.00	EA	1100510	OUTLET BODY	---
5001	1.00	EA	1100511	INSERT	---
5002	1.00	EA	1100512	INLET BODY	---
5003	1.00	EA	1105786	SEAL	I-708-38 K
5004	1.00	EA	1100513	GASKET	---
6000	2.00	EA	1093026	FLOW ARROW LABEL	---
7000	6.00	EA	1020023	5/16"-18 X 1 1/4" SCREW	--
7001	12.00	EA	1003320	5/16" FLAT WASHER	---
7002	6.00	EA	8005830	5/16" LOCK WASHER	---
7003	6.00	EA	8005827	5/16 NUT	---

Mounting Parts

**DC-5® Air Saver Control
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BILL OF MATERIAL

ITEM: 1035100

DESCRIPTION: DC-5 AIR SAVER CONTROL MOUNTING PARTS

DRAWING NUMBER: ---

BUBBLE NUMBER	QUANTITY	UNIT OF MEASURE	ITEM NUMBER	DESCRIPTION	DRAWING NUMBER
5000	1.00	EA	1032760	BASE	I-327-56 D
5001	1.00	EA	1009752	BRACKET	I-327-44 C
5002	1.00	EA	1018160	CLAMP END, FIXED	I-327-53 D
5003*	1.00	EA	-----	CLAMP STRAP	I-327-53 D
6000	1.00	EA	1035200	O-RING	---

* See Section 7.17 for Clamp Strap item number.

Mounting Parts

**DC-5® Air Saver Control
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CLAMP STRAP, VARIABLE LENGTH

PIPE SIZE	QUANTITY	ITEM NUMBER	DESCRIPTION	DRAWING NUMBER
2"	1	1018161	CLAMP STRAP, 4.12 IN (105 MM) LONG, W/STRAP HOOK	I-327-53 D
3"	1	1018162	CLAMP STRAP, 7.25 IN (184 MM) LONG, W/STRAP HOOK	I-327-53 D
4"	1	1018163	CLAMP STRAP, 10.25 IN (260 MM) LONG, W/STRAP HOOK	I-327-53 D
5"	1	1018164	CLAMP STRAP, 13.62 IN (346 MM) LONG, W/STRAP HOOK	I-327-53 D
6"	1	1018165	CLAMP STRAP, 16.88 IN (429 MM) LONG, W/STRAP HOOK	I-327-53 D

Mounting Parts

DC-5® Air Saver Control
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BILL OF MATERIAL

ITEM: —

DESCRIPTION: DC-5 AIR SAVER CONTROL ASSEMBLY

DRAWING NUMBER: SECTION 7.9 & 7.10

BUBBLE NUMBER	QUANTITY	UNIT OF MEASURE	ITEM NUMBER	DESCRIPTION	DRAWING NUMBER
3000	1	EA	1039906	MAGNA FLOW CONTROL VALVE	A-608-6 K
8000	2	EA	1012925	TUBING CONNECTOR, 1/2" - 1/2" MPT	—
8001	18	IN	1009738	1/2" TUBING	—
8002	1	EA	1090970	1/8" PIPE PLUG	—

We highly encourage the use of our service department for a safe and successful application of the equipment you have purchased and to provide maximum service life.

Should any questions arise with regard to installation and/or operation that is not covered in this manual, please call Dynamic Air's customer service department for further recommendations or visit our website at **www.dynamicair.com**.

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Customer Satisfaction Survey

DC-5® Air Saver Control
Series 708

Dynamic Air is interested in feedback from our customers. Please help us serve you better by going to www.dynamicaire.com/customer.html and completing our Customer Satisfaction Survey or complete the survey below and fax or e-mail it to us.

1. Are you satisfied with the delivery of your Dynamic Air product? ☐ Yes ☐ No
2. Are you satisfied with the performance of your Dynamic Air product? ☐ Yes ☐ No
3. Are you satisfied with the customer service you received? ☐ Yes ☐ No
4. Are you satisfied with the technical support? ☐ Yes ☐ No
5. Are you satisfied with the price? ☐ Yes ☐ No
6. Are you likely to buy more Dynamic Air products? ☐ Yes ☐ No
7. Do you have any suggestions to improve the Dynamic Air product quality or service? ☐ Yes ☐ No

Comments:

Thank you for your help. Please tell us about yourself:

Name: _____

Company: _____

Country: _____

Phone Number: _____

E-mail Address: _____

Would you like someone from Dynamic Air to contact you? ☐ Yes ☐ No
(If Yes, be sure to include your contact information above.)

Please fax this page to Dynamic Air at +1 651-484-7015 or email to info@dynamicaire.com.

Non-Standard Section

**DC-5® Air Saver Control
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This section contains custom design information which supersedes the standard design. All drawings and material lists in this section will replace the drawings and material lists of identical nature previously listed. If this section has no information, all components are standard.

posi-flate®

MagnaTM

Flow Control Valve

Series 608, 700 & 808



INSTALLATION AND OPERATIONS GUIDE

MANUAL NUMBER: PF041894

Revised: 1/22/18

Thank you for purchasing the Magna™ flow control valve. This manual contains information that will allow you to get the best results from your equipment while operating it safely. Please read it carefully before installing and operating this equipment. It is critical that the people operating and maintaining this equipment have a copy of this manual. All information in this publication is based on the latest product information. Posi-flate reserves the right to make changes at any time without notice and without incurring any obligation.

SAFETY MESSAGES

Your safety and the safety of others are very important. We have provided important safety messages in this manual and safety labels on the equipment. Please read these messages carefully.

A safety message alerts you to the potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol and one of three words, DANGER, WARNING, or CAUTION.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

These signal words mean:



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Each message typically identifies the type of the hazard, the consequence of not avoiding the hazard, and how to avoid the hazard.

DAMAGE PREVENTION MESSAGES



NOTICE indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

Safety

**MAGNA™ Flow Control Valve
Series 608, 700 & 808**


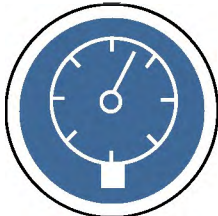


Symbol	Typical Warning/Meaning
	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Maintain Pressure at Safe Levels
	Risk of Explosion
	Remove Power and Lockout/Tagout Before Servicing

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MAGNA™ Flow Control Valve
Series 608, 700 & 808

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How the Magna™ Flow Control Valve Works

The Magna flow control valve is simple to operate from a fully closed position to a fully open position, by turning the micrometer dial clockwise to close and counter-clockwise to open. The Magna flow control valve is only fully closed when the micrometer dial indicates the OFF position. From the OFF position to ZERO, or when flow begins, is about two turns counter-clockwise. Each successive full turn from zero will yield 100 Magna setpoints, as indicated on the micrometer dial. The Magna flow control valve is fully open when the micrometer dial reads 1100 Magna.

A flow indicator on the side of the Magna flow control valve indicates the direction of flow to achieve the best performance. A bottom cap is easily removed for inspection and/or for removing any foreign material which may block the outlet port.

The Magna flow control valve should not be used to shut off flow under pressure.

NOTICE



OPERATING CONDITIONS

Posi-flate's Magna flow control valve has a well-deserved reputation for giving long and dependable service, even under severe use. However, the Magna flow control valve is intended for specific operating conditions only with respect to air pressure and volume. Because conditions for materials handled, installation, use and maintenance of such products are controlled exclusively by the user, Posi-flate disclaims all responsibility for damage or injury resulting from the use of the Magna flow control valve. Therefore, the user assumes all responsibility for any and all claims arising directly or indirectly from the product and/or its use.

Installation Guide

**MAGNA™ Flow Control Valve
Series 608, 700 & 808**

1. Prior to connecting the air supply line to the Magna flow control valve, make sure that all compressed air supply lines are blown clean of metal chips and foreign debris.
2. Make sure incoming air connection is piped in accordance with the flow direction arrow on the valve body (See Fig. 1).
3. Prior to connecting the air supply line, make sure both the end cap and the retaining cap are tight with the valve.
4. To insure proper sealing, use pipe thread sealant on mating threads to the inlet and outlet of the valve. Do not use PTFE tape.

NOTICE



The mating inlet and outlet connections to the Magna flow control valve should be tightened to a maximum of 15-30 ft-lbs (20-41 Nm). Overtightening the inlet and outlet connections may damage or destroy the valve.

5. When the flow control valve installation is complete, check for any air leaks and correct accordingly.

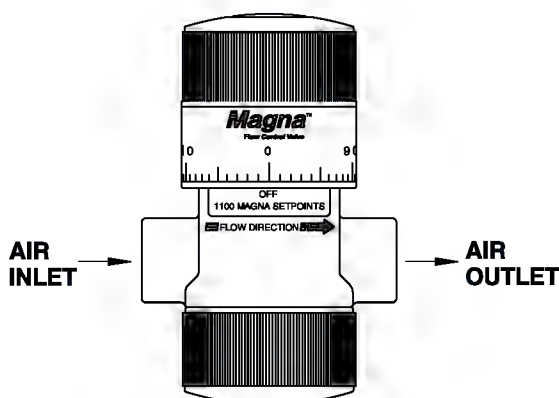


Fig. 1

NOTICE



OPERATING CONDITIONS

Maximum operating pressure is 200 psig (13.8 barg)

Maximum operating vacuum is 29.9 in Hg (759 mm Hg)

Maximum operating temperature is 150° F (65.6° C)

NOTICE



Whenever the clear polycarbonate or white nylon Magna flow control valve is utilized with compressible gas applications in an outdoor application and exposed to direct ultraviolet light, which can reduce the overall strength of the valve, the valve must be replaced after five (5) years of operation. Failure to do so will result in premature failure of the valve body.

Troubleshooting

**MAGNA™ Flow Control Valve
Series 608, 700 & 808**

Symptom	Problem	Correction
FLOW CONTROL VALVE LEAKS	• Compressed air supply line leaks.	• Correct compressed air supply line leaks.
	• End cap is loosened or removed from valve body.	• Tighten end cap to have a tight fit with valve body.
	• O-ring(s) missing or damaged.	• Replace worn or missing O-ring(s).
	• Input or output air connection leaks.	• Correct air connection leaks.
	• Valve body damaged.	• Replace valve body.
	• End cap damaged.	• Replace end cap.
	• Plunger damaged.	• Replace plunger.
	• Control valve has been used as a cut off valve and is now leaking at the off position.	• Remove air pressure and replace plunger O-rings.
FLOW CONTROL VALVE BODY CRACKS	• Inlet or outlet fittings overtightened.	• Replace valve body.
	• Valve has seen pressure in excess of 200 psig (13.8 barg).	• Replace valve body.
	• Valve has seen temperature in excess of 150° F (65.6° C).	• Replace valve body.

To calculate gas flow given a particular Magna setpoint, please reference Fig. 3 in Section 4.3 to obtain C_v value for the Series 608 or Fig. 4 in Section 4.4 to obtain C_v value for Series 700, or Fig. 5 in Section 4.5 to obtain C_v value for Series 808 then enter value into the following formula:

$$Q = 22.68 C_v \sqrt{\frac{P_1(P_1 - P_2)}{(460 + T)G}}$$

Where:

Q= Gas Flow (SCFM)

C_v =Coefficient of Flow

T=Gas Temperature (°F)

G=Specific Gravity of Gas*

P_1 =Pressure upstream of valve (psia), see Fig. 1

P_2 =Pressure downstream of valve (psia), see Note and Fig. 1.

Notes:

If $P_2 \geq 0.528P_1$, then $P_2 = P_2$

If $P_2 < 0.528P_1$, then $P_2 = 0.528P_1$

*The specific gravity of air at 60° F is 1.0.

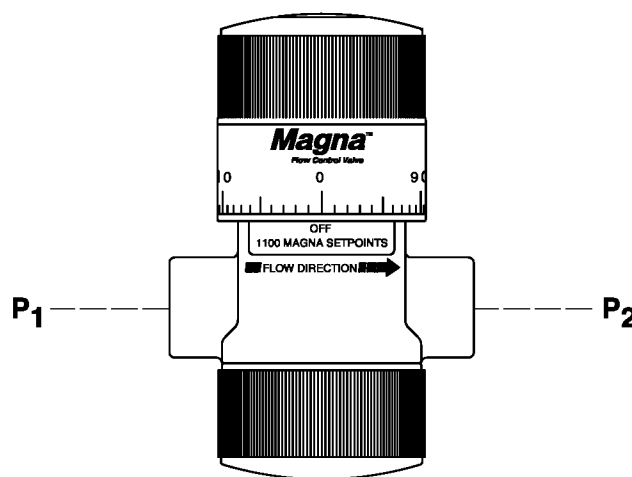


Fig. 1

To calculate liquid flow given a particular Magna setpoint, please reference Fig. 3 in Section 4.3 to obtain C_v value for the Series 608 or Fig. 4 in Section 4.4 to obtain C_v value for Series 700, or Fig. 5 in Section 4.5 to obtain C_v value for Series 808 then enter value into the following formula:

$$Q = \frac{C_v}{1.23 \sqrt{\frac{G}{(P_1 - P_2)}}}$$

Where:

Q = Liquid Flow Rate (GPM)

C_v =Coefficient of Flow

G =Specific Gravity of Liquid (Water = 1)

P_1 =Pressure upstream of valve (psig), see Fig. 2.

P_2 =Pressure downstream of valve (psig), see Fig. 2.

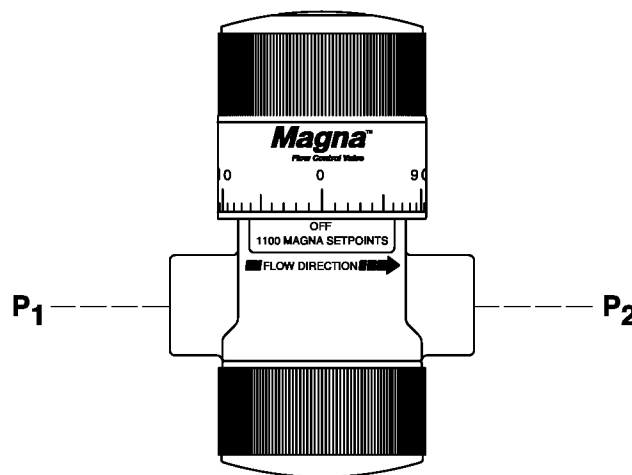
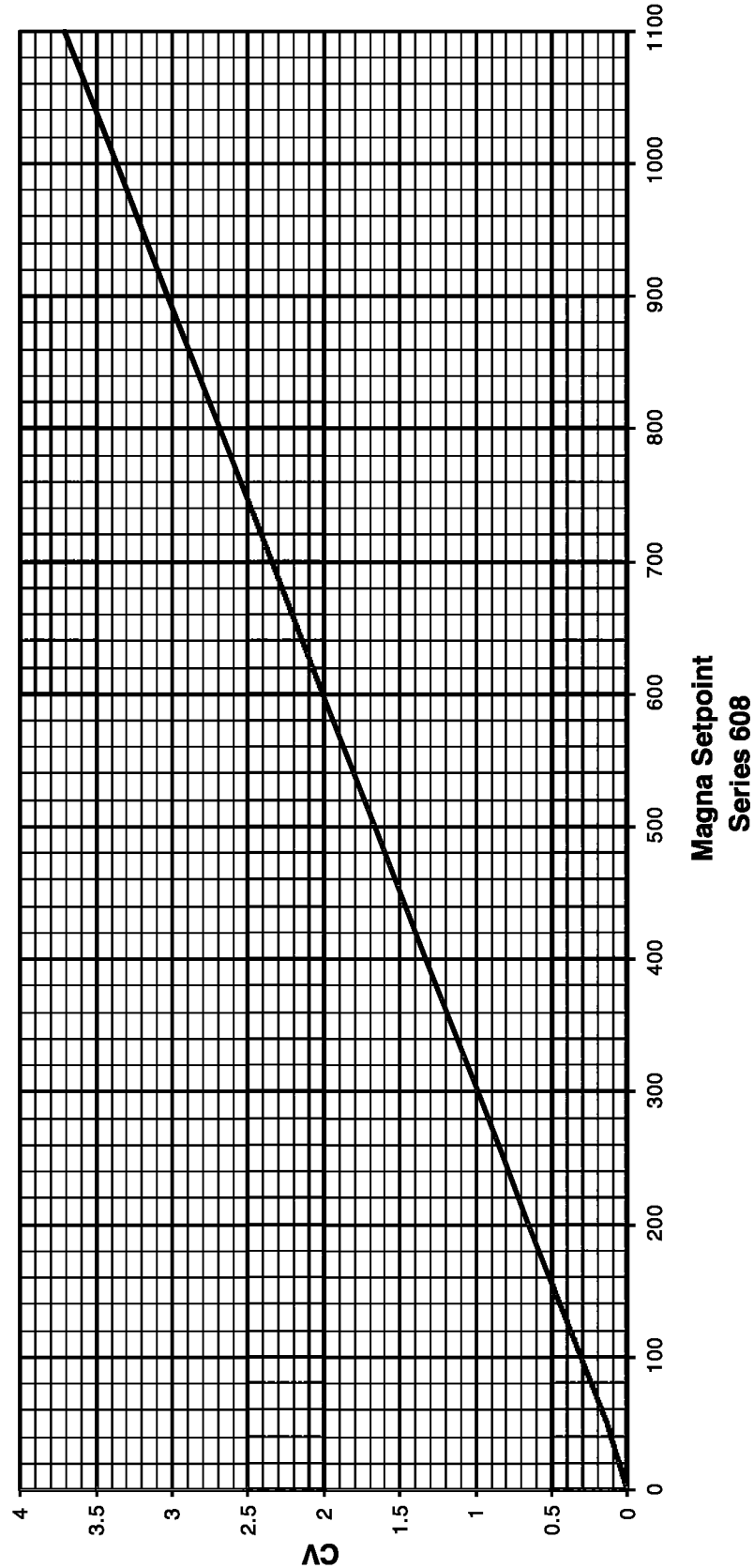


Fig. 2



Magna Setpoint
Series 608

Fig. 3

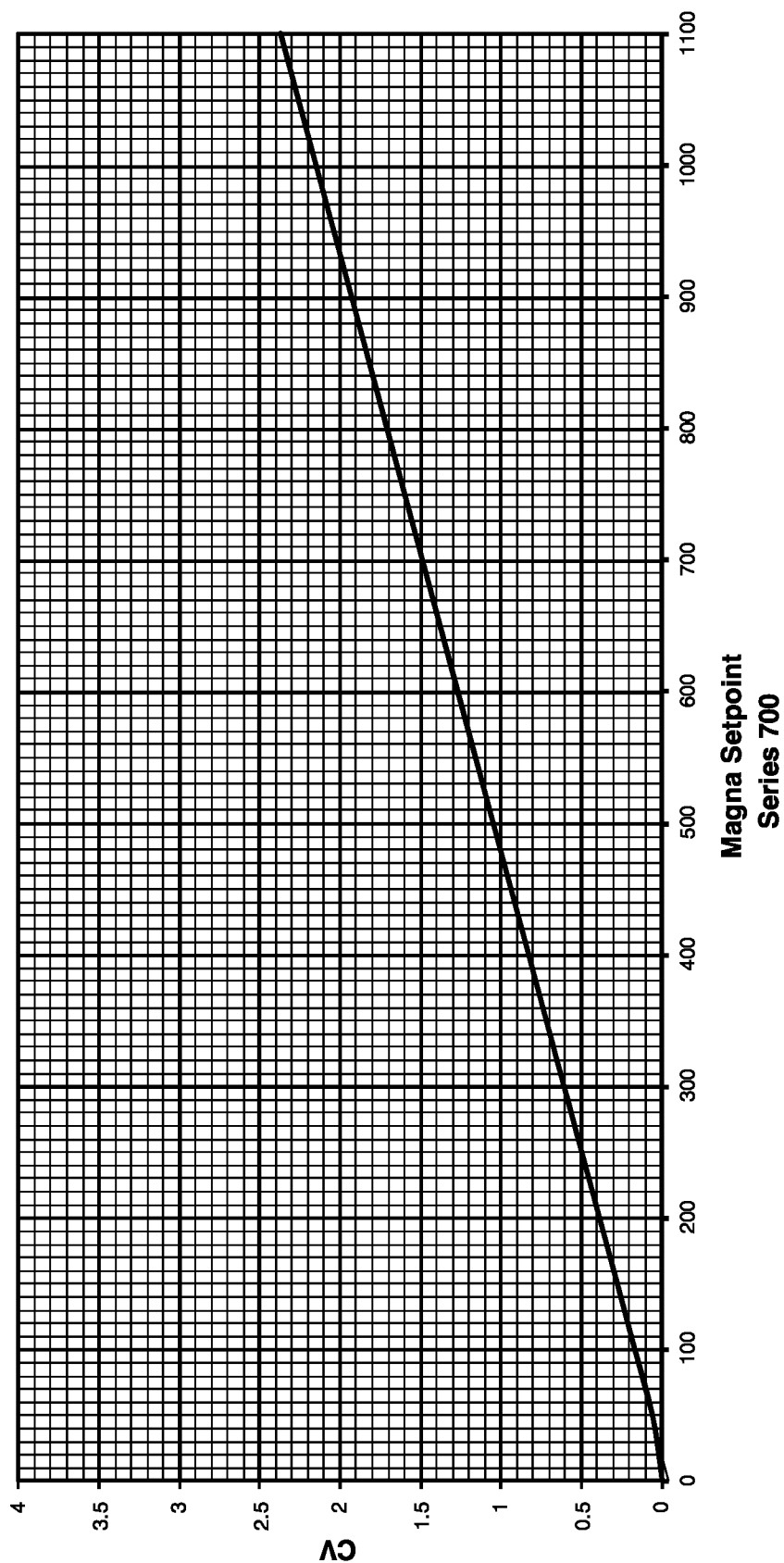
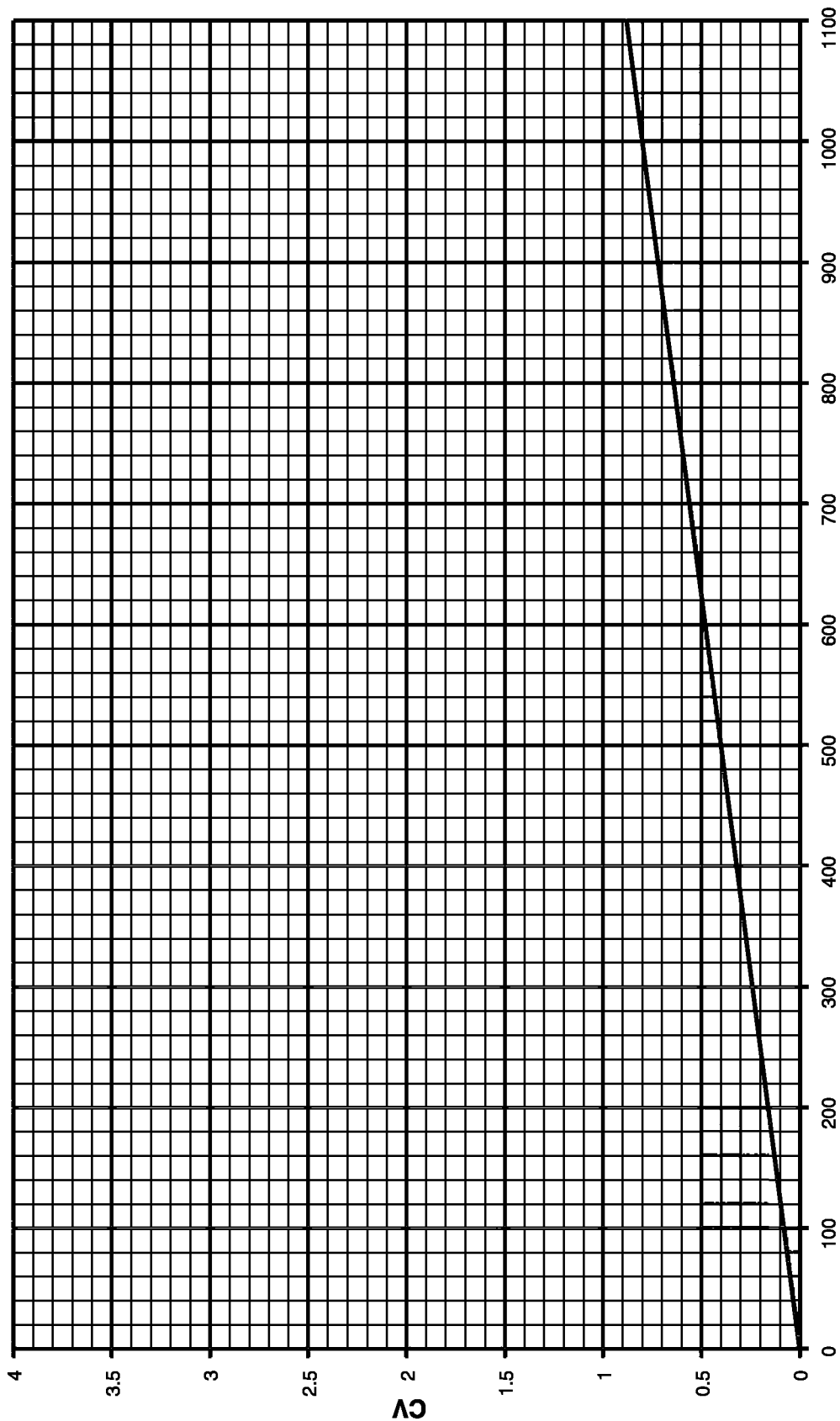


Fig. 4

Gas/Liquid Flow Characteristics

MAGNA™ Flow Control Valve
Series 608, 700 & 808



Magna Setpoint
Series 808

Fig. 5

Daily, Weekly, and Yearly Maintenance

WARNING

The Magna flow control valve and any accessories you have purchased have a limited and variable life, which will depend on each specific application, operating condition and medium of material handled. Over time, the individual components will deteriorate, wear, corrode, and eventually fail. It is therefore the responsibility of the purchaser of the valve to determine when a valve will fail, to safeguard all plant personnel against any and all adverse conditions. The user must follow all instructions contained in this notice and in the operating manuals provided with each Posi-flate product.

REQUIRED PREVENTATIVE MAINTENANCE SCHEDULES

The user of Posi-flate supplied valve and equipment must take adequate preventative maintenance precautions to safeguard all plant personnel, equipment and property against any and all adverse conditions that may occur during operation of the Magna flow control valve. To prevent valve failure, the user must establish, create and follow a daily, weekly, monthly and yearly maintenance schedule, which coincides with the actual intended use of each valve. The maintenance schedule for each situation will depend on the user's specific application and medium of material handled. If the user has any questions about creating a specific maintenance program, you may contact the Posi-flate engineering department for recommendations.

REQUIRED INSPECTIONS

The user of the Magna valve and/or equipment must visually inspect all valves and/or other Posi-flate equipment at least once daily. This inspection is necessary to detect and/or guard against any potential problems or unsafe operating conditions such as leaks, stress cracks, loosening of bolts and part failures, etc.

WARNING

VALVES THAT REQUIRE IMMEDIATE SHUTDOWN AND INSPECTION

Whenever any unusual operating conditions are noticed during operation of the Magna valve and any accessories, the valve should be immediately replaced. Prior to replacing the valve, all air and electrical power should be shut off and the upstream pressure relieved, in order to protect personnel from potential injury and to protect any equipment from potential damage or unsafe operating conditions. After replacing the valve, it should be thoroughly inspected to determine the cause of such unusual operating conditions or symptoms. The root cause of the problem must be corrected and/or any worn or failed parts must be replaced prior to putting the valve back into service.

Conditions that require immediate shutdown and inspection include, but are not limited to excess vibration, unusual pipe or equipment movement, abnormal noise, excessive heat build-up, leaks, sudden loss of air pressure, or sudden and unusual changes in temperature, noise, etc.

Daily, Weekly, and Yearly Maintenance

SERVICE AND SAFEGUARD REQUIREMENTS

To safeguard plant personnel, prevent valve failure, and optimize valve performance, a qualified Posi-flate factory service technician must inspect each valve on a yearly basis, at a minimum. Failure to follow the above recommendations or observe other safety precautions outlined in the operating manual could damage the Magna valve and endanger plant personnel. It is the user's responsibility to schedule these regular service visits as required.

CHANGES TO POSI-FLATE SUPPLIED EQUIPMENT

Any changes made by the user to the Magna flow control valve and/or associated components, and not specifically authorized in writing by the Posi-flate engineering department, are made totally at the risk of the user, who assumes all liability. These changes may have a negative effect with regard to the valve's performance and decrease life, damage adjacent equipment, or endanger plant personnel. Failure to follow this requirement could cause damage to the valve, accessories and associated equipment or endanger plant personnel. Should the user fail to operate the valve according to all instructions in the operating manuals, the warranty will be invalidated.



DANGEROUS OR EXPLOSIVE MATERIALS:

The valve or associated equipment furnished by Posi-flate may handle materials that may be dangerous or explosive. The customers assumes all liability and total responsibility to insure the safety of plant personnel by following to the fullest extent those procedures recommended by the suppliers of such dangerous or explosive materials. The user must determine when a valve will fail, be proactive and respond before any plant personnel are put into a dangerous situation. Posi-flate assumes no liability with regard to potential hazards when handling either dangerous or explosive materials.

It is the user's responsibility to perform a "hazardous operation study" by a qualified individual and/or company with regard to possible valve failure and/or possible repercussions or other dangerous situations as a result. In addition, any safeguarding required to protect plant personnel should a Magna flow control valve or associated equipment and/or accessories fail, is the user's responsibility.

Daily, Weekly, and Yearly Maintenance



WARNING



Disconnect and lockout/tagout all energy sources before performing any maintenance.

RECOMMENDED MAINTENANCE SCHEDULE:

O-rings:

- A weekly check for air leaks or air blockage should be conducted on all Magna flow control valve connections. Check supply air pressure weekly.
- Posi-flate recommends that an evaluation of the condition of the O-rings be done once a year as a minimum. Regular maintenance should then be scheduled to replace worn parts consistent with each application.

Cleaning:

If it should become necessary to clean this equipment, disconnect the unit from all power sources first. Do not use liquid cleaners, aerosols, abrasive pads, scouring powders or solvents, such as benzine or alcohol. Use a soft cloth lightly moistened with a mild detergent solution. Ensure the surface cleaned is fully dry before reconnecting power.

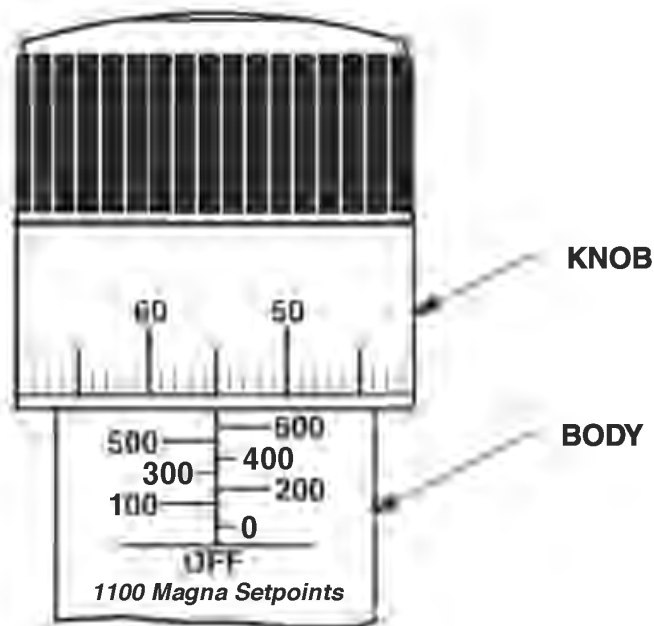
How to Read the Valve Settings

MAGNA™ Flow Control Valve
Series 608, 700 & 808

1. The valve knob is divided into 100 equal parts. Each part or division is indicated by a vertical line, and each vertical line represents one Magna Setpoint.
2. The valve body is divided into 11 equal parts. One complete rotation of the valve knob coincides with the smallest division of the valve body, or 100 Magna setpoints.

Reading Example:

1. The valve knob has stopped at a point on the valve body between 600 and 700.
2. The valve body vertical line intersects the valve knob at 55.
3. Since the valve knob has passed 600 but hasn't reached 700, the base reading is 600. Add 600 to 55, the reading on the knob, and your overall reading is 655.



Recommended Spare Parts List

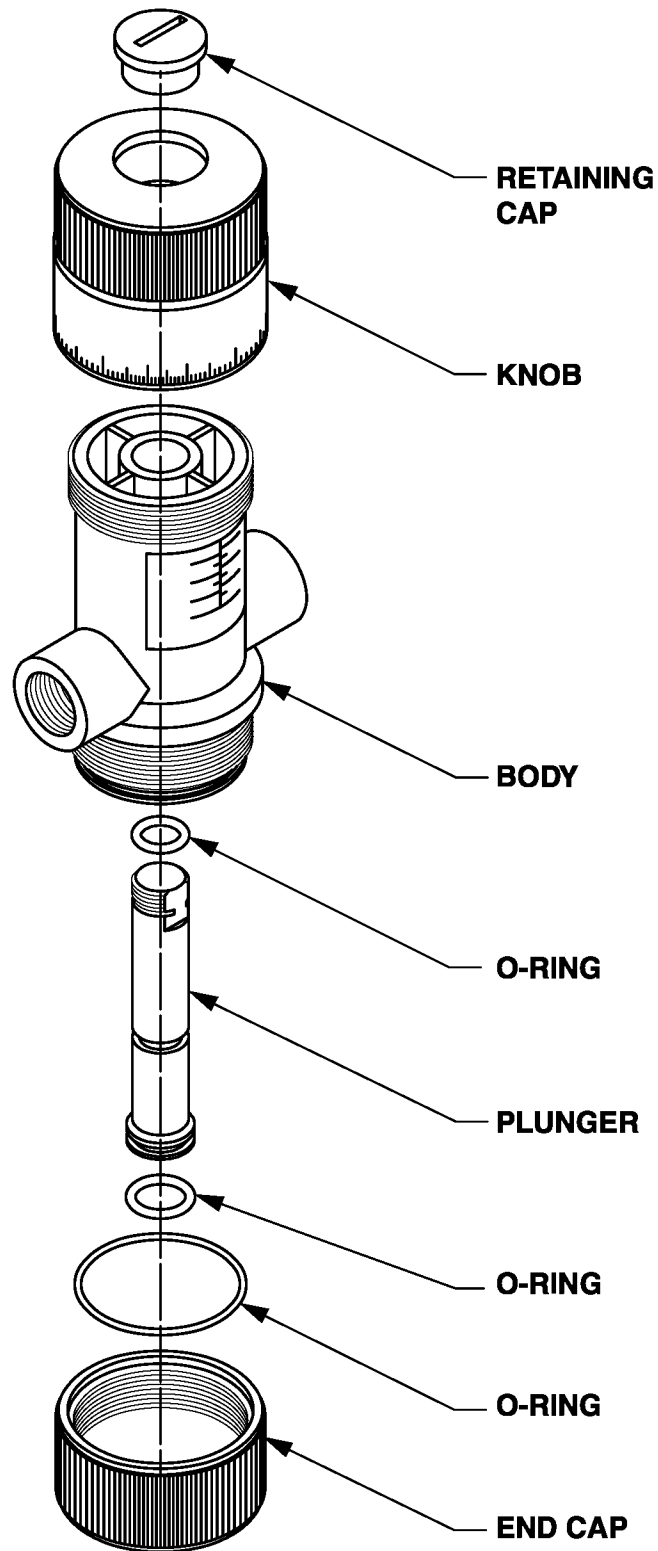
**MAGNA™ Flow Control Valve
Series 608, 700 & 808**

Description	Section Number	Recommended Quantity to Stock	Highly Recommended Quantity to Stock
Magna Flow Control Valve	8.1	-	10%*
O-ring	8.1	-	1 each

* 10% of the total quantity used.

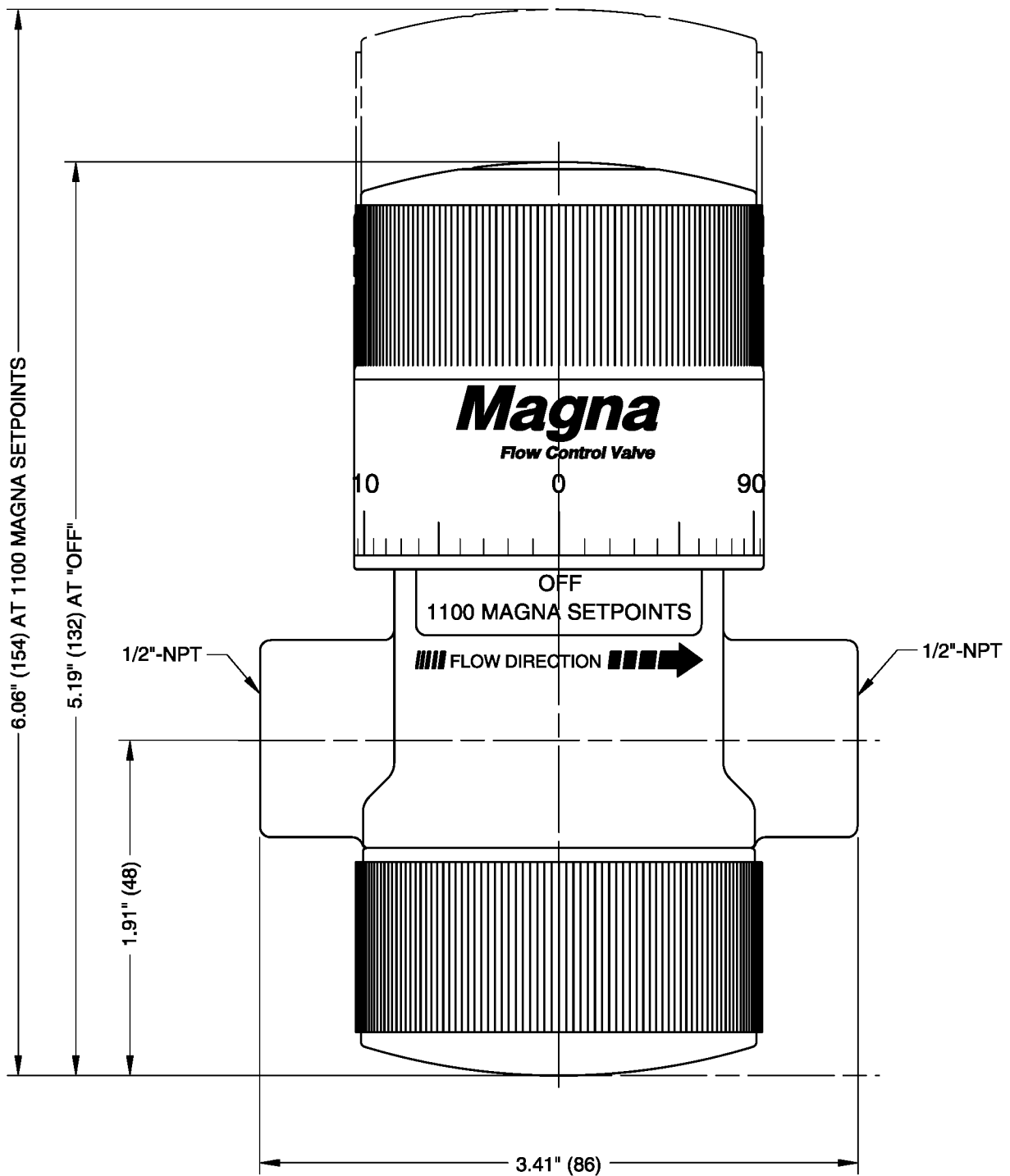
Ex: If a quantity of 100 are being used, it is highly recommended to stock at least a quantity of 10.

NOTE: *Due to long lead times and part availability, the above material may not be in Dynamic Air's stock. Therefore, allow ample time for ordering replacement parts.*



Dimensional Drawing

MAGNA™ Flow Control Valve
Series 608, 700 & 808



Note: All dimensions are in inches (millimeters)

Should any questions arise with regard to installation and/or operation that is not covered in this manual, please call Posi-flates's customer service department for further recommendations or visit our website at www.posiflate.com.

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Customer Satisfaction Survey

**MAGNA™ Flow Control Valve
Series 608, 700 & 808**

Posi-flate is interested in feedback from our customers. Please help us serve you better by going to www.posiflate.com/customer.html and completing our Customer Satisfaction Survey or complete the survey below and fax or e-mail it to us.

1. Are you satisfied with the delivery of your Posi-flate product? ☐ Yes ☐ No
2. Are you satisfied with the performance of your Posi-flate product? ☐ Yes ☐ No
3. Are you satisfied with the customer service you received? ☐ Yes ☐ No
4. Are you satisfied with the technical support? ☐ Yes ☐ No
5. Are you satisfied with the price? ☐ Yes ☐ No
6. Are you likely to buy more Posi-flate products? ☐ Yes ☐ No
7. Do you have any suggestions to improve the Posi-flate product quality or service? ☐ Yes ☐ No

Comments:

Thank you for your help. Please tell us about yourself:

Name: _____

Company: _____

Country: _____

Phone Number: _____

E-mail Address: _____

Would you like someone from Posi-flate to contact you? ☐ Yes ☐ No
(If Yes, be sure to include your contact information above.)

Please fax this page to Posi-flate at +1 651-484-7015 or email to info@posiflate.com.



Inflatable Seated Butterfly Valve

Series 485, 486, 487 & 488



INSTALLATION AND OPERATIONS GUIDE

Manual Number: PF111097

Revised 10/20/16

Thank you for purchasing the Posi-flate® Inflatable Seated Butterfly Valve. This manual contains information that will allow you to get the best results from your equipment while operating it safely. Please read it carefully before installing and operating this equipment. It is critical that the people operating and maintaining this equipment have a copy of this manual. All information in this publication is based on the latest product information. Posi-flate reserves the right to make changes at any time without notice and without incurring any obligation.

SAFETY MESSAGES

Your safety and the safety of others are very important. We have provided important safety messages in this manual and safety labels on the equipment. Please read these messages carefully.

A safety message alerts you to the potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol and one of three words, DANGER, WARNING, or CAUTION.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

These signal words mean:



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Each message typically identifies the type of the hazard, the consequence of not avoiding the hazard, and how to avoid the hazard.

DAMAGE PREVENTION MESSAGES



NOTICE indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

Safety

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488






Symbol	Typical Warning/Meaning
	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Do Not Weld
	Crush Hazard. Keep hands clear of moving parts.
	Risk of Explosion
	Remove Power and Lockout/Tagout before Servicing

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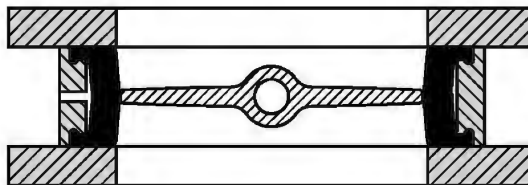
**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

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How the Inflatable Butterfly Valve Works

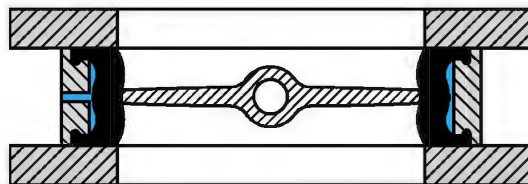
Closed, unsealed

As the valve rotates into the closed position, the disc makes only casual contact with the seat, reducing friction, wear and torque requirements.



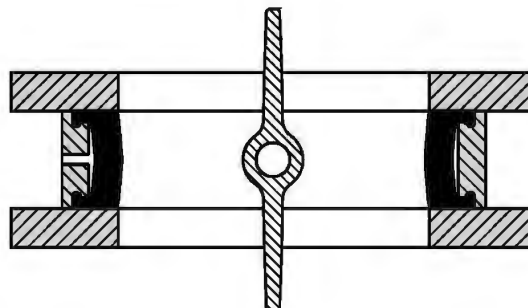
Closed, sealed

After the valve is closed, the seat inflates against the disc providing more sealing surface and an even pressure distribution against the disc.



Open, unsealed

Before the valve opens, the seat is first deflated. The disc is then free to rotate to the open position.



NOTICE



OPERATING CONDITIONS

The Posi-flate Inflatable Seated Butterfly Valve has been designed to provide dependable service, even under severe use. However, the Posi-flate Butterfly Valve is intended for specific operating conditions only, with respect to air pressure and volume. Because conditions for materials handled, installation, use and maintenance of such products are controlled exclusively by the user, Posi-flate disclaims all responsibility for damage or injury resulting from the use of the butterfly valve. Therefore, the user assumes all responsibility for any and all claims arising directly or indirectly from the product and/or its use.

Installation Guide

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488

1. The Posi-flate butterfly valve should be installed with the disc in the closed position. Spread the opening between the pipe flanges to permit easy installation of the valve without interference. Check to ensure mating flanges are aligned and cleaned. Remove all grease, oils and other foreign material from mating surface.

The Posi-flate Series 485, 486, 487 and 488 butterfly valves are designed to be used with ANSI 125/150 pound flat faced flanges or PN 10 metric flat faced flanges (PN 16 for 150mm and smaller valves or 10 bar flat faced flanges), or JIS 10 bar flanges.

Flange gaskets are not required with these valves (see Fig. 1).

NOTICE

Contact factory for approval if valve mating flanges are not as recommended. Failure to do so may cause damage to the seat or the entire valve or may impair the valve's ability to operate properly.

NOTICE

Do not install valve if flanges are misaligned. This can cause damage to the disc and seat resulting in premature failure (see Fig. 2).

NOTICE

Do not install valve with a warped flange. The flange must be flat within $\pm .015$ inches (.381 mm) to prevent increased torque and premature wear (see Fig 3).

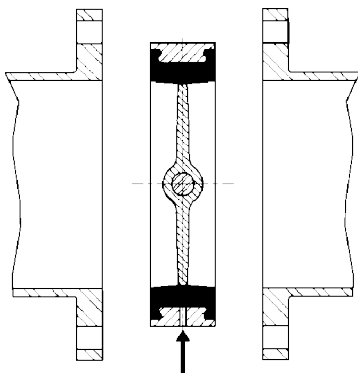


Fig. 1

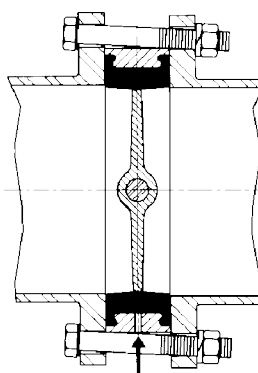


Fig. 2

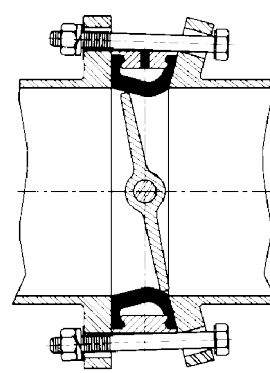


Fig. 3

Installation Guide

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488

2. Following is a recommended bolt diameter chart for use with ANSI 125/150 pound and PN 10 metric flat faced flanges (PN 16 flanges for valves 150mm and smaller).

VALVE SIZE	RECOMMENDED BOLT DIAMETER		
	ANSI 125/150 LB. FLANGES	PN 10 OR 16 FLANGES	JIS 10 BAR FLANGES
2"/50 mm	5/8"	M16	M16
3"/80 mm	5/8"	M16	M16
4"/100 mm	5/8"	M16	M16
5"/125 mm	3/4"	M16	M20
6"/150 mm	3/4"	M20	M20
8"/200 mm	3/4"	M20	M20
10"/250 mm	7/8"	M20	M22
12"/300 mm	7/8"	M20	M22
14"/350 mm	1"	M20	M22
16"/400 mm	1"	M24	M24
18"/450 mm	1-1/8"	M24	M24
20"/500 mm	1-1/8"	M24	M24
24"/600 mm	1-1/4"	M27	M30
30"/800 mm	1-1/4"	M30	M30

3. Adjust the valve body position so it is centered between the flanges. Install flange bolts and finger-tighten. Slowly open and close the valve manually without air pressure on the seat to insure proper alignment of valve (see Fig. 4). Return disc to closed position and **cross-tighten** all bolts until the flanges touch the valve housing. Connect the compressed air supply line but do not pressurize seat until the disc is in the closed position (see Fig. 5).

NOTICE

Do not inflate seat when disc is in the open position. This can result in valve failure and/or cause the seat to become dislodged or damaged (see Fig. 6).

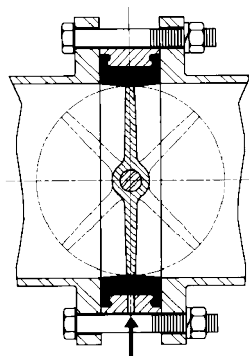


Fig. 4

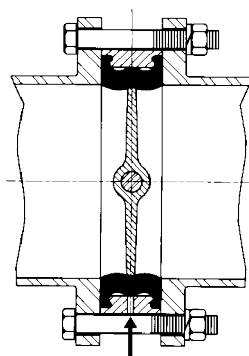


Fig. 5

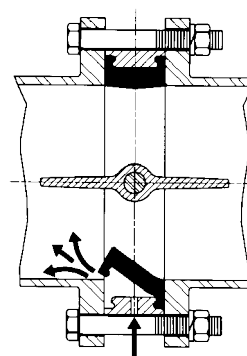


Fig. 6

NOTICE

Do not attempt to open disc when inflatable seat is pressurized. This can result in twisting of the shaft and damage to the seat (see Fig. 7).

4. In the closed position, the disc should be centered or slightly over center so that the seat tends to push the disc against a mechanical restraint such as an air cylinder in the bottomed-out position (see Fig. 8).

NOTICE



Do not weld to any part of the butterfly valve housing (see Fig. 9). All supporting connections must be bolted to the housing flange.

5. Customer to supply clean, dry compressed air at 80-115 psig (5.5-7.9 barg).



WARNING



Keep hands free of all rotating parts during check-out procedure and do not attempt to put hands or fingers inside the butterfly valve sealing area when either the compressed air supply or electrical power is connected.

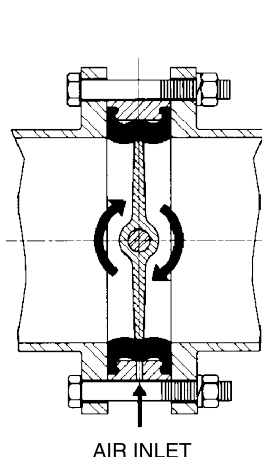


Fig. 7

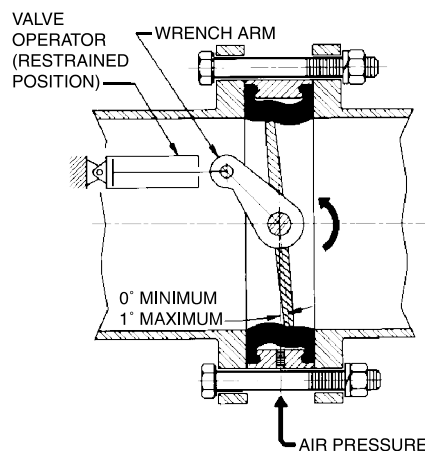
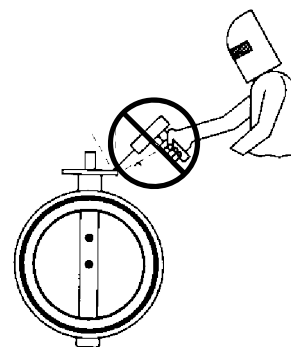


Fig. 8



DO NOT WELD

Fig. 9

6. Determine the correct seat pressure and regulate the seat air supply to this pressure. The minimum seat pressure must be 15 psig (1 barg) above the maximum process pressure (the pressure the valve must seal against). If the result is less than 40 psig (2.7 barg), the seat pressure should be set at 40 psig (2.7 barg). Determine and record the proper seat pressure below:

MINIMUM SEAT PRESSURE DETERMINATION:

MAXIMUM PROCESS PRESSURE: _____

MINIMUM PRESSURE DIFFERENTIAL: 15 PSIG (1 BARG)

TOTAL (IF LESS THAN 40 PSIG (2.7 BARG), ENTER 40 PSIG (2.7 BARG))

MINIMUM SEAT PRESSURE = _____

The single most important factor in getting the maximum life from your Posi-flate butterfly valve is setting the correct seat pressure. The above pressure is the minimum pressure which will give good results. In many applications, you can enhance the life of the valve by raising the seat pressure above the minimum. For optimum seat pressure, please contact your Posi-flate distributor or the factory.

OPTIMUM SEAT PRESSURE: _____

7. Make sure, during installation, adequate space is provided for maintenance and replacement of worn parts. Sufficient clearance must be allowed to easily replace any worn or defective parts, should it be necessary.



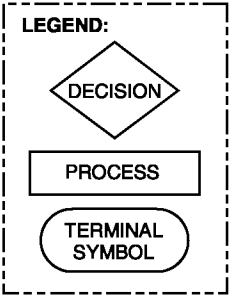
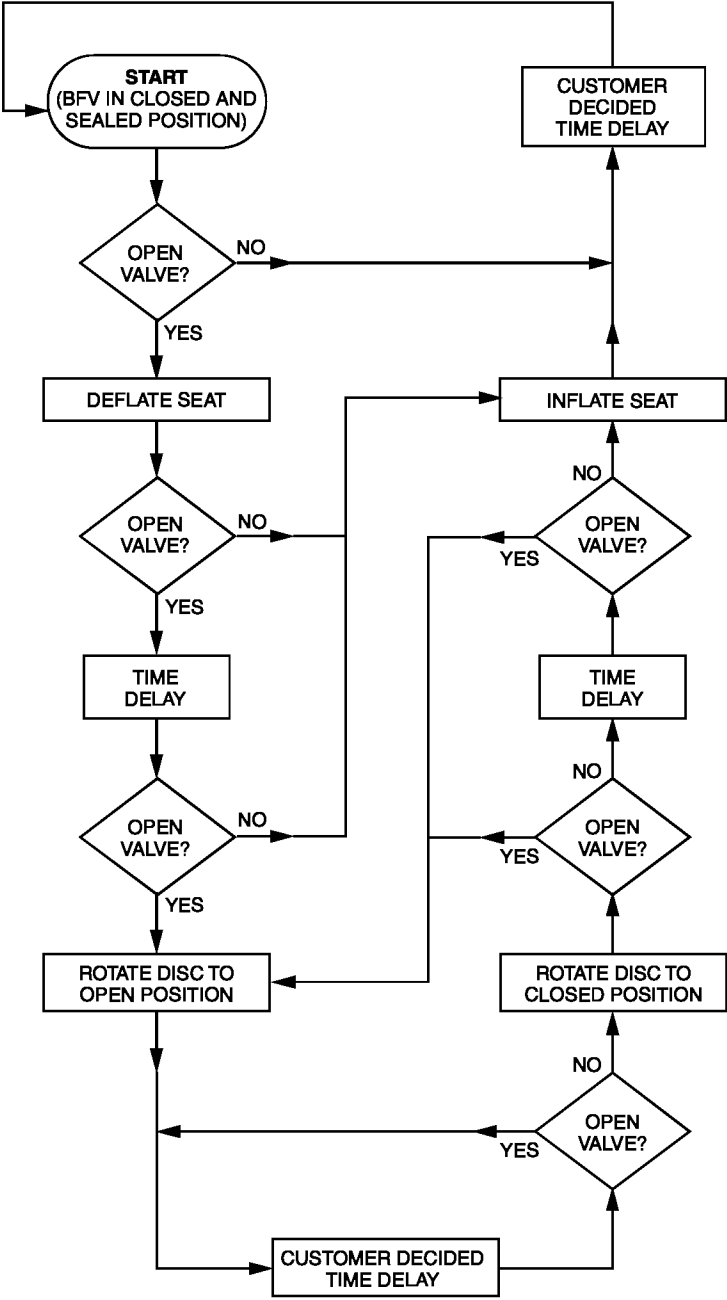
WARNING



Damaged inflatable seat may pose a safety hazard due to the possibility of sudden failure. To avoid mishap, inspect all inflatable seats prior to installation and at periodic intervals. Replace any damaged seats.

Sequence of Operations **Posi-flate® Butterfly Valves Series 485, 486, 487 & 488**

Posi-flate® Butterfly Valves Series 485, 486, 487 & 488



Troubleshooting

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

Symptom	Problem	Correction
BUTTERFLY VALVE DISC DOES NOT MOVE	<ul style="list-style-type: none"> Improper signal to control assembly 	<ul style="list-style-type: none"> Ensure that the electrical signal is the correct voltage and the valve is installed in accordance with the electrical schematic
	<ul style="list-style-type: none"> Low compressed air supply pressure 	<ul style="list-style-type: none"> Correct air supply to 80-115 psig (5.5-7.9 barg)
	<ul style="list-style-type: none"> Compressed air supply line leaks 	<ul style="list-style-type: none"> Eliminate compressed air supply line leaks
	<ul style="list-style-type: none"> Seat is inflated 	<ul style="list-style-type: none"> Ensure control assembly is installed and operating correctly
		<ul style="list-style-type: none"> Remove any seat exhaust restrictions
		<ul style="list-style-type: none"> Ensure seat inflation line is not kinked or restricted
	<ul style="list-style-type: none"> Seat is deformed (compression set) 	<ul style="list-style-type: none"> Replace seat
		<ul style="list-style-type: none"> Review application to ensure proper seat is being used
	<ul style="list-style-type: none"> Valve opens under vacuum 	<ul style="list-style-type: none"> Contact factory for special "Vacuum Control Assembly"
	<ul style="list-style-type: none"> Material is sticking to disc or seat 	<ul style="list-style-type: none"> Clean material from seat or disc
		<ul style="list-style-type: none"> Review application for proper seat and disc selection
	<ul style="list-style-type: none"> Material packed above and below disc 	<ul style="list-style-type: none"> Review valve application
	<ul style="list-style-type: none"> Defective actuator 	<ul style="list-style-type: none"> Repair or replace actuator
	<ul style="list-style-type: none"> Defective solenoid valve 	<ul style="list-style-type: none"> Clean or replace solenoid valve
	<ul style="list-style-type: none"> Manual override actuated 	<ul style="list-style-type: none"> Release manual override
	<ul style="list-style-type: none"> Control assembly is installed wrong 	<ul style="list-style-type: none"> Review installation section, piping diagram and custom design section for correct installation

Troubleshooting

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488

Symptom	Problem	Correction
BUTTERFLY VALVE DISC DOES NOT MOVE	<ul style="list-style-type: none"> Foreign object preventing movement 	<ul style="list-style-type: none"> Remove object and check valve for damage
	<ul style="list-style-type: none"> Frozen or seized shaft 	<ul style="list-style-type: none"> Replace upper and lower bearings and shaft seals following the butterfly valve rebuilding instructions in Section 5
	<ul style="list-style-type: none"> Sheared or missing disc screws connecting disc to shaft (Series 485 and 487 only) 	<ul style="list-style-type: none"> Replace disc screws and screw seals. Use a thread locker (such as Loctite) on threads when installing screws
	<ul style="list-style-type: none"> Actuator is incorrect size and/or installed incorrectly 	<ul style="list-style-type: none"> Check to ensure actuator is correct size and correctly installed
	<ul style="list-style-type: none"> Butterfly valve seat popped out of housing 	<ul style="list-style-type: none"> Remove valve and repair
		<ul style="list-style-type: none"> Consult the rebuilding instructions in Section 5 for proper repair procedure
		<ul style="list-style-type: none"> Re-install valve and check function of control assembly
	<ul style="list-style-type: none"> Butterfly valve installed incorrectly 	<ul style="list-style-type: none"> Remove valve and install in accordance with the Installation Guide in Section 2
BUTTERFLY VALVE DISC MOVES SLOWLY	<ul style="list-style-type: none"> Butterfly valve installed with raised face flanges 	<ul style="list-style-type: none"> Replace flanges with flat faced flanges or order adapter rings from Posi-flate
	<ul style="list-style-type: none"> Defective limit switch 	<ul style="list-style-type: none"> Repair or replace limit switch (if used)
	<ul style="list-style-type: none"> Low compressed air supply pressure 	<ul style="list-style-type: none"> Correct air supply to 80-115 psig (5.5-7.9 barg)
	<ul style="list-style-type: none"> Compressed air supply line leaks 	<ul style="list-style-type: none"> Eliminate compressed air supply line leaks
	<ul style="list-style-type: none"> Seat is inflated 	<ul style="list-style-type: none"> Ensure control assembly is installed and operating correctly

Troubleshooting

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

Symptom	Problem	Correction
BUTTERFLY VALVE DISC MOVES SLOWLY	• Seat is inflated	• Remove any seat exhaust restrictions
		• Ensure seat inflation line is not kinked or restricted
	• Valve opens under vacuum	• Contact factory for special "Vacuum Control Assembly"
	• Material packed above and below disc	• Review valve application
	• Defective actuator	• Repair or replace actuator
	• Defective solenoid valve	• Clean or replace solenoid valve
	• Plugged or restricted solenoid exhaust	• Remove restriction
	• Foreign object preventing movement	• Remove object and check valve for damage
	• Butterfly valve incorrectly installed	• Remove valve and install in accordance with the Installation Guide in Section 2
	• Butterfly valve installed with raised face flanges	• Replace flanges with flat faced flanges or order adapter rings from Posi-flate
	• Defective limit switch	• Repair or replace limit switch
BUTTERFLY VALVE SEAT DOES NOT INFLATE	• Seat pressure regulator not functioning	• Repair or replace regulator assembly
		• Ensure air supply is clean and dry
	• Seat pressure not correctly set	• Adjust regulator to proper pressure
		• Seat pressure must be 15 psig (1 barg) above process pressure, and must be a minimum of 40 psig (2.7 barg)
		• See Section 2.4 for proper pressure

Troubleshooting

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488

Symptom	Problem	Correction
BUTTERFLY VALVE SEAT DOES NOT INFLATE	• Air leaking from solenoid exhaust ports	• Clean, repair or replace solenoid
		• Repair or replace actuator
	• Insufficient air supply pressure	• Correct air supply to 80-115 psig (5.5-7.9 barg)
	• Butterfly valve seat popped out of housing	• Remove valve and repair
		• Consult Installation Guide in Section 2 for proper repair and installation procedure
		• Re-install valve and check function of control assembly
	• Butterfly valve seat leaking	• Replace seat
		• Consult rebuilding instructions in Section 5 for proper repair
BUTTERFLY VALVE LEAKS WHEN DISC IS IN CLOSED POSITION AND SEAT IS INFLATED	• Butterfly valve incorrectly installed	• Remove valve and install in accordance with the Installation Guide in Section 2
	• Manual override actuated	• Release manual override
	• Damaged shaft seal(s)	• Replace shaft seal(s) and check to make sure the seal(s) is correctly installed
	• Defective gauge	• Replace gauge
	• Seat pressure not correctly set	• Adjust regulator to proper pressure
		• Seat pressure must be 15 psig (1 barg) above process pressure, and must be a minimum of 40 psig (2.7 barg)
		• See Section 2.4 for proper pressure
BUTTERFLY VALVE LEAKS WHEN DISC IS IN OPEN POSITION AND SEAT IS INFLATED	• Flanges not centered or bolts tightened	• Center flanges with butterfly valve and completely tighten

Troubleshooting

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

Symptom	Problem	Correction
BUTTERFLY VALVE LEAKS WHEN DISC IS IN CLOSED POSITION AND SEAT IS INFLATED	• Warped or defective flanges	• Replace defective flanges
	• Foreign material on flanges	• Remove and clean foreign material from flanges
	• Obstruction blocking sealing surface	• Remove obstruction from sealing surface
	• Disc not centered with seat in Butterfly Valve closed position	• Center disc with seat by following the instructions in the Installation Guide in Section 2
	• Damaged shaft seals	• Reinstall shaft seals following the butterfly valve rebuilding instructions in Section 5
	• Butterfly valve seat is worn or defective	• Replace butterfly valve seat
	• Air leak at split in housing (Series 486, 487 & 488 only)	• Replace gasket between housing halves
	• Butterfly valve disc is worn or defective	• Replace butterfly valve disc
	• Disc screws leaking (Series 485 & 487 only)	• Replace screw seals. Use a thread locker (such as Loctite) on threads when installing screws
	• Bearings are worn or defective	• Replace bearings
	• Hole worn in butterfly valve housing	• Replace butterfly valve housing
	• Mismatched housing halves (Series 486, 487 & 488 only)	• Use matched housing halves or replace housing halves

Daily, Weekly, Monthly, and Yearly Maintenance



WARNING

The Posi-flate butterfly valve and any accessories you have purchased have a limited and variable life, which will depend on each specific application, operating condition and medium of material handled. Over time, the individual components will deteriorate, wear, corrode, and eventually fail. It is therefore the responsibility of the purchaser of the valve to determine when a valve will fail, to safeguard all plant personnel against any and all adverse conditions. The user must follow all instructions contained in this notice and in the operating manuals provided with each Posi-flate product.

REQUIRED PREVENTATIVE MAINTENANCE SCHEDULES

The user of Posi-flate supplied valve and equipment must take adequate preventative maintenance precautions to safeguard all plant personnel, equipment and property against any and all adverse conditions that may occur during operation of the Posi-flate butterfly valve. To prevent valve failure, the user must establish, create and follow a daily, weekly, monthly and yearly maintenance schedule, which coincides with the actual intended use of each valve. The maintenance schedule for each situation will depend on the user's specific application and medium of material handled. If the user has any questions about creating a specific maintenance program, you may contact the Posi-flate engineering department for recommendations.

REQUIRED INSPECTIONS

The user of the Posi-flate valve and/or equipment must visually inspect all valves and/or other Posi-flate equipment at least once daily. This inspection is necessary to detect and/or guard against any potential problems or unsafe operating conditions such as leaks, stress cracks, loosening of bolts and part failures, etc.



WARNING

VALVES THAT REQUIRE IMMEDIATE SHUTDOWN AND INSPECTION

Whenever any unusual operating conditions are noticed during operation of the Posi-flate valve and any accessories, the valve should be immediately replaced. Prior to replacing the valve, all air and electrical power should be shut off and the upstream pressure relieved, in order to protect personnel from potential injury and to protect any equipment from potential damage or unsafe operating conditions. After replacing the valve, it should be thoroughly inspected to determine the cause of such unusual operating conditions or symptoms. The root cause of the problem must be corrected and/or any worn or failed parts must be replaced prior to putting the valve back into service.

Daily, Weekly, Monthly, and Yearly Maintenance

Conditions that require immediate shutdown and inspection include, but are not limited to excess vibration, unusual pipe or equipment movement, abnormal noise, excessive heat build-up, leaks, sudden loss of air pressure, or sudden and unusual changes in temperature, noise, etc.

SERVICE AND SAFEGUARD REQUIREMENTS

To safeguard plant personnel, prevent valve failure, and optimize valve performance, a qualified Posi-flate factory service technician must inspect each valve on a yearly basis, at a minimum. Failure to follow the above recommendations or observe other safety precautions outlined in the operating manual could damage the Posi-flate valve and endanger plant personnel. It is the user's responsibility to schedule these regular service visits as required.

CHANGES TO POSI-FLATE SUPPLIED EQUIPMENT

Any changes made by the user to the Posi-flate butterfly valve and/or associated components, and not specifically authorized in writing by the Posi-flate engineering department, are made totally at the risk of the user, who assumes all liability. These changes may have a negative effect with regard to the valve's performance and decrease life, damage adjacent equipment, or endanger plant personnel. Failure to follow this requirement could cause damage to the valve, accessories and associated equipment or endanger plant personnel. Should the user fail to operate the valve according to all instructions in the operating manuals, the warranty will be invalidated.



DANGEROUS OR EXPLOSIVE MATERIALS:

The valve or associated equipment furnished by Posi-flate may handle materials that may be dangerous or explosive. The customer assumes all liability and total responsibility to insure the safety of plant personnel by following to the fullest extent those procedures recommended by the suppliers of such dangerous or explosive materials. The user must determine when a valve will fail, be proactive and respond before any plant personnel are put into a dangerous situation. Posi-flate assumes no liability with regard to potential hazards when handling either dangerous or explosive materials.

It is the user's responsibility to perform a "hazardous operation study" by a qualified individual and/or company with regard to possible valve failure and/or possible repercussions or other dangerous situations as a result. In addition, any safeguarding required to protect plant personnel should a Posi-flate butterfly valve or associated equipment and/or accessories fail, is the user's responsibility.

Series 485 Butterfly Valve Rebuilding Instructions

Reference the assembly drawings in Sections 8.1 and 8.2.

Note: Before disassembling the series 485 butterfly valve, make sure that a complete repair kit is available.



WARNING



Make sure compressed air supply is disconnected and depressurized and all electrical power disconnected from the Butterfly Valve before performing any maintenance.

1. Remove the actuator and control assembly from the butterfly valve.
2. Remove the butterfly valve from between the flanges.
3. Remove the disc screws (J) from the disc (D) and the shaft (H) of the butterfly valve.
4. Slide the shaft (H) out of the disc (D) and housing (B). Remove the disc and set it aside.
5. Remove the seat (A) by placing a blunt instrument with rounded edges, such as a slotted screwdriver, between the housing (B) and the seat (see Fig. 1).

NOTICE

Do not place blunt instrument near shaft opening since it may cause damage to the seat along the shaft sealing area.

6. Once the instrument makes contact with the inside edge of the housing (B), angle the tool to get below the housing lip (see Fig. 2).

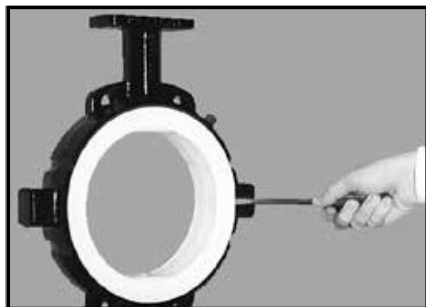


Fig. 1

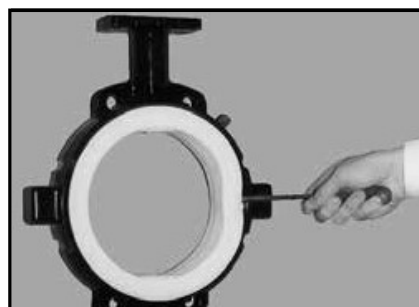


Fig. 2

7. Push the instrument between the seat (A) and the housing (B), working the end of the tool past the seat to the side opposite where the tool was inserted (see Fig.3).
8. Pull a portion of the seat (A) out of the housing (B) (see Fig. 4).
9. Grasp the portion of the seat (A) that is out of the housing (B) and ease the seat out of the housing.

NOTICE

Do not bend butterfly valve seat to extremes (see Fig. 5) since this may cause damage to the seat.

NOTICE

Do not bend seat at the shaft hole, since this may damage or destroy seats that are fabric reinforced or that have seat inserts.

10. Remove the retaining ring (G), lower bearing (F), upper bearings (C) and shaft seals (E) from the housing (B).

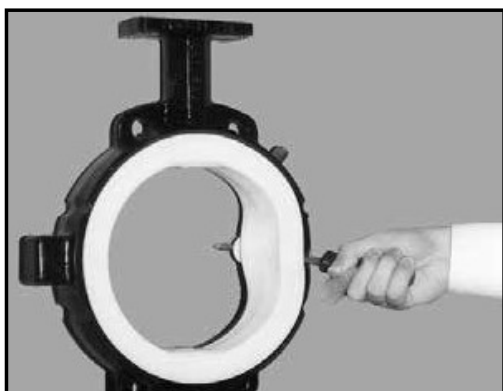


Fig. 3



Fig. 4



DO NOT BEND SEAT

Fig. 5

11. Inspect all parts to ensure that they are clean and free of defects. Replace any worn or damaged parts.

Note: *Posi-flate recommends replacing shaft seals (E), disc screws (J) and screw seals (K) each time the valve is disassembled.*

12. Lubricate the shaft holes in the seat (A) and the shaft seals (E) using the appropriate lubricant as shown below.

Seat Material	Grease Type
Silicone based	Fluorosilicone
EPDM	Silicone based
FDA Buna-N	FDA approved petroleum based
Polyurethane	Petroleum based
Buna-N	Petroleum based

NOTICE

Use of an improper lubricant on the rubber seat may result in decreased seat life due to chemical incompatibility.

13. Install the lower bearing (F) in the housing. This bearing may be either a "cup" or a "sleeve" depending upon valve size and bearing material.
14. Install the retaining ring (G), upper bearings (C) and shaft seals (E) as shown in Section 8.1. Some butterfly valve sizes have 3 bearings and shaft seals. Consult the exploded view drawing included with the repair kit.
15. Install the seat (A) into the middle of the housing (B) by attaching the seat to the lip of the housing making sure the seat shaft hole is aligned with the housing shaft hole.
16. Continue attaching the seat (A) to the housing (B) by gradually working the seat over the housing lip (see Fig. 6).

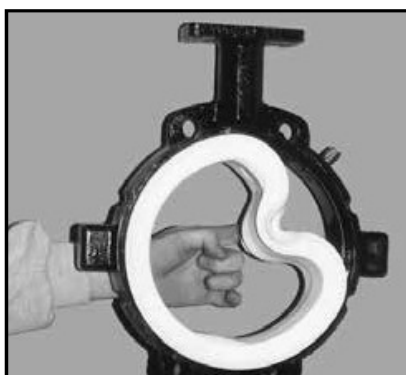


Fig. 6

17. Once the seat (A) has been fully installed, check the seat alignment in the housing (B) by inserting the shaft (H) completely into the valve, without the disc (D) in place.
18. Withdraw the shaft (H) sufficiently to allow the installation of the disc (D).
19. Position the disc (D) by aligning the shaft bore of the disc with the seat (A) shaft openings.
20. Push the shaft (H) through the disc (D) and rotate it until the screw holes line up with the disc screw holes.
21. Install the disc screws (J) and screw seals (K) in the disc (D). Some valve sizes use three disc screws and screw seals. If new screws are not used, a thread locking compound should be used to ensure the disc screws will not become dislodged.
22. Install the actuator and control assembly on the butterfly valve. Adjust the angular position of the disc so that it is centered on the seat. Once this step is completed, the actuator and valve must remain assembled until installed. Proper completion of this step will help maximize the life of the seat.
23. Install the valve in accordance with Section 2 of this manual.
24. Consult the "Controlling the Posi-flate Butterfly Valve" manual for additional instructions and performance tips.

NOTICE

Prior to connecting electrical power and compressed air supply, make sure that no foreign objects are present inside of disc closure area.



WARNING



To avoid personal injury, make sure prior to connecting the compressed air supply, hands are kept from the inside of the seat, since the disc may rotate into position unexpectedly when the compressed air is applied.

Series 486-488 Butterfly Valve Rebuilding Instructions

Reference the assembly drawings in Sections 8.3 and 8.4.

Note: Before disassembling the series 486 or 488 Butterfly Valve, make sure that a complete repair kit is available.



WARNING



Make sure compressed air supply is disconnected and depressurized and all electrical power disconnected from the butterfly valve before performing any maintenance.

1. Remove the actuator and control assembly from the butterfly valve.
2. Remove the butterfly valve from between flanges.
3. Remove the housing nuts (D), bolts (J) and washers (K and N) from the housing.
4. Pull the upper half of the housing (B) from the disc/shaft (H), seat (A) and lower half of the housing.
5. Remove the alignment sleeves (M) from the housing halves. Some Posi-plate valves use alignment pins. These pins are pressed into one half of the housing and do not need to be removed.
6. Remove the retaining ring (G), lower bearing (F), upper bearings (C) and shaft seals (F) from the housing (B).
7. Pull the disc/shaft (H) with the seat (A) attached from the lower half of the housing (B).
8. Remove the seat (A) from the disc/shaft (H) by detaching the seat from the short stem (see Fig. 1).
9. Rotate the seat (A) 90 degrees and slide it past the disc/shaft (H) and off the long stem.



Fig. 1

10. Inspect all parts to ensure that they are clean and free of defects.
Replace any worn or damaged parts.

Note: *Posi-flate recommends replacement of shaft seals (E) and housing gaskets (L) each time the valve is disassembled.*

11. Check housing halves to ensure a proper match. Split housing halves are matched at the factory and can not be interchanged.
12. Lubricate the shaft holes in the seat (A) and the shaft seals (E) using the appropriate lubricant as shown below.

Seat Material	Grease Type
Silicone	Fluorosilicone based
EPDM	Silicone based
FDA Buna-N	FDA approved petroleum based
Polyurethane	Petroleum based
Buna-N	Petroleum based

13. Install the lower bearing (F) in the housing. This bearing may be either a "cup" or a "sleeve" depending upon valve size and bearing material.
14. Install the retaining ring (G), upper bearings (C) and shaft seals (E) as shown in Section 8.3. Some sizes have three bearings and shaft seals. Consult the exploded view drawing included with the repair kit.
15. Attach the seat (A) to the disc/shaft (H) by first sliding it over the long stem, and then over the short stem of the disc/shaft.

NOTICE

Do not bend seat at the shaft hole, since this may damage or destroy seats that are fabric reinforced or that have seat inserts.

16. Insert the short stem of the disc/shaft (H) with the seat (A) attached into the housing (B).
17. Apply the housing gaskets (L) to housing. See Section 8.3 for the correct location of the gasket.
18. Insert alignment sleeves (M), if used, into the housing (B).
19. Push the upper housing (B) half onto the seat (A) and disc/shaft (H) until the housing halves meet snugly together.

20. Install the housing bolts (J), washers (K and N) and nuts (D) into housing (B). Tighten bolts evenly to properly compress the housing gaskets (L). Torque bolts according to the following specifications:

Valve Size	486/488 Housing Bolt Torque Specifications	
2"	35-40 ft.-lbs.	45-55 Nm
3"	35-40 ft.-lbs.	45-55 Nm
4"	40-45 ft.-lbs.	55-65 Nm
5"	40-45 ft.-lbs.	55-65 Nm
6"	40-45 ft.-lbs.	55-65 Nm
8"	45-50 ft.-lbs.	60-70 Nm
10"	45-50 ft.-lbs.	60-70 Nm
12"	45-50 ft.-lbs.	60-70 Nm
14"	50-55 ft.-lbs.	65-75 Nm
16"	50-55 ft.-lbs.	65-75 Nm
18"	60-65 ft.-lbs.	80-90 Nm
20"	60-65 ft.-lbs.	80-90 Nm
24"	70-75 ft.-lbs.	95-105 Nm
30"	70-75 ft.-lbs.	95-105 Nm

21. Trim the housing gasket (L) as shown in Section 8.9. Slide a blunt instrument with rounded edges, such as a slotted end screw driver, between the seat (A) and the housing (B) and pull the seat away from the gasket (L). Using a small grinding tool or knife, remove the excess gasket material that is protruding from the housing into the seat sealing area. Be careful not to cut the seat. Repeat until both gaskets are properly trimmed.
22. Check to ensure the seat (A) is correctly installed in the housing (B) and trim the excess gasket (L) around the outside of the housing. Be careful not to cut the seat.

23. Install the actuator and control assembly on the butterfly valve. Adjust the angular position of the disc so that it is centered on the seat. Once this step is completed, the actuator and valve must remain assembled until installed. Proper completion of this step will help maximize the life of the seat.

NOTICE

Prior to connecting electrical power and compressed air supply, make sure that no foreign objects are present inside of disc closure area.



WARNING



To avoid personal injury, make sure prior to connecting the compressed air supply, hands are kept away from the inside of the seat, since the disc may rotate into position unexpectedly when the compressed air is applied.

24. Install the valve in accordance with Section 2 of this manual.
25. Consult "Controlling the Posi-flate Butterfly Valve" for additional instructions and performance tips.

Series 487 Butterfly Valve Rebuilding Instructions

Please reference the assembly drawings in Sections 8.5 and 8.6.

Note: Before disassembling the series 487 Butterfly Valve, make sure that a complete repair kit is available.



WARNING



Make sure compressed air supply is disconnected and depressurized and all electrical power disconnected from the butterfly valve before performing and maintenance.

1. Remove the actuator and control assembly from the butterfly valve.
2. Remove the butterfly valve from between flanges.
3. Remove the disc screws (P) from the disc (H) and the shaft (R) of the butterfly valve.
4. Slide the shaft (R) out of the disc (H) and the housing (B). Remove the disc and set it aside.
5. Remove the housing nuts (D), bolts (J) and washer (K and N) from the housing (B).
6. Pull the upper half of the housing (B) from the lower half.
7. Remove the alignment sleeves (M) from the housing halves.
8. Remove the seat (A) from the housing (B).
9. Remove the retaining ring (G), lower bearing (F), upper bearings (C) and shaft seals (E) from the housing (B).
10. Inspect all parts to ensure that they are clean and free of defects. Replace any worn or damaged parts.

Note: Posi-flate recommends replacing shaft seals (E), disc screws (J) and screw seals (K) each time the valve is disassembled.

11. Lubricate the shaft holes in the seat (A) and the shaft seals (E) using the appropriate lubricant as shown below:

Seat Material	Grease Type
Silicone	Fluorosilicone based
EPDM	Silicone based
FDA Buna-N	FDA approved petroleum based
Polyurethane	Petroleum based
Buna-N	Petroleum based

NOTICE

Use of an improper lubricant on the rubber seat may result in decreased seat life due to chemical incompatibility.

12. Install the lower bearing (F) in the housing. This bearing may be either a "cup" or a "sleeve" depending upon valve size and bearing material.
13. Install the retaining ring (G), upper bearings (C), and shaft seals (E) as shown in Section 8.6.
14. Install the seat (A) into the lower housing (B), making sure the seat and shaft hole is aligned with the housing shaft hole.
15. Apply the housing gaskets (L) to the housing (B).
16. Insert the alignment sleeves (M) into the housing (B).
17. Push the upper housing half onto the seat until the housing halves meet snugly together.
18. Install the housing bolts (J), washers (K and N) and nuts (D) into the housing (B). Tighten the bolts evenly to properly compress the housing gaskets (L). Torque bolts to 40-45 ft. lbs. (55-65 Nm).
19. Trim the housing gasket (L) as shown in Section 8.7. Slide a blunt instrument with rounded edges, such as a slotted end screwdriver, between the seat (A) and the housing (B) and pull the seat away from the gasket (L). Using a small grinding tool or knife, remove the excess gasket material that is protruding from the housing into the seat sealing area. Be careful not to cut the seat. Repeat until both gaskets are properly trimmed.
20. Check the seat alignment in the housing (B) by inserting the shaft (R) completely into the valve, without the disc (H) in place.
21. Withdraw the shaft (R) sufficiently to allow the installation of the disc (H).

22. Position the disc (H) by aligning the shaft bore of the disc with the seat shaft openings.
23. Push the shaft (R) through the disc (H) and rotate it until the screw holes line up with the disc screw holes.
24. Install the disc screws (P) and screw seals (Q) in the disc (H). If new screws are not used, a thread locking compound (such as Loc-Tite) should be used to ensure that the disc screws will not become dislodged.
25. Trim excess gasket (L) around the outside of the housing (B). Be careful not to cut the seat (A).
26. Install the actuator and control assembly on the butterfly valve. Adjust the angular position of the disc so that it is centered on the seat. Once this step is completed, the actuator and valve must remain assembled until installed. Proper completion of this step will help maximize the life of the seat.

NOTICE

Prior to connecting electrical power and compressed air supply, make sure that no foreign objects are present inside of disc closure area.



WARNING



To avoid personal injury, make sure, prior to connecting the compressed air supply, that hands are kept away from the inside of the seat, since the disc may rotate into position unexpectedly when the compressed air is applied.

27. Install the valve in accordance with Section 2 of this manual.
28. Consult "Controlling the Posi-flate Butterfly Valve" for additional instructions and performance tips.

Recommended Spare Parts List

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

Description	Reference Number	Section Number	Recommended Quantity to Stock
<i>SERIES 485 BUTTERFLY VALVE</i>			
Seat	A	8.1 and 8.2	1
Repair Kit, consisting of:			1
Shaft Seal	E	8.1 and 8.2	2
Retaining Ring	G	8.1 and 8.2	1
Disc Screw	J	8.1 and 8.2	2
Screw Seal	K	8.1 and 8.2	2
<i>SERIES 486 & 488 BUTTERFLY VALVE</i>			
Seat	A	8.3 and 8.4	1
Repair Kit, consisting of:			1
Shaft Seal	E	8.3 and 8.4	2
Retaining Ring	G	8.3 and 8.4	1
Housing Gasket	L	8.3 and 8.4	2
<i>SERIES 487 BUTTERFLY VALVE</i>			
Seat	A	8.5 and 8.6	1
Repair Kit, consisting of:			1
Shaft Seal	E	8.5 and 8.6	2
Retaining Ring	G	8.5 and 8.6	1
Disc Screw	P	8.5 and 8.6	2
Screw Seal	Q	8.5 and 8.6	2
Housing Gasket	L	8.5 and 8.6	2

Seat Material Design Recommendations

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

Seat Material	FDA*	Operating Temperature	Min.. Seat Pressure	Max. Seat Pressure**
Black EPDM	No	-20° to 150° F -29° to 66° C	40 psig 2.7 barg	115 psig 7.9 barg
Black Buna-N	No	-10° to 125° F -23° to 52° C	40 psig 2.7 barg	115 psig 7.9 barg
White Buna-N	Yes	+20° to 125° F -7° to 52° C	40 psig 2.7 barg	70 psig 4.8 barg
Black Poly	No	+32° to 150° F 0° to 66° C	40 psig 2.7 barg	115 psig 7.9 barg
White Poly	No	+32° to 150° F 0° to 66° C	70 psig 4.8 barg	115 psig 7.9 barg
White Silicone	Yes	-40° to 350° F -40° to 175° C	40 psig 2.7 barg	115 psig 7.9 barg
BLK Fluoroelastomer	No	+50° to 300° F 10° to 150° C	40 psig 2.7 barg	55 psig 3.7 barg

* *The seat compound ingredients and molding process comply with FDA requirements for elastomeric materials in direct contact with food, as published in 21 CFR Part 177.2600.*

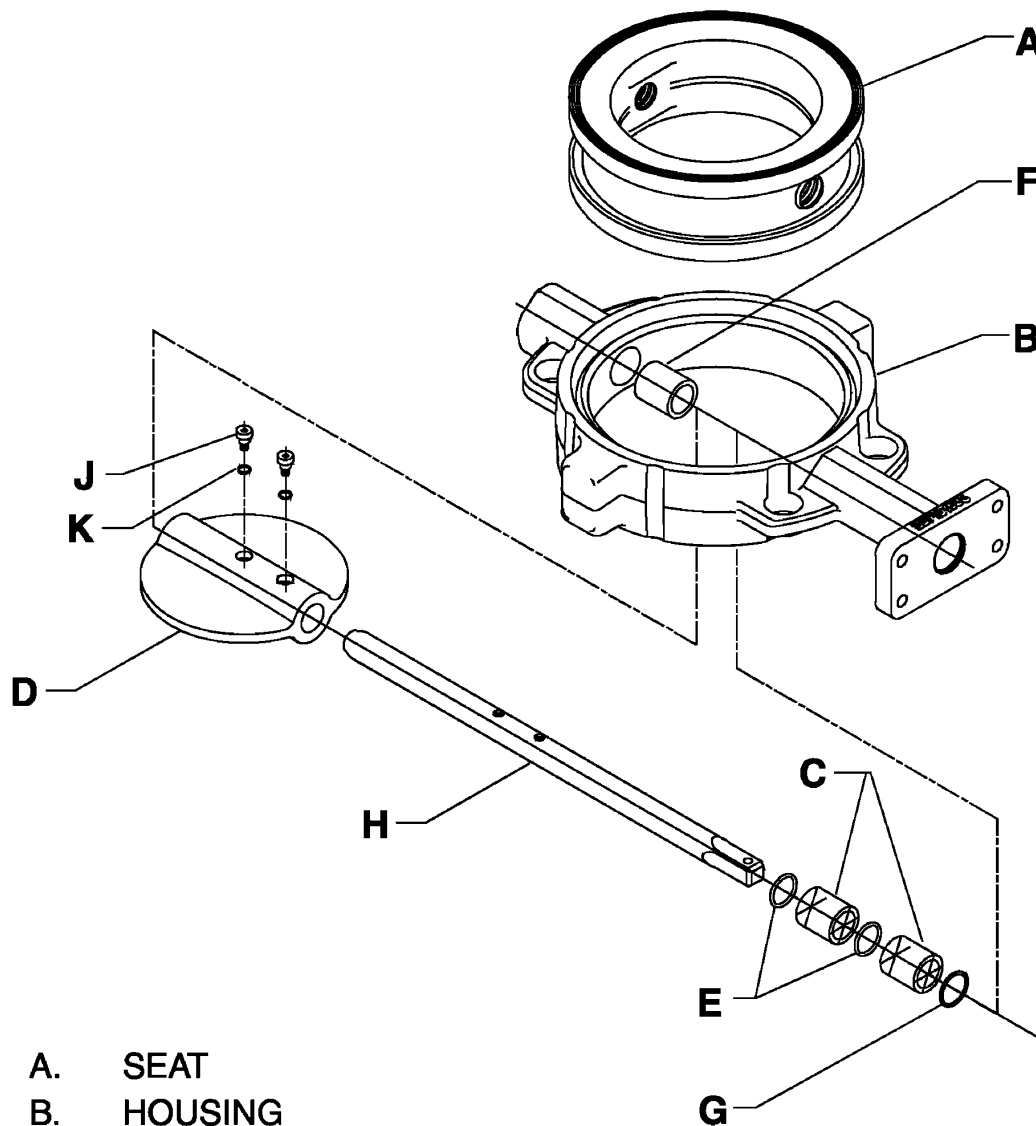
** *Maximum seat pressure. Process pressure is 15 psig (1 barg) less.*

Notes:

1. Posi-flate Research and Development engineers are constantly developing new seat materials. Please consult factory for any material not listed.
2. Consult Posi-flate for chemical compatibility recommendation.

**Series 485 Assembly,
Exploded View**

**Posi-plate® Butterfly Valves
Series 485, 486, 487 & 488**

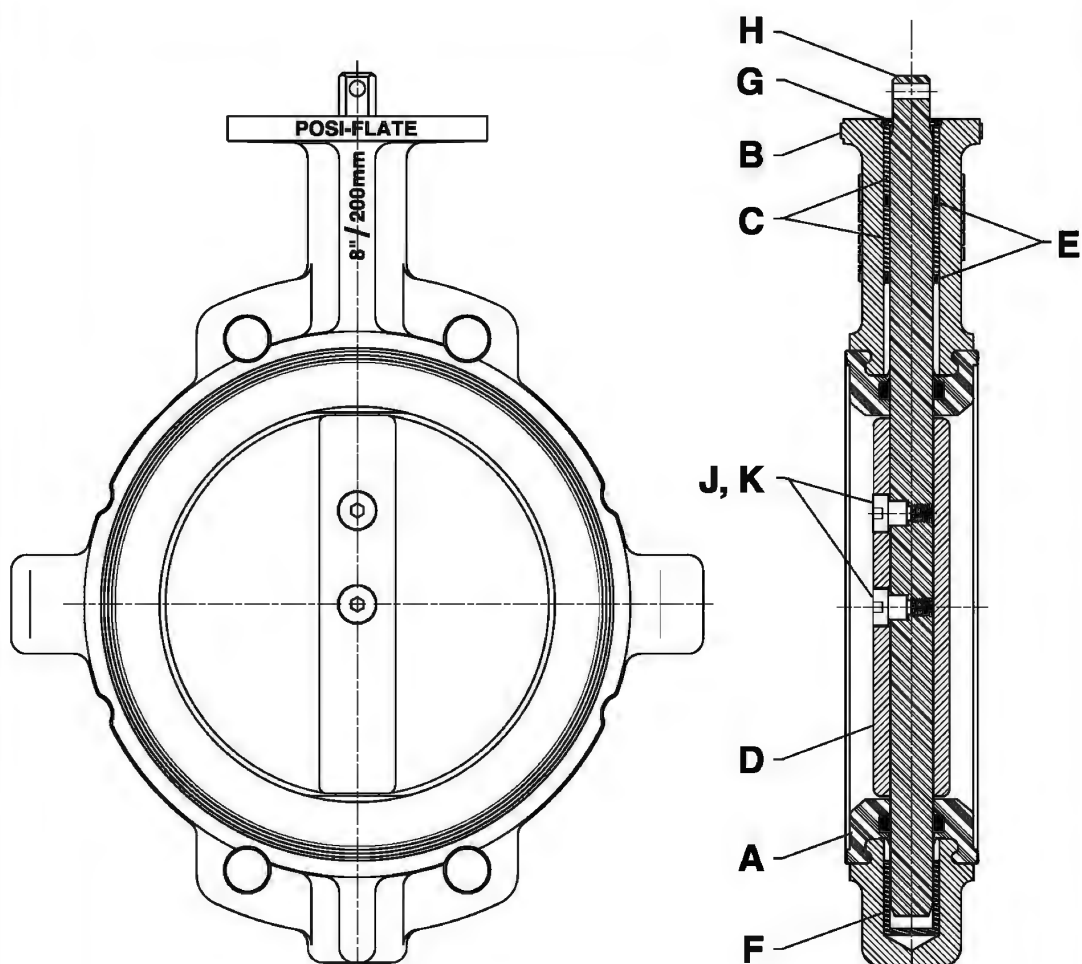


- A. SEAT
- B. HOUSING
- C. UPPER BEARING
- D. DISC
- E. SHAFT SEAL
- F. LOWER BEARING
- G. RETAINING RING
- H. SHAFT
- J. DISC SCREW
- K. SCREW SEAL

See Sections 8.7 and 8.8 for Bearing and Seal Placement for all sizes

Series 485 Assembly

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488

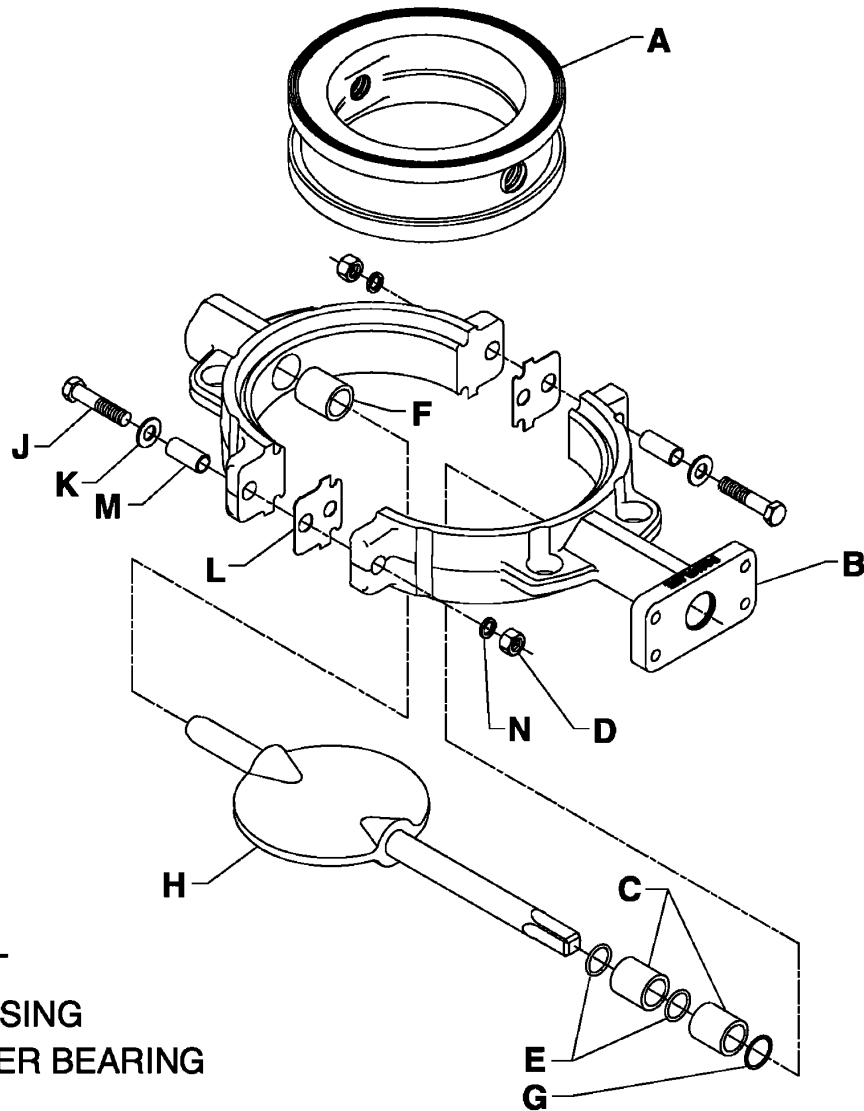


- A. SEAT
- B. HOUSING
- C. UPPER BEARING
- D. DISC
- E. SHAFT SEAL
- F. LOWER BEARING
- G. RETAINING RING
- H. SHAFT
- J. DISC SCREW
- K. SCREW SEAL

See Sections 8.7 and 8.8 for Bearing and Seal Placement for all sizes

**Series 486 & 488 Assembly,
Exploded View**

**Posi-plate® Butterfly Valves
Series 485, 486, 487 & 488**

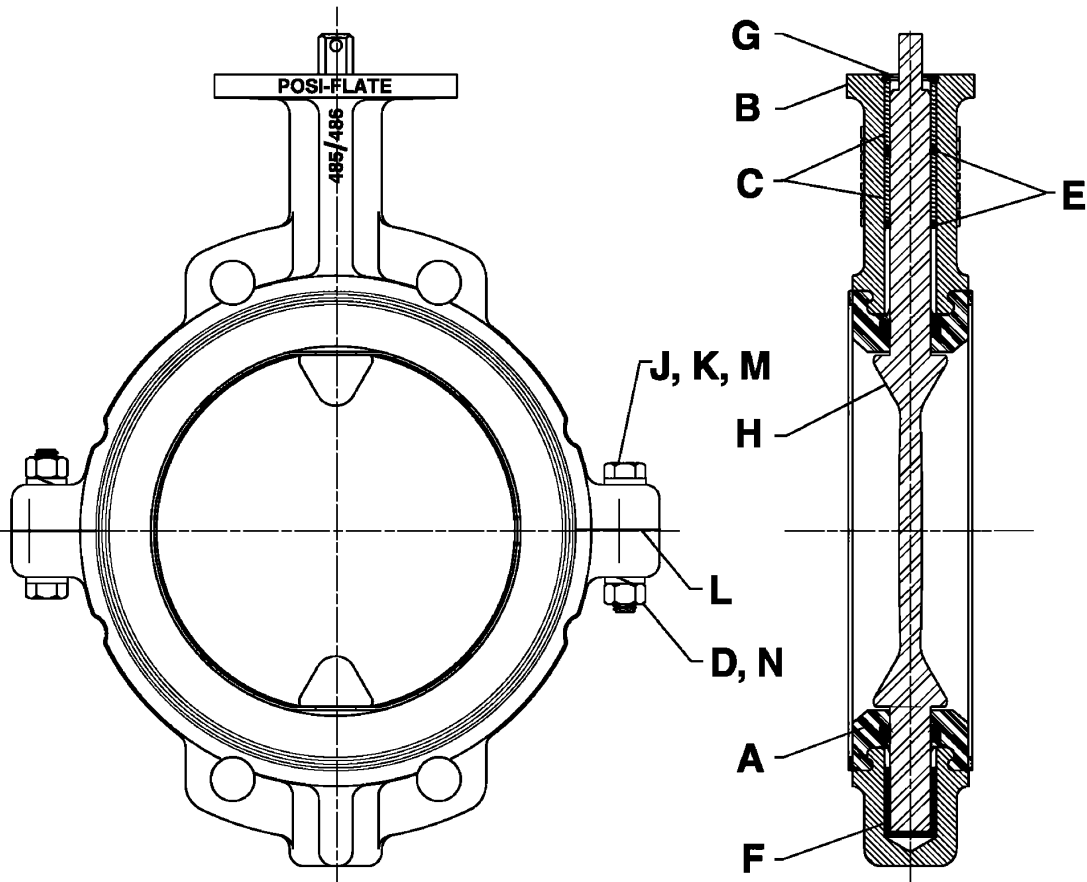


- A. SEAT
- B. HOUSING
- C. UPPER BEARING
- D. NUT
- E. SHAFT SEAL
- F. LOWER BEARING
- G. RETAINING RING
- H. DISC/SHAFT
- J. HOUSING SCREW
- K. FLAT WASHER
- L. HOUSING GASKET
- M. ALIGNMENT SLEEVE
- N. LOCK WASHER

See Sections 8.7 and 8.8 for Bearing and Seal Placement for all sizes

Series 486 & 488 Assembly

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488



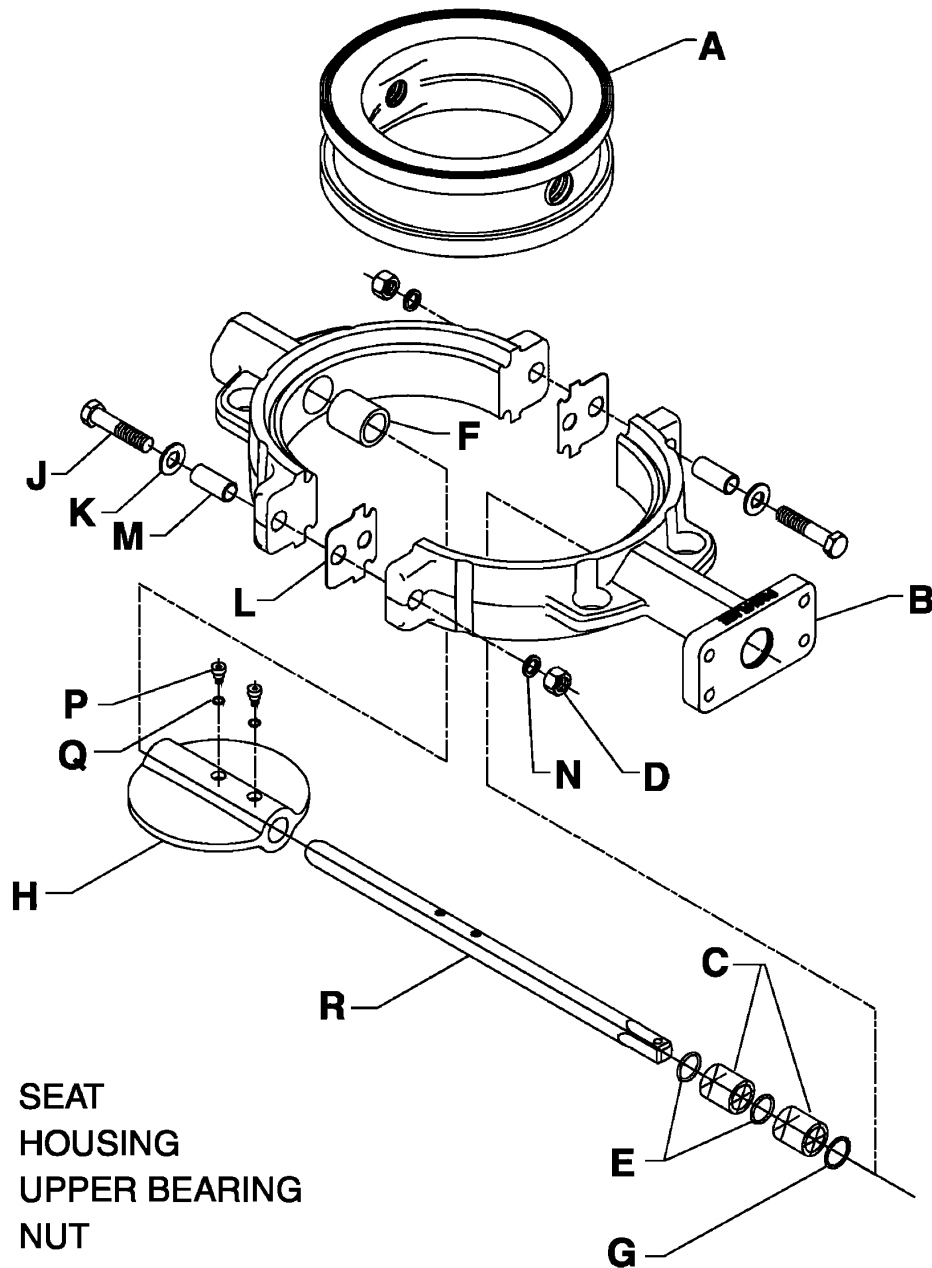
- A. SEAT
- B. HOUSING
- C. UPPER BEARING
- D. NUT
- E. SHAFT SEAL
- F. LOWER BEARING
- G. RETAINING RING

- H. DISC/SHAFT
- J. HOUSING SCREW
- K. FLAT WASHER
- L. HOUSING GASKET
- M. ALIGNMENT SLEEVE
- N. LOCK WASHER

See Sections 8.7 and 8.8 for Bearing and Seal Placement for all sizes

**Series 487 Assembly,
Exploded View**

**Posi-plate® Butterfly Valves
Series 485, 486, 487 & 488**

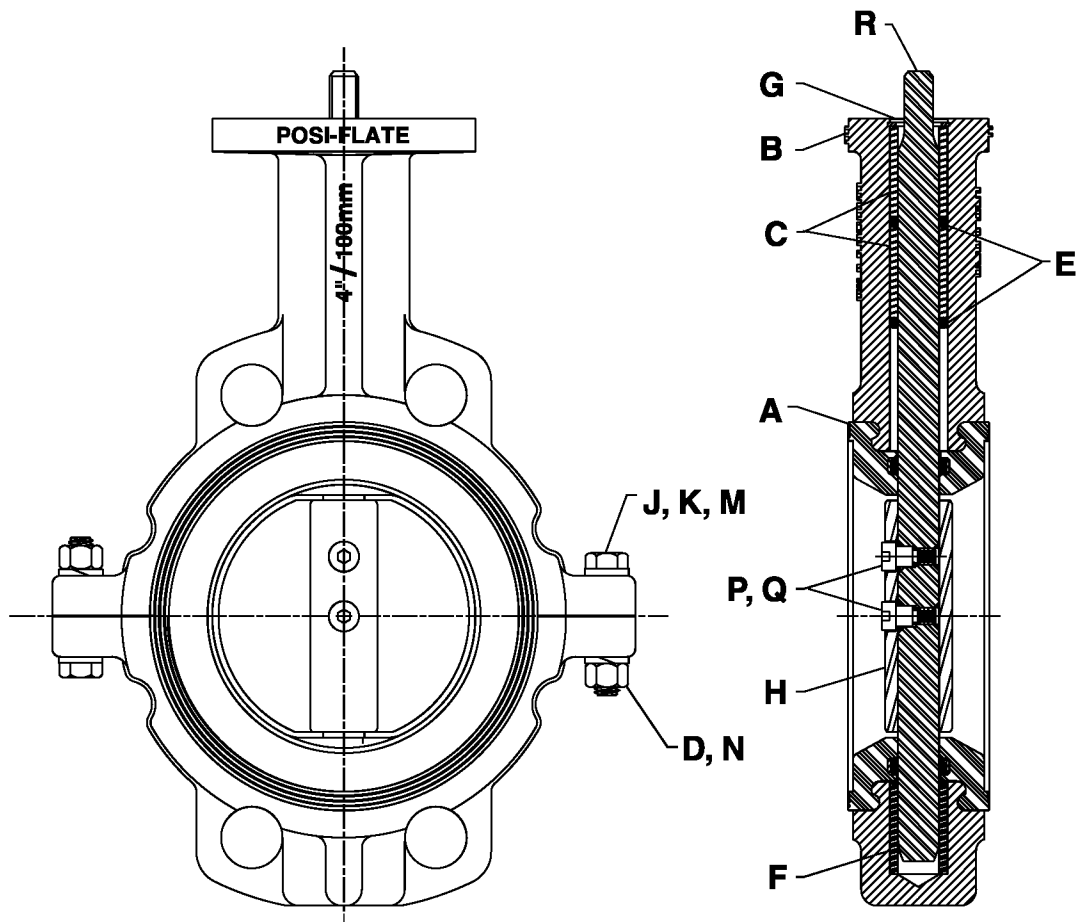


- | | | |
|----|------------------|--|
| A. | SEAT | |
| B. | HOUSING | |
| C. | UPPER BEARING | |
| D. | NUT | |
| E. | SHAFT SEAL | |
| F. | LOWER BEARING | |
| G. | RETAINING RING | |
| H. | DISC | |
| J. | HOUSING SCREW | |
| K. | FLAT WASHER | |
| L. | HOUSING GASKET | |
| M. | ALIGNMENT SLEEVE | |
| N. | LOCK WASHER | |
| P. | DISC SCREW | |
| Q. | SCREW SEAL | |
| R. | SHAFT | |

See Sections 8.7 and 8.8 for Bearing and Seal Placement for all sizes

Series 487 Assembly

Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488



- A. SEAT
- B. HOUSING
- C. UPPER BEARING
- D. NUT
- E. SHAFT SEAL
- F. LOWER BEARING
- G. RETAINING RING
- H. DISC

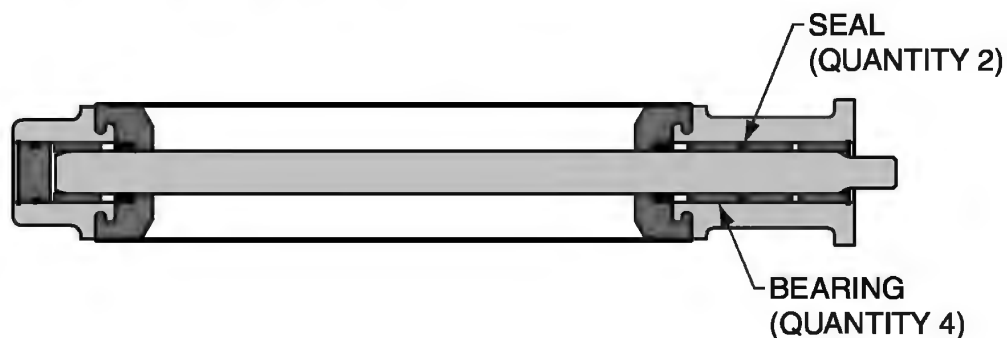
- J. HOUSING SCREW
- K. FLAT WASHER
- L. HOUSING GASKET
- M. ALIGNMENT SLEEVE
- N. LOCK WASHER
- P. DISC SCREW
- Q. SCREW SEAL
- R. SHAFT

See Sections 8.7 and 8.8 for Bearing and Seal Placement for all sizes

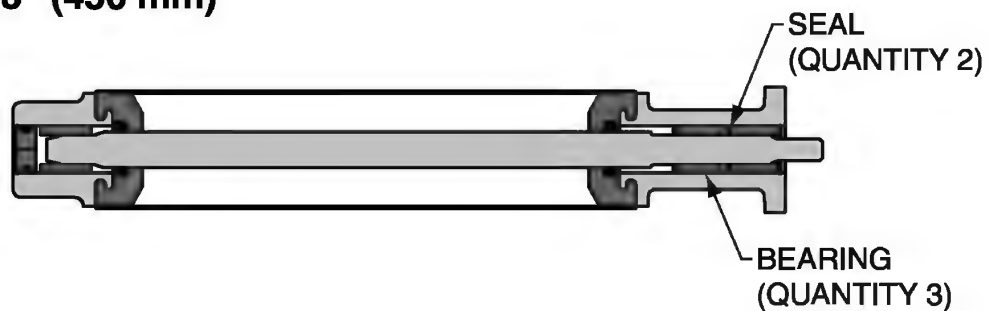
Bearing and Seal Placement

Posi-plate® Butterfly Valves
Series 485, 486, 487 & 488

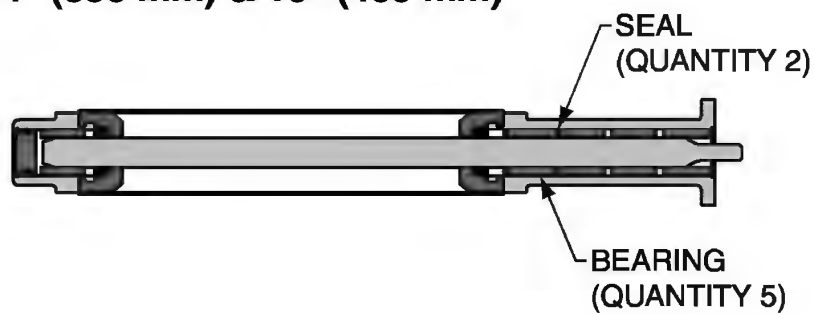
20" (500 mm), 24" (600 mm), 30" (800 mm)



18" (450 mm)



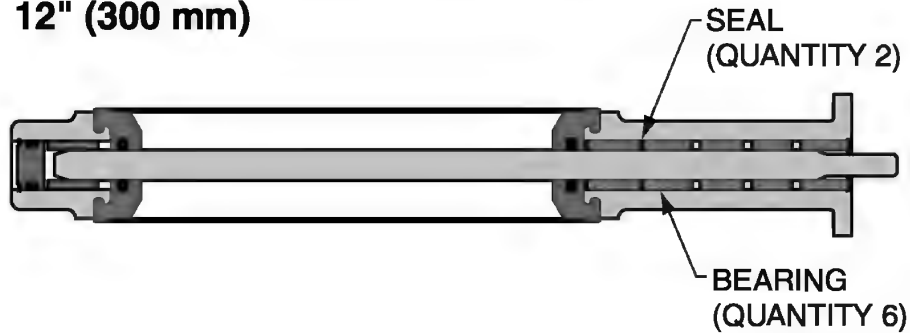
14" (350 mm) & 16" (400 mm)



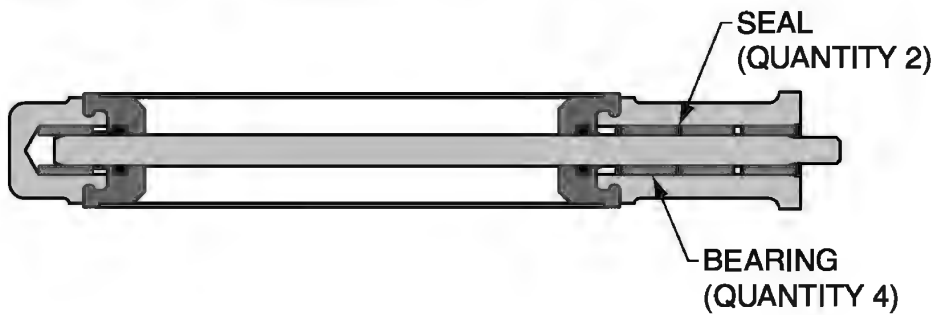
Bearing and Seal Placement

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

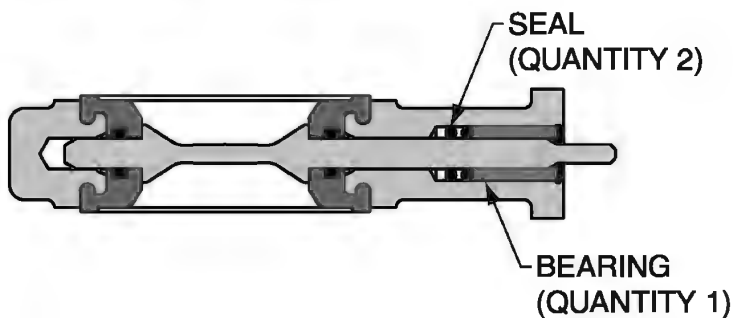
12" (300 mm)

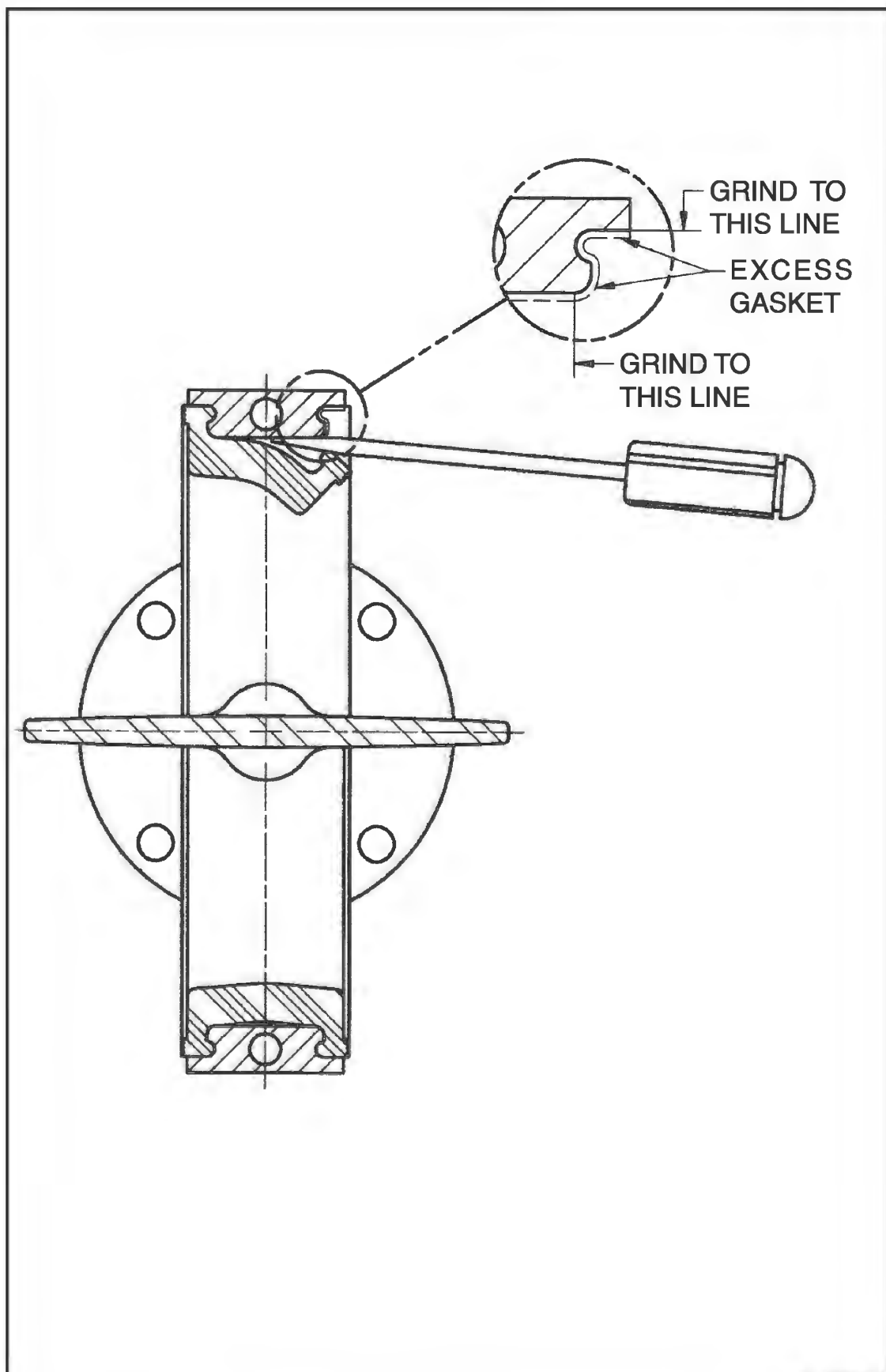


4" (100 mm), 5" (125 mm), 6" (150 mm), 8" (200 mm), 10" (250 mm)



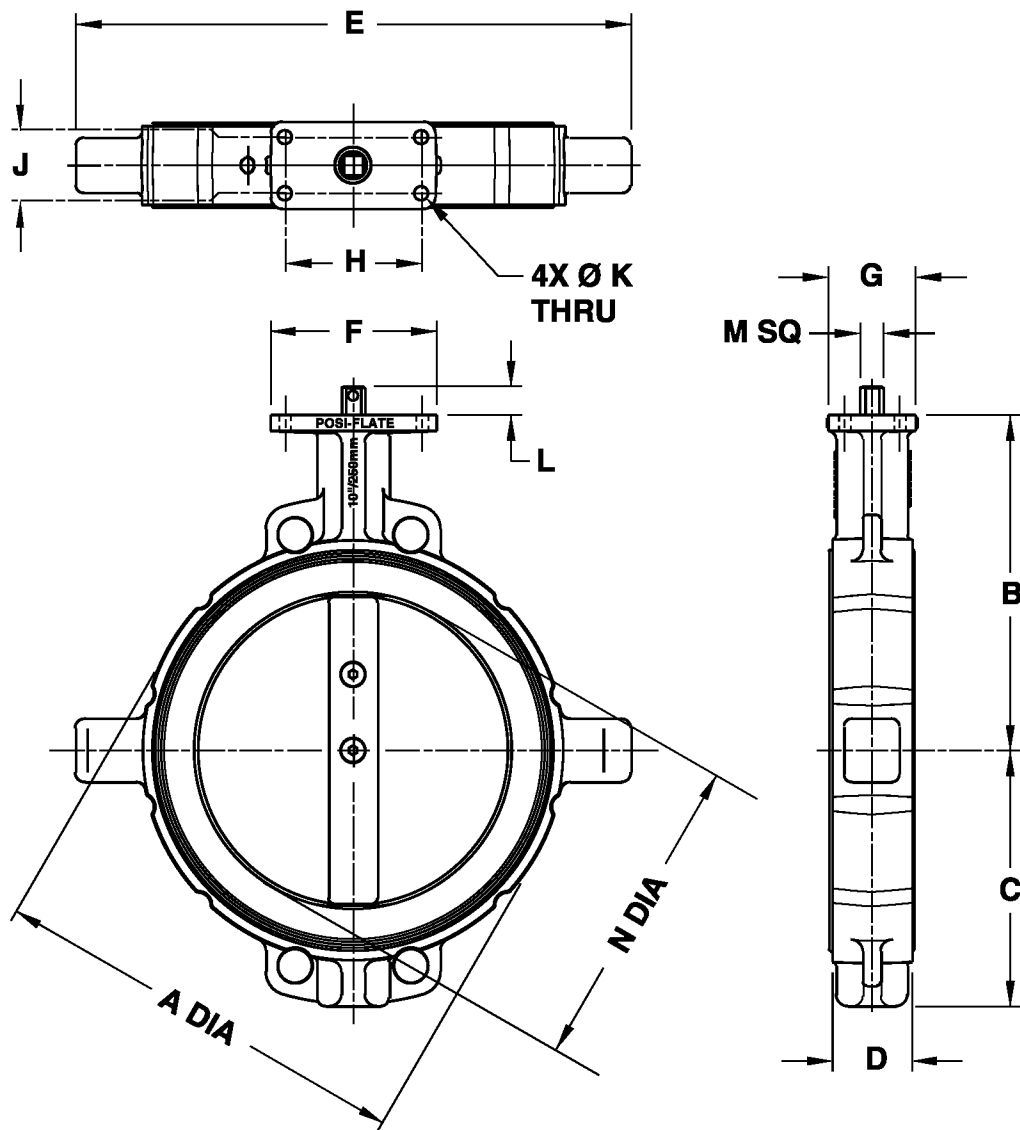
2" (50 mm) & 3" (80 mm)





Basic Dimensions

Posi-plate® Butterfly Valves
Series 485, 486, 487 & 488



Basic Dimensions

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

Valve Size	Posi-plate Butterfly Valve Series 485, 486, 487, & 488 Dimensions*													Approx. Weight Lbs. (Kg)	Normal Torque Inch Pounds (Nm)	
	<div><div></div> Inches <div></div> mm</div>														Min.	Max.
	A	B	C	D	E	F	G	H	J	K	L	M	N			
2"	4.52	4.50	2.91	1.62	6.50	4.00	2.12	3.25	1.17	.31	.78	.43	1.99	8	40	450
50 mm	114.8	114.3	73.9	41.1	165.1	101.6	53.8	82.6	29.7	7.9	19.8	11.0	50.5	(3.6)	(4.5)	(50.0)
3"	5.65	5.56	3.57	1.75	8.19	4.00	2.12	3.25	1.17	.31	.81	.43	2.89	10	80	450
80 mm	143.5	141.2	90.7	44.5	208.0	101.6	53.8	82.6	29.7	7.9	20.6	11.0	73.4	(4.5)	(9.0)	(50.0)
4"	6.88	7.58	4.42	2.00	8.88	4.00	2.12	3.25	1.17	.31	.70	.43	3.88	16	130	450
100 mm	174.8	192.5	112.3	50.8	225.5	101.6	53.8	82.6	29.7	7.9	17.8	11.0	98.6	(7.2)	(14.6)	(50.0)
5"	7.75	7.95	6.05	2.12	9.62	4.00	2.12	3.25	1.17	.31	.86	.55	4.92	19	260	450
125 mm	196.9	201.9	153.7	53.8	244.3	101.6	53.8	82.6	29.7	7.9	21.8	14.0	125.0	(8.6)	(29.4)	(50.0)
6"	8.75	7.95	6.05	2.12	10.69	4.00	2.12	3.25	1.17	.31	.86	.55	5.88	22	300	450
150 mm	222.3	201.9	153.7	53.8	271.5	101.6	53.8	82.6	29.7	7.9	21.8	14.0	149.4	(10.0)	(33.9)	(50.0)
8"	11.12	9.87	7.24	2.50	14.00	5.25	2.75	4.31	1.75	.38	.88	.75	7.86	37	540	700
200 mm	282.4	250.7	183.9	63.5	355.6	133.4	69.9	109.5	44.5	9.5	22.3	19.0	199.6	(17.0)	(61.0)	(79.0)
10"	13.31	10.56	8.06	2.50	17.50	5.25	2.75	4.31	1.75	.38	.93	.75	9.81	45	860	1300
250 mm	338.1	268.2	204.7	63.5	444.5	133.4	69.9	109.5	44.5	9.5	23.6	19.0	249.2	(20.0)	(97.0)	(147.0)
12"	15.50	14.28	9.52	3.00	20.25	4.00	4.00	2.84	2.84	.44	1.25	.87	11.83	80	1240	2480
300 mm	393.7	362.7	241.8	76.2	514.4	101.6	101.6	72.1	72.1	11.1	31.8	22.0	300.5	(36.0)	(140.0)	(280.0)
14"	17.72	16.00	10.50	3.00	22.00	4.00	4.00	2.84	2.84	.44	1.02	.87	13.08	150	2100	6200
350 mm	450.1	406.4	266.7	76.2	558.8	101.6	101.6	72.1	72.1	11.1	25.9	22.0	332.5	(68.0)	(237.0)	(700.0)
16"	19.75	16.93	12.40	4.00	24.75	7.63	4.62	3.48	3.48	.53	1.29	1.06	15.02	180	3500	9600
400 mm	501.6	430.0	315.0	101.6	628.7	193.8	117.3	88.4	88.4	13.5	32.8	27.0	381.5	(82.0)	(395.0)	(1084.0)
18"	21.46	15.84	13.30	4.25	26.84	7.37	4.75	3.48	3.48	.53	1.29	1.06	17.13	235	4800	12150
450 mm	545.0	402.3	337.8	108.0	681.7	187.2	120.7	88.4	88.4	13.5	32.8	27.0	435.1	(106.0)	(542.0)	(1373.0)
20"	23.75	17.38	14.38	5.00	30.00	7.37	5.50	3.90	3.90	.69	1.57	1.42	18.68	275	7800	15600
500 mm	603.2	441.5	365.3	127.0	762.0	187.2	139.7	99.0	99.0	17.5	39.9	36.0	474.5	(125.0)	(881.0)	(1762.0)
24"	28.00	19.12	16.49	5.94	34.50	8.00	5.75	3.90	3.90	.69	1.48	1.42	22.65	420	9400	18800
600 mm	711.2	485.6	418.8	150.9	876.3	203.2	146.0	99.0	99.0	17.5	37.6	36.0	575.3	(190.0)	(1062.0)	(2124.0)
30"	35.88	23.00	21.00	6.62	43.00	8.00	5.75	3.90	3.90	.69	1.56	1.42	28.41	750	11000	22000
800 mm	911.4	584.2	533.4	108.1	109.2	203.2	146.0	99.0	99.0	17.5	39.6	36.0	721.6	(340.0)	(1243.0)	(2486.0)

* Series 485 available in 5" (125 mm) to 30" (800 mm). Series 486 available in 2" (50 mm) to 30" (800 mm).
Series 487 available in 4" (100 mm). Series 488 available in 2" (50 mm) and 3" (80 mm).

Should any questions arise with regard to installation and/or operation that is not covered in this manual, please call Posi-flate for further recommendations.

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Posi-flate® is a registered trademark of Posi-flate, St. Paul, MN USA

Customer Satisfaction Survey

**Posi-flate® Butterfly Valves
Series 485, 486, 487 & 488**

Posi-flate is interested in feedback from our customers. Please help us serve you better by going to www.posiflate.com/customer.html and completing our Customer Satisfaction Survey or complete the survey below and fax or e-mail it to us.

1. Are you satisfied with the delivery of your Posi-flate product?
☐ Yes ☐ No
2. Are you satisfied with the performance of your Posi-flate product?
☐ Yes ☐ No
3. Are you satisfied with the customer service you received?
☐ Yes ☐ No
4. Are you satisfied with the technical support?
☐ Yes ☐ No
5. Are you satisfied with the price?
☐ Yes ☐ No
6. Are you likely to buy more Posi-flate products?
☐ Yes ☐ No
7. Do you have any suggestions to improve the Posi-flate product quality or service?
☐ Yes ☐ No

Comments:

Thank for your help. Please tell us about yourself:

Name: _____

Company: _____

Country: _____

Phone Number: _____

E-mail Address: _____

Would you like someone from Posi-flate to contact you?

☐ Yes ☐ No (If Yes, be sure to include your contact information above.)

*Please fax this page to Posi-flate at +1 651-484-7015 or
email to **info@posiflate.com**.*