

DESCRIPTION

The Type G-60 regulator is a fully automatic pressure regulating valve designed for cryogenic service in the pressure build-up circuit. Because it may be used for either cryogenic liquids or gases, it may be installed either before or after the pressure build-up coil.

SPECIFICATION DATA

Service: Cryogenic liquids and gases (pressure reducing or pressure build-up service)

Sizes: 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", and 1-1/2"

Connections: Threaded (NPT) female inlet and outlet (Also available with BSP threads).

Body: Bronze, Stainless Steel

Temperature Rating: +150°F (339°K) to -320°F (78°K)

Maximum Initial Pressure: 400 psi, 600 psi on 1/4" and 3/8" sizes

CONSTRUCTION

Bronze body, Internal trim, Spring chamber and diaphragms, (stainless steel internal trim available); Stainless steel pressure spring and seat ring; Teflon gaskets. Also available in stainless and special construction for HI-Purity Service; consult the factory.

All parts commercially cleaned for cryogenic service.

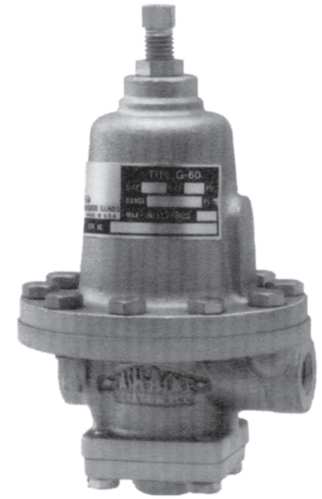
GENERAL INSTALLATION INSTRUCTIONS

The Type G-60 regulator should be installed in the horizontal position with the spring chamber upright. For other installation requirements consult the factory. For ease of operation and maintenance, it is suggested that manual shut-off valves be installed upstream and downstream from the valve. Before installing the valve, the piping and valve should be thoroughly flushed out to remove any foreign material. Install the valve with the inlet pipe fitted to the inlet connection identified on the valve body. Use a compatible sealant on the male pipe threads and do not over tighten the valve connections.

OPERATING INSTRUCTIONS

Adjusting the Delivery Pressure

The regulator's delivery pressure setting is adjusted by turning the adjusting screw (3) at



Type G-60 CRYOGENIC PRESSURE REGULATOR

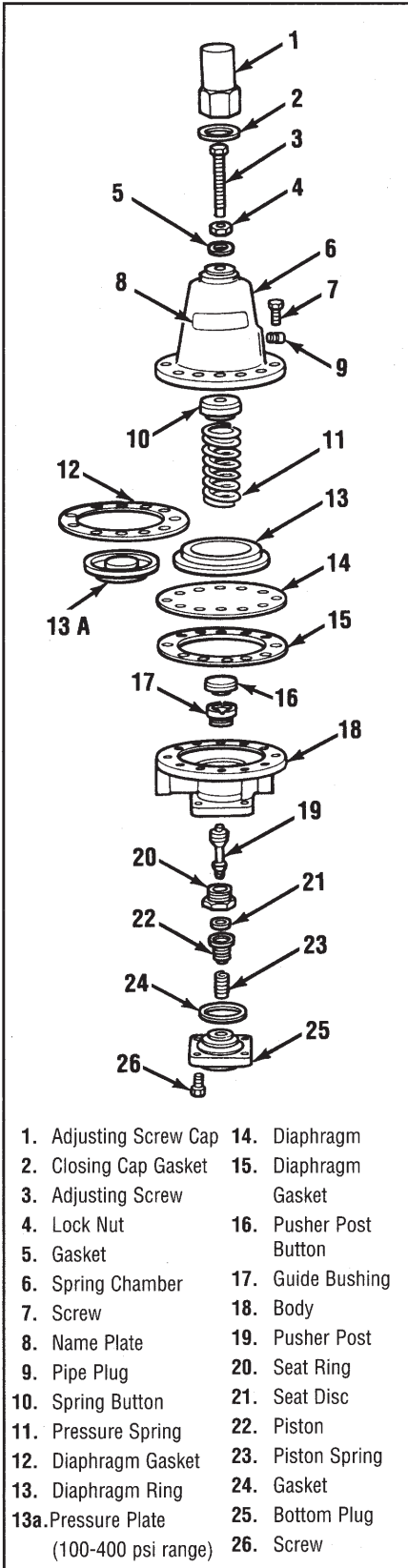
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the top of the spring chamber (6) after removing the adjusting screw cap (1) and loosening the adjusting screw lock nut (4). To increase the delivery pressure, turn the adjusting screw clockwise (into the spring chamber). To decrease the delivery pressure, turn the adjusting screw counter-clockwise (out of the spring chamber). Tighten the adjusting screw lock nut after the adjustment has been made and install the adjusting screw cap.

MAINTENANCE INSTRUCTIONS

The following procedures are provided for servicing the recommended spare parts for the Type G-60 regulator. Repair parts can easily be installed without removing the regulator from the line.

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 G-60 exploded view for parts identification.

Servicing the Pressure Spring (11) Diaphragm(s) (14), and Diaphragm Gaskets (12 and 15)

1. Remove the adjusting screw cap (1) from the top of the spring chamber (6). Remove and replace the gasket (2) if necessary.
2. Loosen the lock nut (4) 1/4 turn and turn the adjusting screw (3) counter-clockwise until the pressure spring (11) is no longer under tension.

NOTE: When installing the adjusting screw, turn the screw clockwise until the lock nut just touches the spring chamber. When the valve is placed in service the pressure setting should be very close to the original setting.

3. Remove the screws (7) securing the spring chamber (6) to the valve body (18). During reassembly, tighten the screws evenly in an alternate diagonal pattern.
4. Lift the spring chamber (6) from the valve body. Then remove the spring button (10), pressure spring (11), and pressure plate (13) (small or large).
5. Remove the metal diaphragms (14) and the upper and lower diaphragm gaskets (12 and 15).

NOTE: Metal diaphragms are laminated (either 5 or 6 per set depending on valve size). It is recommended that the gaskets be renewed whenever the metal diaphragms are replaced.

6. Remove the pusher post button (16) from the protruding pusher post (19). During reassembly, be sure the pusher post button is centered properly on the piston.
7. Inspect all parts and replace if necessary. If further disassembly is not required then reassemble the parts in reverse order. Then place the valve in service and readjust the delivery pressure as outlined under Operating Instructions.

Servicing the Guide Bushing (17), Pusher Post (19), Piston Spring (23), and Gasket (24)

1. Before removing any parts through the bottom of the valve it is necessary to completely disassemble the upper part of the valve. Remove the spring chamber and related parts from the valve body as outlined in Steps 1 through 7 above.
2. Remove the screws retaining the bottom plug (25) to the valve body (18) being careful not to damage the gasket (24). Remove the piston spring (23). Inspect and if necessary replace the gasket.
3. Separate the pusher post (19) and piston (22) by using an end wrench on the pusher post and a hex key (Allen) wrench on the piston. Then remove the pusher post through the top of the valve body (18) and the piston through the bottom of the valve body. Examine and if necessary replace the Teflon seat disc (21).

4. Remove the seat ring (20) through the bottom of the valve body using a socket wrench to prevent distortion. Then using a screw driver remove the guide bushing (17) through the top of the valve body.
5. Inspect all parts for wear or damage and replace if necessary. Use only genuine Cash-Acme replacement parts.
6. Reassemble the valve in reverse order being certain to assemble the lower section first. Carefully tighten all threaded parts, especially the seat ring (20) and the guide bushing (17) to prevent distortion. After the lower section of the valve has been completely assembled, test the valve parts for **smooth, free** movement by pushing down on the pusher post button with the heel of your hand. After placing the valve in service, readjust the delivery pressure as detailed under Operating Instructions.

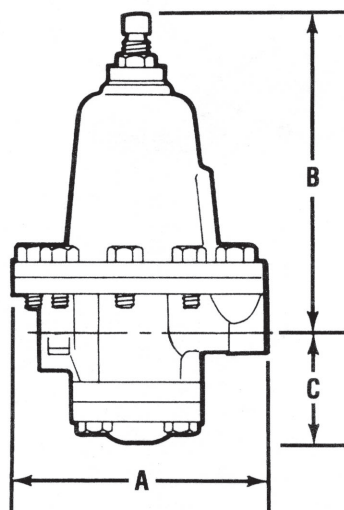
REPAIR PARTS INFORMATION

Type G-60 regulators are rugged and built to withstand long periods of service without maintenance. However, a functioning or operating piece of equipment such as an automatic valve does, in time, require attention. The relatively simple construction aids in the ease of maintenance when repairs are needed.

Refer to the Type G-60 exploded view for parts identification.

SPECIFICATIONS

Each Type G-60 pressure regulator is equipped with a pressure spring selected to provide the desired outlet or reduced pressure setting. The range of adjustment or satisfactory "working range" of individual springs is shown 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 are recommended for best performance.



REDUCED PRESSURE RANGES

VALVE SIZE	SPRING NUMBER AND ADJUSTMENT RANGE (psi)					
	#8483 5-30	#8484 15-65	#8485* 30-110	#8486* 75-200	#10019* 100-400*	#8487* 100-600*
1/4"	#8483 5-30	#8484 15-65	#8485* 30-110	#8486* 75-200	#10019* 100-400*	#8487* 100-600*
3/8"	#8483 5-30	#8484 15-65	#8485* 30-110	#8486 75-200	#10019* 100-400*	#8487* 100-600*
1/2"	#8488 0-7	#8489 5-70	#8490 50-150	#7806 50-250	#7806* 100-400*	#7806* 200-500*
3/4"	#8493 0-10	#8494 5-75	#8495 50-200	#8495* 100-400*	-	-
1"	#10672 10-50	#10751 50-200	#10751* 100-400	-	-	-
1-1/4"	#13577 5-15	#13579 10-50	#13581 30-75	#13583 50-120	#13575 75-150	#13575* 100-400*
1-1/2"	#13577 5-15	#13579 10-50	#13581 30-75	#13583 50-120	#13575 75-150	#13575* 100-400*

* NOTE: Springs and ranges marked are standard for above shown valve numbers. Lower ranges are attained by modifying standard valve and/or using a different pressure spring. Consult the factory.

DIMENSIONS

VALVE NUMBER*	SIZE	DESCRIPTION			SHIP. WT. (lbs.)
		A	B	C	
14270	1/4"	4"	6-5/8"	2-3/16"	9
14271	3/8"	4"	6-5/8"	2-3/16"	9
10585	1/2"	4-3/4"	7-5/8"	2-5/16"	16
10615	3/4"	5-5/8"	10"	2-5/8"	24
10525	1"	6-1/2"	10-3/4"	2-7/8"	35
17982	1-1/4"	8"	12-5/16"	3-9/16"	63
17740	1-1/2"	8"	12-5/16"	3-9/16"	63

* Indicated valves furnished with 100-400 psi range; see note below "Reduced Pressure Ranges" table.

HOW TO ORDER

To order repair parts, refer to the exploded view of the Type G-60 to identify the part required. When ordering, please use the names listed and provide the valve serial number stated on the identification tag. Also state the following:

- "Repair Parts for Type G-60 Cryogenic Service" and provide:
1. Valve size
 2. Service
 3. Inlet pressure
 4. Outlet or delivery pressure range and setting
 5. Temperature range
 6. Pressure range
 7. Part description
 8. Quantity of each part
 9. Valve assembly or serial number stated on the metal name plate attached to the spring chamber.