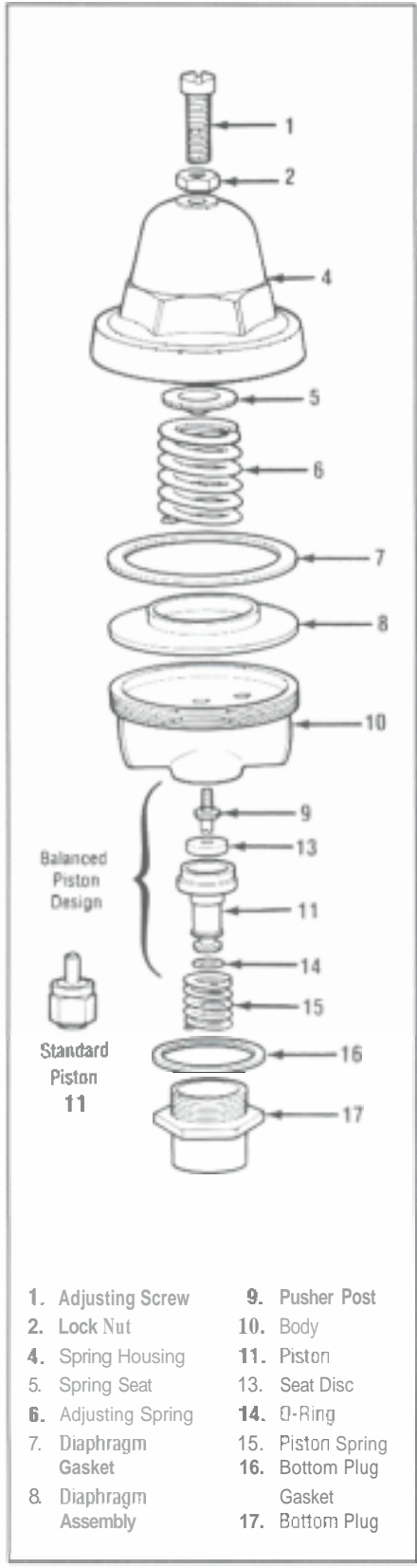




# TECHSPEC



- 1. Adjusting Screw
- 2. Lock Nut
- 4. Spring Housing
- 5. Spring Seat
- 6. Adjusting Spring
- 7. Diaphragm Gasket
- 8. Diaphragm Assembly
- 9. Pusher Post
- 10. Body
- 11. Piston
- 13. Seat Disc
- 14. O-Ring
- 15. Piston Spring
- 16. Bottom Plug
- 17. Bottom Plug

## DESCRIPTION

The Types A-31 and A-31S pressure reducing and regulating valves automatically reduce a high inlet pressure to a lower delivery pressure and maintains the lower pressure within reasonably close limits.

## SPECIFICATION DATA

- Service:** Air, water and light oil
- Sizes:** 1/8", 1/4", and 3/8"
- Connections:** Threaded female inlet and outlet
- Body:** Forged Brass
- Maximum Temperature:** 180°F
- Maximum Initial Pressure:** 300 psi
- Outlet Pressure Range:** 2 to 180 psi
- Capacity:** Refer to bulletin PRV-A (supersedes REG-4) for capacity information.

## GENERAL INSTALLATION INSTRUCTIONS

Types A-31 and A-31S regulators can be installed in any position, however for ease of maintenance and repair, it suggested that the valve be installed in a horizontal line with the spring chamber upright. For convenient operation and maintenance, manual shut-off valves should be installed upstream and downstream from the valve. Prior to valve installation, the piping should be thoroughly flushed out to remove any foreign material. Install the valve with the inlet pipe in proper relationships to the inlet connection identified on the valve body.

## OPERATING INSTRUCTIONS

### Adjusting the Delivery Pressure

The regulator's delivery pressure setting is adjusted by turning the adjusting screw (1) at the top of the spring chamber after loosening the adjusting screw lock nut (2). To increase the delivery pressure, turn the adjusting screw clockwise (into the spring chamber). To decrease the delivery pressure, turn the adjusting screw counter clockwise (out of the spring chamber). Tighten the adjusting screw lock nut after the adjustment has been made.

## MAINTENANCE INSTRUCTIONS

The following procedures are provided for servicing the recommended spare parts for the Types A-31 and A-31S regulators. Repair parts can easily be installed without removing the regulator from the line,



## Type A-31 Type A-31S PRESSURE REGULATOR

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Dated	<b>MAY 1998</b>

Caution: Before attempting to replace any spare parts be sure to shut off all pressure connections to the valve. With the valve closed, however, system pressure could still be locked between the shut-off valve and the inlet and/or outlet sides of the regulator. Before proceeding with any valve service be certain to relieve the pressure from BOTH sides of the regulator. Refer to the Type A-31 regulator exploded view for parts identification.

### Servicing the Diaphragm Assembly (8)

1. Loosen the lock nut (2) 1/4 turn and turn the adjusting screw (1) in a counter clockwise direction until the adjusting spring (6) is no longer under tension.

**NOTE:** When installing the adjusting screw, turn the screw clockwise until the lock nut just touches the spring chamber. By following this procedure the pressure setting should be very close to the original setting.

# INSTALLATION, MAINTENANCE & REPAIR PARTS INFORMATION

- Unscrew the spring housing (4) from the valve body (10) and remove the housing, spring seat (5), adjusting spring (6), and diaphragm gasket (7).

- The diaphragm assembly (8) can now be lifted out of the valve body (10). Replace if necessary.

**NOTE:** The diaphragm assembly is only available as a complete three part unit.

- Reassemble the valve in reverse order. After placing the valve in service, readjust the delivery pressure as detailed under Operating Instructions.

#### Servicing the Piston (11) and Related Parts

- It is recommended that the load on the adjusting spring (6) be relieved before starting to service any parts through the bottom of the valve. Relieve the adjusting spring tension as detailed in Step 1 under Servicing the Diaphragm Assembly, above.

- Unscrew the bottom plug (17) from the valve body (10) and remove the plug gasket (16), the piston spring (15), and piston assembly. Replace the gasket or piston if necessary.

**NOTE:** On Type A41 balanced piston design regulators, the seat disc (13), piston (11), and pusher post (9) are removed as a complete assembly. If the piston (11) needs replacing, then at the same time replace the O-ring (14). Lubricate any new O-ring with the Fiske Brothers Relining Company Lubriplate No. 907 or the equivalent. If the pusher post or seat disc need replacing, then unscrew the pusher post from the piston and replace where necessary.

- Reassemble the parts in reverse order. After placing the valve in service, readjust the delivery pressure setting as outlined in Adjusting the Delivery Pressure, under Operating Instructions.

## REPAIR PARTS INFORMATION

Refer to the exploded view of the Type A-31 regulator shown on page 1 for parts identification.

REF. NO.	DESCRIPTION	MATERIAL	PART NO.	NO. REQ'D.
1	Adjusting Screw (Slotted Head)	Brass	1652	1
1	Adjusting Screw (T-Handle) Assembly	Brass	2168	1
1	Adjusting Screw (Handwheel) Assembly	Brass	8591	1
2	Lock Nut (Hex for Slotted Head)	Brass	1653	1
2	Lock Nut (Wing for T-Handle or Handwheel)	St. Cad. Plated	2169	1
3	Adjusting Screw Bushing (For Handwheel, Panel Mt.)	Brass	5034	1
4	Spring Housing (For Slotted Head or T-Handle)	Aluminum	7364	1
4	Spring Housing (For Slotted Head or T-Handle)	Brass	1603	1
4	Spring Housing (For Handwheel, Panel Mt.)	Aluminum	7365	1
5	Spring Seat	Brass	1996	1
6	Adjusting Spring (See Spring Range Chart)	Steel		1
7	Diaphragm Gasket	Brass	2298	1
8*	Diaphragm Assembly		1627	1
	Includes: Diaphragm	Buna-N	-	1
	Pressure Plate	Brass	-	1
	Pusher Post Seat	Brass	-	1
9*	Pusher Post <sup>1</sup>	Brass	12599	1
10	Body (1/8", 1/4", 3/8")	Brass	-	1
11*	Standard Piston Assembly		1621	1
	Includes: Piston	Brass	-	1
	Seat Disc	Buna-N	-	1
11*	Balanced Piston <sup>1</sup>	Brass	12602	1
13*	Seat Disc <sup>1</sup>	Buna-N	266	1
14*	O-Ring <sup>1</sup>	Buna-N	14029	1
15	Piston Spring	302 S. St.	1622	1
16*	Bottom Plug Gasket	Nylon	1623	1
16*	Bottom Plug Gasket <sup>1</sup>	Copper	8283	1
17	Bottom Plug <sup>1</sup>	Brass	12604	1
17	Bottom Plug (A-31 2-Way, A-31S 3 Way)	Brass	1624	1
17	Bottom Plug (A-31 3-Way)	Brass	-	1
17	Bottom Plug (Bracket Mounting Valve Only)	Brass	2747	1
18	Bottom Plug Nut (Bracket Mounting Valve Only)	Brass	2748	1
19	Bracket (Bracket Mounting Valve Only)	Brass	2749	1

\* Recommended Spare Parts

- These parts are components in complete assemblies ONLY.

<sup>1</sup> Specify body size, Type (A-31 standard or balanced piston or A-31S) and if 2. or 3 way. Balanced Piston Type A-31 only

## SPECIFICATIONS

Each Type A-31 pressure regulator is equipped with a pressure spring selected to provide the desired outlet or reduced pressure setting. The range of adjustment or "working range" of individual springs is shown below for each valve

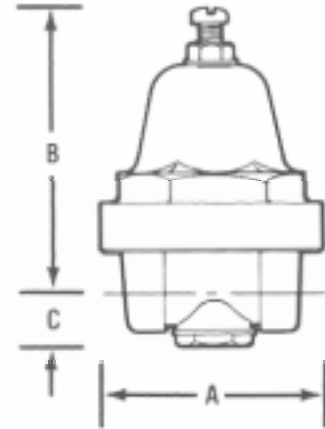
size. Every regulator has the "set" pressure and range of adjustment stamped on a tag fastened to the valve. The ranges shown below are recommended for best performance.

### WRING RANGES

PARTS NUMBERS & RANGE OF ADJUSTMENT (in psi)					
#6354	#1618	#1747	#1748	#1841	#2235
2-15	2-30	10-50	30-90	80-120	100-180

### DIMENSIONS

VALVE SIZE	DIMENSIONS				SHP. WT. (lbs.)
	A	B	C		
			Standard Piston	Balanced Piston	
1/4" or 3/8"	2-11/2"	3-1/2"	5/8"	27/32"	1-3/4



## HOW TO ORDER

To order repair parts, refer to the exploded view of the Type A-31 to identify the part required. When ordering, please use the names listed and provide the valve serial number stated on the bottom plug. Also state the following:

"Repair Parts for Standard Type A-31". "Balanced Type A-31", or "Type A-31S". Also state if two-way or three-way and provide:

1. Valve size
2. Service (water, air, oil, etc.)
3. Inlet pressure
4. Outlet or delivery pressure range and setting
5. Part description
6. Quantity of each part
7. Valve assembly or serial number stated on the bottom plug.



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