

# 708SH Series

## Short Pattern 1/4"

CRN Registration Number Available

### FRACTIONAL FLOW CONTROL VALVES

The Mark 708SH was developed by LowFlow Valve to provide the most accurate control available for fractional flow services: whether for pilot plant installations, test stands, R & D facilities, or for specialized processes such as dosing, injection and venting applications.

The Short Pattern 1/4" offers Cv's ranging from 0.00001 through 0.2 (0,000009 to 0,17 Kv in DN8). A small package ideal for critical traditional flow applications where space is at a premium.

#### Features:

- Rolling diaphragm – the rolling diaphragm design ensures that the effective diaphragm area remains relatively constant, regardless of valve stem position. This increases accuracy of the actuator when positioning the valve by ensuring a linear response to input signal changes.
- Spring-loaded TFE/Chevron packing – the spring-loaded packing maintains a proper compression, while minimizing excessive friction. This alleviates the need for most field adjusting. The TFE packing is suitable for temperatures to 450°F (232°C), while braided or Graphite/Grafoil may be used for higher temperature requirements.
- Bolted body/bonnet connection – the bolting provides solid construction and secure connection. This bolting adds ease to maintenance, as bonnet/actuator assembly may be removed with the valve body in-line.



**MK708SH SERIES SHORT PATTERN 1/4" SPECIFICATIONS**

Sizes: 1/4" (DN8)

**End Connections**

- Threaded – NPT, BSPT, BSPP
- Socket weld
- Others upon request (contact factory)

**Actuator**

- 1/4" (DN8) – standard: 7M (7 in<sup>2</sup>) multi-spring
- Optional: 14M (14 in<sup>2</sup>) multi-spring

**Diaphragm Material**

- 7M & 14M – rolling (Nylon/Nitrile)

**Body/Bonnet Materials**

- Carbon Steel
- Stainless Steel
- Hastelloy C
- Hastelloy B
- Alloy 20
- Monel
- Titanium
- Other materials upon request

**Trim Materials**

- Cv's 0.05 (0,04 Kv) and above: 17-4 plug, 316SS stem/seat
- Cv's below 0.05 (0,04 Kv): Nitronic 60 stem/plug & seat

**Optional Trim Materials**

- 316SS Stem, 17-4 plug, 416SS seat
- 316SS Stem, Stellite plug and Stellite seat (hard seat only)
- 316SS Stem/plug & seat

**Actuator Materials**

- Aluminum

**Stem Packing**

- Standard: spring-loaded TFE/Chevron (to 450°F/232°C)
- Optional: braided or Graphite/Grafoil (positioner required)

**Body/Bonnet Gasket:** RPTFE or Grafoil (matches packing material unless specified)

**Service:** steam, air, gas, oil, water, chemicals

**Shutoff**

- Standard – Cv's 0.05 and greater: ANSI Class IV; CClass VI with optional PEEK insert
- Cv's 0.02 and lower: ANSI Class VI

**Ranges:** 3-15 or 6-30 psi (0,21-1,0 or 0,4-2,1 bar) split ranges are available with optional positioner

**Action**

- Direct (air signal closes valve)
- Reverse (air signal opens valve)

**Flow Characteristic:** linear (all Cv's, equal percentage (Cv > 0.05/0,43 Kv only); or quick opening (Cv > 0.05/0,43 Kv only)

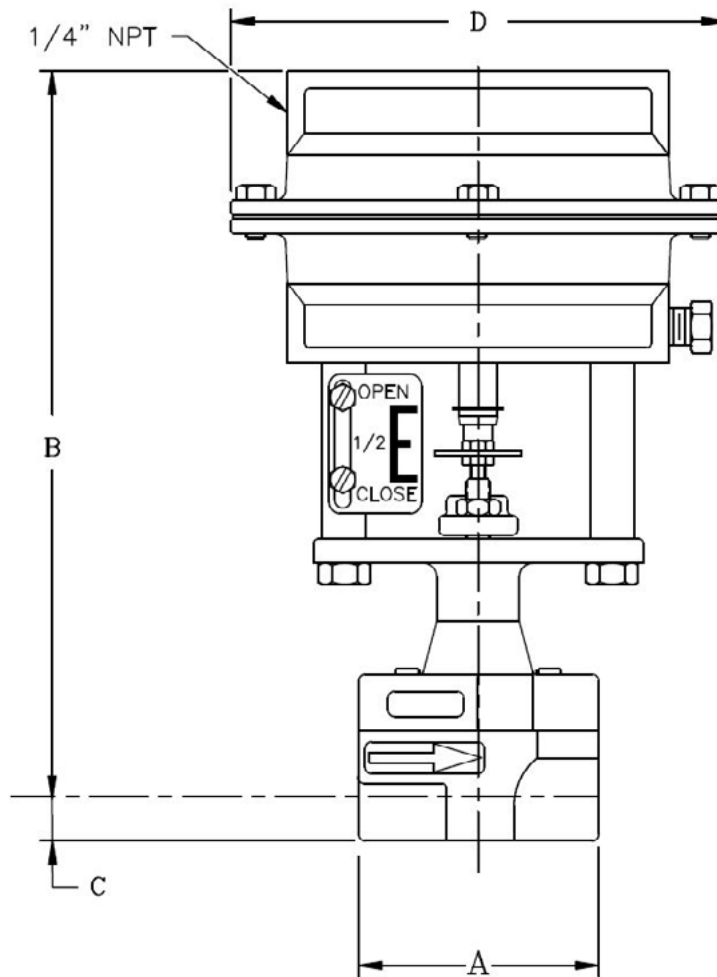
**Pressure & Temperature Ratings**

Temp F° (°C)	1/4" (DN8) psi (bar)
	CF8M, SST
100 (38)	5000 (345)
200 (93)	4299 (296)
300 (149)	3882 (268)
400 (204)	3569 (246)
500 (260)	3319 (229)
600 (316)	3132 (216)
650 (343)	3083 (213)

**Maximum Allowable ΔP Ratings**

Valve	Actuator Size	Valve Action	Range	Valve Cv	
				0.05 - 0.2	≤ 0.02
708SH	7M	Reverse (ATO)	3-15 6-30	1350 2700	5000 5000
		Direct (ATC)	3-15 6-30	5000 5000	5000 5000
	14M	Reverse (ATO)	3-15 6-30	2700 5000	5000 5000
		Direct (ATC)	3-15 6-30	5000 5000	5000 5000
708SHTP	14M	Reverse (ATO)	ALL	5000	5000
		Direct (ATC)		5000	5000

## MK708SH SERIES SHORT PATTERN 1/4" DIMENSIONS

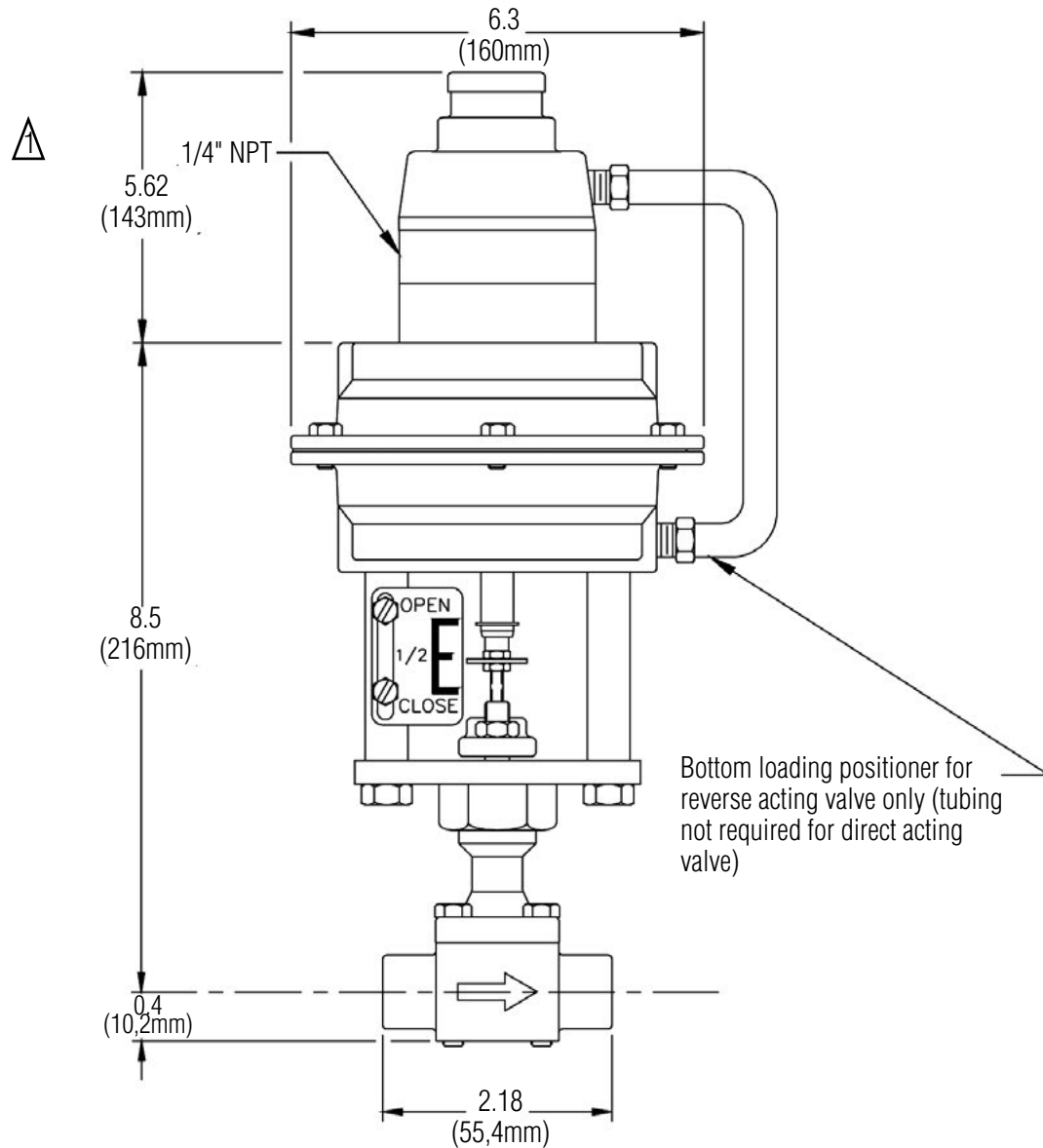


BWE, FE, TRI-C & TUBE END F-F DIM ARE +/- 1/16"  
 ALL OTHER DIMENSIONS: +/- 1/2"

VALVE SIZE	DIMENSIONS, INCHES				WEIGHT LBS
	A	B	C	D	
1/4" w/ 7M	2.18	8.5	0.4	5.0	2.8
1/4" w/ 14M	2.18	8.5	0.4	6.3	3.7

VALVE SIZE	DIMENSIONS, MM				WEIGHT LBS
	A	B	C	D	
DN15 w/ 7M	55,4	216	10,16	127	6,2
DN15 w/ 14M	55,4	216	10,16	160	8,14

**MK708SHTP SERIES SHORT PATTERN 1/4" DIMENSIONS**



**A** Additional height by 708SHTP only (Top mounted positioner only available on 14M actuators)

Tolerances: BWE, FE, Tri-C & Tube End F-F dimension are  $\pm 1/16"$  (1,57mm) all other dimensions are  $\pm 1/2"$  (12,7mm)

**MK708SH SERIES ORDERING SCHEMATIC**

Model No.	Size	Body Mat'l	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

MODEL	
708SH	Standard
708SHTP	with Top Mount Positioner (14M Actuator only)

SIZE	
025	1/4" (DN8)

BODY MATERIAL	
S6	CF8M Stainless Steel
HC	Hastelloy C
MN	Monel
A2	Alloy 20

1 & 2	END CONNECTIONS
BP	BSPP
BT	BSPT
PT	NPT
SW	FSW
ZZ	Non-standard

3 & 4	TRIM
T6	316SS/Teflon Packing
TM	Monel/Teflon Packing
TA	Alloy 20/Teflon Packing
G6*	316SS/Graphite
ZZ	Non-standard

\* Positioner required

5 & 6	PLUG SEAT		
	Material of Stem/Plug/Seat		
	Cv		
A	Standard - Linear Hard	A	0.00001
B	Standard =% Hard	B	0.00002
C	Standard Q.O. Hard	C	0.00005
D	Standard Linear Soft (PEEK)	D	0.0001
E	Standard =% Soft (PEEK)	E	0.0002
F	Standard Q.O. Soft (PEEK)	F	0.0005
M	316/Stellite/Stell-Lin. Hard	G	0.001
N	316/Stellite/Stell =% Hard	H	0.002
P	316/Stellite/Stell Q.O. Hard	I	0.005
		J	0.01
		K	0.02
		L	0.05
		M	0.1
		N	0.2
ZZ	Non-standard		

7,8,9,10,11,12	ACTUATOR		
	Range		
	Diaphragm		
	Actuator		
A4T4D4	3-15 DIR	Nylon/Nitrile	14M
B4T4R4	3-15 REV		
C4T4D4	3-9* DIR		
D4T4R4	3-9* REV		
E4T3D4	9-15* DIR		
F4T4R4	9-15*REV		
G4T4D4	6-30 DIR		
H4T4R4	6-30 REV	Nylon/Nitrile	7M
A7T7D7	3-15 DIR		
B7T7R7	3-15 REV		
C7T7D7	3-9* DIR		
D7T7R7	3-9* REV		
E7T7R7	3-15 REV		
F7T7R7	9-15* REV		
G7T7D7	6-30 DIR		
H7T7R7	6-30 REV		
ZZ	Non-standard		

\* Positioner required

13 & 14	ACCESSORIES
00	None
A7	Air Regulator for 14M Actuator
G2	Two Gages on TMP
SH	304SS Strain Hardened
S2	3-way Solenoid Energize to Open
S3	3-way Solenoid Energize to Close
ZZ	Non-standard

15	ACTION
D	Air-to-close
R	Air-to-open

16	I/P
0	None
7	I/P 7M Act. 4-20Ma/3-15 psi
4	I/P 14M Act. 4-20Ma/3-15 psi
9	I/P 7/14M Act. 4-20Ma/6-30 psi
Z	Non-standard