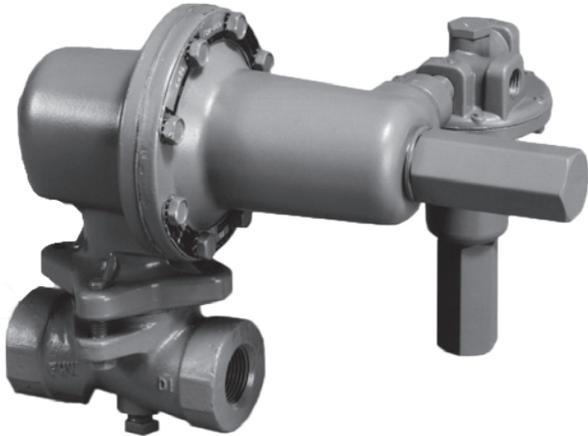
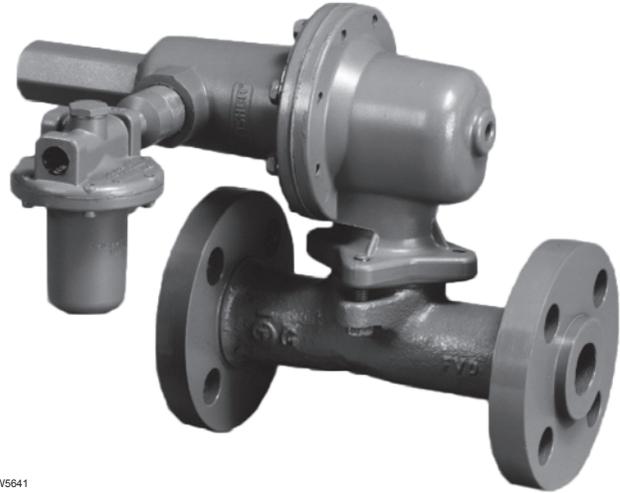


April 2012

Type 627F Pilot-Operated Pressure Reducing Regulator



W5607



W5641

Figure 1. Type 627F Pilot-Operated Pressure Reducing Regulators



WARNING

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

Fisher® regulators must be installed, operated, and maintained in accordance with federal, state, and local codes, rules and regulations, and Emerson Process Management Regulator Technologies, Inc. (Regulator Technologies) instructions.

If the regulator 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.

Call a gas service person to service the unit. Only a qualified person must install or service the regulator.

Introduction

Scope of the Manual

This manual provides instructions for installation, adjustment, maintenance, and parts ordering information for the Type 627F regulator.



www.fisherregulators.com



Type 627F

Specifications

The Specifications section gives some general specifications for the Type 627F regulator. The nameplates give detailed information for a particular regulator as it comes from the factory.

<p>Body Sizes and End Connection Styles Ductile iron: 3/4, 1, or 2 NPT Steel: 3/4, 1, or 2 NPT; NPS 1 or 2 / DN 25 or 50, CL150 RF, CL300 RF, CL600 RF, PN 16/25/40 RF Flanged</p> <p>Minimum Pressure Differential 20 psid / 1.4 bar d</p> <p>Maximum Inlet and Differential Pressures⁽¹⁾ See Table 2</p> <p>Maximum Emergency Outlet Pressure⁽¹⁾ 250 psig / 17.2 bar for all Type 627F actuators and Type 6351F pilot components</p> <p>Outlet Pressure Ranges 5 to 100 psig / 0.34 to 6.9 bar See Table 1</p> <p>Orifice Sizes 3/8 x 1/8, 3/8 x 1/4, 3/8, or 1/2 inch / 9.5 x 3.2; 9.5 x 6.4; 9.5; or 13 mm</p> <p>Temperature Capabilities⁽¹⁾ -20 to 180°F / -29 to 82°C</p>	<p>Flow Coefficients See Table 4</p> <p>IEC Sizing Coefficients See Table 5</p> <p>Pressure Registration External</p> <p>Pilot Supply Connection 1/4 NPT</p> <p>Pilot Sense Connection 1/4 NPT</p> <p>Body Tap Connection 1/4 NPT (ductile iron body only)</p> <p>Approximate Weights NPT body with Ductile iron or steel casings: 10 pounds / 4 kg NPT body with aluminum casings: 6.3 pounds / 3 kg Flanged body with steel casings: 18 pounds / 8 kg Flanged body with Ductile iron casings: 14 pounds / 6 kg</p>
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1. The pressure/temperature limits in this Instruction Manual or any applicable standard limitation should not be exceeded.

Table 1. Outlet Pressure Ranges

PILOT TYPE	OUTLET PRESSURE RANGE		PILOT CONTROL SPRING INFORMATION					
			Part Number	Color Code	Wire Diameter		Free Length	
	psig	bar			inches	mm	inches	mm
6351F	5 to 35	0.34 to 2.4	1B788327022	Unpainted Red	0.142	3.61	2.13	54.1
	35 to 100	2.4 to 6.9	1K748527022		0.192	4.88	2.19	55.6

Table 2. Maximum Allowable Inlet Pressures and Pressure Differential

ORIFICE SIZE		MAXIMUM INLET PRESSURE		MAXIMUM PRESSURE DIFFERENTIAL	
inch	mm	psig	bar	psig	bar
3/8 x 1/8	9.5 x 3.2	250	17.2	250	17.2
3/8 x 1/4	9.5 x 6.3	250	17.2	250	17.2
3/8	9.5	250	17.2	250	17.2
1/2	13	125	8.6	125	8.6

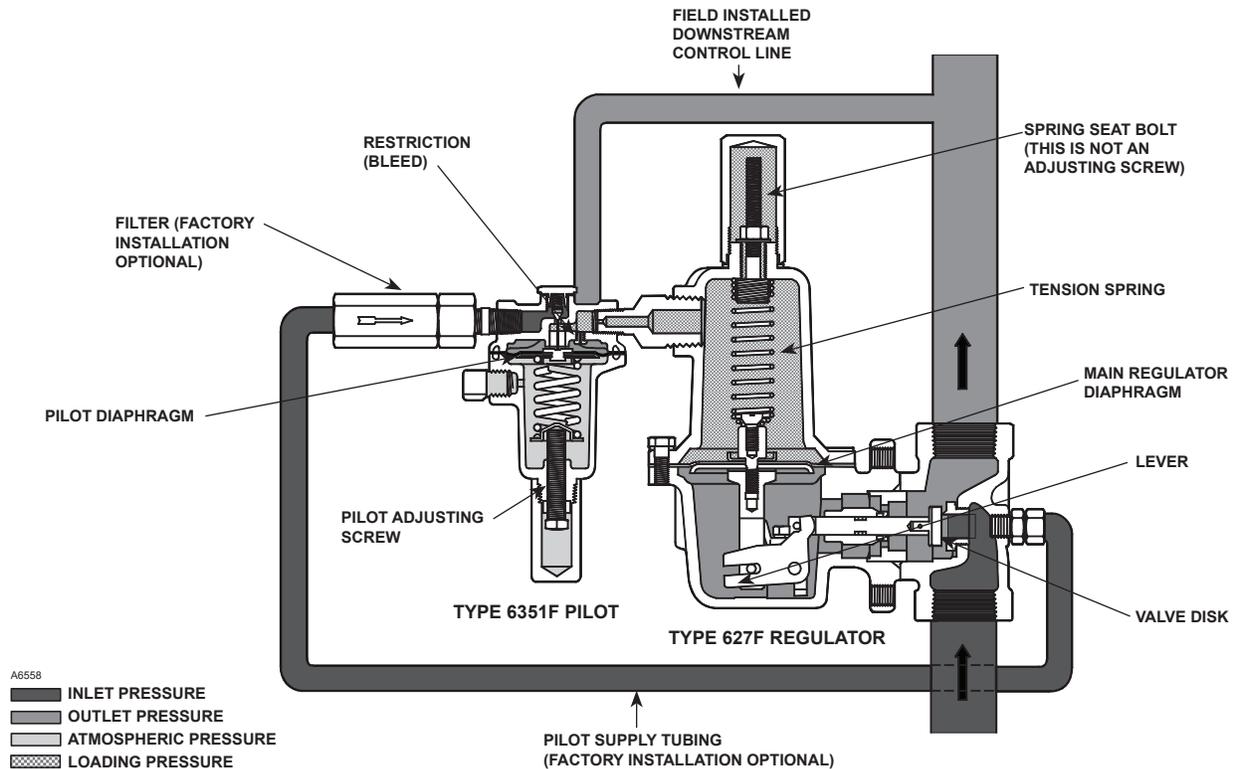


Figure 2. Type 627F Pilot-Operated Pressure Reducing Regulator Operational Schematic

Table 3. Additional Specifications

ORIFICE SIZE		ALLOWABLE INLET PRESSURE RANGE FOR MAINTAINING OUTLET PRESSURE WITHIN $\pm 1\%$ OF THE ABSOLUTE OUTLET PRESSURE SETTING ⁽¹⁾									
		5 psig / 0.34 bar		30 psig / 2.1 bar		40 psig / 2.8 bar		60 psig / 4.1 bar		100 psig / 6.9 bar	
inch	mm	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
3/8 x 1/8	9.5 x 3.2	30 to 250	2.1 to 17.2	55 to 250	3.8 to 17.2	65 to 250	4.5 to 17.2	85 to 250	5.9 to 17.2	125 to 250	8.6 to 17.2
3/8 x 1/4	9.5 x 6.4	30 to 250	2.1 to 17.2	55 to 250	3.8 to 17.2	65 to 250	4.5 to 17.2	85 to 250	5.9 to 17.2	125 to 250	8.6 to 17.2
3/8	9.5	30 to 250	2.1 to 17.2	55 to 250	3.8 to 17.2	65 to 250	4.5 to 17.2	85 to 250	5.9 to 17.2	125 to 250	8.6 to 17.2
1/2	13	25 to 125	1.7 to 8.6	50 to 125	3.4 to 8.6	60 to 125	4.1 to 8.6	80 to 125	5.9 to 8.6	120 to 125	8.3 to 8.6

1. For best performance, outlet pressure setting should be made using an inlet pressure that is midway between the highest and lowest expected inlet pressure.

Description

The Type 627F pilot-operated (Type 6351F pilot) pressure reducing regulator (Figure 1) provides economical, accurate pressure control in a wide variety of applications using pressure factor measurement (fixed factor billing). The regulator can be used with natural gas, air, or a variety of other gases.

Principle of Operation

The superior performance of a Type 627F regulator is due to the amplifying effect of the pilot and the two-path control system (Figure 2). Changes in outlet pressure act quickly on the main regulator diaphragm which

repositions the valve disk to provide fast response to system changes. Simultaneously, the pilot amplifies system pressure changes to position the main regulator valve disk for precise pressure control.

Inlet pressure is used for the pilot supply pressure. If downstream flow increases, lowering the outlet pressure below the regulator setpoint, pressure on the pilot diaphragm and the lever side of the main regulator diaphragm decreases. The pilot opens to supply the required loading pressure increase. The increased loading pressure from the pilot overcomes the main regulator spring force, and the main regulator valve disk moves farther open to supply the required flow.

Type 627F

Table 4. Flow Coefficients

ORIFICE SIZE		3/4 NPT BODY			NPS 1 / DN 25 BODY			NPS 2 / DN 50 BODY		
		Wide-Open	Wide-Open	C ₁	Wide-Open	Wide-Open	C ₁	Wide-Open	Wide-Open	C ₁
inches	mm	C _g	C _v		C _g	C _v		C _g	C _v	
3/8 x 1/8	9.5 x 3.2	12.5	0.43	29.1	12.5	0.43	29.4	12.5	0.43	29.2
3/8 x 1/4	9.5 x 6.4	50	1.63	30.6	50	1.71	29.3	52	1.66	31.3
3/8	9.5	108	2.99	36.1	108	3.42	31.6	11.5	3.39	33.9
1/2	13	190	4.87	39.0	190	5.29	35.9	200	5.01	39.9

Table 5. IEC Sizing Coefficients

ORIFICE SIZE		X _T			F _D	F _L
inches	mm	3/4 NPT Body	NPS 1 / DN 25 Body	NPS 2 / DN 50 Body		
1/8	3.2	0.54	0.55	0.54	0.50	0.79
1/4	6.4	0.59	0.54	0.62		0.87
3/8	9.5	0.82	0.63	0.73		0.89
1/2	13	0.96	0.82	1.01		0.86

When downstream pressure increases due to lowered demand, greater pressure is registered on the pilot diaphragm and the lever side of the main regulator diaphragm. The pilot closes, and the excess loading pressure bleeds off to downstream, through the pilot restriction. With the lower loading pressure, the spring can move the main regulator disk closer to the orifice.

Under no flow conditions, the excess loading pressure bleeds through the pilot restriction to the downstream system until the loading pressure and outlet pressure equalize. The main valve is closed by the spring and the bleed stops.

4. Make sure that there is no damage to, or foreign material in the regulator. Ensure that all tubing and piping have been blown free of foreign debris.
5. The regulator may be installed in any position as long as the flow through the body is in the direction indicated by the arrow cast on the body and both pilot openings are connected.
6. If continuous operation is required during inspection or maintenance, install a three-valve bypass around the regulator.

Installation

Only personnel qualified through training and experience should install, operate, or maintain this regulator. Regulator operation within ratings does not preclude the possibility of damage from debris in the lines or from external sources. Key numbers referenced in this section are shown in Figures 3 and 4.

1. A regulator should be inspected for damage periodically and after any overpressure condition.
2. Ensure that the operating temperature capabilities listed in the Specifications section are not exceeded.
3. A pressure-relieving or pressure-limiting device must be provided by the user if the inlet pressure can exceed the outlet pressure rating of the downstream equipment.

WARNING

A regulator may vent some gas to the atmosphere. In hazardous or flammable gas service, vented gas may accumulate and cause personal injury, death, or property damage due to fire or explosion. Vent a regulator in hazardous gas service to a remote, safe location away from air intakes or any hazardous area. The vent line or stack opening must be protected against condensation or clogging.

To keep the pilot spring case vent from being plugged or the spring case from collecting moisture or other foreign material, point the vent down or otherwise protect it. To change vent orientation, remove the spring case and remount it on the pilot body.

To remotely vent the pilot, remove the vent and install obstruction-free tubing or piping into the 1/4 NPT vent tapping. Provide protection on a remote vent by installing a screened vent cap into the remote end of the vent pipe.

If the regulator requires repositioning, refer to the Body Area Maintenance procedures and/or the Diaphragm Case Area Maintenance procedures in the Maintenance section to reposition the regulator for the application.

The Type 627F regulator requires a downstream control line. Install the control line before putting the regulator into operation. Ensure that the downstream control line piping is at least 3/8 inch / 9.5 mm or larger outside diameter tubing and connected to a straight section of outlet piping several pipe diameters downstream of the regulator. Connect the other end of the control line to the pilot side connection (marked “sense”).

The Type 627F regulator also requires inlet pressure to be piped to the pilot supply connection (see Figure 2). If the optional factory pilot supply piping was not selected, run a 3/8 inch / 9.5 mm outer diameter or larger supply line from the upstream pipeline or from the 1/4 NPT body tap (ductile iron body only) to the pilot inlet connection marked “in”.

Do not make the upstream pipeline connection in a turbulent area, such as near a nipple, swage, or elbow. To properly isolate the regulator, install a hand valve in the pilot supply line, and provide vent valves to relieve pressure from the regulator.

Overpressure Protection



Personal injury, property damage, equipment damage, or leakage due to escaping gas or bursting of pressure-containing parts may result if this regulator is overpressured or is installed where service conditions could exceed the limits given in 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 limits.

Additionally, physical damage to the regulator could cause personal injury or property damage due to escaping gas. To avoid such injury or damage, install the regulator in a safe location.

Startup and Adjustment

Startup



To avoid personal injury or property damage due to explosion or damage to regulator or downstream components during startup, release downstream pressure to prevent an overpressure condition on the diaphragm of the regulator.

In order to avoid an overpressure condition and possible equipment damage, pressure gauges should always be used to monitor pressures during startup.

1. Slowly open the upstream shutoff valves to the pilot and the regulator inlet.
2. Slowly open the downstream shutoff valves to the pilot sense connection and the regulator outlet.
3. Check all connections for leaks.
4. Make final pilot control spring adjustments according to the Adjustment procedures. Standard factory setpoint is approximately mid-range of the pilot spring range.

Adjustment

The range of allowable pressure settings is marked on the pilot. If a pressure setting beyond this range is necessary, substitute the appropriate pilot control spring. Change the pilot stamping to indicate the new pressure range.

The only adjustment necessary on a Type 627F regulator is the pressure setting of the pilot control spring. Turning the pilot adjusting screw clockwise into the spring case increases the spring compression and pressure setting. Turning the pilot adjusting screw counterclockwise decreases the spring compression and pressure setting.

Type 627F

Table 6. Recommended Torque Values

KEY NUMBER ⁽¹⁾	DESCRIPTION	FOOT-POUNDS	NEWTON METERS
Type 627F Actuator			
2	Orifice	25	34
3	Cap Screw (with aluminum diaphragm casing)	16	22
	Cap Screw (with ductile iron or steel diaphragm casing)	25	34
18	Cap Screw Lever	7	9,5
36	Closing Cap	40	54
37	Spring Case Cap Screw (with aluminum or ductile iron diaphragm casing)	7	9,5
	Spring Case Cap Screw (with steel diaphragm casing)	35	47
53	Spring Retainer	3	4.1
54	Diaphragm Connector	7	9.5
Type 6351F Pilot			
3	Body Plug	6	8.1
12	Machine Screw	3	4.1

1. Refer to Figures 3 and 4 for key number locations.

Note

Always use a pressure gauge to monitor pressure when making adjustments.

Shutdown



WARNING

To avoid personal injury, property damage due to explosion, or damage to regulator or downstream components during shutdown, release downstream pressure to prevent an overpressure condition on the diaphragm of the regulator.

1. Close the upstream shutoff valves to the pilot and regulator inlets.
2. Close the downstream shutoff valves to the pilot sense connection and the regulator outlet.
3. Slowly open the vent valve on the downstream side of the regulator to vent all pressures.

Maintenance

Due to normal wear, damage from external sources, or debris in the air or gas line, regulator parts such as the disk assembly, orifice, and diaphragm must be inspected periodically and replaced as necessary

to ensure correct performance. The frequency of inspection and replacement depends upon the severity of conditions and the requirements of applicable laws. Normal wear of the orifice and disk assembly is accelerated with high-pressure drops and with impurities in the flow stream.

Due to the care Regulator Technologies takes in meeting all manufacturing requirements (heat treating, dimensional tolerances, etc.), use only replacement parts manufactured or furnished by Fisher®. Instructions are given below for replacing the disk assembly, orifice, diaphragm, and O-rings. These procedures may also be used for disassembly required for inspection and replacement of other parts.

Body Area Maintenance Procedures



WARNING

Isolate the regulator from all pressure to avoid personal injury and equipment damage due to explosion or sudden release of process pressure. Cautiously release all pressure from the regulator before attempting disassembly.

The disk assembly and orifice can be inspected, removed, and replaced without removing the regulator body from the line connections. If the disk assembly and orifice are not damaged, refer to the Diaphragm and Spring Case Area Maintenance procedures in this section.

These procedures are for gaining access to the disk assembly, orifice, diaphragm casing, O-ring, and stem assembly. All pressure must be released from the regulator before the following steps can be performed. Refer to Figure 3 for key number locations.

Replacing the Disk Assembly or Orifice

If it is necessary to perform maintenance on the disk assembly (key 9) or orifice (key 2), continue with the following steps:

1. Remove the closing cap (key 36) and loosen the lock nut (key 34) relieving tension spring pressure. Hold the spring seat bolt (key 61) to prevent turning of the bolt from the tension spring (key 32). Remove the cap screws (key 3), and separate the diaphragm casing (key 5) from the body (key 1).

Note

If the body cap screws (key 3) are evenly removed and replaced very carefully, then the tension spring force will not need to be released.

2. Inspect and, if necessary, remove the orifice (key 2). If removed, coat the threads of the replacement orifice with lubricant and torque to 25 foot-pounds / 34 N•m.
3. Inspect the disk assembly and, if necessary, remove the hairpin clip (key 13) that holds the disk assembly (key 9) in place. If replacing the disk assembly is the only maintenance required, refer to the Startup procedure.

Replacing the Stem Assembly

If it is necessary to perform maintenance on the stem assembly, continue with the following steps.

1. Remove the boost body (key 6), O-ring (key 7), and stem guide (key 8) from the diaphragm casing (key 5). Unhook the stem (key 10) from the lever (key 15) and remove from the diaphragm casing (key 5).
2. Remove and inspect the diaphragm casing O-ring (key 4) and stem O-ring (key 11), replace if necessary.
3. Install the replacement diaphragm casing O-ring (key 4) onto the boost body (key 6). Apply lubricant to the stem O-ring and install on the stem (key 10).

4. Apply lubricant to the stem (key 10) and insert the stem into the diaphragm casing (key 5) and hook it on the lever (key 15).
5. Apply lubricant to the O-ring (key 7) and insert parts removed in steps 1 and 2 into the diaphragm casing (key 5).
6. Install the disk assembly (key 9), line up the hole in the disk assembly and stem (keys 9 and 10) and insert the hairpin clip (key 13).
7. Position the diaphragm casing plus attached parts in relation to the body (key 1) so that they are correct for the application.
8. Secure the diaphragm casing to the body with the cap screws (key 3). For an aluminum diaphragm casing (key 5), torque the cap screws (key 3) to 16 foot-pounds / 22 N•m. For ductile iron or steel diaphragm casings, torque the cap screws (key 3) to 25 foot-pounds / 34 N•m. Torque the two body cap screws (key 3) very evenly to square up the orifice (key 2) and disk assembly (key 9) seating relationship.
9. It may be necessary to reposition the diaphragm spring case to prevent rain, ice, and foreign debris from entering the pilot spring case through the vent.

Diaphragm and Spring Case Area Maintenance Procedures

These procedures are for gaining access to the tension spring, diaphragm assembly, and lever assembly. All spring pressure must be released from the diaphragm casing before these steps can be performed. Refer to Figure 3 for key number locations.

1. To release the tension spring force, remove the closing cap (key 36), the lock nut (key 34), and washer (key 62). Hold the spring seat bolt (key 61) to prevent turning of the bolt from the tension spring (key 32).
2. Remove the spring case cap screws (key 37), the nameplates, and lift off the spring case (key 29). If changing the tension spring (key 32) or repositioning the spring case (key 29) is the only maintenance required, remove the spring seat bolt (key 61) from the tension spring (key 32) and unscrew the spring retainer (key 53). Install the replacement tension spring. Install left hand threaded end of spring

Type 627F

- seat bolt (key 61) into tension spring (key 32) until the spring is flush with the top of the bolt threads as shown in Figure 3. Rotate the spring case so it is correct for the application. Skip to step 14. For Diaphragm Area Maintenance, continue with step 3.
- Remove the diaphragm assembly by tilting it so that the pusher post (key 19) slips off the lever (key 15).
 - If it is necessary to replace the lever assembly, remove the lever cap screws (key 18).
 - Install the replacement lever (key 15) into the lever retainer (key 16) by inserting the lever pin (key 17). Secure the lever into the diaphragm casing with the cap screws (key 18) and torque the cap screws to 7 foot-pounds / 9.5 N•m. If it is necessary to perform maintenance on the diaphragm assembly, continue with steps 6 through 15.
 - Unscrew the diaphragm connector (key 54) and remove the lower spring seat (key 31). Separate the diaphragm (key 23) from the diaphragm head (key 24), gasket (key 55) and the pusher post (key 19).
 - Install the diaphragm (key 23), in reverse order in step 6, apply lubricant to the threads of the diaphragm connector (key 54) and finger tighten.
 - Hook the pusher post on the lever (key 15), then turn the diaphragm (key 23) to match the holes in the diaphragm with the holes in the spring casing.
 - Unhook the pusher post from the lever, hold the pusher post and torque the diaphragm connector (key 54) to 7 foot-pounds / 9.5 N•m.
 - Apply lubricant to the pusher post (key 19), then hook the pusher post on the lever (key 15) and check the hole alignment. If necessary, loosen the diaphragm connector (key 54) and reposition the diaphragm (key 23) on the pusher post (key 19). Tighten the diaphragm using 7 foot-pounds / 9.5 N•m of torque.
 - To change the tension spring, remove the spring seat bolt (key 61) from the tension spring (key 32) and unscrew the spring retainer (key 53).
 - Install the tension spring (key 32) on the lower spring seat (key 31), insert and tighten the spring retainer (key 53). Install the tension spring on the spring seat bolt (key 61) until the spring is flush with the top of the bolt threads as shown in Figure 3.
 - Install the spring case (key 29) over the spring seat bolt and so that the pilot assembly will be in the correct position for the application. Place the nameplate (key 39) over the screw holes, insert the spring case cap screws (key 37), and finger tighten.
 - Install the locknut (key 34), and hold the spring seat bolt (key 61) to prevent turning, by running the locknut all the way down the threads and tighten as shown in Figure 3. Install the closing cap gasket (key 63). Apply lubricant to the threads on top of the spring case (key 29) and install the closing cap (key 36).
 - Using a crisscross pattern, finish tightening the spring case cap screws (key 37, see Figure 3).

Pilot

These procedures are for gaining access to the Type 6351F pilot trim and diaphragm parts. All pressure must be released from the regulator and pilot before the following steps can be performed. Refer to Figure 4 for key number locations.

Trim Parts

- Remove the body plug (key 3) and the valve spring (key 6), and inner valve assembly (key 4) from the body.
- Inspect the removed parts and body plug gasket (key 23), replace as necessary, and make sure the plug seating surfaces are free from debris.
- Sparingly apply lubricant to the body plug gasket (key 23) and the threads of the body plug (key 3). Install the body plug gasket over the body plug.
- Install the plug spring (key 6), and inner valve assembly (key 4) into the body (key 1). Torque the body plug (key 3) to 6 foot-pounds / 8.1 N•m.

Diaphragm Parts

1. Remove the closing cap (key 28), loosen the locknut (key 11), and back out the adjusting screw (key 10) to remove control spring (key 9) compression.
2. Remove the machine screws (key 12) and separate the spring case (key 2) from the body assembly (key 1). Remove the control spring (key 9).
3. Remove the diaphragm assembly (key 7) and inspect the removed parts and replace as necessary. Make sure the restriction hole (key 44) is free from debris.
4. Install the diaphragm assembly (key 7) and push down on it to see if the inner valve assembly (key 4) strokes smoothly and approximately 1/16-inch / 2.0 mm.

Note

In step 5, if installing a control spring of a different range from the one that was removed, be sure to replace the spring range originally appearing on the spring case with the new spring range.

5. Stack the control spring (key 9) and control spring seat (key 8) onto the diaphragm assembly (key 7). Sparingly apply lubricant to the control spring seat.
6. Install the spring case (key 2) on the body (key 1) with the vent (key 35) oriented to prevent clogging or entrance of moisture. Install the machine screws (key 12) and using a crisscross pattern, torque them to 3 foot-pounds / 4.1 N•m.
7. When all Maintenance is complete, refer to the Startup and Adjustment section to put the regulator back into operation, and adjust the pressure setting. Tighten the locknut (key 11), and install the closing cap (key 28).

Parts Ordering

When corresponding with your local Sales Office or representative about this regulator, reference the type number which is found on the nameplate.

When ordering replacement parts, reference the key number of each needed part as found in the following parts list. Separate kit containing all recommended spare parts is available.

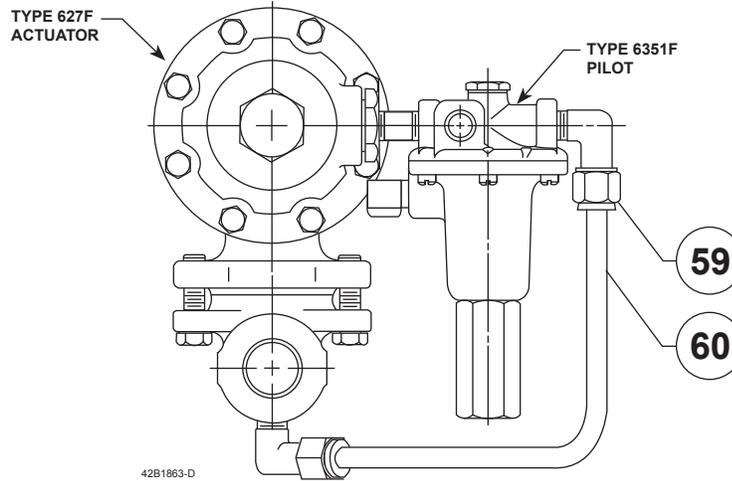
Parts List

Type 627F Main Regulator (Figure 3)

Key	Description	Part Number
	Type 627F Parts Kit (includes keys 4, 7, 9, 11, 12, 13, 23, 55, and 63)	
	Aluminum or Ductile iron casing	R627FX00A12
	Stainless steel casing	R627FX00S12
1	Body	
	Ductile iron	
	3/4 NPT	12B3307X012
	1 NPT	12B3307X022
	2 NPT	12B3308X012
	Steel	
	3/4 NPT	30B3050X012
	1 NPT	30B3051X012
	2 NPT	30B7452X012
	Steel, CL150 RF Flanged	
	NPS 1 / DN 25	43B8656X022
	NPS 2 / DN 50	44B0666X012
	Steel, CL300 RF Flanged	
	NPS 1 / DN 25	41B8978X012
	NPS 2 / DN 50	41B8080X012
	Steel, CL600 RF Flanged	
	NPS 1 / DN 25	40B6754X012
	NPS 2 / DN 50	40B6756X012
	Steel, PN 16/25/40 RF Flanged	
	NPS 1 / DN 25	44B0386X012
	NPS 2 / DN 50	44B3342X012
2*	Orifice	
	Aluminum	
	3/8 x 1/8 inch / 9.5 x 3.2 mm	12B4986X012
	3/8 x 1/4 inch / 9.5 x 6.4 mm	12B4986X022
	3/8 inch / 9.5 mm	0B042209012
	1/2 inch / 13 mm	1A928809012
	Stainless steel	
	3/8 x 1/8 inch / 9.5 x 3.2 mm	12B4986X032
	3/8 x 1/4 inch / 9.5 x 6.4 mm	12B4986X042
	3/8 inch / 9.5 mm	0B042235032
	1/2 inch / 13 mm	1A928835032
3	Cap Screw (2 required)	
	Aluminum	1A352524052
	Ductile iron	1A560724052
	Steel	1A560724052
4*	Diaphragm Case O-Ring, Nitrile (NBR)	17A2325X022
5	Diaphragm Case	
	Aluminum	40B3084X012
	Ductile iron	30B3053X012
	Steel	30B3104X012
6	Boost Body, Aluminum	22B4767X012
7*	O-Ring, Nitrile (NBR)	1E547706992
8	Stem Guide, Powdered metal	20B3061X012
9*	Disk Assembly (for all orifice sizes)	
	Aluminum holder and Nitrile (NBR) disk	1C4248X0212
	303 Stainless steel holder and Nitrile (NBR) disk	1C4248X0202
10	Stem, 416 Stainless steel	10B3059X012
11*	Stem O-Ring, Nitrile (NBR)	1D687506992
12*	Stem Backup Ring, Polytetrafluoroethylene (PTFE) (2 required)	1K786806992
13	Hairpin Clip, Stainless steel	10B3058X012
14	Drive Pin, Plated steel	1H3671X0012
15	Lever, Plated steel	20B3063X012
16	Lever Retainer, Plated steel	30B3097X012
17	Lever Pin, Stainless steel	10B3083X012
18	Lever Cap Screw, Plated steel (2 required)	10B7454X012
19A	Pusher Post, Aluminum	20B3064X012
19B	Drive Pin, Stainless steel	14B0382X012

*Recommended Spare Parts

Type 627F



OPTIONAL PILOT SUPPLY TUBING

Figure 3. Type 627F Main Regulator Assembly (continued)

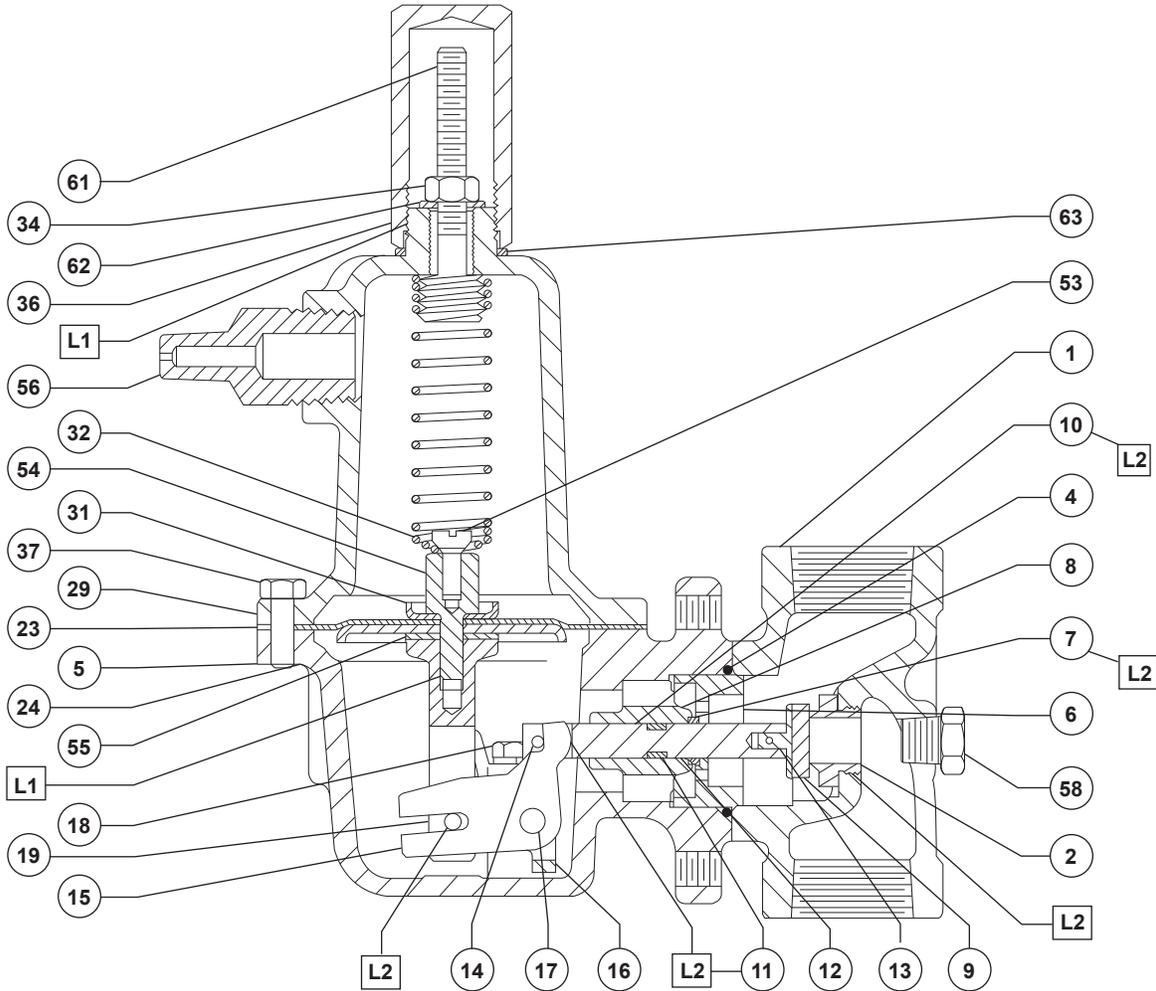
Type 627F Main Regulator (Figure 3) (continued)

Key	Description	Part Number
23*	Diaphragm, Nitrile (NBR)	
	Aluminum or Ductile iron diaphragm case	10B3069X012
	Steel diaphragm case	10B8735X012
24	Diaphragm Head, Plated steel	1D666428982
29	Spring Case	
	Aluminum	40B3086X012
	Ductile iron	30B3055X012
	Steel	30B3102X012
31	Lower Spring Seat, Plated steel	1D666625072
32	Tension Spring, Plated steel	12B3306X012
34	Locknut, Plated steel	1E944024112
36	Closing Cap	
	Brass	1E543314012
	Aluminum	1E5433X0012
	Stainless steel	1E5433X0022
37	Spring Case Cap Screw (8 required)	
	Aluminum	1A391724052
	Ductile iron	1A391724052
	Steel	1A368324052
39	Nameplate	-----
53	Spring Retainer, Plated steel	1H855224102
54	Diaphragm Connection, Plated steel	12B3301X012
55*	Gasket, Nylon (PA)	12B3302X012
56	Reducing Nipple, Plated steel	12B4987X012
58	Pipe Plug, Steel	1A767524662
59	Elbow, Plated steel (optional) (2 required)	15A6002XW32
60	Pilot Supply Tubing, Steel (optional)	
	With Type P594-1 filter	0500213809W
	Without filter	0500213809W
61	Spring Seat Bolt, Plated steel	12B3303X012
62	Washer, Plated steel	1B865928982
63*	Closing Cap Gasket	12B1862X012
67	Drive Screw (2 required)	
	Aluminum	1A368228982
	Ductile iron	1A368228982
	Steel	1A368228982

Type 6351F Pilot (Figure 4)

Key	Description	Part Number
	Parts Kit (included are keys 4, 6, 7, and 23)	R6351X00012
1	Body Assembly, Stainless Steel	1B7971X0322
2	Spring Case, Aluminum	25A6220X012
3	Body Plug Assembly	
	Aluminum/Nitrile (NBR)	18B6542X022
	Aluminum/Fluorocarbon (FKM)	18B6542X042
	Stainless steel/Nitrile (NBR)	18B6542X052
	Stainless steel/Fluorocarbon (FKM)	18B6542X062
4*	Inner Valve Plug	
	Stainless steel/Nitrile (NBR)	20B9389X022
	Stainless steel/Fluorocarbon (FKM)	20B9389X062
6*	Valve spring, Steel	1B797937022
7*	Diaphragm Assembly	
	Aluminum/Nitrile (NBR)	1B7980000B2
	Aluminum/Fluorocarbon (FKM)	1B7980000C2
	Aluminum/Nitrile (NBR)	1B7980X00A2
8	Upper Spring Seat, Plated steel	1B798525062
9	Control Spring, Plated steel spring wire	
	5 to 35 psig / 0.34 to 2.4 bar, Unpainted	1B788327022
	35 to 100 psig / 2.4 to 6.9 bar, Red	1K748527202
10	Adjusting Screw, Plated steel	10B7192X012
11	Locknut, Zinc-plated steel	1A946324122
12	Machine Screw, Carbon steel (6 required)	10B6189X022
22	Pipe Nipple, Galvanized plated steel	1C488226232
24	Filter, Type P594-1 (optional)	AJ5004000A2
28	Closing Cap, Aluminum	1H2369X0012
35	Vent Assembly, Type Y602X1-A12	27A5516X012
44	Restriction, Carbon-plated steel	
	High Gain	17A7279X012
	Medium Gain	17A2029X012
	Low Gain	17A7277X012

*Recommended Spare Parts



32B3310_E

- APPLY LUBRICANT⁽¹⁾
- L1 = MULTI-PURPOSE NLGI GRADE 1 GREASE*
- L2 = ANTI-SEIZE COMPOUND

1. Lubricants must be selected such that they meet the temperature requirements.
 *NLGI is the National Lubricating Grease Institute.

Figure 3. Type 627F Main Regulator Assembly

Type 627F

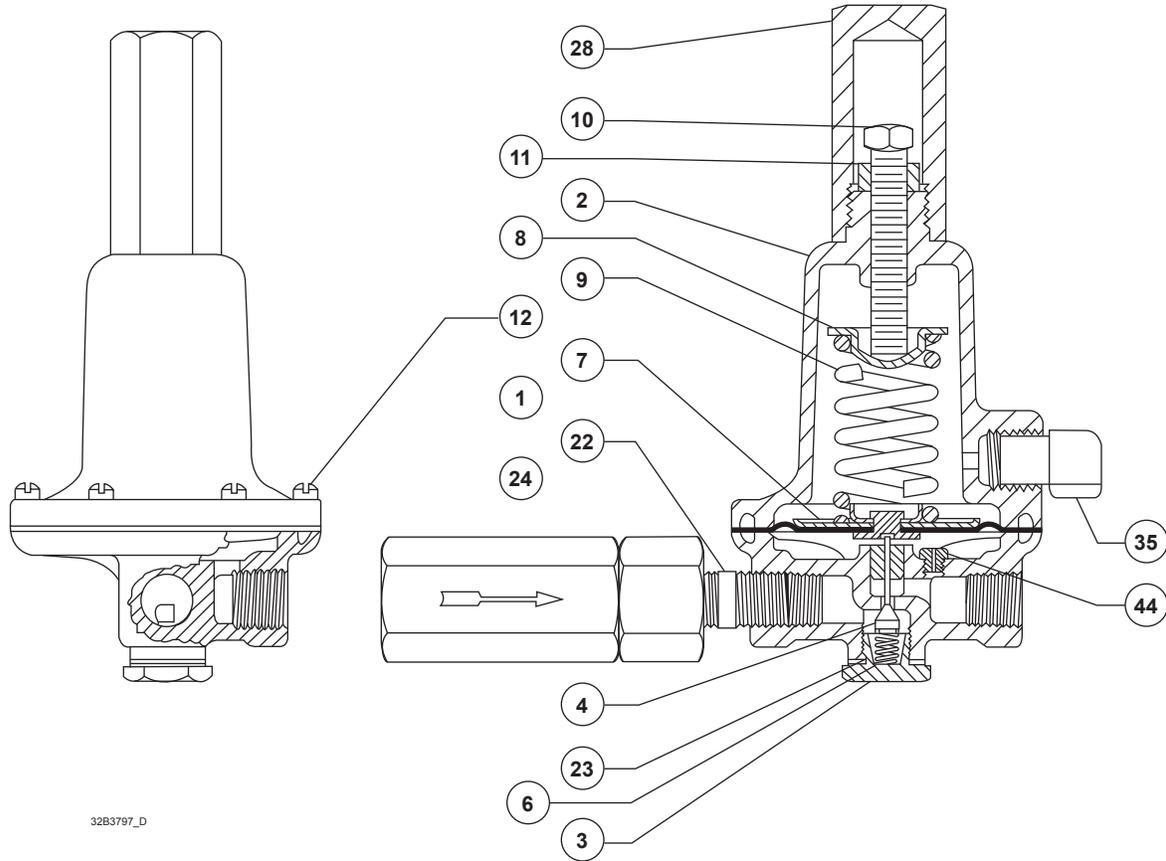


Figure 4. Type 6351F Pilot Assembly

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