

# Model 380 Control Valve (8 Inch Only)

## Operation, Parts, and Instruction Manual



**Figure 1** Model 380 Control Valve with DFC Actuator

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### NOTICE

These instructions are meant to be used with the Dyna-Flo 380 Technical Bulletin as they refer to Figures and Tables therein. If you do not have the Technical Bulletin, contact Dyna-Flo immediately, or visit [www.dynaflo.com](http://www.dynaflo.com)

Each control valve is factory tested and checked. Check the calibration for the specific application, before a valve is put into service.

It is the intention of this document to provide users with an accurate guide for safe installation and maintenance of the 380 Control Valves. Revisions and updates are available at above mentioned website.

## INTRODUCTION

The Dyna-Flo 380 series of valves are heavy duty cage guided globe style control valves designed for high pressure applications. These valves are used in all kinds of demanding applications, including oil and gas production and chemical process.

Both Models 380 and 381 are cage guided control valves with balanced plugs. Model 380 control valves are capable of Class V shutoff at process temperatures below 450°F (232°C). Model 381 control valves are designed for high temperature / high pressure applications and are well suited for general applications that do not require tight shutoff.

A bolted bonnet is standard and a typical actuator is a Dyna-Flo Model DFC, DFO, or DFLP linear actuator.

## GENERAL

**The following instructions are to be thoroughly reviewed and understood prior to installing, operating or performing maintenance on this equipment. Work on this equipment should be performed by experienced personnel. Throughout the manual, safety and caution notes appear and must be strictly followed, to prevent serious injury or equipment malfunction.**

## SCOPE

The control valve configuration and construction materials were selected to meet particular pressure, temperature, and process fluid conditions. Some material combinations are limited in their pressure and temperature ranges. Do not apply any other conditions to the valve without first contacting your Dyna-Flo sales office.

This manual is written to be a practical and useful guide maintaining the Dyna-Flo 380 Control Valve.

### CAUTION

**To avoid personal injury or installation damage as a result of the sudden release of process pressure or the breaking of parts, do not install the valve assembly where service conditions could exceed the limits stated in this manual or on the equipment nameplates. Use government codes, accepted industry standards and good piping practices to select pressure-relieving equipment for protection of your installation. It is also important to wear the proper protective equipment when performing any installation or maintenance activity.**

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### SPECIFICATIONS

#### Configurations

Refer to Table 1 of the Sales Bulletin.

Consult your Dyna-Flo sales office for other available configurations.

#### Sizes and End Connection Styles

Models	380 & 381
Size:	8"
Rating:	ASME 900 & 1500
Connections:	RF / RTJ / BWE

#### Maximum Inlet Temperatures and Pressures

In accordance with ASME B16.34 Class 1500 unless limited by material selection shown in Tables 4 to 7, and Figure 9 of the Sales Bulletin.

#### Maximum Pressure Drops

Same as maximum inlet pressure unless limited by specific trim construction. For valve assembly shut off pressure drops refer to Table 8 and Figure 9 of the Sales Bulletin.

#### Shutoff Classifications

Refer to Table 1 of the Sales Bulletin.

#### Dimensions

Valve Dimensions  
Refer to Table 3 and Figure 2 of the Sales Bulletin.

#### Approximate Valve Body Weights

Refer to Table 2 of the Sales Bulletin.

#### Valve Body to Bonnet Bolting

Refer to Table 5 of the Sales Bulletin.

#### Characteristics

- Equal Percentage (Standard)
- Modified Equal Percentage
- Linear
- Contact factory for Low-Noise and Anti-Cavitation options.

#### Flow Direction

Flow down through seat ring except when using Low-Noise trim.

#### Packing Type and Examples

The standard packing is PTFE V-Ring. Live loaded low emission, graphite and other packing arrangements are also available. Refer to Figure 8.

#### Flow Coefficients

For standard coefficients at maximum travel, refer to Table 7 of the Sales Bulletin.  
For full list of coefficients refer to document P-CVSM.

#### Valve Travel

Refer to Table 7 of the Sales Bulletin.

#### Trim Materials

Refer to Table 6 of the Sales Bulletin.

#### Materials

Body and bonnet material options include:

LCC (A350-LF2 optional\* bonnet material)

WCC (A350-LF2 optional\* bonnet material)

CF8M (A182-F316 optional\* bonnet material)

**\*NOTE:** Dyna-Flo reserves the right to substitute a cast material with the forged bar equivalent in the event a casting is not available.

Refer to Figure 8 of the Sales Bulletin. Refer to Tables 4 & 5 of the Sales Bulletin for typical construction materials. Refer to Table 6 of the Sales Bulletin for trim selections.

For more information and other options contact your Dyna-Flo sales office.



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### UNPACKING VALVE FROM SHIPPING CONTAINER

Check the packing list, verify that the list includes all the materials in the shipping container before unpacking. Valve information can be found on the nameplate (Key 33). Refer to Figure 3 and xx for possible nameplate locations.

When lifting the valve from shipping container, place properly rated lifting straps securely around the neck of the actuator, refer to Figure 3 for strap placement. Straps should be placed to avoid damage to tubing and other mounted accessories.

For valve assemblies without an attached actuator, use caution when lifting or positioning straps so as not to damage the valve stem.

Lift the valve/actuator assembly using proper lifting techniques.

**WARNING:** The following maintenance procedures require removing the control valve from service. To avoid personnel injury, only qualified technicians should perform the following procedures. Always ensure the control valve is fully released of pressure or process fluid before starting maintenance.

### INSTALLATION

Before installing the valve, clean dirt, welding chips, scale or other foreign material from the line.

Inspect flange gasket surfaces for damage.

Check packing box bolting for proper tightness. Packing nuts should be slightly over finger-tight; however, tighten only as necessary to prevent stem leakage.

If the valve has small internal flow passages such as anti-cavitation or low-noise trim the installation of an upstream strainer should be considered to prevent clogging of these small passages.

**CAUTION:** Do not over tighten packing! This can cause excessive packing wear and high stem friction that may impede stem movement! Refer to Table 5 for Packing Nut Torque.

- 1 Install the valve with flow through the valve in the direction indicated in Specifications (Page 3). The valve assembly may be installed in any position unless limited by vibration considerations.

**CAUTION:** The normal position of the actuator is vertical above the valve body. In some non-vertical applications, the actuator may need to be supported.

**WARNING:** Keep hands, hair and clothing away from all moving parts when operating the valve! Serious injury can result from failure to do so!

- 2 When possible, stroke the valve and check for smooth operation through the full-stroke. Unsteady valve stem movement could be an indication of an internal problem.

### Air Piping

The actuators are designed to accept 1/4" NPT connection. Use 3/8" OD tubing (or equivalent) for all air lines. All connections must be free of leaks.

**CAUTION:** Do not exceed maximum casing pressure indicated on name plate located on the yoke of the actuator or in the Technical (Sales) Bulletin appropriate for the actuator type.

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### PERIODIC INSPECTION

**CAUTION:** Use safe work practices and lock out procedures when isolating valves and actuators! Always be aware of flammable instrument gas!

- 1 Avoid personal injury from sudden release of process pressure! Before performing any maintenance operation:
  - A Disconnect any power supply media lines providing air / gas pressure, electric power, or a control signal to the actuator. Ensure the actuator cannot suddenly operate the valve.
  - B Isolate the valve from process pressure with bypass valves or completely shut off the process. Relieve process pressure, and drain the process fluid from the up and down stream of the valve.
  - C Vent the pneumatic actuator loading pressure and relieve any actuator spring preload.
  - D Use Safety lock-out procedures to be sure that the above provisions stay in effect while you complete the work on your equipment.
- 2 Check for process fluid leakage to the atmosphere through the body to bonnet joint and (if equipped) any NPT connection.
- 3 Examine the valve for damage caused by corrosive fumes or process drippings.
- 4 Clean the valve and repaint areas of severe oxidation.
- 5 Make sure positioner linkage (if equipped) and stem connector are securely fastened. If the stem connector is loose, check plug thread engagement and retighten. Refer to the Actuator Manual for detailed instructions.
- 6 Ensure all accessories, mounting brackets and fasteners are secure.
- 7 Clean any dirt and foreign material from the valve stem.

### MAINTENANCE

**Only "Certified Technicians" should be disassembling and inspecting these valves and actuators.**

**CAUTION:** For diaphragm actuators the spring is under compression. The actuator is also under pneumatic / gas pressure. Ensure actuator has been disconnected from supply lines before starting any work on the actuator. The actuator needs to be supported before the actuator mounting nut (Key 32) can be removed, failure to support the actuator could result in actuator damage and/or personal injury.

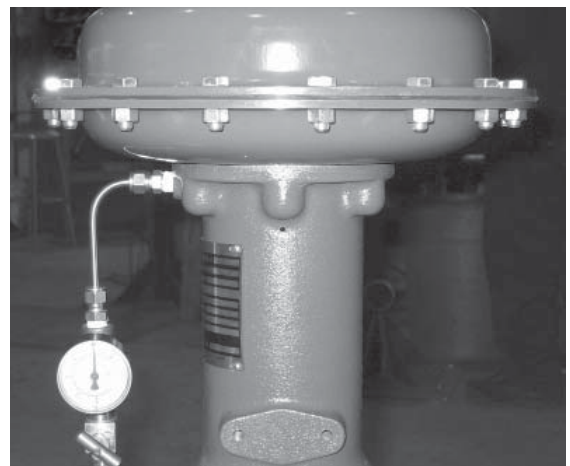
#### Removing Actuator from Valve

Refer to the appropriate Actuator Manual for detailed instructions.

- 1 Disconnect all pneumatic/gas supply lines and any other lines that might supply pressure to the actuator.

#### ON MODEL DFC (FAIL CLOSED) ACTUATORS

Connect a supply line to the inlet port of the actuator. Be sure not to exceed the maximum casing pressure. This will open the valve and take downward force off the stem connector.



**Figure 2** Needle Valve with Gauge setup



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### MAINTENANCE (Continued)

#### Removing Actuator from Valve (Continued)

- 2 Remove the stem connector (Refer to the Actuator Instruction Manual for stem connector removal instructions).
- 3 Support the actuator - the actuator may be able to be removed manually on the smaller sizes. It is recommended the lifting eyes attached to the actuator casing be used (refer to Figure 3). If there are no lifting eyes, it is advisable to remove 2 actuator casing cap screws, 180° apart, and temporarily replace them with eye bolts and nuts. Position the lifting straps through the lifting eyes or eye bolts to avoid damage to the tubing and mounted accessories.

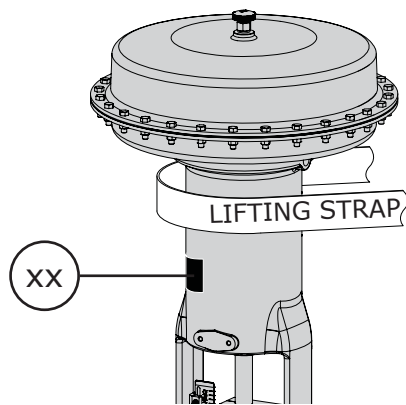


Figure 3 Actuator Lifting Suggestions

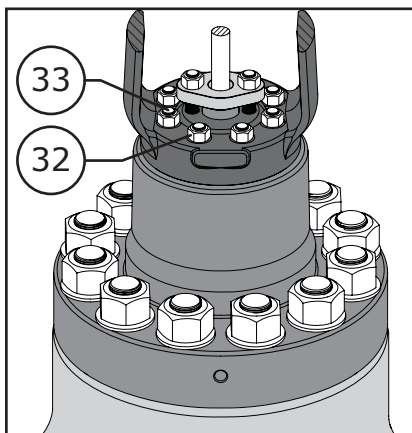


Figure 4 Actuator Mounting Nuts and Bolts

- 4 Remove the actuator mounting nuts (Key 32) and lift actuator off of valve, store in a safe place.
- 5 Remove the jam nuts and travel indicator from the valve stem. Refer to the actuator manual for disassembly procedures for actuators.
- 6 Once actuator has been removed from the valve the air pressure in the actuator can be released. (DFC actuator only)

**NOTE:** For Actuator to Valve Mounting (Assembly) see appropriate Actuator Instruction Manual.

### Packing Maintenance

Refer to Figures 8 for packing orientation and Key numbers for the following section. For live loaded packing instructions, refer to the P-LLPS Instruction Manual.

#### For single (spring-loaded) packing:

- A Spring-loaded packing has constant force applied to the packing set (Key 2) through a spring (Key 5) in the packing bore. Ensure that the packing follower (Key 8) is in contact with the bonnet (Key 1), if not tighten the packing nuts (Key 12) until the packing follower comes in contact with the bonnet. If this does not stop the leak then the packing will need to be replaced. In some cases the bonnet and/or stem (Key 17) may need to be polished or replaced.
- B Refer to **Valve Disassembly** section for Packing Removal and Inspection.

**CAUTION:** Do not tighten the packing nuts past the recommended maximum torque value as this will cause high stem friction and could cause the valve to operate incorrectly.

#### For double packing / graphite ring packing:

- A Double packing consists of two packing sets (Key 2) separated by a lantern ring (Key 6). Both styles of packing require that the packing nuts (Key 12) be kept tight to keep force on the packing. If leakage is detected from the packing, the packing nuts can be tightened to apply more force on the packing set (make sure not to exceed the maximum allowable torque values, refer to Table 2). If this does not seal off the leak then the packing will need to be replaced. In some cases the bonnet (Key 1) and/or stem (Key 17) may need to be polished or replaced.
- B Refer to Valve Disassembly section for Packing Removal and Inspection. Refer to Figure 8 for double and graphite packing arrangements.

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### VALVE DISASSEMBLY

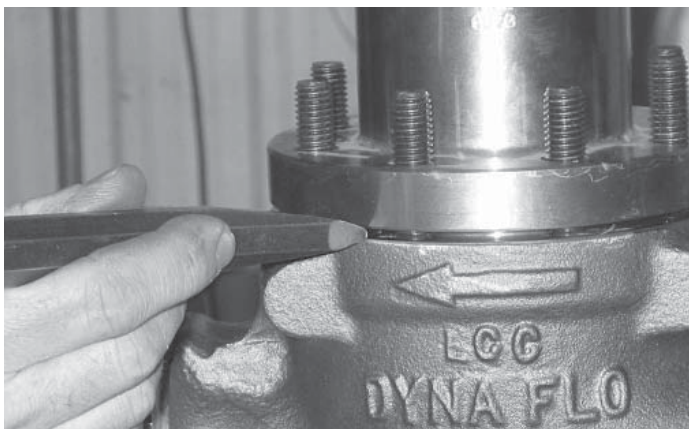
**CAUTION:** If maintenance is to be performed on the valve in-line, relieve process pressure and drain the process media from the upstream and downstream sides of the valve. Check that bypass valves are used or the process has been completely shut down.

#### Bonnet Removal

- 1 Loosen the packing nuts (Key 12) until the packing follower (Key 8) is loose. Loosen the bonnet nuts (Key 25) one turn after contact with the bonnet is broken. The bonnet may need to be rocked loose or loosened from the body by prying at the bonnet-to-body joint (refer to Figure 5). Take care not to damage the gasket-sealing surface when separating the bonnet. If no process medium leaks from the bonnet-to-body joint removal of the bonnet nuts (Key 25) can proceed.
- 2 When removing the bonnet (Key 1) ensure that the stem / plug assembly (Key 19) does not drop out of the bonnet. This could damage the plug seating surface.
- 3 A razor or a pick-set can be used to remove old gaskets. Inspect the gasket-sealing surface for scratches or dents that may cause the gasket to leak.

**NOTE:** Spiral wound gaskets (Key 23) make their seal by being crushed. Spiral wound gaskets cannot be reused.

- 4 Inspect threads on bonnet studs (Key 24) and on packing studs (Key 11) for any damage.



#### Trim Parts Removal (Plug / Seat / Cage)

Refer to Figures 8 to 11 for Key numbers.

**NOTE:** For instructions on Anti-Cavitation and Low-Noise trim contact the Dyna-Flo Sales Office.

##### 1 Seal ring (spring-loaded):

To remove the seal ring (Key 29), first pry the retaining ring (Key 27) out of the groove, then remove the metal backup ring (Key 28). Finally remove the seal ring from the plug.

##### Piston ring:

Piston rings (Key 30) were broken in half, simply pull apart the sections of piston ring and remove.

- 2 Inspect the valve stem (Key 17) for any deep scratching or corrosion also inspect the threads for any damage. Minor scratching or corrosion is acceptable. A minor scratch can be defined as a scratch that will not stop your fingernail when you run it across the scratch. Anything other than a minor scratch will need to be sent to the factory to be refurbished back to the 4 µin finish.
- 3 Inspect the seating area on the plug (Key 16). Some minor scratching or corrosion can be lapped out of the plug. The plug can be machined and lapped to remove damage caused by normal wear, corrosion or erosion. Care must be taken not to machine the seat surface back to far as this will effect the position of the seal ring in the cage and may cause failure.
- 4 Inspect the seal ring sealing surface on the plug for any scratching.
- 5 Carefully lift the cage (Key 18) out of the valve body by installing eyebolts into the 1/2" 13-UNC threaded holes in the top of the cage. Remove the gaskets (Key 22) from the top and bottom of the cage. Inspect the inside diameter of the cage for signs of erosion, corrosion, or deep scratching. Cages can be polished, but any deep scratching or corrosion is cause for replacement.
- 6 Remove all seat ring cap screws (Key 21A) and once removed install eyebolts into the two 9/16 inch 12-UNC threaded holes (they will be larger than the other cap screw holes and directly across from each other on the seat ring). Using the eyebolts, carefully lift the seat ring out of the valve body.

**Figure 5** Body/bonnet being separated with a chisel



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### VALVE DISASSEMBLY (Continued)

#### Packing and Packing Parts Removal

**CAUTION:** Concentrated gases could be trapped in the packing! For live loaded packing removal instructions refer to the P-LLPS manual.

- 1 Remove all packing parts (Keys 2 through 9, & 14) from the packing bore. Use a rounded tool to remove the packing set (Keys 2, 3 & 4) from the packing bore. Clean all metal parts; if they are not damaged they can be reused.
- 2 Inspect the packing bore for any scratching or corrosion; minor scratching or pitting in the packing bore can be polished out.

#### Body Gasket Removal

- 1 A razor or a pick-set can be used to remove old seat ring gaskets (Key 23) or o-rings (Key 31).

**CAUTION:** Care must be taken to avoid damaging these surfaces.

**NOTE:** Spiral wound gaskets (Key 23) make their seal by being crushed. Spiral wound gaskets cannot be reused.

- 2 Inspect all gasket surfaces for damage.
- 3 Inspect the internal body surfaces for any signs of corrosion, erosion or irregular wear.

### ASSEMBLY

Ensure that all parts have been cleaned and inspected as per disassembly section.

**NOTE:** For instructions on Anti-Cavitation and Low-Noise Trims contact the Dyna-Flo Sales Office.

**NOTE:** Use an anti-seize compound that is approved for the service conditions that the valve is being installed into.

**NOTE:** Spiral wound gaskets (Keys 23) make their seal by being crushed. Spiral wound gaskets cannot be reused.

- 1 **For spiral wound seat ring gasket (Key 23):**  
Coat the seat ring gasket with nickel anti-seize compound and insert it into the seat pocket in the body.

#### For seat ring o-ring (Key 31):

Lubricate the o-ring with the appropriate o-ring lubricant and insert the o-ring into the o-ring groove on the underside of the seat ring (Key 21). Refer to Figure 13.

**NOTE:** To order the proper seat ring you will need to know the Valve Serial Number. Old style seat rings will be used for valves with Serial Numbers **BEFORE** P191270-01, new style seat rings will be used for valves with Serial Numbers **AFTER** P191270-01. For more information contact Dyna-Flo Control Valve Services.



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### ASSEMBLY (Continued)

#### Plug Seal Assembly

##### 1 For one-piece seal ring:

- A** Refer to assembly diagram (Figure 9). Lubricate plug seal diameter and install seal ring (Key 29) with cup facing the correct direction as shown in Figure 9. Install back up ring (Key 28) and retaining ring (Key 27) as shown.

**NOTE:** The seal ring will need to be gently stretched over the top edge of the plug. Use a constant force when stretching the ring over the plug, failure to do so will cause the ring to get damaged.

- B** Allow time for the PTFE material to shrink back to its original size before installing the plug into the cage.

##### For piston rings (Key 30) (Model 381):

**NOTE:** Replacement piston rings (Key 29) come in one piece. Before installation it is necessary to break the piston ring into two pieces. Do not saw or cut piston rings. Use extreme caution when breaking piston rings as they can be easily damaged.

##### Vise break (Refer to Figures 6 & 7)

Piston rings can be broken into two pieces using a vise with smooth jaws or softeners. Wrap electrical tape once around the outside diameter of the piston ring to contain it while it is being snapped in half. Place the unbroken piston ring into the jaws of the vise so that they will compress the ring into an oval. Slowly compress the piston ring until the ring snaps on both sides. If one side of the ring snaps first, simply keep compressing until the other side snaps.

##### Scoring

If no vise is present, wrap electrical tape once around the outside diameter of the piston ring to contain it while it is being snapped in half. Score (don't cut) the piston ring and snap it over a hard surface (such as the edge of a work bench or table).

- 2 Lubricate the valve plug / stem (Key 19) assembly with light assembly grease and insert into the cage (Key 18).

**NOTE:** Ensure the seal ring (Key 29) does not shift out of the plug groove when installing the plug into the cage.



**Figure 6** Piston Ring Taping



**Figure 7** Vise Break



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### ASSEMBLY (Continued)

#### Trim Parts Assembly

- 1 Install two eyebolts or two similar threaded lifting devices into the 9/16" 12-UNC holes (the two larger holes) on the seat ring (Key 21). Carefully lower the seat ring onto the seat ring gasket (Key 23) inside the valve body (Key 15).
- 2 See Table 4 for the appropriate lubricant and torque values for installing the seat ring cap screws (Key 21A). Lubricate the threads of the cap screws and thread them into the seat ring. Begin by torquing the seat ring cap screws in an alternating crisscross pattern to 15 lbf-ft (20 N•m). Continue tightening the cap screws in increments of 15 lbf-ft (20 N•m) in the appropriate pattern until the recommended torque listed in Table 4 is achieved (Do Not Exceed the recommended torque). Repeat the tightening process a final time, and if there are any cap screws that are able to turn, repeat the tightening process.
- 3 Lubricate the cage gasket (Key 22) and gasket seating surface of the valve body with nickel based anti-seize compound and place the gasket onto the lip of the valve body.
- 4 Install two eyebolts (or similar threaded lifting device) into the 1/2" 13-UNC threaded holes located on top of the cage (Key 18). Carefully lower the cage onto the seat ring (Key 21) inside the valve body (Key 15). Remove the lifting devices.
- 5 Lubricate the bonnet gasket (Key 22) and gasket seating surface of the cage with nickel based anti-seize compound and place the gasket on top of the cage.

#### Bonnet Assembly

- 1 Place bonnet (Key 1) over stem (Key 17) and onto the valve body. Install a washer (Key 26) over each bonnet stud (Key 24). Lubricate the bonnet studs with nickel based anti-seize compound and thread the bonnet nuts (Key 25) onto the studs. Tighten bonnet nuts to specified torque values. Follow standard torque sequence when tightening bolts. Refer to Table 2 for specific torque values.

#### Packing Assembly

Refer to Figure 8 for packing orientation and Key numbers for the following section. For live loaded packing instructions refer to the P-LLPS manual.

- 1 Ensure all parts have been cleaned and inspected prior to replacing packing. (See Disassembly section for inspection procedures).

#### For single style (spring-loaded) packing:

- A Coat the packing box ring (Key 13) and lower wiper (Key 14) with silicone-based compound. Insert both parts into the packing bore followed by spring (Key 5) and special washer (Key 7).
- B Coat the packing set (Key 2) with silicone-based compound and insert on top of the washer (Key 7) in the packing bore. It may be necessary to tap down each soft packing part into the packing box so that there is no air gap between parts, use a smooth-edged pipe placed over the valve stem to accomplish this.
- C Place the packing follower (Key 8) on top of the packing set followed by the upper wiper (felt) (Key 9) and packing flange (Key 10).
- D Tighten the packing nuts (Key 12) until the packing follower comes into contact with the bonnet (Key 1).

#### For double style packing:

- A Coat packing box ring (Key 13), lower wiper (Key 14) and lower packing set (Key 2) with silicone-based compound. Insert these parts into the packing bore followed by the lantern ring (Key 6).
- B Coat the upper packing set (Key 2) with silicone-based compound and place it into the packing bore followed by the packing follower (Key 8).
- C Insert the upper wiper (felt) (Key 9) and the packing flange (Key 10) over the stem (Key 17) and tighten the packing nuts (Key 12) to the proper torque value as specified in Table 5.

#### For single style graphite packing:

- A Refer to Figure 8 for single and double packing arrangements. Choose proper arrangement based on stem size and single or double configurations. Install bonnet as described in the Assembly section. Install packing box ring and packing arrangement as shown. Note that Key 4 is graphite filament wound material that typically looks like rope. Key 3 is graphite ribbon compressed into rings and not split as the graphite filament ring is. Install packing follower (Key 8) and flange (Key 10) and torque as per Table 5.

**CAUTION:** Graphite ribbon packing damages easily, care is to be taken when installing it into the packing bore.

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Table 1

### Bolting Material and Designations

Material	Temperature Limitations
B7 (Standard)	-50°F to 900°F (-46°C to 482°C)
B7M (NACE 150-300 ASME Class)	-50°F to 900°F (-46°C to 482°C)

Table 2

### Body to Bonnet Bolting Torque

Valve Sizes (Inch)	Bolt Torques	
	B7 & B7M	
	lbf-ft.	N•m
8	2000	2710

Table 3

### Valve Stem Connection Assembly Torque and Pin Replacement

VSC Diameter Inches (mm)	Torque lbf-ft. (N•m)	Hole Size Inches (mm)
1 (25.4)	310 - 355 (420 - 481)	0.251 - 0.254 (6.38 - 6.45)
1-1/4 (31.8)	610 - 670 (827 - 908)	0.251 - 0.254 (6.38 - 6.45)

Table 4

### Seat Ring Cap Screw Lubricant and Torque Values

Lubricant	Seal Construction			
	Spiral Wound Gasket (Key 23)		Seat Ring O-Ring (Key 31)	
	lbf-ft.	N•M	lbf-ft.	N•M
Nickel Based Anti-Seize	45	61	30	41

Table 5

### Packing Nut Torque Values

Valve Stem Diameter Inch (mm)	ASME Class	PTFE Packing				Graphite Packing			
		Min. Torque		Max. Torque		Min. Torque		Max. Torque	
		lbf-ft.	N•m	lbf-ft.	N•m	lbf-ft.	N•m	lbf-ft.	N•m
1 (25.4)	900 / 1500	38	52	57	77	38	52	57	77
1-1/4 (31.8)	900 / 1500	50	68	75	102	50	68	75	102



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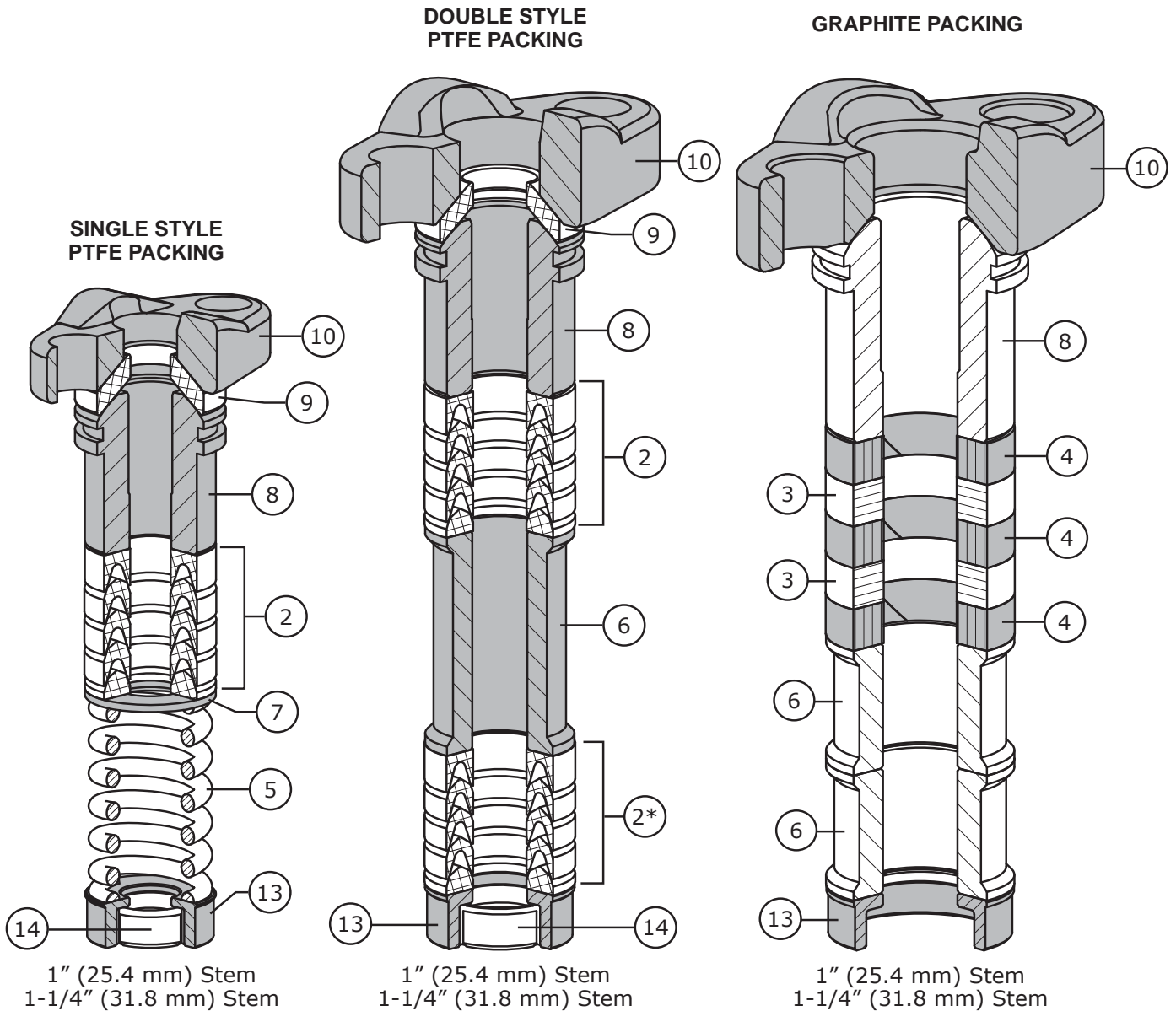


Figure 8 Control Valve Packing Diagrams

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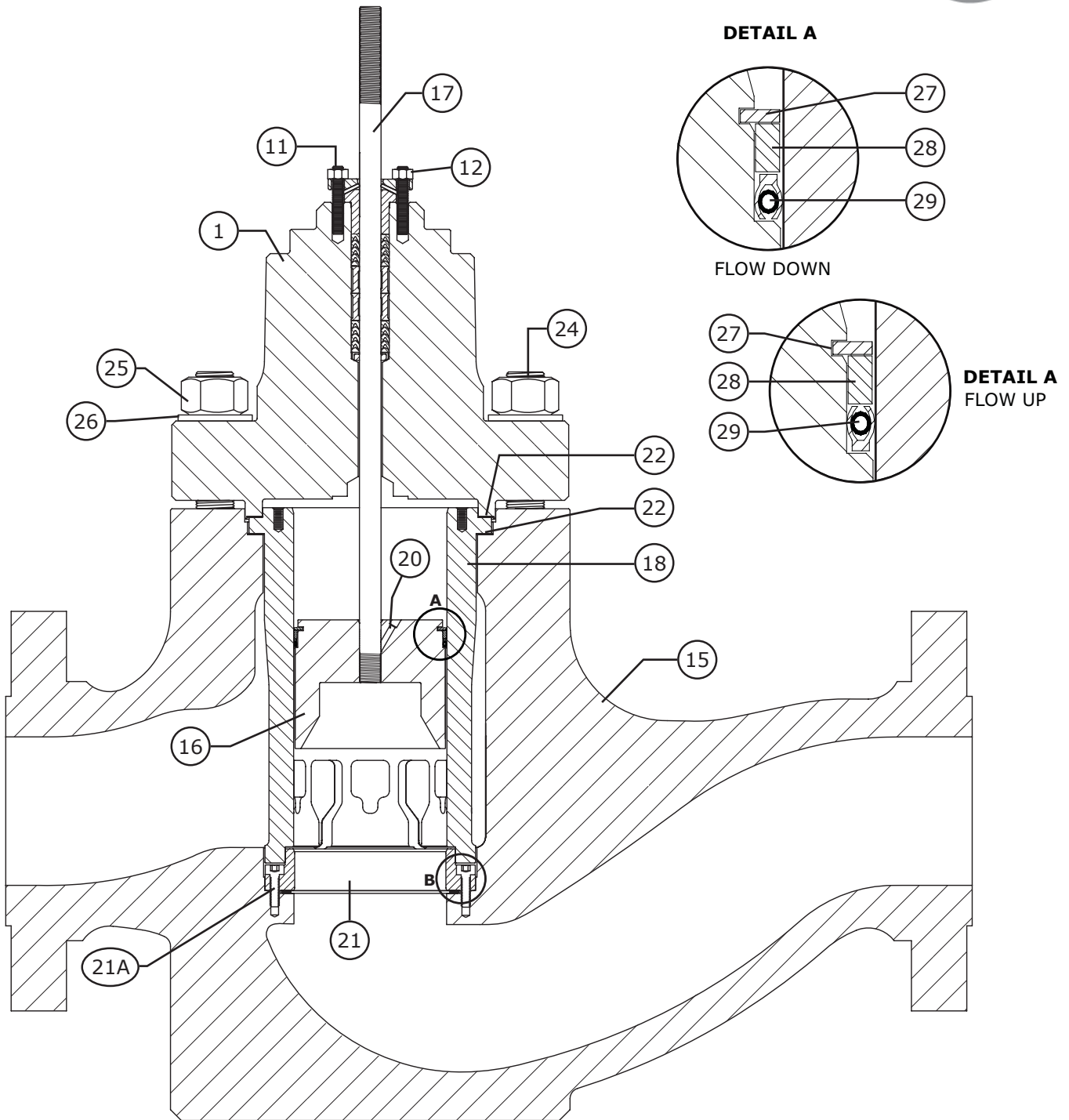


Figure 9 Model 380 Control Valve Cross Section



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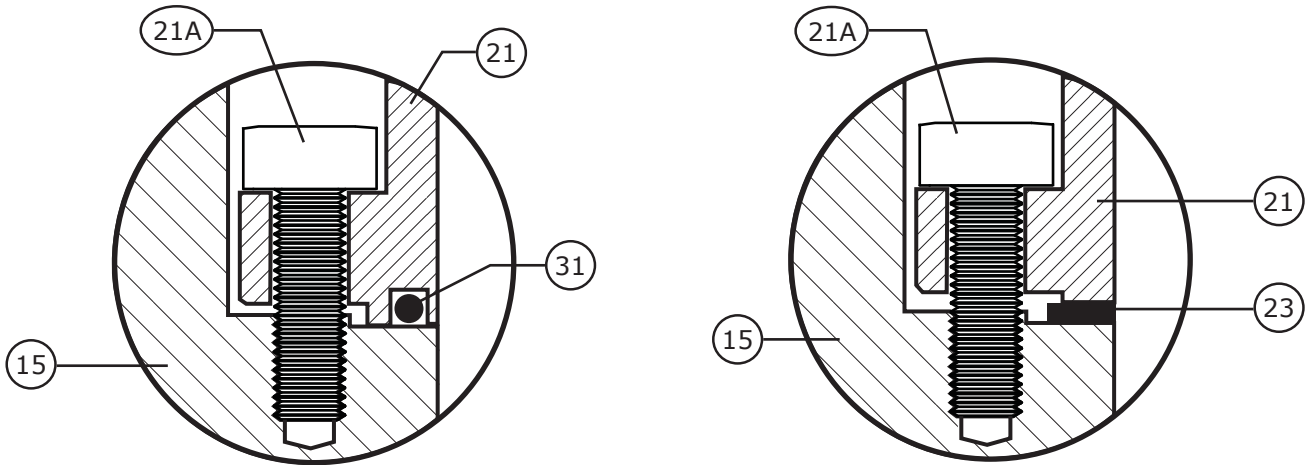


Figure 10 Detail B - O-Ring and Gasket Seat Ring Seal

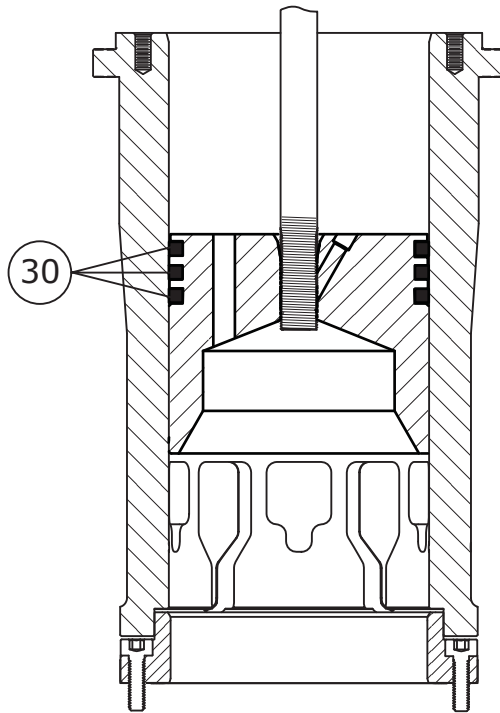


Figure 11 Model 381 Cage / Piston Ring Detail

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### Parts

Key	Description	Part Number
<b>1</b>	<b>Bonnet</b> if you need a bonnet as a replacement part, order by valve size and stem diameter, serial number and desired material.	
<b>2 - 7</b>	<b>Packing Box Parts</b> Refer to Packing Box Parts Table 6.	
<b>8</b>	<b>Packing Follower</b> S31600/S31603 Dual Grade	
	1 inch (25.4 mm) Stem	1H98233507D
	1-1/4 inch (31.8 mm) Stem	1H99843507D
<b>9</b>	<b>Upper Wiper, Felt</b>	
	1 inch (25.4 mm) Stem	1J87290633D
	1-1/4 inch (31.8 mm)	1J87300633D
<b>10</b>	<b>Packing Flange</b> Carbon Steel - Plated	
	1 inch (25.4 mm) Stem	0V00242505D
	1-1/4 inch (31.8 mm) Stem	0W08562505D
<b>11</b>	<b>Stud, Packing, 2 Required</b>	
	B7	
	1 inch (25.4 mm) Stem	0V00253103D
	1-1/4 inch (31.8 mm) Stem	1N35653101D
	B7M	
	1 inch (25.4 mm) Stem	0V0025B7MDD
	1-1/4 inch (31.8 mm) Stem	1N3565B7MDD
<b>12</b>	<b>Nut, Packing, 2 Required</b>	
	2H	
	1 inch (25.4 mm) Stem	1A34332411D
	1-1/4 inch (31.8 mm) Stem	1A36812411D
	2HM	
	1 inch (25.4 mm) Stem	
	1-1/4 inch (31.8 mm) Stem	
<b>13</b>	<b>Packing Box Ring</b> S31600/S31603 Dual Grade	
	1 inch (25.4 mm) Stem	1J87343507D
	1-1/4 inch (31.8 mm) Stem	1J87353507D

Key	Description	Part Number
<b>15</b>	<b>Body</b> if you need a body as a replacement part, order by valve size and stem diameter, serial number and desired material.	
<b>16</b>	<b>Valve Plug</b>	Refer to Table 7 & 8
<b>17</b>	<b>Valve Stem</b>	Refer to Table 9
<b>18</b>	<b>Cage</b>	Refer to Table 11
<b>19</b>	<b>Valve Plug / Stem Assembly</b>	Refer to Table 10
<b>20</b>	<b>Pin</b> S31600/S31603 Dual Grade	
	1 inch (25.4 mm) Stem	1V33403507D
	1-1/4 inch (31.8 mm) Stem	1V33403507D
<b>21</b>	<b>Seat Ring</b>	Refer to Table 12
<b>21A</b>	<b>Cap Screws (Seat Ring)</b> S66286 HT, 22 Required	19A7492X03D
<b>22</b>	<b>Gasket (Spiral Wound) 2 Required</b> N06600 / Graphite	29A9220X01D
<b>23</b>	<b>Seat Ring Gasket (Spiral Wound)</b> N06600 / Graphite	19A7468X01D
<b>24</b>	<b>Stud, Bonnet, 8 Required</b>	
	B7	15A3906X01D
	B7M	15A3906B7MD
<b>25</b>	<b>Nut, Bonnet, 8 Required</b>	
	2H	1N85052407D
	2HM	1N8505X2HMD
<b>26</b>	<b>Washer, SST, 12 Required</b>	18A6429X03D
<b>27</b>	<b>Retaining Ring, S30200</b>	14A4652X01D
<b>28</b>	<b>Backup Ring, S31600</b>	15A4009X02D
<b>29</b>	<b>Seal Ring, CPTFE / R30003</b>	15A4010X032
<b>30</b>	<b>Piston Ring (Model 381 Only)</b> Graphite, 3 Required	1U5069X002D
<b>31</b>	<b>O-Ring, Seat Ring</b> Viton	1D5470X001D
<b>32</b>	<b>Actuator Mounting Nut, 2H, 8 Required</b>	
	5" Yoke Boss / 1" Stem	1A34333525D
	5H Yoke Boss / 1-1/4" Stem	1A35203525D
<b>33</b>	<b>Actuator Mounting Stud, B7, 8 Required</b>	
	5" Yoke Boss / 1" Stem	1J6981B8MDD
	5H Yoke Boss / 1-1/4" Stem	1R3690CL28D



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Table 6

### Packing Box Parts (Keys 2, 3, 4, 5, 6 & 7)

	Description	Key No.	Stem Diameter inch (mm)	
			1 (25.4)	1-1/4 (31.8)
PTFE V-Ring Packing	Packing Set (PTFE) QTY: 1 for Single, 2 for Double (Refer to Table 11 for Repair Kits) <sup>1</sup>	2	1R29060101D	1R29080101D
	Lower Wiper (Teflon)	14		
	Spring (S30400) (for single only)	5	1D58293701D	1D38743701D
	Lantern Ring (S31600/S31603) (for double only)	6	DFX0000051D	DFX0000061D
	Quantity Required	Double Packing	1	1
	Special Washer (S30400) (for Single only)	7	1H98223604D	1H99593604D
Graphite Ribbon / Graphite Filament	Graphite Ribbon (Ring)	3	1U6768X002D	1V5666X002D
	Quantity Required		2	2
	Graphite Filament (Ring)	4	1D7518X013D	1D7520X016D
	Quantity Required		3	3
	Lantern Ring (S31600/S31603)	6	DFX0000051D	DFX0000061D
	Quantity Required		2	2



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Table 7

### Key 16, Valve Plug for Spring-Loaded Seal Ring

Valve Size Inch	Stem Diameter Inch (mm)	S31600(S31603) / Alloy 6 Hard Faced Seat & Guide	S42000
8	1 (25.4)	380P8021X5D	-
	1-1/4 (31.8) [2 (50.8) VSC]	35A4006X01D	35A3991X01D

Table 8

### Key 16, Valve Plug for Piston Ring Design (Model 381 Only)

Valve Size Inch	Stem Diameter Inch (mm)	Graphite
8	1 (25.4)	-
	1-1/4 (31.8)	-

Table 9

### Key 17 Valve Stem (S20910)

Valve Size Inch	Stem Diameter Inch (mm)	Stem Length Inch (mm)	Part Number
8	1 (25.4)	34-1/4 (870)	380S3421X5D
	1-1/4 (31.8) [2 (50.8) VSC]	27-7/16 (705)	1L2688NT50D

Table 10

### Key 16, 19 & 20 Valve Plug & Stem Assembly for Spring-Loaded Seal Ring

Valve Size Inch	Stem Diameter Inch (mm)	S31600 / Alloy 6 Hard Faced Seat & Guide	S42000
8	1 (25.4)	380N8810X2D	-
	1-1/4 (31.8) [2 (50.8) VSC]	35A4006XN1D	-

Table 11

### Key 18 Cage

Valve Size Inch	S17400 DH1150		
	Quick Opening Cage	Linear Cage	Equal Percentage Cage
8			380C8617X1D
	S31600 (S31603 Dual Grade) / ENC		
	Quick Opening Cage	Linear Cage	Equal Percentage Cage
	-	-	-



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Table 12

**Key 21, Seat Ring**

Seat Ring Seal	S17400 H1075	S31600 / Alloy 6
Gasket (Old Style)	39A7400X03D	39A7401X03D
O-Ring (Old Style)	39A9035X02D	39A9036X02D
Gasket (New Style)		
O-Ring (New Style)		

**NOTE:** To order the proper seat ring you will need to know the Valve Serial Number. Old style seat rings will be used for valves with Serial Numbers **BEFORE** P191270-01, new style seat rings will be used for valves with Serial Numbers **AFTER** P191270-01.

Table 13

**Packing Repair Kits**

Stem Diameter [Yoke Boss Diameter] inch (mm)	Single		Double
	PTFE	Graphite	PTFE
1 (25.4) [5" (127 mm)]	-	-	-
1-1/4 (31.8) [5" (127 mm)]	-	-	-

**Parts Ordering**

Whenever corresponding with Dyna-Flo about 380 Control Valves, refer to the nameplate for the serial number of the unit. Please order by the complete part number (as given in the part lists) of each part required.

***Our Commitment to Quality***

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# Model 380 Control Valve (8 Inch Only)

## Operation, Parts, and Instruction Manual



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# Model 380 Control Valve (8 Inch Only)

## MODEL NUMBERING SYSTEM

**SAMPLE PART NUMBER: 380-8BFL-SVP5-CES4**

<b>VALVE MODEL</b>				<b>380</b>
<b>380</b>	380	<b>381</b>	381	
<b>VALVE SIZE</b>				<b>8</b>
<b>8</b>	8 INCH			
<b>ASME RATING</b>				<b>B</b>
<b>A</b>	900	<b>B</b>	1500	
<b>END CONNECTION</b>				<b>F</b>
<b>F</b>	RF	<b>J</b>	RTJ	<b>B</b> BUTTWELD (SCHEDULE 80)
<b>U</b>	BUTTWELD (SCHEDULE 120)		<b>P</b>	BUTTWELD (SCHEDULE 160)
<b>BODY MATERIAL</b>				<b>L</b>
<b>L</b>	LCC	<b>M</b>	CF8M	<b>W</b> WCC
<b>BOLTING</b>				<b>-</b>
<b>-</b>	B7 / 2H (STANDARD)		<b>A</b>	B7M / 2HM
<b>B</b>	B8M / 8M		<b>K</b>	B7 FLUOROKOTE #1 / 2H FLUOROKOTE #1
<b>L</b>	B7M FLUOROKOTE #1 / 2HM FLUOROKOTE #1			
<b>TRIM</b>				<b>S</b>
<b>S</b>	TRIM SPEC S		<b>C</b>	TRIM SPEC C
<b>N</b>	TRIM SPEC N			
<b>SEAT RING GASKET / O-RING</b>				<b>V</b>
<b>G</b>	GASKET (N06600 / GRAPHITE)		<b>E</b>	O-RING (EPDM)
<b>N</b>	O-RING (NITRILE)		<b>V</b>	O-RING (VITON) STANDARD
<b>PACKING STYLE</b>				<b>P</b>
<b>P</b>	SINGLE PTFE V-RING (PRESSURE)		<b>J</b>	DOUBLE PTFE V-RING (PRESSURE)
<b>G</b>	SINGLE GRAPHITE (PRESSURE)		<b>V</b>	DOUBLE PTFE V-RING (VACUUM)
<b>R</b>	DOUBLE PTFE V-RING (VACUUM / PRESSURE)		<b>L</b>	LIVE LOADED PTFE V-RING (PRESSURE)
<b>T</b>	LIVE LOADED GRAPHITE (PRESSURE)		<b>D</b>	LIVE LOADED DUPLEX (PRESSURE)
<b>K</b>	LIVE LOADED KALREZ®			
<b>YOKE BOSS SIZE / VALVE STEM DIAMETER</b>				<b>5</b>
<b>5</b>	5" (127 mm) / 1" (25.4 mm)		<b>H</b>	5H - 5" (127 mm) / 1-1/4" (31.8 mm)
<b>PAINT</b>				<b>-</b>
<b>-</b>	DFPS-01 (STANDARD)		<b>2</b>	DFPS-02 (SEVERE SERVICE)
<b>3</b>	DFPS-03 (HIGH TEMPERATURE)			
<b>BACKUP RING / PISTON RING</b>				<b>C</b>
<b>C</b>	S31600 / PTFE-ELGILOY		<b>R</b>	S31600 / PTFE-ELGILOY WITH PEEK AE RINGS
<b>P</b>	PISTON RING - GRAPHITE (MODEL 381 ONLY)			
<b>CHARACTERISTIC</b>				<b>E</b>
<b>E</b>	EQUAL PERCENT	<b>L</b>	LINEAR	<b>M</b> MODIFIED EQUAL PERCENT
<b>BONNET STYLE</b>				<b>S</b>
<b>S</b>	STANDARD		<b>T</b>	STANDARD TAPPED
<b>SHUTOFF CLASS</b>				<b>4</b>
<b>4</b>	IV	<b>5</b>	V	

**NOTE:** Modified Equal Percent is a factor of travel and requires no special parts or trim options that differ from Equal Percent.