

**TYPES 114 • 114R – DOUBLE SEATED • SPRING LOADED
 TYPES 116 • 116R – DOUBLE SEATED • WEIGHT LOADED
 DIAPHRAGM REGULATING VALVES**

Reducing Valve (Normally Open) Pressure to Diaphragm to Close • Relief Valve (Normally Closed) Pressure to Diaphragm to Open • Steam, Air, Gas, Water, Oil Service
 300 lb. Bronze Body • 250 lb. Cast Iron Body



On self contained Regulators for reduced pressures above 60 psi a piston operator is necessary and replaces the diaphragm operator at additional cost.

Type 114 • Type 116: Spring-loading distinguishes the 114 Regulator. Weight-loading distinguishes the 116 Regulator. They are direct connected, diaphragm actuated. A regulator of this design will maintain a given constant pressure reduction under continuous service conditions. The balanced inner valve is unaffected by high pressure fluctuations. When the spring or weight is set for the desired reduced pressure, the regulator will automatically deliver the amount of steam required for any specific operating condition.

This regulator is ideal for heating and gas distributing systems or any service requiring direct operated pressure reduction of Steam, Air, Gas, Water and Oil.

Valves, sizes 1½, and smaller, are usually furnished with bronze bodies and bronze trim. Larger valves have cast iron bodies with bronze trim.

Diaphragm heads are interchangeable and may be had in a number of sizes suitable for various reduced pressure ranges. (6", 7", 8", 10", 13".)

Installation may be made in a horizontal pipe line with the diaphragm either above or below the line or in a vertical line with the stem located in a horizontal plane.

Control pressure is piped to the diaphragm chamber from the reduced pressure line about ten feet ahead of the regulator where an equalized pressure is maintained. The control pressure line should be so located as to form a condensate trap to seal the diaphragm and protect it from the heat of the steam.

A needle valve installed in this line will cushion the action of the main valve. Weight loaded regulators must be installed with diaphragm below a horizontal pipe line.

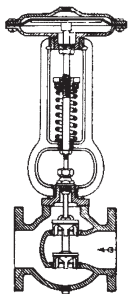
Type 114-R • Type 116-R double seated relief valve • Reverse acting:

With the exception of a reversed disc, the 114-R and 116-R double seated Relief Valves are of the same general construction as the 114 and 116 Regulator with the same dimensions in all pipe sizes.

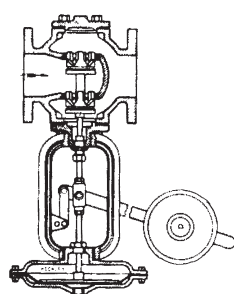
The disc is held to its seat by the spring or weight loading and is opened by the pressure to be relieved acting on the diaphragm through pilot piping to the inlet line.

The 114-R and 116-R are best applied in relieving from one pressure line into a lower pressure line as variations in either the inlet or outlet pressure have no effect on its operation because of the balanced disc construction.

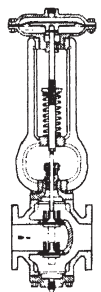
Steam and air capacity tables, see pages 16-17. Water capacity table, see page 15.



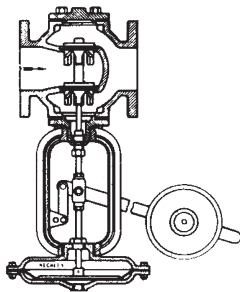
TYPE 114



TYPE 116



TYPE 114-R



TYPE 116-R

**DIMENSIONS (approximate) • TYPE 114 • 114-R
 116 • 116-R • 118 • 118-R • 119 • 119-R**

Size	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12
Face to Face Screwed	4⅞	4⅞	4⅞	5	5	6½	7	9	—	—	—	—	—	—
Face to Face Std. Flanged	—	—	—	—	—	6½	8⅞	9	10	12	13	16	20	22
Face to Face Ex. Hvy. Flanged	—	—	—	—	—	7	8⅞	10	11	12	13	17	21	24

TYPES 119 • 119R – SINGLE SEATED • SPRING LOADED
TYPES 118 • 118R – SINGLE SEATED • WEIGHT LOADED
DIAPHRAGM REGULATING VALVES

Reducing Valve (Normally Open) Pressure to Diaphragm to Close • Relief Valve (Normally Closed) Pressure to Diaphragm to Open • Steam, Air, Gas, Water, Oil Service 300 lb. Bronze Body • 250 lb. Cast Iron Body

Type 119 • Type 118: This single seated direct connected diaphragm type of regulator is recommended for dead end service where it is required that the valve close tight and maintain a reduction regardless of flow.

The port area is about one-half the pipe area so it is not a suitable type to use where maximum high pressure pipe capacity is required.

The initial pressure is under the disc. Control pressure on the diaphragm must overbalance initial pressure under the disc. The greater the difference between initial and reduced pressures, the larger the diaphragm must be.

Approximate initial and reduced pressures must be known in order to construct a regulator of this type for a given operating condition.

Valves, sizes 1½" and smaller, are usually furnished with bronze bodies and bronze trim. Larger valves have cast iron bodies with bronze trim.

The yoke which joins the valve body and the diaphragm chamber is held in place by set screws. **Recommended installation in order to obtain water accumulation to protect the diaphragm would be to have the valve inverted with the yoke and diaphragm chamber below the line of flow.** Diaphragm heads are interchangeable and are available for most pressure conditions in sizes 6", 7", 8", 10", 13".

Installation: See page 10.

Type 119-R • Type • 118-R single seated relief valves • Reverse acting:

The Single Seated 119-R and 118-R are identical to the 119 and 118 valve except reverse seated.

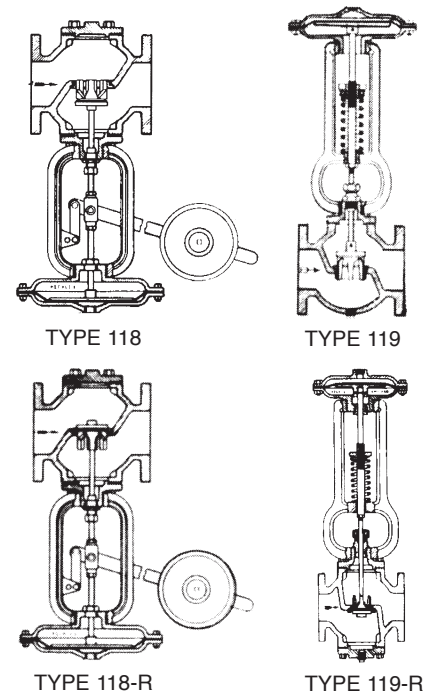
The 119-R and 118-R gives accurate relief where the pressure on the discharge is constant such as when relieving to the atmosphere. It is tight on shut-off but the pressure setting is affected by both inlet and outlet pressure variations.

The disc is held to the seat by spring or weight loading (normally closed). The pilot line senses the increase in up-stream pressure and signals the diaphragm to open the main valve.

Steam and air capacity tables. see pages 16-17. Water capacity table, see page 15.



On self contained regulators for reduced pressures above 60 psi, a piston operator is necessary and replaces the diaphragm operator at additional cost.



SHIPPING WEIGHT • TYPE 114 • 114-R • 116 • 116-R • 118 • 118-R • 119 • 119-R

Size	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12
Screwed	31	31	33	36	40	90	100	130	—	—	—	—	—	—
Standard Flanged	—	—	—	—	—	95	110	140	170	235	285	450	600	925
Extra Heavy Flanged	—	—	—	—	—	100	120	150	185	245	290	500	650	1000