
SELF OPERATING GAS CONTROLS

Description

Partlow's series of self-operating, throttling gas valves have been specified for a wide variety of applications for more than 60 years. They maintain critical temperatures in gas-fired appliances without the characteristic sawtooth curves of two-position controls.

Model 10

Tapped for 1/2" pipe size only, these valves control kerosene, fuel oil and liquid phase of LP gas without freeze up. Heavy-walled bronze body, with delrin valve seat and stainless valve. Maximum pressure: 65 psi.

Model 20

Pocket-sized valve designed for temperature control of small appliances. May be mounted in any position. Pipe size 3/8" for 1 psi. Model 28 - 3/8 is constructed to handle up to 40 psi.

Model 40

Self-operating Model 40 was designed for use in vertical pipelines to maintain throttling temperature control of small or medium capacity gas-fired appliances. Pipe size of 1" take 1 psi. Model 48 - 1/2" has a 5 psi rating.

Model 60

The horizontally-mounted Model 60 is used to provide throttling control in gas-fired appliances of moderate capacity. Pipe sizes of 1 1/4", 1 1/2" and 2" handle 1 psi. UL listed.

Model 70

Features a balanced double-ball valving mechanism. Pipe sizes 3/4", 1 1/4" and 2" for pressures up to 20 psi. Model 70 - 3", a special large capacity valve up to 5000 cfh operates at 1 psi instead of 20 psi. For very sensitive applications, the Model 713 was developed, with larger seat and ball dimensions. Model 70 series may be installed horizontally only.

Operation

Adjustment is made by turning the setting knob, which advances or retracts a fixed level fulcrum in larger models, or raises or lowers the valve seat of smaller instruments. The plunger of the thermal element bears directly on the short leg of the lever or control valve.

There is no power requirement.

In the thermal element, expanding and contracting with deviations from appliance set point, advances and retracts the element plunger. The valve is thus throttled to decrease or increase the fuel supply to the burners, restoring control temperature at the bulb.

The throttling action leads to a state of balance in which the valve is held at just that position which permits a gas flow sufficient to maintain control temperature under existing appliance load conditions. As load conditions change, a new valve position is sought and maintained as soon as equilibrium is established under the new condition.

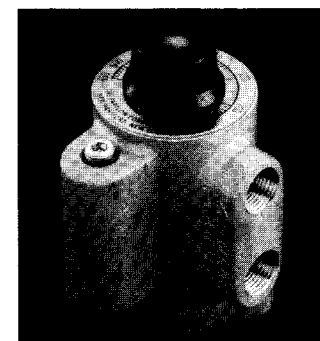
An adjustable needle-type by-pass regulates the gas flow around the valve to supply minimum flame, if required.

All models (except Model 10) are made of heavy-wall die-cast aluminum; internal mechanisms are machined brass, aluminum and zinc die cast parts.

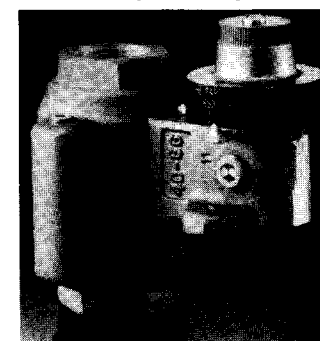
MODEL 10



MODEL 20



MODEL 40



MODELS

10, 20, 28, 40, 48, 60, 70, 713

Applications range from industrial ovens to bakery and permanent press ovens, grain dryers, maintenance of molten solder temperature in side-seaming of cans, asphalt and tar kettles, air makeup heaters, bismuth to wax melt tanks, even cotton gins and propane heaters to power desert-based radar units.

Models 70, 60 and 40 are designed for stationary applications only. For mobile applications, like tar kettles, Models 20 and 10 are recommended.

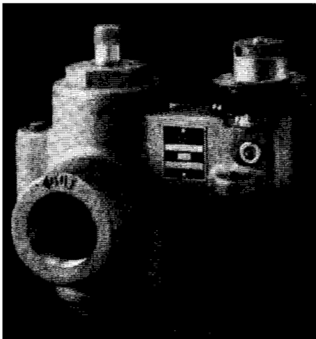
Those sizes of gas control valves which have shared common internal parts have been consolidated into the largest pipe size in each group. Since the only difference between them was the pipe thread machining, it is proper to reduce the large sizes by common, locally available pipe bushings, to the needed smaller size. Previous published flow characteristics for the smaller sizes after being bushed-down are still appropriate. Some codes may not allow the use of standard reduced bushings. If this is the case, a standard pipe concentric reducing coupling and pipe nipple may be allowed. We recommend that local codes be checked to be sure acceptable fittings are used.

How To Order

The various ordering numbers are:

Model 10	GC00107
Model 20 - 3/8"	GC00098
Model 28 - 3/8"	GC00100
Model 40 - 1"	GC00088
Model 48 - 1/2"	GC00090
Model 60 - 1"	GC00093
Model 60 - 1 1/4"	GC00094
Model 60 - 1 1/2"	GC00095
Model 60 - 2"	GC00096
Model 70 - 3/4"	GC00101
Model 70 - 1 1/4"	GC00103
Model 70 - 2"	GC00105
Model 70 - 3"	GC00106
Model 713A - 1 1/4"	GC00104

MODEL 60



MODEL 70



Select the proper ordering number. Next consult element selection matrix, page 62, and after selecting part number, specify as a separate line item. Dials available for gas controls are on pages 66- 68. Dial selected must correspond to specific range of element selected.

All gas controls require a Type M element plunger which is spring loaded to compensate for overtravel (Code 55 or 56). High ambient temperature head assembly (Code 55) is used when the instrument will be located in ambient temperatures between 32°F but not greater than 150°F. Low ambient assembly should be called out (Code 56) when instrument will be located in ambient temperatures between -30°F and 125°F.

For pricing see Form 3028, Mechanical Price Book, page 16.

**Gas
Controls**