

Safety Cocks and Safety Control Systems, Pneumatic, for Gas

A gas cock developed by FM Approvals provides a positive method of preventing fuel explosions in multi-burner gas-fired industrial furnaces, ovens, dryers and boilers.

The types of explosions prevented are those which can result if a burner cock is accidentally left open when the main gas supply is turned on and there is delay in applying the lighting torch. Such a time delay would permit an explosive gas-air mixture to form which would be ignited when the torch is applied.

Briefly, this method of assuring closure of all individual burner cocks before the main burner gas safety shutoff valve can be opened is a supervising cock and gas safety control system. The supervising cock is similar to a usual burner cock, except that it incorporates two side outlets to furnish a small independent passageway which is open only after the main gas passage is completely closed. The keyway width is narrow enough, with respect to the size and proportions of the main gas ports, to insure positive closure of the main gasway before opening the side outlets.

When these cocks are applied to multiburner gas safety control systems, the side ports are connected in series with copper tubing to adjacent cocks, so that when the gas passages of all cocks are closed, a new continuous passageway is provided through all the closed cocks. The number and locations of pressure switches, arrangement of tubing and other details will vary with the individual installation. FM Approvals should be allowed to review and advise on specific applications.

The gas safety control system is adaptable to any type of burner and its air-gas mixing equipment. Combustion air, where available, is preferable to gas for use in the copper tubing (safety checking) system. The main burner safety shutoff valve cannot be opened and remain open until all supervising cocks are closed, combustion air pressure normal and normal gas pressure present in the pilot burner manifold. Power failure, loss of combustion air, and/or gas pressure failure during normal firing will automatically close the main burner and pilot safety shutoff valves. Once the initial safety check has been completed and the main burner safety shutoff valve is opened, the low gas pressure switch downstream from it shunts the checking pressure switch so that, after lighting the pilots, the supervising cocks can be opened to light off.

Another important application of the gas safety control cock is its use to provide a ready means for making leakage tests of safety shutoff valves. The cocks listed are suitable for manufactured, natural, propane and butane gases.

Cat. No. 3013

<i>Cat. No.</i>	<i>Nominal Pipe Size, in.</i>	<i>Port Size, % Pipe Sectional Area</i>	<i>Max Rated Optg. Press., psi (kPa)</i>	<i>Copper-tubing Checking System Connections, in. NPS</i>
3013	3/8	53	1 (6.9)	1/4

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