



Model  
**360** Control Valve  
 Operation, Parts and Instruction Manuals



**Figure 1** 360 Control Valve & DFC Actuator

# Dyna-Flo 360

## Operation, Parts and Instruction Manual

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### **!NOTICE!**

These instructions are meant to be used with the Dyna-Flo Model 360 Technical (Sales) Bulletin. If you do not have the Technical Bulletin, contact Dyna-Flo immediately, or visit **www.dynaflo.com**

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

## **Introduction**

The Model 360 Control Valves are heavy duty globe style control valves used in many demanding oil and gas applications from well head to gas plant and beyond. The Model 360 is also suited for any refinery or chemical process that requires a rugged and easy to maintain control valve solution.

Model 360 control valves are cage guided, pressure balanced with push down to close plug action. The actuator typically used for 360 control valves are Dyna-Flo model DFC or DFO linear actuators. These heavy duty actuators are spring return diaphragm style, and can be used for throttling or on/off service, with or without a valve positioner.

The Model 360 control valve is manufactured to a high level of quality specifications to ensure superior performance and customer satisfaction.

## **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 only be done 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 valve configuration and construction materials were selected to meet particular pressure, pressure drop, temperature, and process fluid conditions. Some body and trim 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 to successfully using the Dyna-Flo Model 360 for many years.

### **! 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

The 360 Series control valves are high capacity single port, globe style valves, with a bolted type valve bonnet. The valve plug action is push down to close.

See Table 1 of Sales Bulletin

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

### Sizes and Connection Styles

Models: 360, 361, 362  
Size: 1", 1-1/2", 2", 3", 4", 6", 8"  
Rating: ASME 150 / 300 / 600  
Connections: RF / RTJ All Sizes  
NPT - 1", 1-1/2" and 2"

### Maximum Inlet Temperature and Pressures

Flanged valves consistent with ANSI Class rating as per ASME B16.34, unless limited by either material pressure or temperature limitations.

### Maximum Pressure Drops

Maximum pressure drop is the same as maximum inlet pressure unless otherwise rated by a specific trim construction.

### Standard Shut-off Classifications

In accordance with ASME / FCI 70.2  
-360 Series - Standard Class IV  
-361 Series - Standard Class II  
-362 Series - Standard Class IV

See Table 1 of Sales Bulletin for Optional Shut-off capability

### Dimensions

#### Valve and Actuator Outline Dimension Diagram

See Figure 2 of Sales Bulletin

#### Valve and Actuator Assembly Dimensions

See Table 3 and Table 4 of Sales Bulletin

### Approximate Valve Body and Actuator Weights

See Table 11 of Sales Bulletin

### Materials

The standard body material is LCC. The standard bonnet material is LF2 or LCC. CF8M (316 SST) is an option. See Table 5 of Sales Bulletin for typical construction materials. See Tables 6 and 7 of Sales Bulletin for trim selections.

### Cross-Section of 360 Series Control Valves

See Figure 12

### Flow Characteristics

Standard cage is equal percent. Other cages are available upon request. 360 and 361 control valves normally flow down. 362 control valves normally flow up.

### Port Diameters and Maximum Valve Plug Travel

See Table 2 of Sales Bulletin

### Packing Type

The Standard packing is PTFE V-ring. Live-loaded low emission, graphite and other packing arrangements are available.

### Valve Sizing Coefficients

See Table 8 of Sales Bulletin

### Actuator Sizing

#### Fail Open Actuator

See Table 9 of Sales Bulletin

#### Fail Close Actuator

See Table 10 of Sales Bulletin

### Trim Style Service Application

See Table 7 of Sales Bulletin



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## Unpacking Valve from Shipping Container

Check the packing list against materials received, while unpacking the valve. The Packing List describes the valve and accessories in each shipping container.

When lifting the valve from shipping container, it is advisable to remove 2 actuator casing bolts, 180° apart, and temporarily replace them with eyebolts and nuts. See Figure 3 for details. Position the lifting straps through the eyebolts to avoid damage to the tubing and mounted accessories.

### **! 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.

### **Packing Maintenance:**

### **! CAUTION !**

**Do not over tighten packing! This can cause excessive packing wear and high stem friction that may impede stem movement!**

- 1 Install the valve with flow through the valve in the direction shown by the flow arrow on the valve body. The valve assembly may be installed in any position unless limited by vibration considerations.

### **! CAUTION !**

**The normal method is with the actuator 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 serial plate located on the yoke of the actuator.**



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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 Dyna-Flo Model DFC, or DFO 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.

**Figure 2** Needle Valve w/Gauge setup

## Maintenance

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

### ! CAUTION !

**Actuator spring is under compression.**

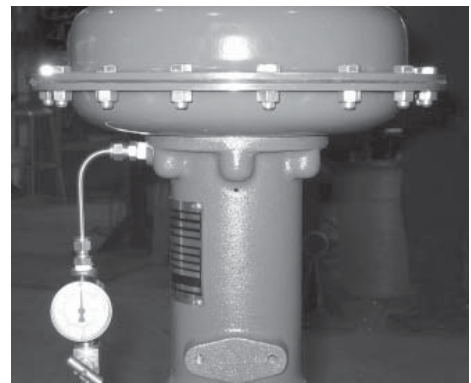
**The actuator is also under pneumatic / gas pressure. Ensure actuator has been disconnected from supply lines before starting any work on the actuator.**

**The actuator needs to be supported before the yoke nut can be removed, failure to support actuator could result in actuator damage and/or personal injury.**

## Removing Actuator from Valve

**Refer to the Dyna-Flo Model DFC/DFO 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 30 psi 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.





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### Maintenance (con't)

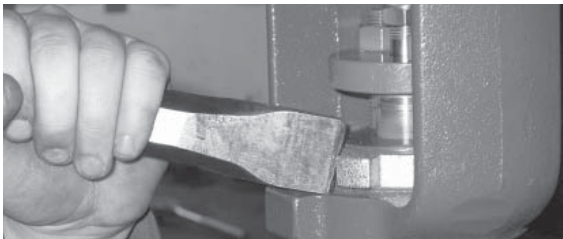
#### Removing Actuator from Valve (Con't)

- 2 Remove the stem connector (Refer to the DFC / DFO Instruction Manual for stem connector removal instructions).
- 3 Support the actuator - the actuator may be able to be removed manually on the smaller sizes. For rigging use two eyebolts in place of two of the casing bolts; make sure they are located 180° apart so that the actuator can be lifted vertically off the valve. Use a sling or chain with hooks to lift the actuator from the valve with the eyebolts. Refer to Figure 3 for rigging setup.
- 5 Remove the jam nuts and travel indicator from the valve stem. Refer to DFC / DFO 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)



**Figure 3** Rigging Setup

- 4 Use a blunted heavy chisel to loosen yoke nut (See Figure 4), unscrew yoke nut off of bonnet. Lift actuator off of valve and store in a safe place.



**Figure 4** Yoke Nut being loosened with a Chisel

#### Packing Maintenance

Refer to Figure 9 & 10 for packing orientation and Key numbers for the following section.

##### 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 (Keys 2 & 3) separated by a lantern ring (Key 6). This style of packing requires 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, see 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.



## Valve Disassembly

### ! CAUTION !

**If maintenance is to be performed on the valve inline, 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.**

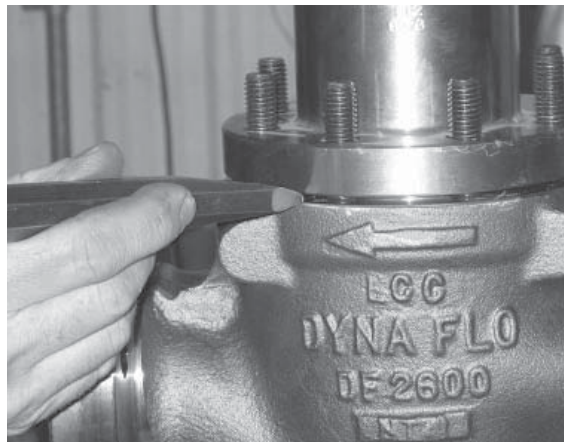
### Bonnet Removal

- 1 Remove the packing nuts (Key 12) and loosen the bonnet nuts (Key 28) a few millimeters. The bonnet may need to be rocked loose or loosened from the body by prying at the bonnet-to-body joint (See 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 28) 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 24) make their seal by being crushed. Spiral wound gaskets cannot be reused.**

- 4 Inspect threads on bonnet studs (Key 27) and on packing studs (Key 11) for any damage.



### Trim Parts Removal (plug/seat/cage)

Refer to Figures 11 & 12 for Key numbers

- 1 **For one-piece seal ring (spring-loaded):**  
To remove the seal ring (Key 34), first pry the retaining ring (Key 41) out of the groove, then remove the metal backup ring (Key 35). Finally remove the seal ring from the plug.

#### For two-piece seal rings:

These rings (Keys 34 & 35) can be cut with a sharp knife; this will allow you to remove the rings without damaging the sealing surface on the plug.

**On 8-inch valves** the load ring (Key 36) will need to be removed from the cage.

- 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 4µin 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 **For one-piece metal seat ring (Key 21):**  
Inspect the metal seat surface for any damage caused by erosion, corrosion or deep scratching. Minor scratching or corrosion can be removed by lapping or machining. Seat ring will need to be replaced if lapping or machining cannot remove the damage. Also inspect the gasket-sealing surface for any damage.

### For three-piece soft seat ring disassembly

#### (Keys 31, 32 & 33):

The disk seat (Key 32), PTFE disk (Key 33) and disk retainer (Key 31) will need to be inspected for any damage. Minor scratching is acceptable

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



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### Valve Disassembly (Cont'd)

#### Trim Parts Removal (plug/seat/cage) (Cont'd)

##### For three-piece soft seat ring disassembly (Keys 31, 32 & 33):

on these parts. The angle on the disk seat that supports the PTFE disk must be in good condition in order to seal effectively. If the PTFE disk cannot seal the imperfections on the disk seat, the valve will leak. These parts will need to be replaced if there is deep scratching or corrosion. The PTFE disk would normally be replaced during routine maintenance.

- 6 Inspect the inside diameter of the cage (Key 18) for signs of erosion, corrosion or deep scratching. Cages can be polished, but any deep scratching or corrosion is cause for replacement.
- 7 Inspect the gasket surfaces on the load ring (Key 36) for any damage.

#### Packing and Packing Parts Removal

##### ! CAUTION !

**Concentrated gases could be trapped in the packing!**

- 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) 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 gaskets.

##### ! CAUTION !

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

##### ! NOTE !

**Spiral wound gaskets (Key 24) make their seal by being crushed. Spiral wound gaskets cannot be reused.**

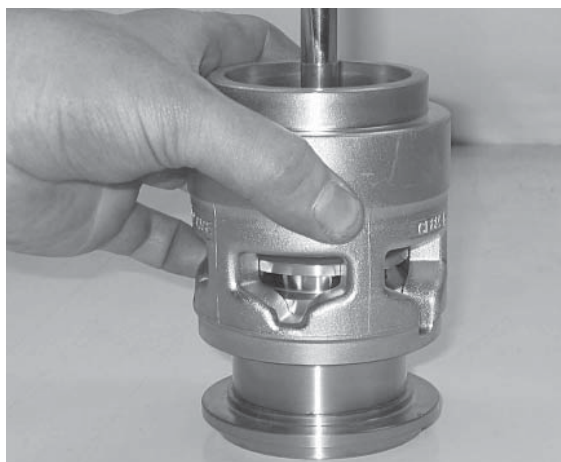
- 2 Inspect all gasket surfaces for damage.
- 3 Inspect the internal body surfaces for any signs of corrosion, erosion or irregular wear.

### Lapping

Hand lapping is typically performed on new metal seats to optimize sealing performance. In some cases during maintenance, sealing performance of metal seats can be improved by hand lapping. Dyna-Flo recommends the lapping of metal seats on all Model 360 valves when new trim is installed or when seats have been re-machined.

Before proceeding with LAPPING process, inspect the plug / stem and seat as described in **Trim Parts Removal** (page 7).

- 1 Ensure all valve parts have been thoroughly cleaned before lapping. If the valve plug (Key 16) and seat ring (Key 21) have minor scratches on the seating surface, lapping can remove these scratches without having to replace or machine the plug or seat ring.
- 2 The seat ring (Key 21) and valve plug (Key 16) can be lapped with the seat in or out of the body. Having the seat ring out of the body will ensure that no lapping compound will be left behind in the body that may get in between the seats causing the valve to leak.
- 3 Coat the seating surface of the seat ring (Key 21) with fine grit lapping compound (400-600). Place the valve plug (Key 16) onto the seat ring without the seal ring (Key 34) or backup ring (Key 35) installed.
- 4 Lubricate the inner diameter of the cage with light assembly grease. Place the cage (Key 18) over the valve plug (Key 16) and down onto the seat. Refer to Figure 6. This will ensure that no lapping compound gets between the cage and plug.



**Figure 6** Plug going into Cage





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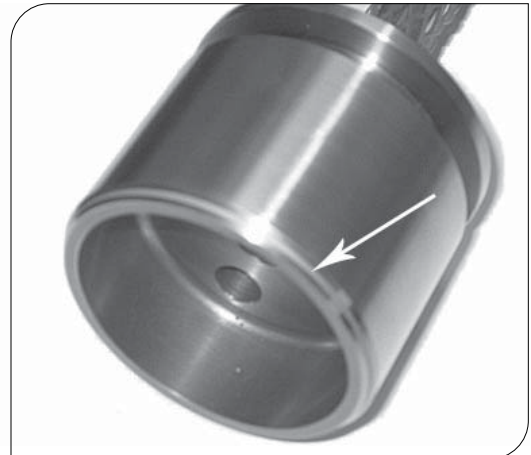
## Lapping (Cont'd)

- 5 Carefully place bonnet (Key 1) over the stem (Key 17) and down on top of cage (Key 18). Place packing follower (Key 8) over the stem and into the packing bore. The bonnet and packing follower act as a guide while you are lapping, these parts will keep the plug centered while lapping. Use two jam nuts and two and two wrenches to make a lapping handle. Refer to Figure 7 for lapping handle setup.



**Figure 7** Lapping Handle

further or possibly replaced. Any deep scores will require that the plug be machined or replaced.



**Figure 8** Lap-line

- 6 Rotate the valve plug (Key 16) in a clockwise direction and then a counter clockwise direction (only a small amount of rotation is required), apply a light downward force while rotating the valve plug back and forth. After 3 full cycles of turning the valve plug and stem (Key 19), lift the valve plug off of the seat ring (Key 21) to allow for fresh lapping compound to get in between the seats.

### ! CAUTION !

**If while lapping the seats you start to hear a squeaking noise as you rotate the plug / stem, you will need to add more lapping compound to the seats as this noise is caused by shortage of lapping compound.**

- 7 Remove the packing follower (key 8) and bonnet (Key 1), wipe the lapping compound off of all parts, inspect plug sealing surface, there should be a fine "lap-line" around the plug. Refer to Figure 8 for "lap-line". If this "lap-line" is not symmetrical all the way around the plug and seat ring then they will both need to be lapped

## Assembly

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

### Trim Parts Assembly

- 1 For one-piece metal seat ring refer to **Lapping** section (page 8) for instructions before assembling valve. After lapping has been completed assemble as follows.

**For a three piece soft seat ring design:**

### ! NOTE !

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

- a Coat the seat ring gasket with nickle anti-seize compound and insert it into the seat pocket in the body.
- b Insert a one-piece seat ring (Key 21) or a three-piece (Keys 31, 32, & 33) seat ring assembly into seat pocket.



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## Assembly (Cont'd)

### Trim Parts Assembly

- c Insert the cage (Key 18) into the body (Key 15).
- d Install one-piece or two-piece seal ring (Key 34) onto plug.

### For one-piece seal ring:

- a Refer to assembly diagram (Figure 11). Lubricate plug seal diameter and install seal ring (Key 34) with cup facing the correct direction as shown in diagram. Install back up ring (Key 35) and retaining ring (Key 41) as shown.

### ! NOTE !

**On 8 inch valves 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. Refer to Figure 12 for 8 inch seal ring orientation.**

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

### For two-piece seal ring:

- a Lubricate the backup ring (Key 35) and seal ring (Key 34) with silicone-based grease. Slide the backup ring down over the plug and into the groove.
  - b Carefully slide the seal ring over the edge of the plug and down into the groove. Allow time for the seal ring to shrink back to its original size after installation.
- 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 34) does not shift out of the plug groove when installing the plug into the cage.**

### Bonnet Assembly

- 1 Coat gasket sealing surface on bonnet with nickle based anti-seize compound. Place bonnet (Key 1) over stem (Key 17) and tighten bonnet nuts (Key 28) to specified torque values. Follow standard torque sequence when tightening bolts. Refer to Table 1 for specific torque values.

### Packing Assembly

**Refer to Figure 10 for packing orientation and Key numbers for the following section.**

- 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 Lubricate the packing box ring (Key 13) and lower wiper (Key 14) with silicone-based lubricant. Insert both parts into the packing bore followed by spring (Key 5) and special washer (Key 7).
- b Lubricate the packing set (Key 2) with silicone-based lubricant and insert on top of the washer (Key 7) in the packing bore.
- 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 Lubricate packing box ring (Key 13), lower wiper (Key 14) and lower packing set (Key 2) with silicone-based lubricant. Insert these parts into the packing bore followed by the lantern ring (Key 6).
- b Lubricate the upper packing set (Key 2) 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 2.



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**Assembly (Cont'd)**

**Packing Assembly (cont'd)**

**For double style graphite packing:**

- a Refer to Figures 9 & 10 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 3.

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

**Table 1**

**Body to Bonnet Stud Torque**

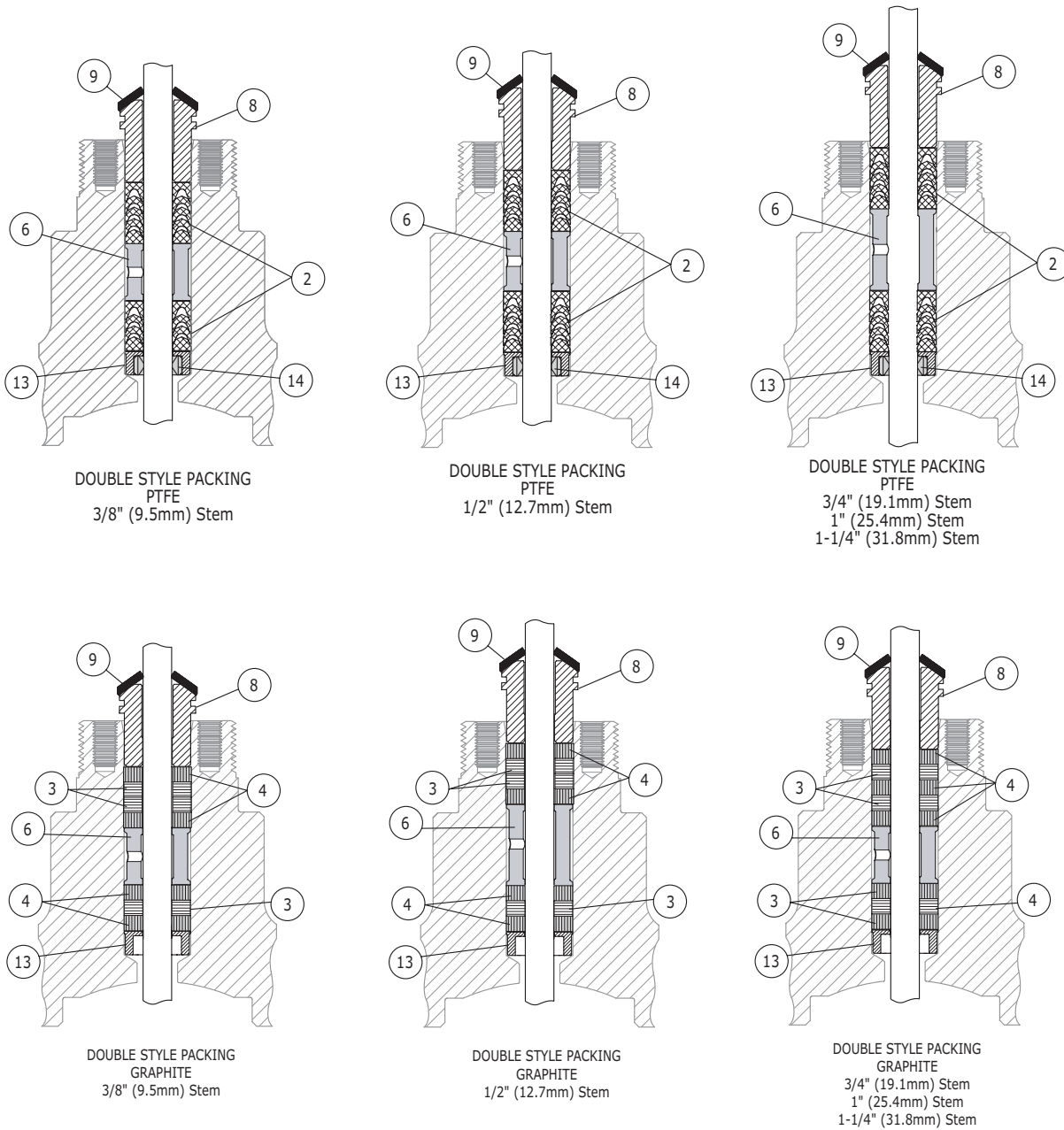
**Valve Sizes (Inch)**

**Bolt Torques**  
**SA193-B7/B7M**  
**SA193-B8/B8M**

	Annealed		Strain Hardened	
	N•m	Ft-lbs.	N•m	Ft-lbs.
1	63-65	46-48	126-132	93-97
1-1/2, 1-1/2 x 1, 2, or 2 x 1	44-46	32-34	94-98	70-73
3, 3 x 2	86-90	63-66	166-172	123-128
4, 4 x 3	153-159	113-117	266-276	196-204
6	359-373	265-275	538-560	397-413
8	518-540	382-398	731-761	382-398



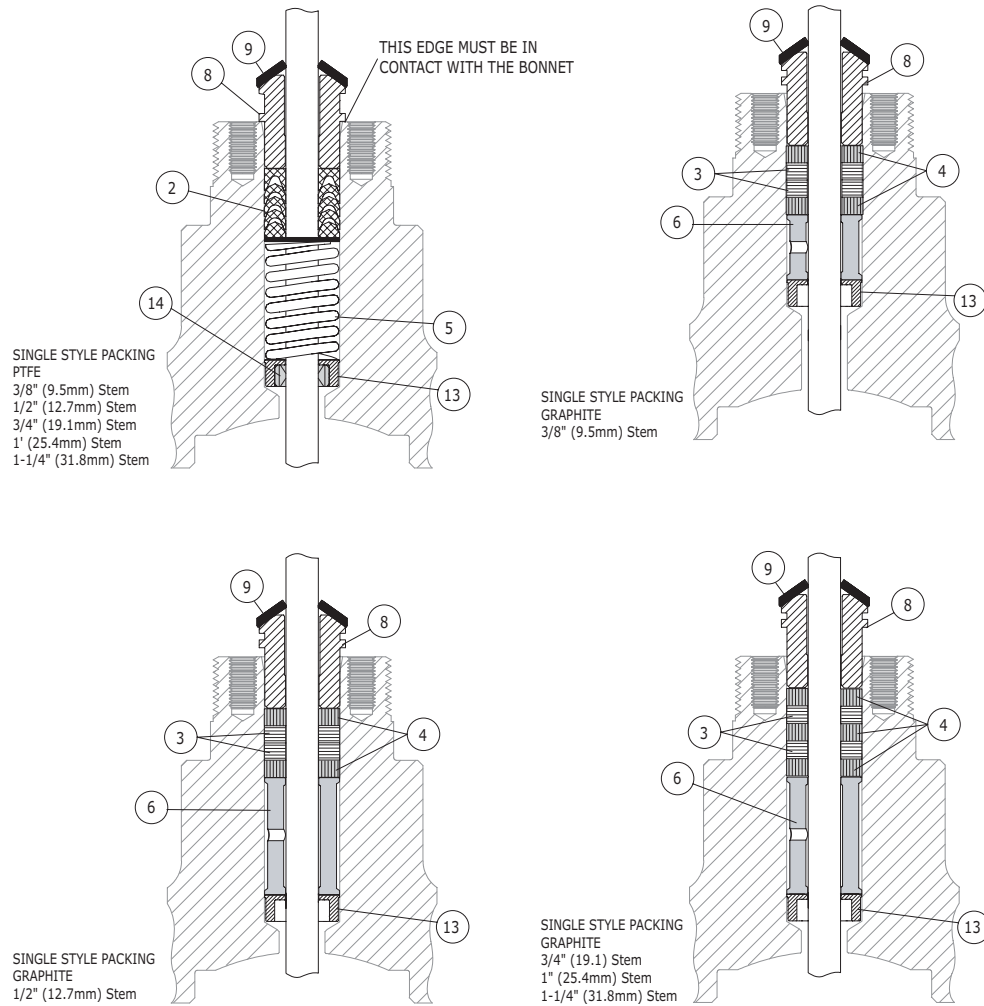
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▲  
**Figure 9** 360 Series Control Valve Packing Diagrams



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**Figure 10** 360 Series Control Valve Packing Diagrams

**Table 2**

**Valve Stem Connection Assembly Torque and Pin Replacement**

VSC Diameter Inches (mm)	Torque Ft.-lbs. (N•m)	Hole Size Inches (mm)
3/8 (9.5)	25 - 35 (34 - 47)	0.095 - 00.97 (2.41 - 2.46)
1/2 (12.7)	60 - 85 (81 - 115)	0.126 - 0.128 (3.20 - 3.25)
3/4 (19.1)	175 - 250 (237 - 339)	0.189 - 0.192 (4.80 - 4.88)
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)

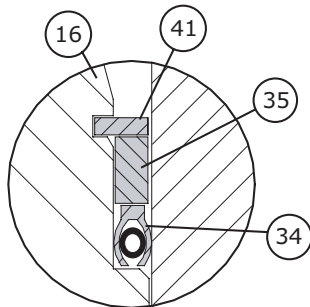


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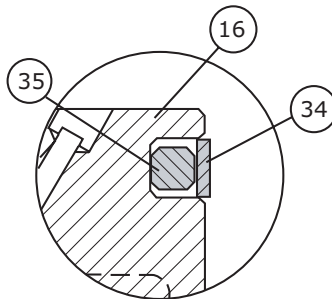
Table 3

Packing Nut Torque Values

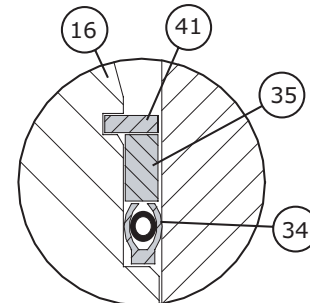
Valve Stem Diameter Inch (mm)	ASME Class	PTFE Single and Double Type Packing				Graphite Single and Double Type Packing			
		Min. Torque		Max. Torque		Min. Torque		Max. Torque	
		In-lbs.	N•m	In-lbs.	N•m	In-lbs.	N•m	In-lbs.	N•m
3/8 (9.5)	150	9	1	17	2	27	3	44	5
	300	17	2	27	3	35	4	53	6
	600	27	3	35	4	53	6	71	8
1/2 (12.7)	150	17	2	35	4	44	5	71	8
	300	27	3	44	5	58	7	89	10
	600	35	4	58	7	80	9	124	14
3/4 (19.1)	150	44	5	71	8	97	11	150	17
	300	62	7	97	11	133	15	204	23
	600	89	10	133	15	186	21	274	31
1 (25.4)	300	106	12	159	18	230	26	336	38
	600	150	17	221	25	310	35	469	53
1-1/4 (31.8)	300	150	17	230	26	319	36	478	54
	600	212	24	319	36	434	49	655	74



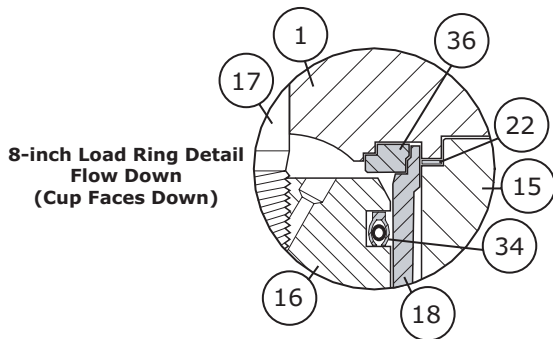
**ONE-PIECE SEAL RING**  
 Spring-Loaded  
 Flow Down  
 (Cup Faces Down)



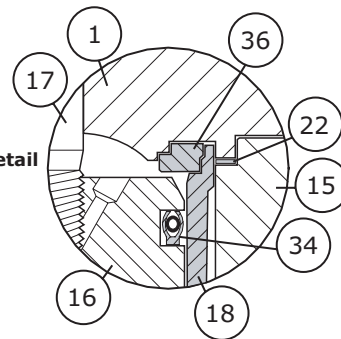
**TWO-PIECE SEAL RING**



**ONE-PIECE SEAL RING**  
 Spring-Loaded  
 Flow Up  
 (Cup Faces Up)



**8-inch Load Ring Detail**  
 Flow Down  
 (Cup Faces Down)

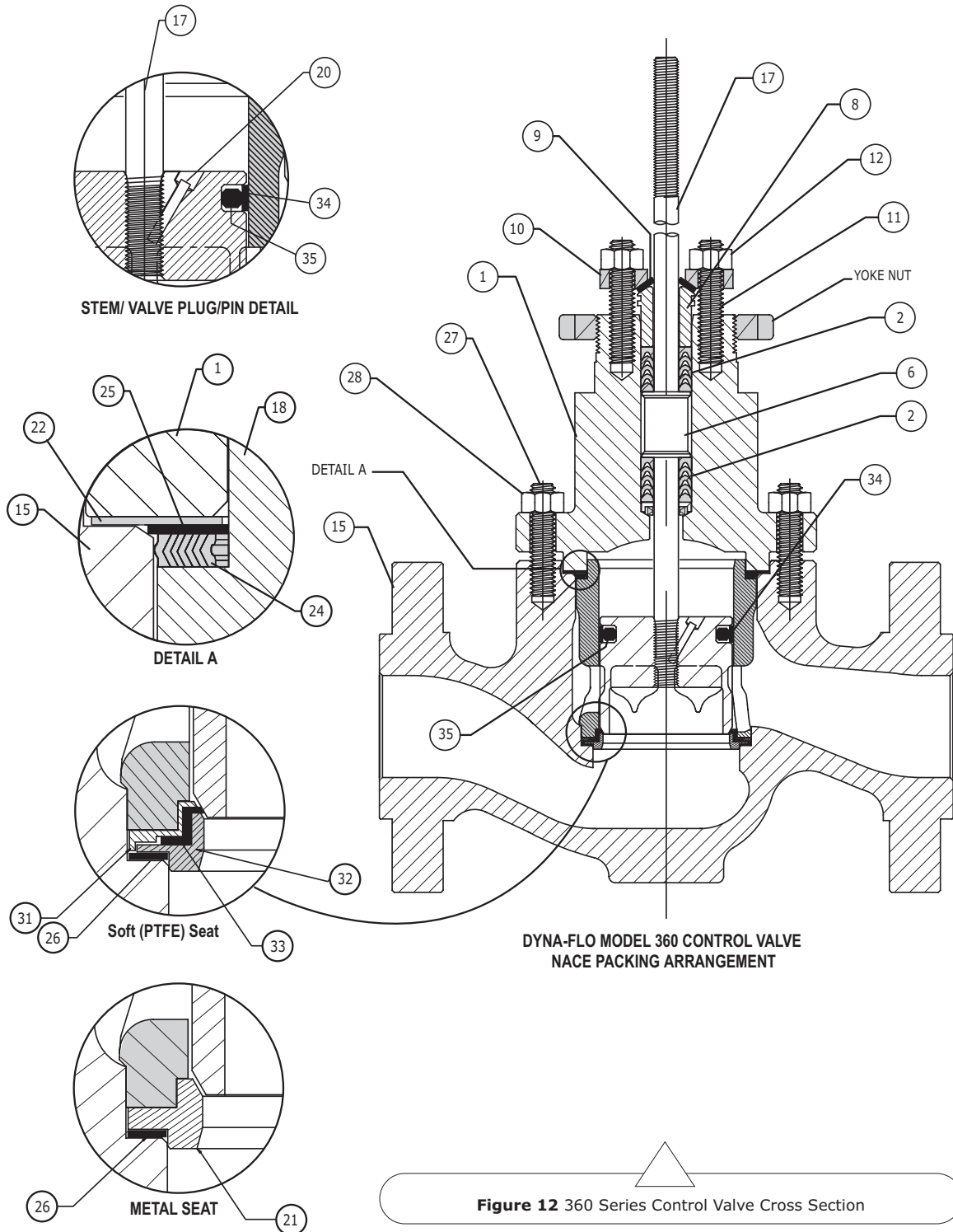


**8-inch Load Ring Detail**  
 Flow Down  
 (Cup Faces Up)

Figure 11 360 Series Control Valve Seal Diagrams



Model **360** Control Valve  
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**Figure 12** 360 Series Control Valve Cross Section



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**Parts**

**Key Description Part Number**

**1 Bonnet**, if you need a bonnet as a replacement part, order by valve size and stem diameter, serial number and desired material

**2 - 7 Packing Box Parts**  
 Refer to Packing Box Parts Table 4 on Page 19

**8 Packing Follower, 316 SST**  
 3/8 inch (9.5mm) stem 1E94393507D  
 1/2 inch (12.7mm) stem 1E94433507D  
 3/4 inch (19.1mm) stem 1E94473507D  
 1 inch (25.4mm) stem 1H98233507D  
 1-1/4 inch (31.8mm) stem 1H99843507D

**9 Upper Wiper, Felt**  
 3/8 inch (9.5mm) stem 1J87260633D  
 1/2 inch (12.7mm) stem 1J87270633D  
 3/4 inch (19.1mm) stem 1J87280633D  
 1 inch (25.4mm) stem 1J87290633D  
 1-1/4 inch (31.8mm) stem 1J87300633D

**10 Packing Flange, Steel**  
 3/8 inch (9.5mm) stem 1E94372410D  
 1/2 inch (12.7mm) stem 1E94422307D  
 3/4 inch (19.1mm) stem 1E94482307D  
 1 inch (25.4mm) stem 0V00242505D  
 1-1/4 inch (31.8mm) stem 0W08562505D

**11 Packing Flange, Stud Steel (2 Req'd)**  
 3/8 inch (9.5mm) stem 1E94413103D  
 1/2 inch (12.7mm) stem 1E94443103D  
 3/4 inch (19.1mm) stem 1E94493103D  
 1 inch (25.4mm) stem 0V00253103D  
 1-1/4 inch (31.8mm) stem 0W08693103D

**12 Packing Flange, Nut Steel (2 Req'd)**  
 3/8 inch (9.5mm) stem 1E94402411D  
 1/2 inch (12.7mm) stem 1E94452411D  
 3/4 inch (19.1mm) stem 1E94462411D  
 1 inch (25.4mm) stem 1A34332411D  
 1-1/4 inch (31.8mm) stem 1A36812411D

**13 Packing Box Ring, 316**  
 3/8 inch (9.5mm) stem 1J87313507D  
 1/2 inch (12.7mm) stem 1J87323507D  
 3/4 inch (19.1mm) stem 1J87333507D  
 1 inch (25.4mm) stem 1J87343507D  
 1-1/4 inch (31.8mm) stem 1J87353507D

**14 Lower Wiper**  
 3/8 inch (9.5mm) stem 1J87210699D  
 1/2 inch (12.7mm) stem 1J87220699D  
 3/4 inch (19.1mm) stem 1J87230699D

1 inch (25.4mm) stem 1J87240699D  
 1-1/4 inch (31.8mm) stem 1J87250699D

**15 Body**, if you need a body as a replacement part, order by valve size and stem diameter, serial number and desired material.

**16 Valve Plug** Refer to Table 5

**17 Valve Stem** Refer to Table 5

**18 Cage** Refer to Table 7

**19 Valve Plug/Stem Assembly** Refer to Table 5

**20 Pin, 316 SST**  
 3/8 inch (9.5mm) stem 1V32263507D  
 1/2 inch (12.7mm) stem 1V32273507D  
 3/4 inch (19.1mm) stem 1V32603507D  
 1 inch (25.4mm) stem 1V33403507D  
 1-1/4 inch (31.8mm) stem 1V33403507D

**21 Seat Ring 416 SST**  
 1 inch, 2 x 1 inch 1U22254617D  
 1-1/2 inch 1U22204617D  
 1-1/2 x 1 inch 1U22194617D  
 2 inch or 3 x 2 inch 1U22264617D  
 3 inch 1U22284617D  
 4 inch 1U22294617D  
 6 inch 1U50804617D  
 6 x 4 inch 2V37194617D  
 8 inch 20A3260X01D

**316 SST**  
 1 inch, 2 x 1 inch 1U22253507D  
 1-1/2 inch 1U22203507D  
 1-1/2 x 1 inch 1U22193507D  
 2 inch or 3 x 2 inch 1U22263507D  
 3 inch 1U22283507D  
 4 inch 1U22293309D  
 6 inch 1U50803309D  
 6 x 4 inch 2V27193507D  
 8 inch 20A3260X02D

**Alloy 6 (cast)**  
 1 inch, 2 x 1 inch 1U22253910D  
 1-1/2 inch 1U22203910D  
 1-1/2 x 1 inch 1U22193910D  
 2 inch or 3 x 2 inch 1U22263910D  
 3 inch 1U22283910D  
 4 inch 1U22293910D  
 6 inch 1U50803910D  
 6 x 4 inch 2V37204605D  
 8 inch 20A3260X15D





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**Parts**

**Key Description Part Number**

**22 Bonnet Gasket**

1 inch	1R2859X004D
1-1/2 inch, 1-1/2 x 1 inch	1R3101X003D
2 inch, 2 x 1 inch	1R3299X004D
3 inch, 3 x 2 inch	1R3484X004D
4 inch	1R3724X004D
6 inch, 6 x 4 inch	1U5081X005D
8 inch	20A3265X11D

**23 Cage Gasket**

1-1/2 x 1 inch, 2 x 1 inch	1R2861X004D
3 x 2 inch	1R3298X003D

**24 Spiral Wound Gasket**

1 inch	1R2860X006D
1-1/2 inch	1R30999928D
1-1/2 x 1 inch	1R28609944D
2 inch	1R32979928D
2 x 1 inch	1R28609944D
3 inch	1R34829928D
4 inch	1R37229928D
6 x 4 inch	1U50859944D
6 inch	1U50859928D

**25 Metal Shim**

1 inch, 1-1/2x1 inch, 2x1 inch	16A1936X01D
1-1/2 inch	16A1937X01D
2 inch, 3 x 2 inch	16A1938X01D
3 inch	16A1940X01D
4 inch	16A1941X01D
6 inch, 6 x 4 inch	16A1942X01D

**26 Seat Ring Gasket**

1 inch, 2 x 1 inch	1R2862X011D/1R2862X006D
1-1/2 inch, 1-1/2 x 1 inch	1R3098X005D
2 inch, 3 x 2 inch	1R3296X004D
3 inch	1R3481X006D
4 inch	1J5047X006D
6 inch, 6 x 4 inch	1U5086X003D
8 inch	10A3266X08D

**27 Body/Bonnet Stud**

1 inch (4 Req'd)	1R2848X057D
1-1/2 inch (8 Req'd)	1K2429X056D
1-1/2 x 1 inch (8 Req'd)	1P5682X019D
2 inch or 2 x 1 inch (8 Req'd)	1K2429X056D
3 inch or 3 x 2 inch (8 Req'd)	1A3781X045D
4 inch (8 Req'd)	1R3690X042D
6 inch or 6 x 4 inch (12 Req'd)	1A36563101D
8 inch (16 Req'd)	1D94523101D

**28 Body/Bonnet Nut**

1 inch (4 Req'd)	1C3306X071D
1-1/2 inch (8 Req'd)	1A3772X066D
1-1/2 x 1 inch (8 Req'd)	1A3772X066D
2 or 2 x 1 inch (8 Req'd)	1A3772X066D

3 or 3 x 2 inch (8 Req'd)	1A3760X059D
4 inch (8 Req'd)	1A3520X060D
6 inch or 6 x 4 inch (12 Req'd)	1A44092407D
8 inch (16 Req'd)	1A44522402D

**29 Flow Direction Arrow, SST**

1 inch valve	1V10593898D
1-1/2 inch thru 8-inch valve	1V10603898D

**30 Drive Screw (6 Req'd)**

1A36822898D
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**31 Disk Retainer**

1 inch, 2 x 1 inch	1V71003507D
1-1/2 inch	1V71033507D
1-1/2 x 1 inch	1V71213507D
2 inch or 3 x 2 inch	1V71083507D
3 inch	1V71123507D
4 inch	1V71153309D
6 inch	1V71183309D
6 x 4 inch	1V71233507D
8 inch	10A4466X01D

**32 Disk Seat, 316 SST**

1 inch, 2 x 1 inch	1V71023507D
1-1/2 inch	1V71053507D
1-1/2 x 1 inch	1V71223507D
2 inch or 3 x 2 inch	1V71063507D
3 inch	1V71223507D
4 inch	1V71173309D
6 inch	1V71203309D
6 x 4 inch	2V71243507D
8 inch	20A4467X01D

**Alloy 6 (cast)**

1 inch, 2 x 1 inch	1V71023910D
1-1/2 inch	1V71053910D
1-1/2 x 1 inch	1V71223910D
2 inch or 3 x 2 inch	1V71063910D
3 inch	1V71143910D
4 inch	1V71173910D
6 inch	1V7120X001D
6 x 4 inch	2V7124X001D
8 inch	20A4467X02D

**33 Disk, PTFE**

1 inch, 2 x 1 inch	1V71010624D
1-1/2 inch	1V71040624D
1-1/2 x 1 inch	1V71010624D
2 inch or 3 x 2 inch	1V71070624D
3 inch	1V71130624D
4 inch	1V71160624D
6 inch	1V71190624D
6 x 4 inch	1V71160624D
8 inch	20A4468X01D



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**Parts**

**Key Description Part Number**

**34 Seal Ring**  
**Carbon Filled PTFE**

1 inch, 1-1/2x1 inch or 2x1 inch	1V65910509D
1-1/2 inch	1V65930509D
2 inch or 3 x 2 inch	1V55080509D
3 inch	1V65970509D
4 inch or 6 x 4 inch	1V65990509D
6 inch	1V66010509D

**Seal Ring**

**Spring Loaded PTFE**

1 inch, 1-1/2x1 inch or 2x1 inch	10A4207X01D
1-1/2 inch	10A4216X01D
2 inch or 3 x 2 inch	10A4206X01D
3 inch	10A5351X01D
4 inch or 6 x 4 inch	10A4223X01D
6 inch	10A2643X01D
8 inch	10A3261X01D

**35 Backup Ring**  
**2-Piece Seal Ring Construction**  
**Nitrile**

1 inch, 1-1/2x1 inch or 2x1 inch	1V65900305D
1-1/2 inch	1V65920305D
2 inch or 3 x 2 inch	1V55070305D
3 inch	1V65960305D
4 inch or 6 x 4 inch	1V65980305D
6 inch	1V66000305D

**Fluroelastomer**

1 inch, 1-1/2x1 inch or 2x1 inch	1V65900529D
1-1/2 inch	1V65920529D
2 inch or 3 x 2 inch	1V55070529D
3 inch	1V65960529D
4 inch or 6 x 4 inch	1V65980529D
6 inch	1V66000529D

**Ethylene Propylene**

1 inch, 1-1/2x1 inch or 2x1 inch	1V6590X004D
1-1/2 inch	1V6592X003D
2 inch or 3 x 2	1V5507X004D
3 inch	1V6596X002D
4 inch or 6 x 4 inch	1V6598X002D
6 inch	1V6600X002D

**Spring-Loaded Seal Ring Construction**

**416 SST**

1 inch, 1-1/2x1 inch or 2x1 inch	10A4209X01D
1-1/2 inch	10A4218X02D
2 inch or 3 x 2 inch	10A5349X01D
3 inch	10A4208X01D
4 inch or 6 x 4 inch	10X4224X01D

**316 SST**

1 inch, 1-1/2x1 inch or 2x1 inch	10A4209X02D
1-1/2 inch	10A4218X01D
2 inch or 3 x 2 inch	10A5349X02D
3 inch	10A4208X02D
4 inch or 6 x 4 inch	10A4224X02D

**36 Load Ring (8 inch valve only)**  
 -101°C(-150°F) to 316°C(600°F) 1U22182449D  
 17-4 PHSST

**37 Load Ring (8 inch valve only)**  
 -254°C(-425°F) to 593°C(1100°F) 20A3267X02D  
 Inconel 718  
 -240°C(-400°F) to 260°C(500°F) 20A3268X01D  
 Corrosive Service, K-Monel

**38 Cage Adapter**

1-1/2 x 1 inch	1U22182449D
2 x 1 inch	1U12072449D
3 x 2 inch	1U12462201D

**39 Seat Ring Adapter**

2 x 1 inch	1U22622449D
3 x 2 inch	1U23462201D

**40 Adapter Gasket**

1-1/2 x 1 inch	1U2152X004D
2 x 1 inch	1R3296X004D
3 x 2 inch	1R3481X005D

**41 Retaining Ring**

1 inch	10A4211X01D
1-1/2 x 1 inch or 2 x 1 inch	10A4220X01D
1-1/2 inch	10A4210X01D
2 inch or 3 x 2 inch	10A4219X01D
3 inch	10A4225X01D
4 inch or 6 x 4 inch	10A5410X01D



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**Keys 2, 3, 4, 5, 6 & 7 Packing Box Parts**

**Table 4**

Description	Key No.	Stem Diameter inch (mm)					
		3/8 (9.5)	1/2 (12.7)	3/4 (19.1)	1 (25.4)	1-1/4 (31.8)	
PTFE V-Ring Packing	Packing Set (PTFE) (Refer to Table 8 for Repair Kits)	2	1R29000101D	1R29020101D	1R29040101D	1R29060101D	1R29080101D
	Spring (SST) (for single only)	5	1F12543701D	1F12533701D	1F12563701D	1D58293701D	1D38743701D
	Lantern Ring (SST) (for double only)	6	1F36413507D	1J96233507D	0N02843507D	0U09973507D	0W08713507D
	Quantity Required	Double	1	2	1	1	1
	Special Washer (SST) (for Single only)	7	1F12523604D	1F12513604D	1F12503604D	1H98223604D	1H99593604D
Graphite Ribbon / Graphite Filament	Graphite Ribbon (Ring)	3	1V3160X002D	1V3802X002D	1V2396X002D	1U6768X002D	1V5666X002D
	Quantity Required	Single	2	2	2	2	2
		Double	3	3	3	3	3
	Graphite Filament (Ring)	4	1F3370X023D	1E3190X022D	1E3190X028D	1D7518X013D	1D7520X016D
	Quantity Required	Single	2	2	3	3	3
		Double	4	4	5	5	5
	Lantern Ring (SST)	6	1F36413507D	1J96233507D	0N02843507D	0U09973507D	0W08713507D
	Quantity Required	Single	2	3	2	2	2
Double		1	2	1	1	1	

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

**Table 5**

Valve Size, inches	Stem Diameter inch (mm)	416 SST Hardened (STD) 2 Piece Seal (Spring-Loaded Seal)	316 SST 2 Piece Seal (Spring-Loaded Seal)	316 with Stellite on Seat	316 with Stellite on Seat & Guide 2 Piece Seal (Spring-Loaded Seal)
1	3/8 (9.5)	1V6571X003D (20A4103X05D)	1V6571X005D	11A5315X03D	11A5317X04D
	1/2 (12.7)	1V6572X002D	1V6572X006D	11A5316X02D	11A5318X04D
1, 1-1/2 x 1	3/8 (9.5)	1V6571X004D (20A4103X04D)	1V6573X005D (20A6711X04D)	11A5321X02D	10A4438X02D (22A5941X02D)
	1/2 (12.7)	1V6572X004D	1V6574X003D	—	10A4611X04D
1-1/2	3/8 (9.5)	1V6573X004D (20A6711X03D)	1V6571X009D	—	11A5317X07D
	1/2 (12.7)	1V6574X001D (20A4150X06D)	—	—	11A5318X03D
2 or 3 x 2	1/2 (12.7)	1V6575X005D (20A4097X06D)	1V6575X006D (20A4097X18D)	11A5324X02D	11A5326X02D (20A4099X10D)
	3/4 (19.1)	1V6576X001D (20A5414X06D)	—	—	11A5327X03D
2 x 1	1/2 (12.7)	1V6572X002D	1V6572X006D	11A5316X02D	11A5318X04D
3	1/2 (12.7)	1V6579X009D (20A5414X06D)	1V6579X011D (20A5414X05D)	11A5336X03D	11A5337X08D (22A3458X02D)
	3/4 (19.1)	(20A5342X08D)	—	—	(20A5344X04D)
4	1/2 (12.7)	1V6581X004D (20A2641X04D)	1V6581X005D (20A2641X16D)	11A5341X03D	11A5344X02D
	3/4 (19.1)	1V6582X002D (20A4194X05D)	1V6582X007D	—	11A5345X04D
6	3/4 (19.1)	1V6584X004D (20A2642X05D)	1V6584X006D (20A2642X06D)	11A5350X03D	21A5351X06D (21A8443X03D)
6 x 4	3/4 (19.1)	1V6582X001D (24A9731X03D)	1V6582X005D	11A5350X03D	11A5345X07D
8	3/4 (19.1)	(21A5356X05D)	(21A5356X05D)	—	(21A536X06D)



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**Table 6**

**Key 16, Valve Plug for Two-Piece Seal Ring & Spring-Loaded Seal Ring**

Valve Size, inches	Stem Diameter inch (mm)	416 SST Hardened (STD) 2 Piece Seal (Spring-Loaded Seal)	316 SST 2 Piece Seal (Spring-Loaded Seal)	316 with Stellite on Seat	316 with Stellite on Seat & Guide 2 Piece Seal (Spring-Loaded Seal)
1, 1-1/2 x 1	3/8 (9.5)	1V65714617D (20A4103X01D)	1V65713507D (20A4103X02D)	11A5315X01D	11A5317X01D (20A4104X01D)
	1/2 (12.7)	1V65724617D	1V65723507D	11A5316X01D	11A5318X01D
1-1/2	3/8 (9.5)	1V65734617D (20A6711X01D)	1V65733507D (20A6711X02D)	11A5321X01D	10A4438X01D (22A5941X01D)
	1/2 (12.7)	1V65744617D (20A4150X01D)	1V65743507D (20A4150X02D)	10A4439X01D	10A4611X01D (20A4151X01D)
2 or 3 x 2	1/2 (12.7)	1V65754617D (20A4097X01D)	1V65753507D (20A4097X02D)	11A5324X01D	11A5326X01D (20A4099X01D)
	3/4 (19.1)	1V65764617D (20A4098X01D)	1V65763507D (20A4098X02D)	11A5325X01D	11A5327X01D (20A4100X01D)
2 x 1	1/2 (12.7)	1V65724617D	1V65723507D	11A5316X01D	11A5318X01D
3	1/2 (12.7)	1V65794617D (20A5414X01D)	1V65793507D (20A5414X02D)	11A5336X01D	11A5337X01D (22A3458X01D)
	3/4 (19.1)	1V65804617D (20A5342X01D)	1V65803507D (20A5342X02D)	11A5014X01D	11A5338X01D (20A5344X01D)
4	1/2 (12.7)	1V65814617D (20A2641X01D)	1V65813507D (20A2641X02D)	11A5341X01D	11A5344X01D (21A0187X01D)
	3/4 (19.1)	1V6582X002D (20A4194X01D)	1V6582X007D (20A4194X02D)	—	11A5345X04D (20A4197X01D)
	1 (25.4)	1V65834617D (20A4195X01D)	1V65833507D (20A4195X03D)	11A5343X01D	11A5346X01D (20A4198X01D)
6	3/4 (19.1)	1V65844617D (20A2642X01D)	1V65843507D (20A2642X02D)	11A5350X01D	11A5351X01D (21A8443X01D)
	3/4 (19.1)	1V65854617D (20A5621X01D)	1V65853507D (20A5621X02D)	10A5107X01D	20A0103X01D (20A6706X01D)
	1-1/4 (31.8)	1V65864617D	1V65863507D	10A5108X01D	20A4608X01D
6 x 4	3/4 (19.1)	1V65824617D (24A9731X01D)	1V65823507D (24A9731X02D)	11A5342X01D	11A5345X01D (25A1579X01D)
8	3/4 (19.1)	(21A5356X01D)	(21A5356X02D)	—	(21A5362X01D)
	1 (25.4)	(21A5357X01D)	(21A5357X02D)	—	(21A5363X01D)
	1-1/4 (31.8)	(21A5358X01D)	(21A5358X02D)	—	(21A5364X01D)

**Table 7**

**Key 18 Cage**

Valve Size, inches	17-4 PH SST		
	Quick Opening Cage	Linear Cage	Equal Percentage Cage
1, 1-1/2 x 1 or 2 x 1	2U21503327D	2U21563327D	2U21533327D
1-1/2	2U21923327D	2U21983327D	2U21953327D
2 or 3 x 2	2U22343327D	2U22403327D	2U22373327D
3	2U23183327D	2U23243327D	2U23213327D
4	2U23603327D	2U23663327D	2U23633327D
6	2U50633327D	2U50613327D	2U50593327D
6 x 4	2V37223327D	2V37183327D	2V37233327D
8	20A3249X01D	20A4349X01D	20A3245X01D



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**Key 18 Cage (continued)**

**Table 8**

Valve Size, inches	17-4 DH1150		
	Quick Opening Cage	Linear Cage	Equal Percentage Cage
1, 1-1/2 x 1 or 2 x 1	2U21501150D	2U21561150D	2U21531150D
1-1/2	2U21921150D	2U21981150D	2U21951150D
2 or 3 x 2	2U22341150D	2U22401150D	2U22371150D
3	2U23181150D	2U23241150D	2U23211150D
4	2U23601150D	2U23661150D	2U23631150D
6	2U50631150D	2U50611150D	2U50591150D
6 x 4	2V37221150D	2V37181150D	2V37231150D
8	20A3249X05D	20A4349X05D	20A3245X05D

Valve Size, inches	316 SST (Chrome Coated)		
	Quick Opening Cage	Linear Cage	Equal Percentage Cage
1, 1-1/2 x 1 or 2 x 1	2U69114610D	2U69174610D	2U69134610D
1-1/2	2U69184610D	2U69204610D	2U69194610D
2 or 3 x 2	2U69214610D	2U69234610D	2U69224610D
3	2U69274610D	2U69294610D	2U69284610D
4	2U69304610D	2U69334610D	2U69314610D
6	2U69354610D	2U69384610D	2U69374610D
6 x 4	2V37174610D	2V37154610D	2V37164610D
8	20A4350X01D	—	20A4348X01D

Valve Size, inches	316 SST (ENC)		
	Quick Opening Cage	Linear Cage	Equal Percentage Cage
1, 1-1/2 x 1 or 2 x 1	2U74034893D	2U74144893D	2U74084893D
1-1/2	2U72544893D	2U74154893D	2U74094893D
2 or 3 x 2	2U74044893D	2U74164893D	2U74104893D
3	2U74064893D	2U74184893D	2U74124893D
4	2U74074893D	2U74194893D	2U74134893D
6	2U80694893D	2U80684893D	2U80674893D
6 x 4	2V37144893D	2V37124893D	2V37134893D
8	20A5469X01D	20A5468X01D	20A5467X01D

**Gasket Descriptions**

**Table 9**

Description	Key Number	Material	
		-198° to 593°C (-325° to 1100°F)	-73° to 232°C (-100° to 450°F)
Bonnet Gasket	22		
Cage Gasket	23		
Seat Ring Gasket	26	Graphite / 316 SST	Graphite / 316 SST
Adapter Gasket	40		
Spiral-Wound Gasket	24	Inconel 600 / Graphite	316L SST / Composition
Shim	25	316 SST	316 SST



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**Table 10**

**Key 17 Valve Stem, 316 SST**

Valve Size inches	Stem Diameter inches (mm)	Stem Length inches (mm)	Part Number
1, 1-1/2	3/8 (9.5)	8-7/8 (225)	1U38883516D
	1/2 (12.7)	11-13/16 (300)	1U38903516D
2	1/2 (12.7)	12-1/4 (311)	1K58693516D
	3/4 (19.1)	14-5/8 (372)	1U22653516D
3	1/2 (12.7)	12-5/8 (321)	1U23053516D
	3/4 (19.1)	15 (381)	1U23083516D
4	1/2 (12.7)	12-5/8 (321)	1U23053516D
	3/4 (19.1)	15-1/2 (394)	1K58773516D
	1 (25.4)	18-1/4 (464)	1K75903516D
6	3/4 (19.1)	15-7/8 (403)	1L99643516D
	1 (25.4)	19-5/8 (499)	1N70473516D
	1-1/4 (31.8)	20 (508)	1K41543516D
8	3/4 (19.1)	19-3/8 (492)	1K58803516D
	1 (25.4)	24-3/16 (614)	1K7891X001D
	1-1/4 (31.8)	27-7/16 (705)	1L26883516D
1-1/2 x 1	3/8 (9.5)	9-3/8 (241)	1U22363516D
	1/2 (12.7)	12-1/4 (311)	1K58693516D
2 x 1	1/2 (12.7)	11-13/16 (300)	1U38903516D
3 x 2	1/2 (12.7)	12-1/4 (311)	1K58693516D
	3/4 (19.1)	14-5/8 (372)	1U22653516D
6 x 4	3/4 (19.1)	15-7/8 (403)	1L99643516D



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**Table 11**

**Gasket Kits**

Description	Part Number
1 inch	RGASKETX31D
1-1/2 inch	RGASKETX32D
2 inch	RGASKETX33D
3 inch	RGASKETX35D
4 inch	RGASKETX36D
6 inch	RGASKETX37D
8 inch	RGASKETX08D
2 x 1 inch	RGASKETX25D
3 x 2 inch	RGASKETX27D

**Table 12**

**Packing Repair Kits**

Stem Diameter [Yoke Boss Diameter] inches (mm)	Single		Double		
	PTFE	Graphite	PTFE	Graphite	PTFE/Composition
3/8 (9.5) [2-1/8 (54)]	RPACKX0001D	RPACKX0010D	RPACKX0004D	RPACKX0016D	RPACKX0007D
1/2 (12.7) [2-13/16 (71)]	RPACKX0002D	RPACKX0011D	RPACKX0005D	RPACKX0017D	RPACKX0008D
3/4 (19.1) [3-9/16 (90)]	RPACKX0003D	RPACKX0012D	RPACKX0006D	RPACKX0018D	RPACKX0009D

***Our Commitment of Quality***

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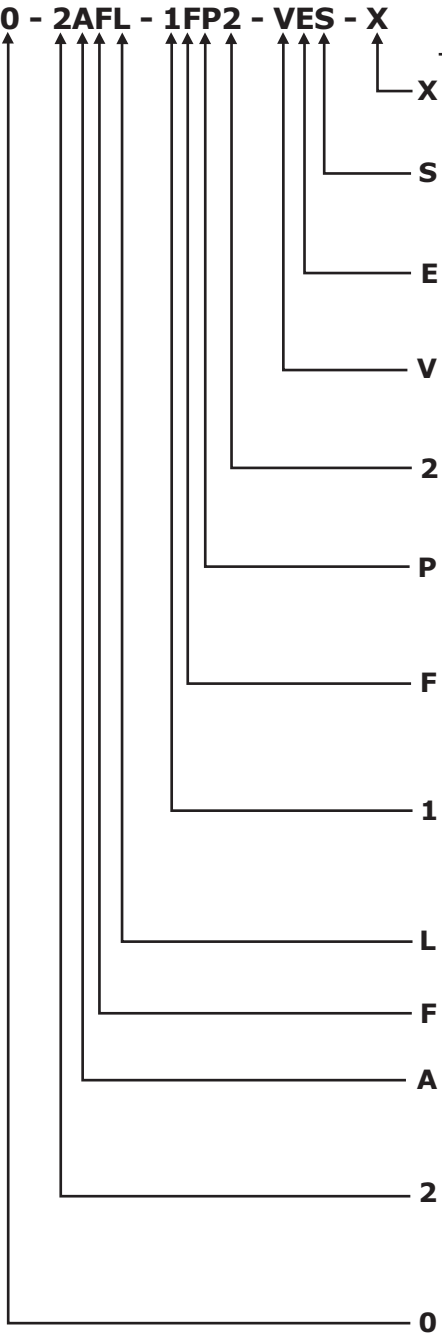
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Sample Part Number

**360 - 2AFL - 1FP2 - VES - X**



Code	Description
<b>X</b>	Special
<b>Bonnet Style</b>	
<b>S</b>	Standard
<b>C</b>	Cryogenic
<b>E</b>	Extension
<b>X</b>	Special
<b>Characteristic</b>	
<b>E</b>	Equal Percentage
<b>Q</b>	Quick Open
<b>L</b>	Linear
<b>N</b>	Noise 1
<b>Back-up Ring (360 only)</b>	
<b>V</b>	Viton
<b>E</b>	Ethylene Propylene
<b>N</b>	Nitrile
<b>X</b>	Special
<b>Yoke Boss Size</b>	
<b>1</b>	2-1/8"
<b>3</b>	3-9/16"
<b>2</b>	2-13/16"
<b>5</b>	5"
<b>Packing Style</b>	
<b>P</b>	Spring Loaded PTFE V-ring
<b>G</b>	Graphite High Temp
<b>T</b>	Live Loaded (PTFE)
<b>D</b>	Double PTFE V-ring
<b>L</b>	Live Loaded (Graphite)
<b>Port Size</b>	
<b>F</b>	Full
<b>R</b>	Reduced
<b>Trim Number</b>	
<b>1</b>	D1
<b>2</b>	D2
<b>3</b>	D3
<b>4</b>	D4
<b>5</b>	D5
<b>6</b>	D6
<b>7</b>	D7
<b>8</b>	D8
<b>9</b>	D9
<b>Body Material</b>	
<b>L</b>	LCC
<b>W</b>	WCC
<b>M</b>	CF8M
<b>Connection Style</b>	
<b>F</b>	RF
<b>J</b>	RTJ
<b>N</b>	NPT
<b>ASME Rating</b>	
<b>A</b>	150
<b>B</b>	300
<b>C</b>	600
<b>Valve Size</b>	
<b>1</b>	1 inch
<b>2</b>	2 inch
<b>4</b>	4 inch
<b>8</b>	8 inch
<b>5</b>	1-1/2 inch
<b>3</b>	3 inch
<b>6</b>	6 inch
<b>Valve Model</b>	
<b>0</b>	Style 360
<b>1</b>	Style 361
<b>2</b>	Style 362