

FVA-FVS ADJUSTABLE FLOW VALVES FOR CLEAN GAS AND AIR

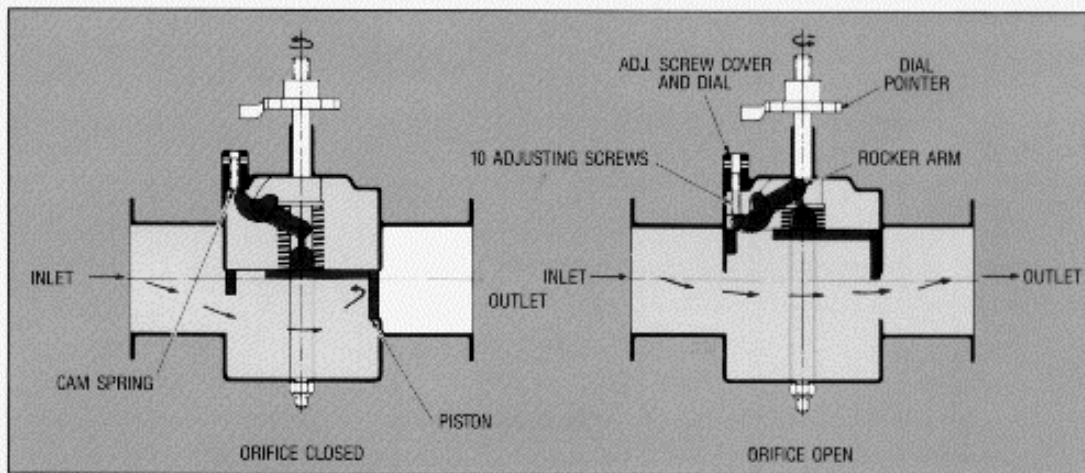
Operating conditions encountered in the automatic controlling of gas and air flows often require valves with an adjustable flow curve which can be altered at various points of opening to obtain the desired amount of flow. With Hauck Adjustable Flow Valves, the flow rate can be easily changed at any of the 10 or more adjusting points provided. Therefore, the valve flow curve can be characterized to suit different constants in pressure, flow suction, or discharge resistance occurring at the minimum, maximum or in-between capacities.

HAUCK



- ADJUSTABLE FLOW CURVES
- STRAIGHT OR ANGLE FLOW
- INSTALLED IN ANY POSITION

- EASY INITIAL SETTING
- LOW OPERATING TORQUE



Operating conditions encountered in the automatic controlling of gas and air flows often require valves with an adjustable flow curve which can be altered at various points of opening to obtain the desired amount of flow. Such flexibility is not obtainable with ordinary adjustable port valves having a fixed height of port opening over the entire range of operation.

With Hauck Adjustable Flow Valves, the flow rate can be easily changed at any of the 10 or more adjusting points provided. Therefore, the valve flow curve can be characterized to suit different constants in pressure, flow suction, or discharge resistance occurring at the minimum, maximum or in-between capacities. Infinite flexibility of flow characteristics is thus available. These valves are designed for use as control valves and they should not be used as shutoff valves.

The Adjustable Flow Valve can easily be linked to a Hauck Micro Oil Valve and Hauck Adjustable Port Valve for manual or automatic control of gas, oil, and air flow to burners.

For the 1" thru 4" valves, the valve body and piston are made of cast iron. For the 6" valve, the body is fabricated (welded) steel and the piston is fabricated aluminum. The valve spring and cam spring are of steel and other internal operating parts are of brass. All valves have four pads on each side which are drilled and tapped to facilitate mounting.

OPERATION

The valve consists of a cylindrical piston with a rectangular port. The rectangular port both rotates and reciprocates within the valve body, which also has a rectangular opening. When the valve lever is moved from low (1) to high (10) position, the rectangular opening in the body is uncovered for flow. The height of the rectangular port is adjustable. The position of the cam spring affects the position of the rocker arm, which in turn controls the height of the port. The cam spring can be adjusted at 10 or more independent points (the number of points is dependent on the valve size) by rotating the adjusting screws located under the valve dial.

If more or less flow is desired at any position, the adjusting screw under the pointer is turned in to increase, or out to decrease, the height of the port opening and thus change the overall port area at that point. Great flexibility of flow characteristics is provided by the adjusting screws which can be set for either uniform or varying increments of change in capacity at the 10 valve dial positions.



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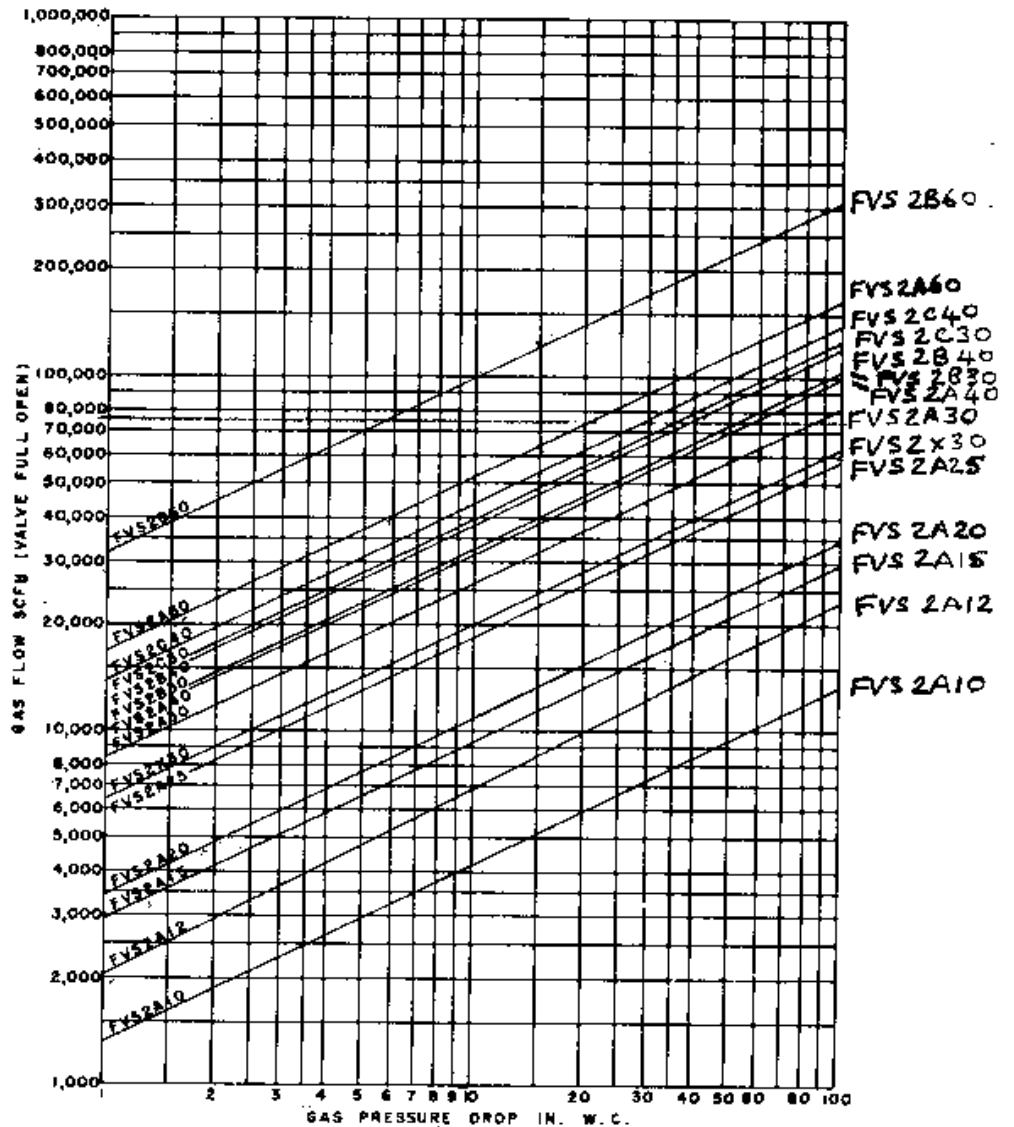
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SELECTION TABLE

VALVE SIZE	PORT SIZE	STRAIGHT MODEL NO.	ANGLE MODEL NO.
1"	A	FVS2A10D	FVA2A10B
1 1/4"	A	FVS2A12D	FVA2A12B
1 1/2"	A	FVS2A15D	FVA2A15B
2"	A	FVS2A20D	FVA2A20B
2 1/2"	A	FVS2A25F	FVA2A25A
3"	X	FVS2X30F	FVA2X30A
3"	A	FVS2A30F	FVA2A30B
3"	B	FVS2B30F	FVA2B30B
3"	C	FVS2C30F	FVA2C30B
4"	A	FVS2A40F	FVA2A40B
4"	B	FVS2B40F	FVA2B40B
4"	C	FVS2C40F	FVA2C40B
6"	A	FVS2A60F	-
6"	B	FVS2B60F	-



FVA-FVS ADJUSTABLE FLOW VALVE STRAIGHT VALVE-GAS NATURAL GAS



EXPLANATION:

Q135

1. Capacities are maximum, pointer on position 10 and valve piston in the full open position.
2. Maximum pressure: 1" to 4" - 15 psig, 6" - 3 psig.
Maximum temperature: all valves - 250° F.
3. For purposes of correction, capacities are taken from curves Q135 and Q136.
4. For a known valve, flows can be corrected for:
HIGH PRESSURE - Correction Factor C1
GAS TEMPERATURE - Correction Factor C2
SPECIFIC GRAVITY - Correction Factor C3

According to the equation:

$$Q(\text{corrected}) = C1 \times C2 \times C3 \times Q(\text{rated})$$

CORRECTION FACTORS - SEE NEXT PAGE.

CORRECTION FACTORS

HIGH PRESSURE (Correction Factor C1)

Pressure Drop (psig)	INLET PRESSURE (PSIG)		
	5	10	15
1	1.15	1.29	1.42
2	1.63	1.80	1.95
3	1.95	2.25	2.40
4	2.20	2.50	2.73
5	2.45	2.75	2.95
10		3.70	4.15
15			4.70

To find flow rate for high pressure air or gas, multiply flow at 16 osig (27.7 in W.C.) by correction factor in the table.

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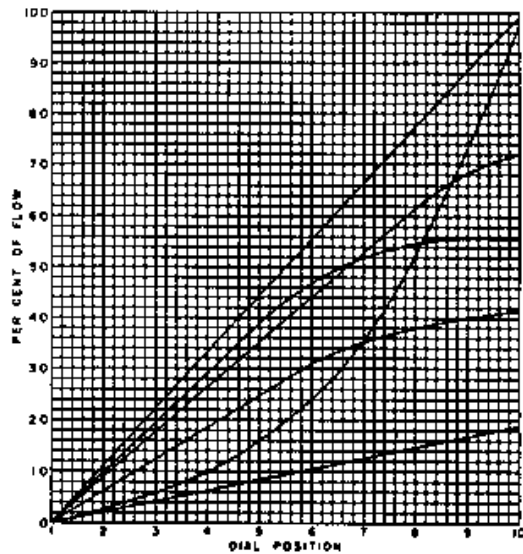
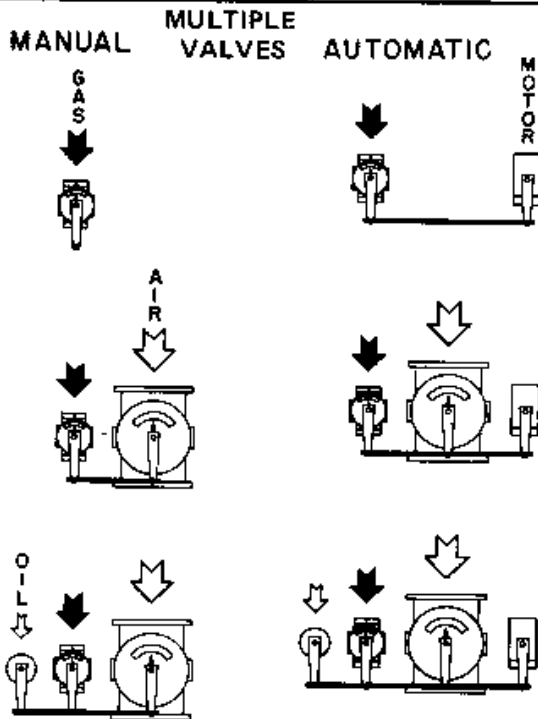
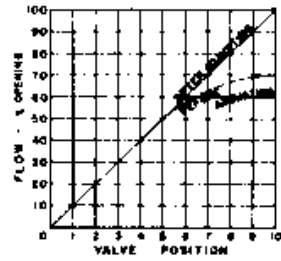
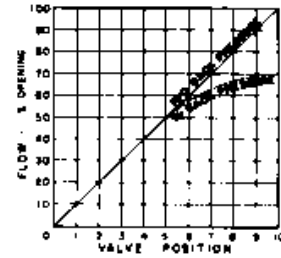
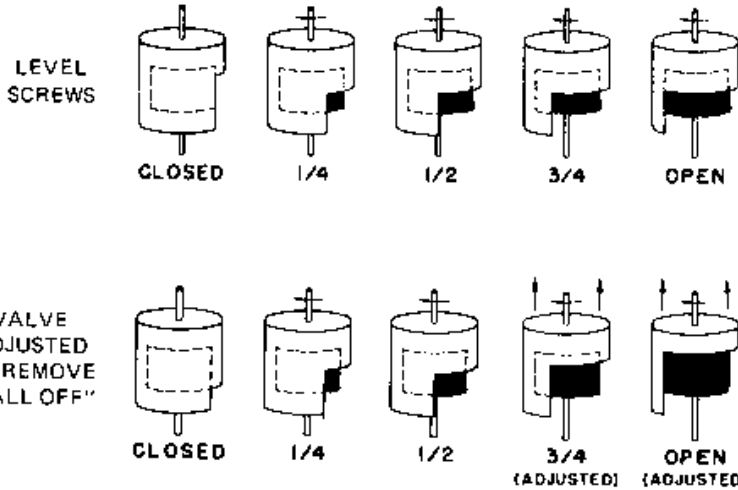
FVA-FVS ADJUSTABLE FLOW VALVES

CONTROL

When adjusting screws are LEVEL the flow curve without any back pressure on the valve is a straight line, as shown. When valves are installed in a combustion system, as the burner flow rate increases the back pressure in the downstream side of the valve increases

causing the flow through the valve to "fall off" from a straight line curve, as shown.

By turning the adjusting screws in, flow can be increased separately at each of ten valve positions to produce a straight line flow curve for the combustion system.



Several typical flow curves which are obtainable with the Hauck Adjustable Flow Valve. Valve flow curve can be characterized to match the flow curves of valves with which it is used.