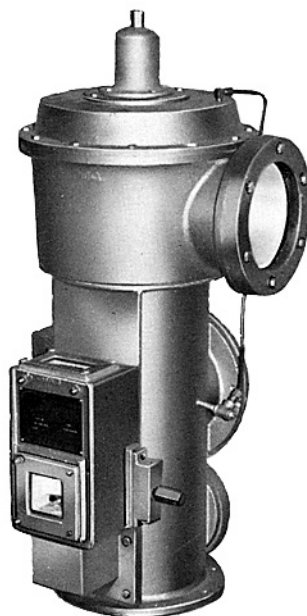


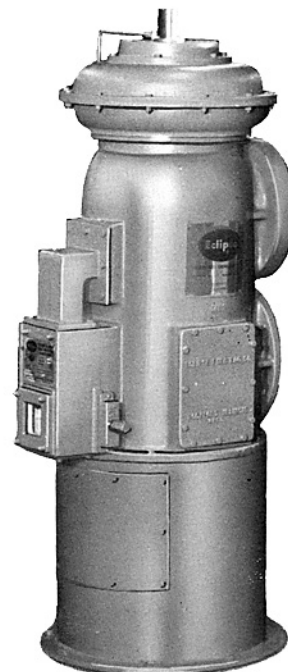
ECLIPSE CONSTA-MIX[®] VALVES



30 CM Valves



116 CM and 124 CM Valves



32 DV thru 40 DV Valves

Eclipse Consta-Mix Valves are precision gas/air mixers and controllers, designed for use in either: Premix Systems, to supply a combustible gas/air mixture to gas-burning equipment; or in Standby Systems, to replace, or supplement, the existing gas supply in the event of interruption.

The Consta-Mix Valve offers extreme flexibility. Any type of commercial fuel gas can be used. Once the gas/air ratio is set, no further adjustments are required. Regardless of demand requirements, exact gas/air ratio is maintained with smooth, pulse-free operation.

Eclipse Consta-Mix Valves are approved by Factory Mutual and listed by Underwriters Laboratories. Consta-Mix Valves are available with maximum capacities ranging from 3,000 to

140,000 cfh. Delivery pressure is dependent on booster or compressor used. Turndown ratios from maximum to minimum capacity are at least 100 to 1.

To aid in the selection of the proper Consta-Mix Valve to suit your requirements, contact your nearest Eclipse representative or the factory with the following information: description of application; desired delivery pressure; type and specific gravity of gas available; maximum gas/air mixture requirements; specific gravity of gas/air mixture required; and electrical current characteristics. Eclipse also offers completely packaged Consta-Mix Machines designed to meet the latest N.F.P.A. requirements and your design specifications. (See Bulletin L-600)

Catalog No.	30CM	116CM	124CM	32DV	32SDSV	40DV
Max. Total Mixture* Capacity, SCFH	3000	10000	25000	40000	72000	140000
Pressure Drop, "W.C.	3	5	5	5	5	5

Capacities are for any commercial fuel gas mixed with air. They can be delivered at any pressure within the range of the booster or compressor used.

*To calculate maximum quantities of individual gases entering the Consta-Mix Valve, multiply its total mixture capacity by the percentage of each gas in the mixture. For example, a 10:1 air-natural gas mixture is 90.9% air and 9.1% natural gas by volume. A 124CM handling this mixture will have maximum capacities of 22,727 scfh air and 2273 scfh natural gas. The same mixer handling a 55% propane-45% air mixture will have maximum capacities of 13,750 scfh propane and 11,250 scfh air.



Eclipse Combustion

ISO 9001 Registered

CONSTA-MIX VALVE OPERATION

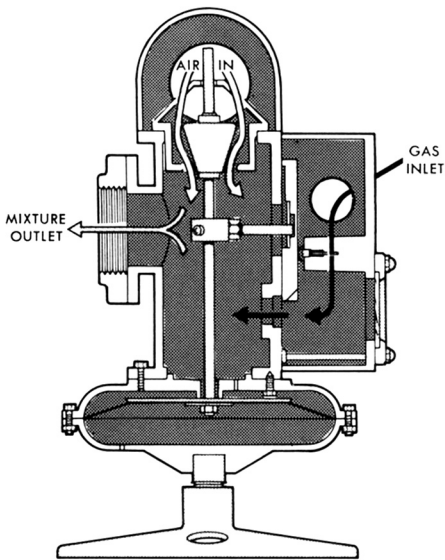


FIG. 1 30 CM Valves

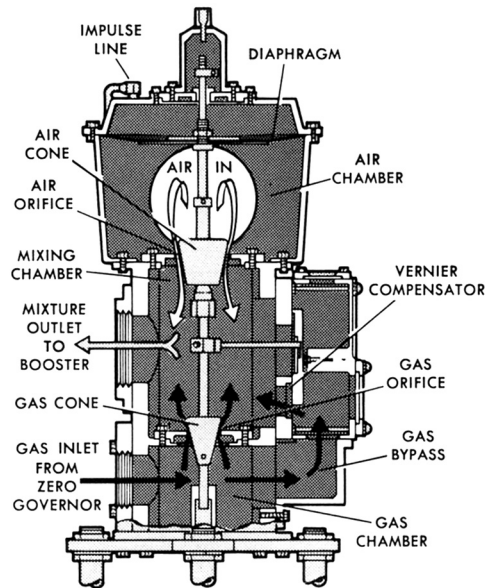


FIG. 2 116 CM and 124 CM Valves

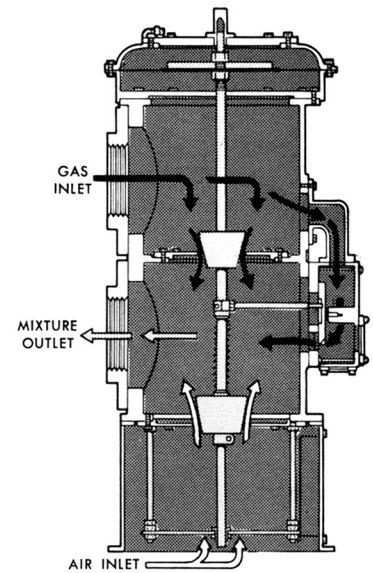


FIG. 3 32 DV and 40 DV Valves

Eclipse Consta-Mix valves are variable area, constant pressure drop devices incorporating two precision cones mounted on a common shaft which float over a pair of precision orifice plates. The gas and air cones and their respective orifices are built to maintain the same proportion of air and gas throughout the entire operating range.

The air and gas cones are factory preset to just close off the annular areas, but do not actually rest on the orifice plates. Wear in the Consta-Mix Valve is negligible if used with clean air and fuel gas. Units have been in operation for over thirty years with no particular attention required except for normal air filter and booster seal maintenance.

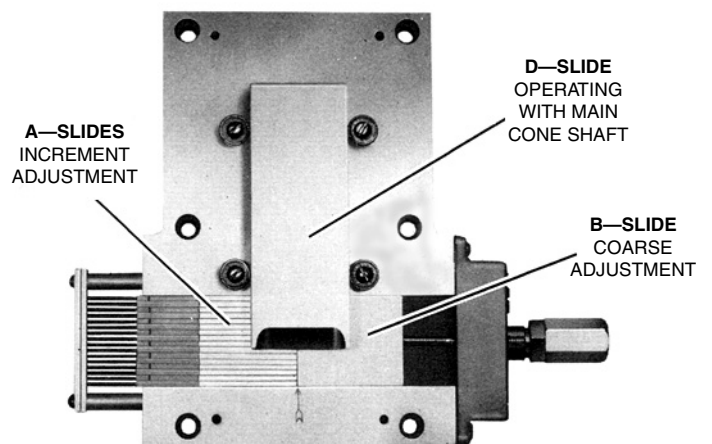
Referring to Figure 2, when suction is created, the air and gas (both at atmospheric pressure) are drawn into the mixing chamber through their respective openings. The proportion of gas and air is controlled by the gas and air cone orifice areas. Within the mixing chamber the gas and air are mixed and drawn into the inlet of the booster or compressor where further intimate mixing occurs.

Suction in the valve is transmitted to the diaphragm through an impulse line. Should the demand increase, a momentary imbalance occurs and the diaphragm, shaft and cones move upward, increasing the gas and air orifice area until the capacity is satisfied. Should the demand decrease, the action is reversed, thus reducing flow.

A predetermined percentage of the fuel gas is diverted to flow through the gas bypass. There the vernier compensator, which is unique with Eclipse Consta-Mix Valves, provides a very precise adjustment of gas/air ratio over the entire capacity range of operation.

The vernier compensator, illustrated below, features a large, adjustable slide for adjusting gas/air ratio over the entire range of the Consta-Mix Machine and a number of small increment slides for the fine ratio adjustments at any point in the range of operation.

The 30CM is supplied standard with an air cone and orifice. All of the gas flows through the vernier compensator. Larger valve sizes are typically constructed with both air and gas cones and orifices. For some applications, however, the vernier compensator may be sufficient to handle all of the gas flow. Valves for these applications are supplied with an air cone and orifice and a blank gas orifice.



Vernier Compensator



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