

SUPERIOR A21B **STEAM PRESSURE GAS REGULATOR**

The Superior Model A21B Steam Pressure Gas Regulator is a proven control used for accurately regulating the steam pressure on natural gas firing and provides the feature of modulating fire control with a modified low fire adjustment on reaching the pressure setting. It is designed with the compound lever action principle to regulate the flow of gas to the burners by action of a non-metallic Spaldite valve disc controlled by the slightest movements on the diaphragm exposed to the steam pressure. The control is an all metal lever action type, non-corrosive, and not affected by gas, steam or heat thereby assuring long life and dependability.

The A21B is commonly used and has been used on steam boilers through the 50 H.P. size as it is simple and easy to adjust, provides accurate and sensitive steam regulation and the added advantage of modulating fire control.



MODEL A21B

ADVANTAGES AND FEATURES

1. **Safer and More Efficient Method of Burner Control.** The A21B Superior Steam Pressure Gas Regulator provides modulating fire control of the burner for safer and more efficient operation. By modulating the burner flame to the boiler steam pressure, the burner rate increases and decreases to respond to the load demand to maintain a more constant boiler steam pressure. Modulating the flame to the load demand provides higher operating efficiency, more uniform pressure control, safer ignition and steadier operation.
2. **Accurate Repetitive Settings.** The large diaphragm area operated by steam pressure against a heavy steel adjusting spring provides a drift-free, adjustable control that will constantly repeat at control setting to produce dependable accurate control.
3. **Easy and Simple to Adjust Pressure Setting.** The control is easy and simple to adjust compared to most modulating type controls.
4. **Corrosion Resistant Construction.** The materials used in the construction are all for heavy duty service. Brass diaphragm stock, heavy aluminum body castings, bronze internal stampings and heavy duty steel springs provide corrosion resistant features that create the longevity of this control.
5. **Low Cost.** The A21B Superior Regulator is a high quality control at low initial cost. The small number of internal moving parts reduces the maintenance cost of this control and assures dependability.

SUPERIOR A21B
STEAM PRESSURE GAS REGULATOR (CONTINUED)

I. **APPLICATION:**

1. Should be used only on natural gas firing with burners approved for modulating fire control.
2. The valve should be selected for the proper operating pressure as it comes in the following ranges: 0 to 30 PSI, 30 to 100 PSI and 100 to 160 PSI. If the regulator for the proper operating range is not selected, the spring will not permit accurate pressure control.

II. **DESIGN AND CONSTRUCTION:**

This control has been modified to allow a higher adjustable low fire rate. An adjustable stop has been installed on the clapper for controlling the low fire rate. This added feature allows a wider range of low fire setting. The low fire should be properly adjusted to assure a safe light but to the minimum to prevent pressure carry-over unless a high limit shutoff is used

The Model A21B control is designed to prevent steam from entering the gas chamber during normal operation or on diaphragm breakage. The gas chamber is sealed off from the diaphragm section of the valve at the point where the shaft enters the valve body. A "U" cup Meonite Airodated Seal was especially designed for this application as this does not harden or become subject to deterioration or damage from moisture or rust. The principle is such that the "U" cup prevents any gas from entering the diaphragm area and permits positive seal-off from the diaphragm. In event of diaphragm breakage, an opening is provided on the regulator so that steam will escape calling this to the operator's attention.

All sizes of regulators are furnished with cast aluminum bodies.

III. **SERVICE SUGGESTIONS:**

If the valve fails to respond to pressure settings or becomes defective, the following service suggestions are offered.

1. If the valve leaks steam out of the opening or becomes internally inoperative, the entire regulator should be replaced.
2. If the regulator fails to respond to pressure setting, the pressure line and diaphragm area on the steam pressure side should be inspected and cleaned.
3. If the diaphragm breaks or becomes damaged or inoperative, it should be replaced or the entire regulator can be exchanged.

For proper adjustment and setting, see separate Bulletin 128-ADJ A21B.