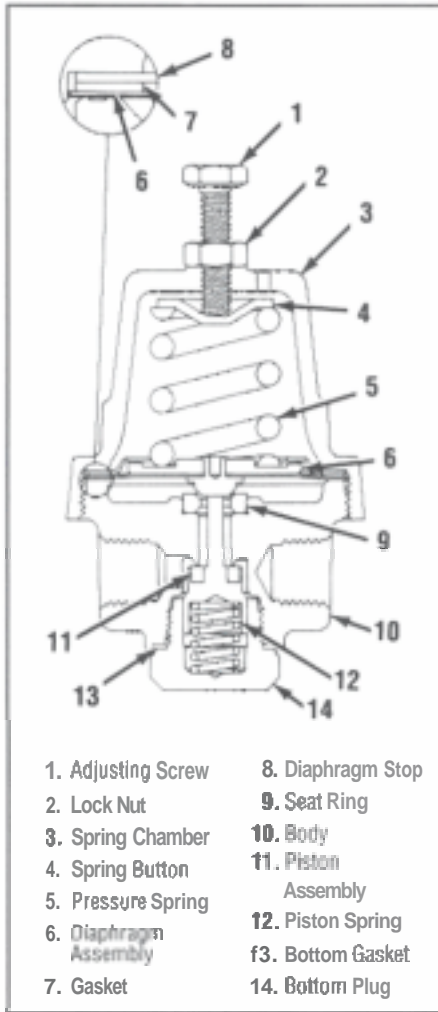




TECHSPEC



DESCRIPTION

The Type PEE-1 regulator is designed for cryogenic service and combines the pressure build-up and economizer functions into one unit. In the Type PBE-1, the economizer function starts before the pressure build function stops. A restriction orifice limits the economizer output and prevents it from overpowering the pressure build function. The Type PBE-1 is small and compact, yet is highly efficient making it suitable for use in numerous applications. The Type PBE-1 incorporates a 'floating ring' design that provides for smooth even pressure control.

SPECIFICATION DATA

Service: Cryogenic liquids and gases that are not corrosive to brass. Well suited for use in the pressure builder-economizer circuits.

Sites: 1/4" only

Connections: Threaded female connections. Connections are identified for pressure builder and economizer circuits. Available with either right-hand or left-hand economizer outlet connection.

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

Pressure Control Range:
 Valve No. 19264: 50-175 psi,
 (also available in 15-65 psi range).

Valve No. 19276: 150-350 psi

Valve No. 20774: 300-600 psi

Maximum Initial Pressure: 600 psi

Capacity: For specific capacity information, consult the factory.

CONSTRUCTION

Forged brass body, and spring chamber. Stainless steel seat disc, and pressure spring. Brass and stainless steel internal trim with Teflon/Armalon diaphragms, or Phosphor Bronze Diaphragms.

All parts commercially cleaned for cryogenic service.

GENERAL INSTALLATION INSTRUCTIONS

Type PBE-1 valves are available with either right-hand or left-hand outlet connections to the economizer circuit to enable it to be adapted to most any installation.

In a typical installation, the Type PBE-1 should be installed in the pressure build-up circuit before the pressure build-up coil and the safety relief valve. When installing the valve connect the pressure build-up supply line to the inlet connection identified 'P.B. IN'. The pressure build-up outlet connection ('P.B. O W') should be connected to the pressure build-up line leading to the pressure build-up coil. Connect the economizer line to the outlet connection identified with EC. OUT.

Before installing the valve, the system piping should be thoroughly flushed out to remove any foreign material to ensure for the efficient and trouble free operation for which the valve was designed.

It is recommended that the Type PBE-1 valve be installed in the horizontal position with the spring chamber upright. For other installation requirements consult the factory.



Type PBE-1 CRYOGENIC COMBINATION PRESSURE BUILDER-ECONOMIZER

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Dated	JULY 1999

For ease of operation and maintenance, it is suggested that manual shut-off valves be installed upstream and downstream from the valve. 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 (1) at the top of the spring chamber after loosening the adjusting screw lock nut (2). To obtain a higher pressure setting, turn the adjusting screw clockwise (into the spring chamber). To lower the pressure setting, 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 Type PBE-1 valve. Repair parts can easily be installed without removing the valve from the line.

INSTALLATION, MAINTENANCE & REPAIR PARTS INFORMATION

ISO 9001 Certified

CAUTION: Before attempting to replace any spare parts be sure to shut off all pressure connections to the valve. Before proceeding with any valve service be certain to relieve the pressure from BOTH sides of the valve.

Refer to the Type PBE-1 cut away view for parts identification.

Servicing the Pressure Spring (5) and Diaphragm Assembly (6)

1. Loosen the lock nut (2) 1/4 turn and turn the adjusting screw (1) counter-clockwise until the pressure spring (5) is no longer under tension.

NOTE: When installing the adjusting screw during reassembly, 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 its original setting.

2. Unscrew the spring chamber (3) from the valve body (10). During reassembly, tighten the spring chamber securely.
3. Remove the spring seat (4), pressure spring (5), diaphragm stop (8), and the diaphragm gasket (7) from the valve body (10).
4. The Diaphragm assembly (6), consisting of the pressure plate, diaphragm(s), diaphragm liner and ball seat can now be lifted off the valve body (10). Inspect all parts and replace if necessary.

NOTE: The diaphragm assembly is offered only as a complete assembly.

IMPORTANT: Exercise care to ensure that the surface of the ball seat is not scratched, marred or damaged during disassembly and reassembly.

5. Once the diaphragm assembly has been removed, the seat ring (9), which is sitting loosely in a recess of the valve body, can be removed.

IMPORTANT: Handle the seat ring carefully to avoid damage to the seat ring surface which contacts the ball seat.

6. Inspect all parts and replace if necessary. Reassemble in reverse order. After placing the valve back in service, adjust the delivery pressure setting as detailed under Operating Instructions.

Servicing the Piston Assembly (11) and Bottom Plug Gasket (13)

1. Unscrew the bottom plug (14) from the valve body (10) and remove the bottom plug gasket (13). The bottom plug is under slight tension as a result of the piston spring (12) acting against the plug. Loosen the bottom plug with a standard wrench, then carefully unscrew the plug by hand. The piston spring (12) and piston assembly (11) will normally "drift" out with the bottom plug.

NOTE: It is not necessary to relieve the load on the pressure spring (5) when removing parts through the bottom of the valve.

2. Inspect all parts and replace if necessary. Closely examine the piston assembly, especially the seat disc. Replace the piston assembly if wear or damage is evident.

NOTE: The piston assembly consists of the piston and the seat disc and is offered only as a complete assembly.

3. Reassemble the valve in reverse order.

REPAIR PARTS INFORMATION

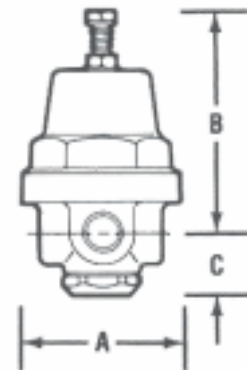
Refer to the Type PBE-1 cut away view for parts identification.

SPECIFICATIONS

Each Type PBE-t valve is supplied with either of two pressure springs which may be selected to provide a desired pressure setting. The range of adjustment or "working range" for each of two pressure springs is stated in the table below. The "set" pressure and range of adjustment is stamped on a tag fastened to the valve.

SPRING RANGES

SPRING NUMBER	MAXIMUM WORKING PRESSURE (psi)
7337	50-175
19295	150-350 & 300-600
Other Ranges	Consult Factory



DIMENSIONS

VALVE NUMBER	SIZE	DIMENSIONS			SHIP WT. (lbs.)
		A	B	C	
	1/4"	2-1/4"	3-118"	718"	1.4
19264	Low Pressure - Ranges to 175 psig.				
19276	High Pressure - Ranges 150 to 350 psig.				
20774	High Pressure - Ranges 300 to 600 psig.				

HOW TO ORDER

To order repair parts, refer to the cut away view of the Type PBE-1 to identify the part required. When ordering, please use the part names listed and provide the valve serial number stated on the identification tag. Also state the following:

"Repair Parts for Types PBE-1 Cryogenic Service" and provide:

1. Valve size
2. Service
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 metal identification tag under the adjusting screw lock nut.

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