Instruction Manual D103234X012 167D Series

June 2011

P1185

# 167D Series Switching Valves



TYPE 167D TWO-WAY SWITCHING VALVE

TYPE 167DA THREE-WAY SWITCHING VALVE

Figure 1. 167D Series Switching Valves

P1184



Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion, fire and/or chemical contamination causing property damage and personal injury or death.

Fisher™ switching valves must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson Process Management Regulator Technologies, Inc. instructions.

If the switching valve vents gas or a leak develops in the system, service to the unit may be required. Failure to correct trouble could result in a hazardous condition.

Installation, operation and maintenance procedures performed by unqualified personnel may result in improper adjustment and unsafe operation. Either condition may result in equipment damage or personal injury. Use qualified personnel when installing, operating and maintaining the 167D Series switching valves.

### Introduction

### Scope of the Manual

This manual provides instructions for the installation, maintenance and parts ordering for the 167D Series Switching Valves. Instructions and parts lists for other equipment mentioned in this instruction manual, as well as for other switching valves are found in separate manuals.



### **Specifications**

Some general 167D Series switching valve ratings and other specifications are given on this page. A label on the spring case gives the control spring range for a given valve as it comes from the factory.

### **Available Configurations**

Types 167D and 167DS: Two-way switching valve Types 167DA and 167DAS: Three-way switching valves

### **Body Size, Inlet and Outlet Connection Style**

Ports A and C: 1/4 or 1/2 NPT

**Vent and Control Pressure Connections** 

(Port D) and Port B: 1/4 NPT

### Maximum Operating Inlet Pressure(1)

Types 167D and 167DS: 400 psig / 27.6 bar Types 167DA and 167DAS: 125 psig / 8.6 bar Types 167DA and 167DAS (NACE):

100 psig / 6.9 bar

#### **Set Pressure Ranges**

See Tables 1 and 2

### Maximum Diaphragm Pressure<sup>(1)</sup>

150 psi / 10.3 bar over outlet pressure setting up to a maximum of 250 psi / 17.2 bar

### Flow and Sizing Coefficients

See Table 3

### **Spring Case Vent Location**

Aligned with inlet (standard), other positions optional

### Temperature Capabilities(1)

#### Nitrile (NBR)

Standard Service (Types 167D and 167DA only): -20 to 180°F / -29 to 82°C Low Temperature Service (Types 167D and 167DA only) and Standard Service (Types 167DS and 167DAS only): -40 to 180°F / -40 to 82°C

### Fluorocarbon (FKM)

High Temperature Service: 0 to 300°F / -18 to 149°C

### **Approximate Weights**

Types 167D and 167DA: 1.2 pounds / 0.5 kg Types 167DS and 167DAS: 2.8 pounds / 1 kg

### **Options**

### Types 167D and 167DA

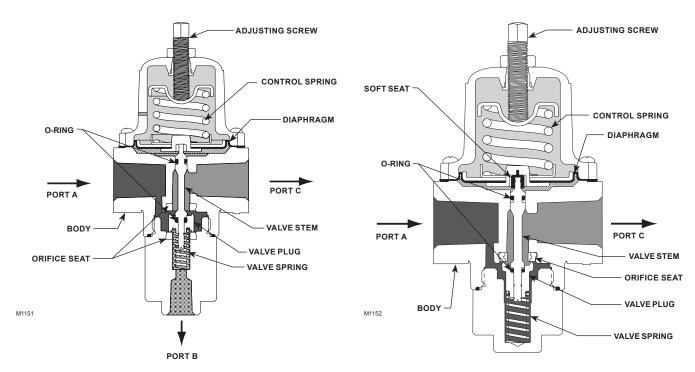
- · Handwheel adjusting screw
- Fluorocarbon (FKM) diaphragm, soft seat, seat and O-rings
- Stainless steel valve stem and plug. Includes stainless steel seat
- 1-hole panel mount with handwheel adjusting screw and 1/4 NPT tap spring case
- 3-hole panel mount bonnet with handwheel adjusting screw and 1/4 NPT spring case
- 1/4 NPT tapped vent spring case
- 1/4 NPT tapped vent and closing cap
- Adjusting screw with locknut and a lock wire to one flange bolt (For Type 167D only)
- Panel mounting bracket. Includes 1/4 NPT spring case, standard adjusting screw, nut and bracket
- Yoke mounting bracket. Includes 1/4 NPT spring case, standard adjusting screw, nut, fasteners and bracket
- Size 30-70 casing mounting bracket. Includes 1/4 NPT spring case, standard adjusting screw, nut, fasteners and bracket
- NACE MR0175 or NACE MR0103 construction<sup>(2)</sup>

### Types 167DS and 167DAS

- · Handwheel adjusting screw
- Fluorocarbon (FKM) diaphragm, soft seat, seat and O-rings
- 1-hole panel mount with handwheel adjusting screw and 1/4 NPT tap spring case
- Panel mounting bracket. Includes 1/4 NPT spring case, standard adjusting screw, nut and bracket
- Yoke mounting bracket. Includes 1/4 NPT spring case, standard adjusting screw, nut, fasteners and bracket
- Size 30-70 casing mounting bracket. Includes nut, fasteners and bracket

<sup>1.</sup> The pressure/temperature limits in this Instruction Manual and any applicable standard or code limitation should not be exceeded.

<sup>2.</sup> Product complies with the material requirements of NACE MR0175 or MR0103. Environmental limits may apply.



TYPE 167DA THREE-WAY SWITCHING VALVE

**TYPE 167D TWO-WAY SWITCHING VALVE** 

INLET PRESSURE
OUTLET PRESSURE (WHEN LOADING PRESSURE IS LESS THAN SETPOINT)
OUTLET PRESSURE (WHEN LOADING PRESSURE IS EQUAL TO OR GREATER THAN SETPOINT)
ATMOSPHERIC PRESSURE
LOADING PRESSURE

Figure 2. 167D Series Operational Schematics (Port D not shown)

MAXIMUM SET PRESSURE RANGE **CONTROL SPRING DATA PRESSURE CHANGE ON TO** SHIFT FROM Port A or C **TYPE** ORT B CLOSED Port B as Inlet Wire Diameter Free Length as Inlet Color Code Material Part Number TO PORT C CLOSED psi d psig bar psig bar In. mm In. mm bar d 14 to 20 0.97 to 1.4 7 to 20 0.48 to 1.4 White stripe Zinc-plated GE40282X012 0.145 3.68 10 0.69 16 to 35 1.1 to 2.4 10 to 30 0.69 to 2.1 Purple stripe Music Wire GE40283X012 0.156 3.96 13 0.90 167DA 1.425 36.2 25 to 60 1.7 to 4.1 25 to 50 1.7 to 3.4 Brown stripe Chrome GE40284X012 0.172 4.37 17 1.2

Pink stripe

White

Purple

Brown

 Table 1. Three-Way Switching Valves Set Pressure Ranges and Control Spring Data

Table 2. Two-Way Switching Valves Set Pressure Ranges and Control Spring Data

Silicon

Inconel®

X-750

GE40345X012

GE40320X012

GE40321X012

GE40322X012

GE40323X012

0.207

0.148

0.162

0.177

0.218

5.26

3.76

4.12

4.50

1.750

44.4

35

8

12

16

2.4

0.55

0.83

1.1

	SET PRESSURE RANGE		CONTROL SPRING DATA							
TYPE	Port A as Inlet		Color Code	Material	Part Number	Wire Diameter		Free Length		
	psig	bar	Color Code	Material	i ait itallibei	In.	mm	In.	mm	
167D	3 to 15 5 to 20 5 to 35	0.21 to 1.0 0.34 to 1.4 0.34 to 2.4	Yellow stripe White stripe Purple stripe	Zinc-plated Music Wire	GG00421X012 GE40282X012 GE40283X012	0.142 0.145 0.156	3.61 3.68 3.96	1.425	36.2	
	25 to 60 40 to 125	1.7 to 4.1 2.8 to 8.6	Brown stripe Pink stripe	Chrome Silicon	GE40284X012 GE40345X012	0.172 0.207	4.37 5.26			
167DS	5 to 20 5 to 35 25 to 60 40 to 125 50 to 150	0.34 to 1.4 0.34 to 2.4 1.7 to 4.1 2.8 to 8.6 3.4 to 10.3	White Purple Brown Pink Gold	Inconel® X-750	GE40320X012 GE40321X012 GE40322X012 GE40323X012 GE40324X012	0.148 0.162 0.177 0.218 0.234	3.76 4.12 4.50 5.54 5.94	1.750	44.4	

Inconel® is a mark owned by Special Metals Corporation.

40 to 125

14 to 20

16 to 35

25 to 60

40 to 125

167DAS

2.8 to 8.6

0.97 to 1.4

1.1 to 2.4

1.7 to 4.1

2.8 to 8.6

40 to 90

7 to 20

10 to 30

25 to 50

40 to 90

2.8 to 6.2

0.48 to 1.4

0.69 to 2.1

1.7 to 3.4

2.8 to 6.2

### **Product Description**

The 167D Series switching valves are pneumatically operated and controlled units, built with a wide range of capabilities to handle those switching applications that involve venting, on-off control and failure modes.

- The Types 167D and 167DS are two-way switching valves.
- The Types 167DA and 167DAS are three-way switching valves.

### **Principle of Operation**

Refer to Figure 2 and also refer to Figures 3 through 5 for port D location. Control pressure enters the switching valve through port D (not shown in Figure 2) and registers under the diaphragm. Control pressure overcomes the spring force and the diaphragm and raise the valve plug, closing port C and opening port B of the Type 167DA three-way switching valve. In this condition, the Type 167D construction is turned off and the Type 167DA construction provides flow from path A to B. If, either intentionally or through pneumatic failure, the control pressure drops below the spring force, the diaphragm and valve plug move downward, opening port C and closing port B of the Type 167DA three-way switching valve. In this condition both constructions provide a flow path from port A to port C. The pressure change necessary to switch the valve depends on the spring used and the setting of the adjusting screw on the switching valve.

### **Overpressure Protection**

The 167D Series switching valves have maximum outlet pressure ratings that are lower than their maximum inlet pressure ratings. A pressure-relieving or pressure-limiting device is needed if inlet pressure can exceed the maximum outlet pressure rating. Overpressuring any portion of a switching valve or associated equipment may cause leakage, parts damage or personal injury due to bursting of

pressure-containing parts or explosion of accumulated gas. Switching valve operation within ratings does not preclude the possibility of damage from external sources or from debris in the pipeline. A switching valve should be inspected for damage periodically and after any overpressure condition.

### Installation

#### Note

If the switching valve is shipped mounted on another unit, install that unit according to the appropriate Instruction Manual.

### **WARNING**

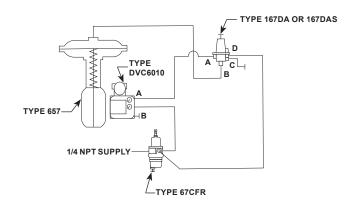
Personal injury, property damage, equipment damage or leakage due to escaping gas or bursting of pressurecontaining parts may result if this switching valve is overpressured or is installed where service conditions could exceed the limits given in the Specifications section or where conditions exceed any ratings of the adjacent piping or piping connections. To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation or standard) to prevent service conditions from exceeding those limits.

Before installing a Type 167D, 167DA, 167DS or 167DAS switching valve, be sure the installation complies with the following installation guidelines:

 Switching valve operation within ratings does not preclude the possibility of damage from debris in the lines or from external sources. Switching valves should be inspected for damage periodically and after any overpressure condition.

Table 3. Flow and Sizing Coefficients

TYPES	BODY SIZE	PORT	WIDE-OPEN FLOW COEFFICIENT C,		C,	IEC SIZING COEFFICIENT
			C <sub>g</sub>	C <sub>v</sub>	'	X <sub>t</sub>
167D, 167DS	1/4 NPT	С	41.46	1.09	37.56	0.89
1070, 10703	1/2 NPT		46.50	1.18	39.03	0.96
	All sizes	В	27.79	0.96	28.74	0.52
167DA, 167DAS	1/4 NPT	С	49.35	1.60	30.58	0.59
	1/2 NPT		58.86	1.81	32.22	0.66

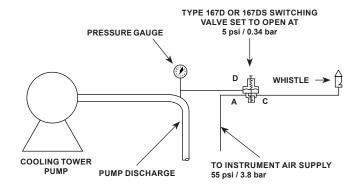


10C0622

Figure 3. Typical 167DA or 167DAS Installation

(Lockup system using Type 167DA or 167DAS to close air circuit to diaphragm of main valve in case of plant air failure.

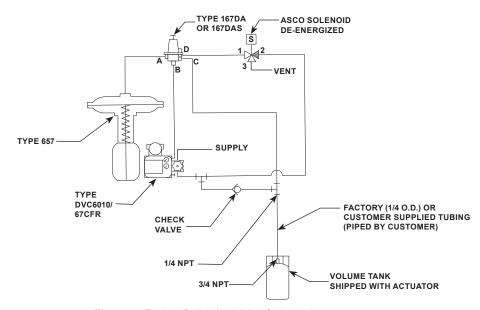
Main valve will remain in position it occupied at time of supply pressure failure.)



AF8400

Figure 4. Typical 167D or 167DS Installation

(Warning system using Type 167D or 167DS two-way valve to activate a whistle when pump discharge pressure falls.)



GE37992

Figure 5. Typical Switching Valve Schematic

### 167D Series

- Only personnel qualified through training and experience should install, operate and maintain a switching valve. Make sure that there is no damage to or foreign material in the switching valve. Also ensure that all tubing and piping is free of debris.
- 3. Install the switching valve to achieve the desired switching results. Connect the control pressure line to either D port. Verify that the other D port is plugged. The port labeled "IN" or port A is the common inlet connection and ports B and C are the outlet connections. Flow is either from A to B or A to C.
- 4. A clogged spring case vent hole may cause the switching valve to function improperly. To keep this vent hole from being plugged (and to keep the spring case from collecting moisture, corrosive chemicals or other foreign material) orient the vent to the lowest possible point on the spring case or otherwise protect it.
  - Inspect the vent hole regularly to make sure it is not plugged. Spring case vent hole orientation may be changed by rotating the spring case with respect to the body. A 1/4 NPT spring case vent may be remotely vented by installing obstruction-free tubing or piping into the vent. Protect the remote vent by installing a screened vent cap on the remote end of the vent pipe.
- 5. For use in switching valve shutdown, install upstream block and vent valves and downstream block and vent valves (if required), or provide some other suitable means of properly venting the switching valves inlet and outlet pressures. Install a pressure gauge to monitor instruments on startup.
- Apply a good grade of pipe compound to the external pipe threads before making connections, making sure not to get the pipe compound inside the switching valves.
- Install tubing fitting or piping into the threaded NPT inlet connection on the body (key 1) and into the threaded NPT outlet connections.
- 8. The 1/4 NPT control pressure ports must be plugged if not in use.

### **Startup and Adjustment**

Key numbers are referenced in Figures 7 through 13.

 With proper installation completed and downstream equipment properly adjusted, slowly open the upstream and downstream shut-off valve (when used) while using pressure gauges to monitor pressure.

## **WARNING**

To avoid personal injury, property damage or equipment damage caused by bursting of pressure containing parts or explosion of accumulated gas, never adjust the control spring to produce an outlet pressure higher than the upper limit of the outlet pressure range for that particular spring. If the desired outlet pressure is not within the range of the control spring, install a spring of the proper range according to the diaphragm parts maintenance procedure.

2. If outlet pressure adjustment is necessary, monitor outlet pressure with a gauge during the adjustment procedure. The switching valve is adjusted by loosening the hexnut (key 19), if used, and turning the adjusting screw or handwheel (key 18) clockwise to increase or counterclockwise to decrease the outlet pressure setting. Retighten the hexnut to maintain the adjustment position.

### **Maintenance**

Switching valve parts are subject to normal wear and must be inspected and replaced as necessary. The frequency of inspection and replacement of parts depend on the severity of service conditions and applicable codes and government regulations.

### Note

If sufficient clearance exists, the body (key 1) may remain mounted on other equipment or in a line or panel during maintenance unless the entire switching valve will be replaced.

# **WARNING**

To avoid personal injury, property damage or equipment damage caused by sudden release of pressure or explosion of accumulated gas, do not attempt any maintenance or disassembly without first isolating the switching valve from system pressure and relieving all internal pressure from the switching valve.

### **Trim Maintenance**

Key numbers are referenced in Figures 7 through 10.

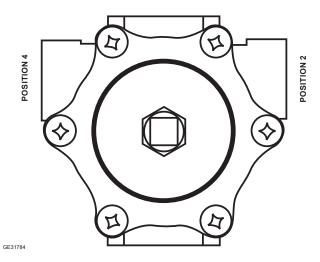
- 1. Unscrew the spring retainer (key 48) and separate the spring retainer and O-ring (key 14) from the body (key 1).
- 2. Inspect the removed parts for damage and debris. Replace any damaged parts. Apply a high quality lubricant to the O-ring (key 50) before reassembling.
- 3. To remove the valve stem (key 11) and valve plug (key 57), grasp the end and pull it straight out of the body (key 1). Inspect the parts for damage and debris. Replace any damaged parts. The valve stem and valve plug may be cleaned or replaced. Types 167D and 167DS: If the soft seat (key 15) was removed, make sure it is properly snapped into place before installing the valve stem. Apply a high quality lubricant to the O-ring (key 50) before reinstalling the valve stem.
- 4. Install valve stem and valve plug by sliding the valve stem through center of the seat (key 58) until the valve plug contacts the seat. Apply lubricant to O-ring (key 14) and thread in spring retainer (key 48). Torque spring retainer to 18 to 22 ft-lbs / 24 to 30 N•m.

### **Diaphragm Maintenance**

Key numbers are referenced in Figures 7, 8, 9, 10 and 12.

- 1. Back out the adjusting screw or handwheel (key 18) until compression is removed from the spring (key 17).
- 2. Remove the flange screws (key 3) to separate the spring case assembly (key 7) from the body (key 1). Remove the upper spring seat (key 20) and the control spring (key 17).
- 3. Remove the diaphragm assembly (key 16), inspect the diaphragm and replace the assembly, if necessary.

#### POSITION 3



POSITION 1 (ALIGNED WITH INLET) (STANDARD)

Figure 6. 167D Series Spring Case Vent Positions

4. Place the diaphragm assembly (key 16) on the body (key 1) as shown in Figures 7 through 10. Push down on the diaphragm assembly to make sure the valve plug (key 57) strokes smoothly and approximately 1/16 in. / 1.6 mm.

### **Note**

In step 5, if installing a control spring of a different range, be sure to delete the spring range originally appearing on the label and indicate the new spring range.

- 5. Stack the control spring (key 17) and upper spring seat (key 20) onto the diaphragm assembly (key 16).
- Install the spring case assembly (key 7) on the body (key 1) with the vent oriented to prevent clogging or entrance of moisture. Install the six flange screws (key 3) using a crisscross pattern and torque to 15 to 30 in-lbs / 1.7 to 3.4 N•m.

### Note

On Types 167DS and 167DAS, lubricate the adjusting screw (key 18) thread to reduce galling of the stainless steel.

 When all maintenance is complete, refer to the Startup and Adjustment section to put the switching valve back into operation and adjust the pressure setting. Tighten the hexnut (key 19) if used, and install the closing cap (key 33) if used.

# 167D Series

### **Parts Ordering**

When corresponding with the local Sales Office about this switching valve, include the type number and all other pertinent information printed on the label. Specify the eleven-character part number when ordering new parts from the following parts list.

Parts List				Fluorocarbon (FKM)	10A3803X112
	. =		15	Soft Seat (Types 167D and 167DS only)	
Key	Description	Part Number		Nitrile (NBR)	T14055T0012
	Times 167D and 167DC Includes Oning		40*	Fluorocarbon (FKM)	T14055T0022
	Types 167D and 167DS - Includes O-ring		16*	Diaphragm Assembly	
	(key 14), seat (key 58), plug assembly (keys 15, 50, 57, 11, 64) and diaphragm assembly (key 16).	,		Type 167D	T44440T0000
	51, 11, 04) and diaprilagin assembly (key 10).			Nitrile(NBR)/Polyester Fluorocarbon(FKM)/Polyester	T14119T0022 T14119T0042
	Type 167D			Type 167DS	11411910042
	Brass/Nitrile (NBR) seat and plug assembly	R167DX00012		Nitrile(NBR)/Polyester	T14119T0062
	Types 167D NACE, 167DS and 167DS NACE			Fluorocarbon(FKM)/Polyester	T14119T0002
	316L Stainless steel/Nitrile (NBR) seat and			Type 167DA	11411910072
		R167DSX0N12		Nitrile(NBR)/Brass	T14119T0112
	Times 167DA and 167DAS, Includes Oring			Nitrile(NBR)/316L Stainless Steel	T14119T0122
	Types 167DA and 167DAS - Includes O-ring (key 14), two seats (key 58), plug assembly			Fluorocarbon(FKM)/316L Stainless Steel	T14119T0132
	(keys 50, 57, 11, 64) and diaphragm			Type 167DAS	11111010102
	assembly (key 16).			Nitrile(NBR)/316L Stainless Steel	T14119T0122
				Fluorocarbon(FKM)/316L Stainless Steel	T14119T0132
	Type 167DA		17		See Tables 1 and 2
	Brass/Nitrile (NBR) seat and plug assembly	R167DAX0022	18	Adjusting Screw	
	Types 167DA NACE, 167DAS, and 167DAS NACE			Types 167D and 167DA	
	316L Stainless steel/Nitrile (NBR) seat and			Zinc-plated steel (For standard spring case)	
	plug assembly	R167DASXN22		Square head (standard)	T14061T0012
1	Pody			Handwheel	T14102T0012
1	Body 1/4 NPT (Ports A and C)			Wire seal (not shown)	T14104T0012
	Type 167D or 167DA, Aluminum	GE35383X012		Zinc-plated steel (For spring case with	
	Type 167DS or 167DAS,	02000007072		1/4 NPT vent)	T44404T0040
	CF3M/CF8M Stainless steel	GE35385X012		Square head for closing cap Handwheel	T14101T0012 T14103T0012
	1/2 NPT (Ports A and C)			Wire seal (not shown)	T1410310012
	Type 167D or 167DA, Aluminum	GE31787X012		316 Stainless Steel	11413010012
	Type 167DS or 167DAS,			(For Spring case with 1/4 NPT vent)	
	CF3M/CF8M Stainless steel	GE31804X012		Square head for closing cap	T14101T0022
3	Flange Screw			Types 167DS and 167DAS	
	Types 167D and 167DA			Square head with or without closing cap,	
	For Standard spring case and spring case with 1/4 NPT vent (6 required), Zinc-plated steel	T12526T0012		316L Stainless steel	T14101T0022
	For Standard Spring Case (6 required),	11332010012		Handwheel, Zinc-plated steel	T14103T0012
	316/316L Stainless steel	T13526T0042	19	Hexnut	
	For wire seal	11002010042		Types 167D and 167DA	
	Flange Screw (5 required), Zinc-plated steel	T13526T0012		Zinc-plated steel	1A946324122
	Flange Screw (1 required), Steel	14B3987X012		316 Stainless steel	1A9463X0042
	Types 167DS and 167DAS (6 required),			Types 167DS and 167DAS	1 4 0 4 6 2 V 0 0 4 2
	316L Stainless steel	T13526T0042	20	316 Stainless steel Upper Spring Seat	1A9463X0042
7	Spring Case Assembly		20	Types 167D and 167DA, Zinc-plated steel	T14051T0012
	Types 167D and 167DA, Aluminum			Types 167DS and 67DAS, 316 Stainless stee	
	Drilled hole vent (standard)	T14070T0012	23	1/4 NPT Pipe Plug	10011201012
	1/4 NPT vent	T14070T0022	23	Socket head, Steel	
	Types 167DS and 167DAS,			(for Types 167D and 167DA only)	1C333528992
	CF8M/CF3M Stainless steel	20C1727X012		Hex head, 316 Stainless steel	1A767535072
11	Valve Stem		30	NACE Tag, 18-8 Stainless Steel (not shown)	19A6034X012
	Types 167D and 167DA,	05055407040	31	Panel Mounting Nut, 303 Stainless steel	10B2657X012
	Brass	GE35519X012	32	Wire Seal (not shown)	
	316L Stainless Steel	GE35519X032		(for Types 167D and 167DA only)	
	Types 167DS and 167DAS 316L Stainless steel	GE35519X032		304 Stainless steel	1U7581000A2
	OTOL Glairiess steel	OL000187002			

Description

Valve Spring

Type 167D or 167DS 302 Stainless steel

Inconel® X-750 (NACE)

Type 167DA or 167DAS

302 Stainless steel Inconel® X-750 (NACE)

O-ring (Spring Retainer) Nitrile (NBR)

Key

12\*

**Part Number** 

GE31783X012

GG00430X012

ERAA00153A0

ERAA00154A0

10A3803X092

Inconel® is a mark owned by Special Metals Corporation.

<sup>\*</sup>Recommended Spare Parts

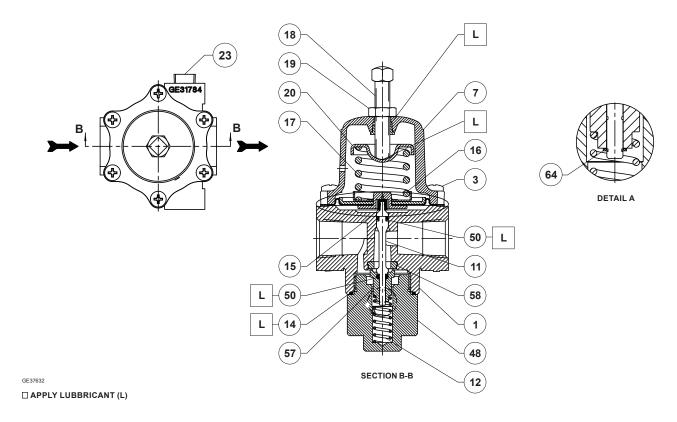


Figure 7. Type 167D Assembly

Key	Description	Part Number	Key	Description	Part Number
33	Closing Cap, Plastic	23B9152X012	58*	Orifice Seat	
45	Screen Vent (for Types 167DS and 167DAS only)			Types 167D and 167DA	0=0.4=00\4000
	18-8 Stainless Steel	0L078343062		303 Stainless steel/Fluorocarbon (FKM)	GE31782X022
48	Spring Retainer			Brass/Nitrile (NBR) 316L Stainless steel/Nitrile (NBR) (NACE)	GE31782X032 GE31782X042
	Type 167D Aluminum	GG03555X012		316L Stainless steel/Nittile (NBR) (NACE)	GL31702X042
	Type 167DS	GG033337012		Fluorocarbon (FKM) (NACE)	GE31782X052
	316L Stainless steel	GE31803X022		Types 167DS and 167DAS	
	Type 167DA			Stainless steel/Fluorocarbon (FKM)	GE31782X022
	Aluminum	GF02286X012		Stainless steel/Nitrile (NBR)	
	Type 167DAS			Standard	GE31782X012
	316L Stainless steel	GF02286X022		(NACE)	GE31782X042
50*	O-ring (Stem and Plug) (2 required)	411000670050	64	Stainless steel/Fluorocarbon (FKM) (NACE) Retaining Ring, Stainless steel	GE31782X052 GG00711X012
	Nitrile (NBR)	1H2926X0052 1H2926X0062	04	Retaining King, Stainless steel	GG00711X012
57	Fluorocarbon (FKM) Valve Plug	10292070002			
31	Type 167D				
	Brass	GE37022X012			
	316L Stainless steel	GE37022X022			
	Type 167DS				
	316L Stainless steel	GE37022X022			
	Type 167DA	0505000\/0.40			
	Brass	GE35229X012			
	316L Stainless steel Type 167DAS	GE35229X022			
	316L Stainless steel	GE35229X022			
	5.52 5.6111000 0.001	0_000/\0			

<sup>\*</sup>Recommended Spare Parts

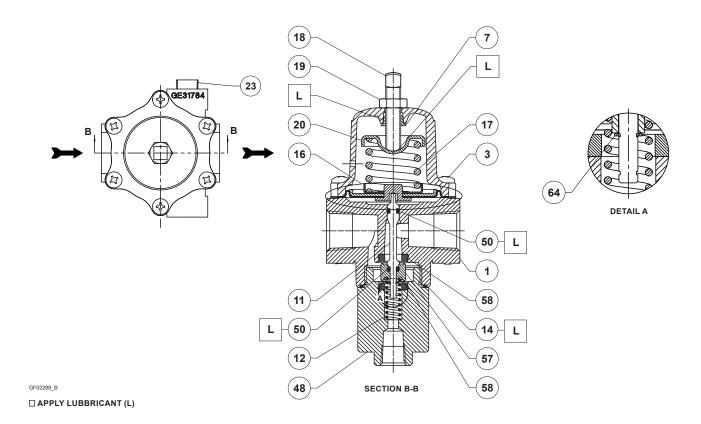


Figure 8. Type 167DA Assembly

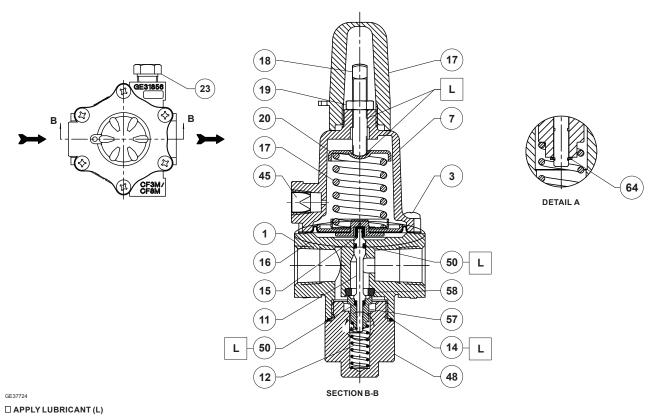


Figure 9. Type 167DS Assembly

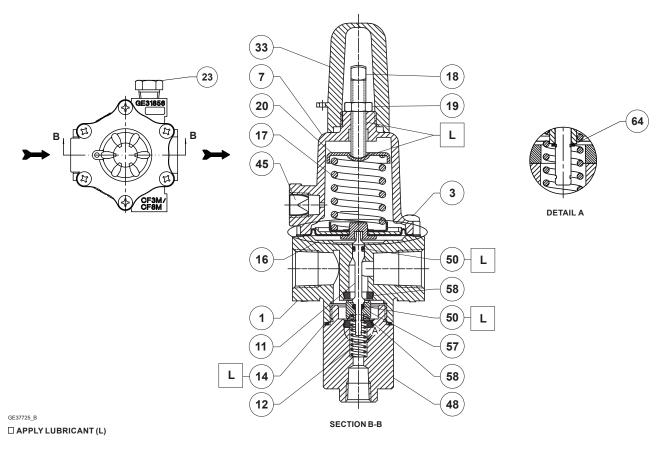


Figure 10. Type 167DAS Assembly

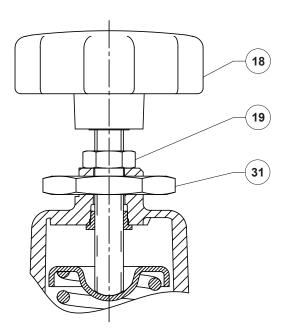
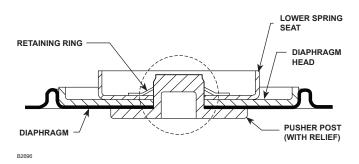
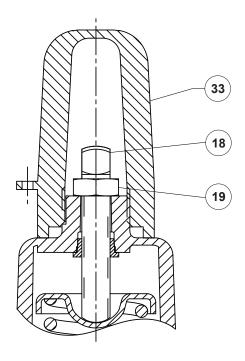


Figure 11. Optional Panel Mount

GE37632

11





GE37632

Figure 12. Types 167D and 167DS Diaphragm Assembly (Key 16)

Figure 13. Optional Closing Cap (Only Available with the 1/4 NPT Spring Case Vent)

Webadmin.Regulators@emerson.com

G Fisher.com

Facebook.com/EmersonAutomationSolutions

in LinkedIn.com/company/emerson-automation-solutions

Twitter.com/emr\_automation

#### **Emerson Automation Solutions**

#### **Americas**

McKinney, Texas 75070 USA T +1 800 558 5853 +1 972 548 3574

#### Europe

Bologna 40013, Italy T +39 051 419 0611

### Asia Pacific

Singapore 128461, Singapore T +65 6777 8211

#### Middle East and Africa

Dubai, United Arab Emirates T +971 4 811 8100 D103234X012 © 2011, 2023 Emerson Process Management Regulator Technologies, Inc. All rights reserved. 10/23.

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their prospective owners. Fisher™ is a mark owned by Fisher Controls International LLC, a business of Emerson Automation Solutions.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Process Management Regulator Technologies, Inc. does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson Process Management Regulator Technologies, Inc. product remains solely with the purchaser.

