



# 708 Series

## Fractional Flow Control Valves

CRN Registration Number Available

### FRACTIONAL FLOW CONTROL VALVES

The Mark 708 was developed by Jordan 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.

With Cv's ranging from 0.00001 to 4.0 available in 1/4" through 1" lines sizes (0.000009 to 3,4 Kv in sizes DN8 through DN20), the Mark 708 offers design features that will provide enhanced performance to insure precision control on your most critical micro-flow flow applications.

The Mark 708 Series is a complete line of pneumatic and electric control valves developed specifically for the unique properties and conditions encountered in fractional flow services. The 708 Series comes standard with the quick change option - for applications requiring frequent trim changes without disturbing the actuator setting.

#### 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.
- Guided trim – extended orifice and plug guiding are standard and offers improved shutoff and accuracy equivalent to heavy duty trim option of competitors (not applicable to cv's below 0.05).
- Quick change trim – the secondary stem connection eliminates stroke adjustment when changing trim facilitating faster, easier trim changes (not applicable to cv's below 0.05).



A Division of  
Richards Industrials  
3170 Wasson Road  
Cincinnati, OH 45209

lowflow@richardsind.com  
513.533.5600  
www.lowflowvalve.com

## MK708 SERIES SPECIFICATIONS

**Sizes:** 1/4", 1/2", 3/4", 1" (DN8, DN15, DN20, DN25)

### End Connections

- Threaded – NPT, BSPT\*, BSPP\*
- Socket weld
- Integral tube ends (max Cv or 0.2 on 1/4" TN option)
- Welded flanges (ANSI, DIN, JIS)
- Others upon request (contact factory)

### Actuator

- 1/4" (DN8) – standard: 14M (14 in<sup>2</sup>) multi-spring
- 1/2" (DN15) – standard: 14M; optional 35M (35 in<sup>2</sup>)
- 3/4" (DN20) – standard: 14M; optional 35M (35 in<sup>2</sup>)
- 1" (DN25) – standard: 14M; optional 35M (35 in<sup>2</sup>)

### Diaphragm Material

- 14M – rolling (Nylon/Nitrile)
- Optional 35M Actuator: Buna-N fabric reinforced

### Body/Bonnet Materials

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

### Trim Materials

For other options/materials, consult factory

\*Barstock body only (1" size)

- Cv's 0.05 (0,04 Kv) and above: 17-4 stem/plug, 316SS 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
- 316SS Stem plug, PEEK seat

### Actuator Materials

- Aluminum – 14M
- Steel – 35M

### Stem Packing

- Standard: spring-loaded TFE/Chevron (to 450°F/232°C)
- Optional: braided or Graphite/Grafoil (with positioners on 14M)

**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; Cv's 0.02 and lower: ANSI Class VI
- Optional – Cv's 0.05 and greater: ANSI Class VI (with PEEK seats)

**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  $\geq$  0.05/0,43 Kv only); or quick opening (Cv  $\geq$  0.05/0,43 Kv only)

## MK708 SERIES SPECIFICATIONS

### Cv (Kv) Selection

| 4.0** (3,4)      | 3.0** (2,6)        | 2.0* (1,7)         | 1.25* (1,1)        | 1.0 (0,9)        |
|------------------|--------------------|--------------------|--------------------|------------------|
| 0.5 (0,43)       | 0.2 (0,17)         | 0.1 (0,09)         | 0.05 (0,04)        | 0.02 (0,017)     |
| 0.005 (0,00043)  | 0.002 (0,0017)     | 0.001 (0,0009)     | 0.0005 (0,00043)   | 0.01 (0,009)     |
| 0.0001 (0,00009) | 0.00005 (0,000043) | 0.00002 (0,000017) | 0.00001 (0,000009) | 0.0002 (0,00017) |

\* Available in ½" (DN15), ¾" (DN20) and 1" (DN25) sizes only

\*\* Available in ¾" (DN20) and 1" (DN25) sizes only

### Maximum Allowable ΔP Ratings

- 14M Actuator

| Cv (Kv)             | ATO 3-15   | ATO 6-30   | ATO w/pos. @ 40 psi (2,8 bar) | ATC3-15 @ 20 psi (1,4bar) | ATC 6-30 @ 40 psi (2,8 bar) |
|---------------------|------------|------------|-------------------------------|---------------------------|-----------------------------|
| 4.0 (3,4)           | 264 (18)   | 532 (37)   | 532 (37)                      | 432 (30)                  | 864 (60)                    |
| 2.0 (1,7)           | 400 (26)   | 800 (55)   | 800 (55)                      | 650 (45)                  | 1300 (90)                   |
| 1.25 (1,1)          | 400 (26)   | 800 (55)   | 800 (55)                      | 650 (45)                  | 1300 (90)                   |
| 0.32-1.0 (0,3-0,9)  | 1275 (88)  | 2350 (162) | 2350 (162)                    | 2065 (142)                | 4100 (283)                  |
| 0.05-0.2 (0,04-0,2) | 2700 (186) | 5000 (345) | 5000 (345)                    | 5000 (345)                | 5000 (345)                  |
| <0.02 (0,017)       | 5000 (345) | 5000 (345) | 5000 (345)                    | 5000 (345)                | 5000 (345)                  |

- 35M Actuator

| Cv (Kv)   | ATO 3-15 | ATO 6-30 | ATO w/pos. @ 40 psi (2,8 bar) | ATC3-15 @ 20 psi (1,4bar) | ATC 6-30 @ 40 psi (2,8 bar) | ATC w/pos. @ 40 psi (2,8 bar) |
|-----------|----------|----------|-------------------------------|---------------------------|-----------------------------|-------------------------------|
| 4.0 (3,4) | 440 (30) | 880 (61) | 880 (61)                      | 704 (49)                  | 1460 (101)                  | 1160 (80)                     |

### Pressure & Temperature Ratings

| Temp F° (°C) | 1/4" & 1/2" (DN8 & 15) Body/Bonnet psi (bar) |            | 3/4" & 1" (DN20 & DN25) Body/Bonnet psi (bar) |            |
|--------------|----------------------------------------------|------------|-----------------------------------------------|------------|
|              | CF8M, SST                                    | A105, CS   | CF8M, SST                                     | A105, CS   |
| 100 (38)     | 5000 (345)                                   | 5000 (345) | 4000 (276)                                    | 4000 (276) |
| 200 (93)     | 4299 (296)                                   | 4555 (314) | 3439 (237)                                    | 3644 (251) |
| 300 (149)    | 3882 (268)                                   | 4426 (305) | 3106 (214)                                    | 3541 (244) |
| 400 (204)    | 3569 (246)                                   | 4278 (295) | 2855 (199)                                    | 3422 (236) |
| 500 (260)    | 3319 (229)                                   | 4042 (279) | 2655 (183)                                    | 3234 (223) |
| 600 (316)    | 3132 (216)                                   | 3691 (254) | 2506 (173)                                    | 2953 (204) |
| 650 (343)    | 3083 (213)                                   | 3623 (250) | 2466 (170)                                    | 2898 (200) |

Note: If your temperature is higher, refer to 708HT datasheet

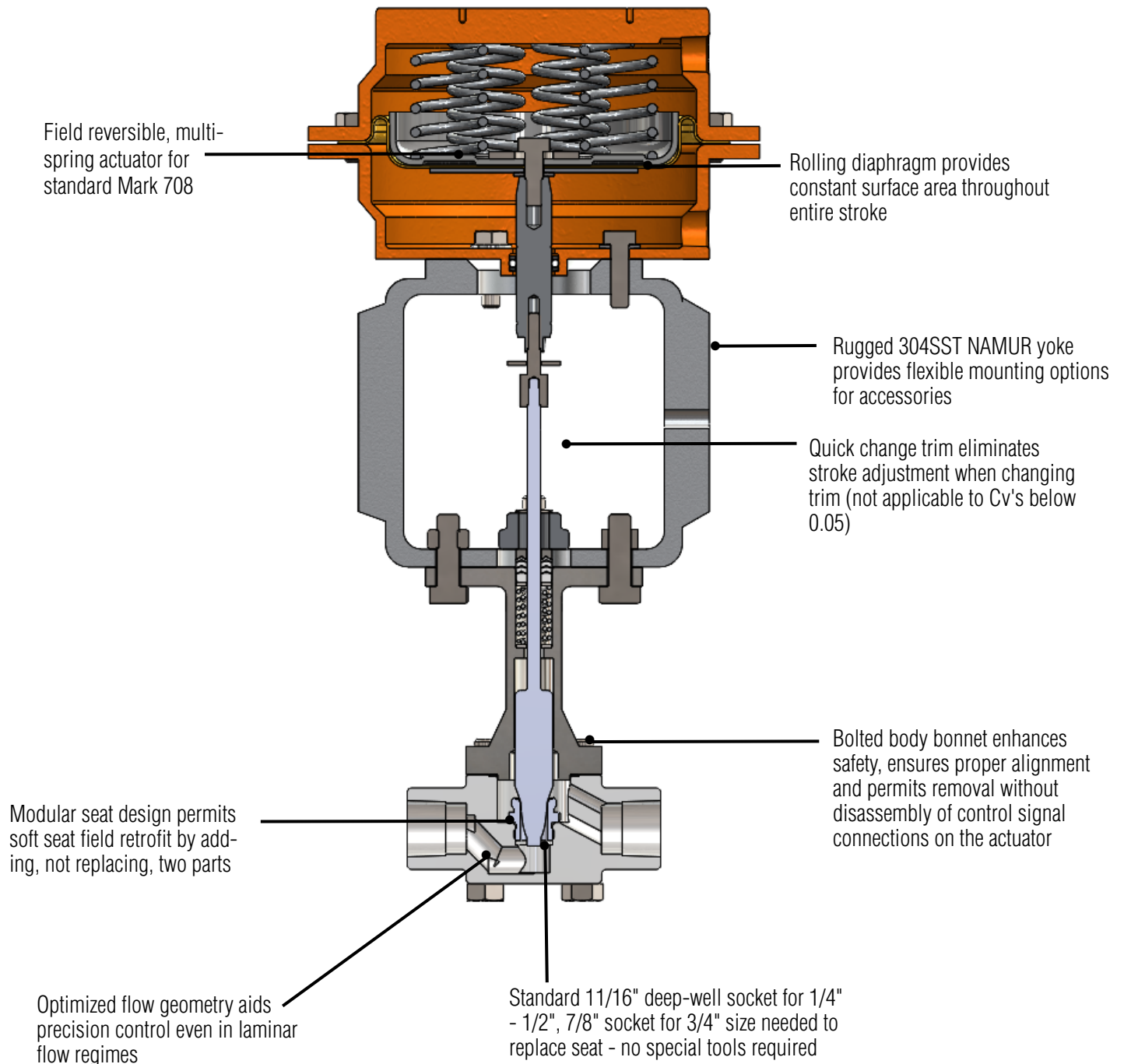
### Body Rating Tables

Valve pressure rating based on body/bonnet material and bolting material. Units in psi (bar)

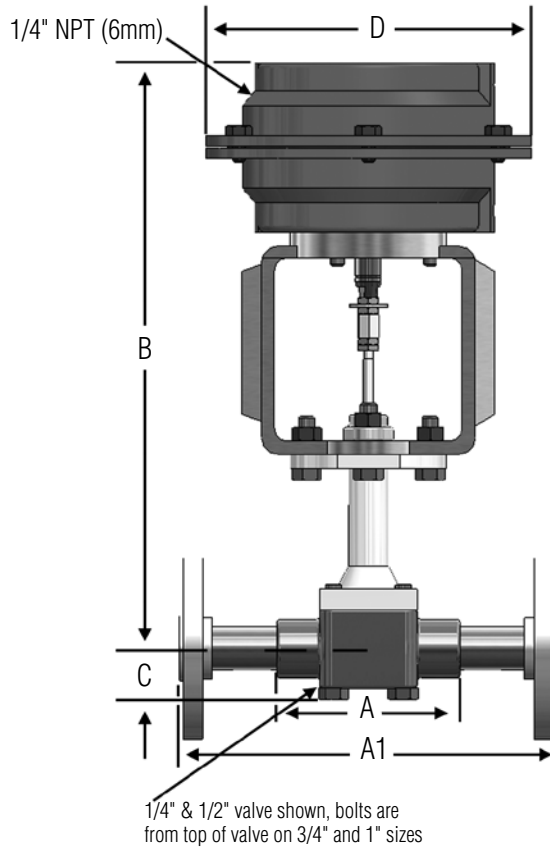
| Bolting Material                 | Body/Bonnet Material |            |                        |            |           |
|----------------------------------|----------------------|------------|------------------------|------------|-----------|
|                                  | At 100°F/38°C        |            | At Maximum Temperature |            |           |
|                                  | CF8M                 | A105       | CF8M                   | A105       | Max °F/°C |
| 1/4" (DN8) Mark 708              |                      |            |                        |            |           |
| ASTM A354, Gr. BD                | 5000 (345)           | 5000 (345) | 3083 (213)             | 3623 (250) | 650 (343) |
| ASTM 193, Gr. B6 (410 SST)       | 3000 (207)           | —          | 2995 (206)             | —          | 200 (93)  |
|                                  | —                    | 3705 (255) | —                      | 2995 (206) | 500 (260) |
| ASTM A193, Gr. B7                | —                    | 5000 (345) | —                      | 2780 (192) | 800 (427) |
|                                  | 5000 (345)           | —          | 2736 (189)             | —          | 450 (232) |
| 1/2" (DN15) Mark 708             |                      |            |                        |            |           |
| ASTM A354, Gr. BD                | 5000 (345)           | 5000 (345) | 3083 (213)             | 3623 (250) | 650 (343) |
| ASTM 193, Gr. B6 (410 SST)       | 5000 (345)           | —          | —                      | 2780 (192) | 800 (427) |
|                                  | —                    | 5000 (345) | 2736 (189)             | —          | 900 (482) |
| ASTM A193, Gr. B7                | —                    | 5000 (345) | —                      | 2780 (192) | 800 (427) |
|                                  | 5000 (345)           | —          | 2736 (189)             | —          | 900 (482) |
| 3/4" & 1" (DN20 & DN25) Mark 708 |                      |            |                        |            |           |
| ASTM A354, Gr. BD                | 4000 (276)           | 4000 (276) | 2466 (170)             | 2898 (200) | 650 (343) |
| ASTM 193, Gr. B6 (410 SST)       | —                    | 4000 (276) | —                      | 2224 (153) | 800 (427) |
|                                  | 4000 (276)           | —          | 2917 (201)             | —          | 375 (191) |
| ASTM A193, Gr. B7                | —                    | 4000 (276) | —                      | 2224 (153) | 800 (427) |
|                                  | 4000 (276)           | —          | 2400 (165)             | —          | 700 (371) |

Note: standard bolting is Grade SA193-B7 Plated

### MK708 SERIES FEATURES & BENEFITS



## MK708 SERIES DIMENSIONS



### Mark 708SP Threaded & FSW Ends

| VALVE SIZE | DIMENSIONS, INCHES |      |     |     | WEIGHT LBS |
|------------|--------------------|------|-----|-----|------------|
|            | A                  | B    | C   | D   |            |
| 1/4"*      | 3.50               | 11.6 | 0.9 | 6.3 | 7.0        |
| 1/2"*      | 3.50               | 11.6 | 0.9 | 6.3 | 7.0        |
| 3/4"*      | 4.38               | 11.7 | 1.2 | 6.3 | 9.0        |
| 3/4"***    | 4.38               | 13.5 | 1.2 | 9.5 | 18.0       |
| 1"*        | 4.38               | 13.6 | 1.2 | 9.5 | 19.0       |
| 1"***      | 4.38               | 13.6 | 1.2 | 6.3 | 9.0        |

### Mark 708SP Threaded & FSW Ends, Metric

| VALVE SIZE | DIMENSIONS, MM |     |      |     | WEIGHT KGS |
|------------|----------------|-----|------|-----|------------|
|            | A              | B   | C    | D   |            |
| DN8**      | 88,9           | 295 | 22,9 | 160 | 3,2        |
| DN15*      | 88,9           | 295 | 22,9 | 160 | 3,2        |
| DN20*      | 111,3          | 297 | 30,5 | 160 | 4,1        |
| DN20**     | 111,3          | 343 | 30,5 | 241 | 8,2        |
| DN25*      | 111,3          | 346 | 30,5 | 241 | 8,6        |
| DN25**     | 111,3          | 346 | 30,5 | 160 | 4,1        |

### Mark 708SP Flanged Ends

| VALVE SIZE | ANSI FLANGE | DIMENSIONS, INCHES |      |     |     | WEIGHT LBS |
|------------|-------------|--------------------|------|-----|-----|------------|
|            |             | A1                 | B    | C   | D   |            |
| 1/2"*      | 150#        | 7.25               | 11.6 | 0.9 | 6.3 | 9.3        |
|            | 300#        | 7.50               | 11.6 | 0.9 | 6.3 | 11.3       |
| 3/4"*      | 150#        | 7.25               | 11.7 | 1.2 | 6.3 | 13.3       |
|            | 300#        | 7.62               | 11.7 | 1.2 | 6.3 | 15.3       |
| 3/4"***    | 150#        | 7.25               | 13.5 | 1.2 | 9.5 | 22.5       |
|            | 300#        | 7.62               | 13.5 | 1.2 | 9.5 | 24.5       |
| 1"***      | 150#        | 7.25               | 13.6 | 1.2 | 5.5 | 26.5       |
|            | 300#        | 7.75               | 13.6 | 1.2 | 5.5 | 26.5       |

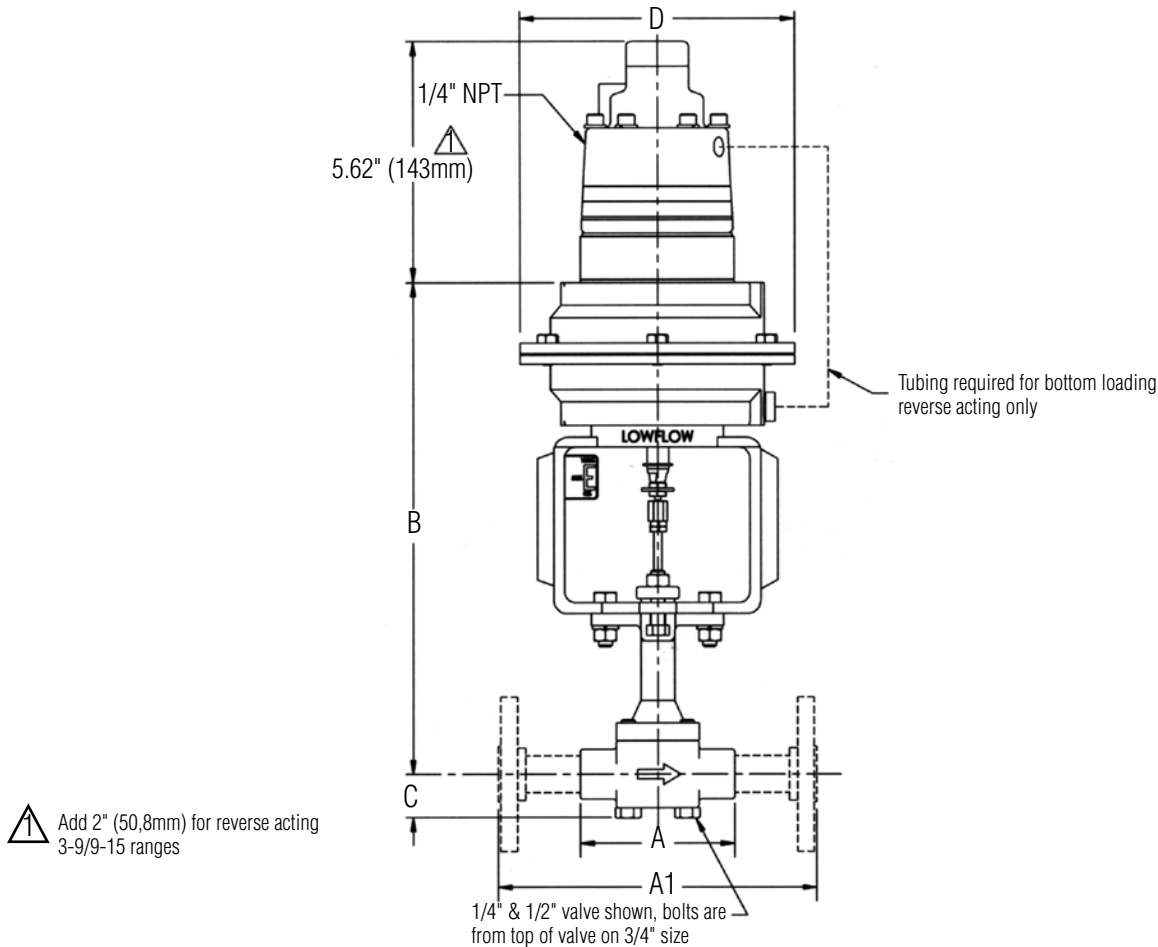
### Mark 708SP Flanged Ends, Metric

| VALVE SIZE | ANSI PN | A1  | B   | C    | D   | WEIGHT KGS |
|------------|---------|-----|-----|------|-----|------------|
| DN15*      | 10/16   | 184 | 295 | 22,9 | 160 | 4,8        |
|            | 25/40   | 191 | 295 | 22,9 | 160 | 5,2        |
| DN20*      | 10/16   | 184 | 297 | 30,5 | 160 | 6,1        |
|            | 25/40   | 194 | 297 | 30,5 | 160 | 7,0        |
| DN20**     | 10/16   | 184 | 343 | 30,5 | 241 | 10,2       |
|            | 25/40   | 194 | 343 | 30,5 | 241 | 11,1       |
| DN25**     | 10/16   | 184 | 346 | 30,5 | 241 | 12,0       |
|            | 25/40   | 197 | 346 | 30,5 | 241 | 12,0       |

\* Valve with 14M actuator

\*\* Valve with 35M actuator

## MK708TP SERIES DIMENSIONS



### • Mark 708TP Threaded & FSW Ends

| VALVE SIZE | DIMENSIONS, INCHES |      |     |     | WEIGHT LBS |
|------------|--------------------|------|-----|-----|------------|
|            | A                  | B    | C   | D   |            |
| 1/4"       | 3.50               | 11.6 | 0.9 | 6.3 | 7.0        |
| 1/2"       | 3.50               | 11.6 | 0.9 | 6.3 | 7.0        |
| 3/4"       | 4.38               | 11.7 | 1.2 | 6.3 | 9.0        |
| 1"         | 4.38               | 13.6 | 1.2 | 9.5 | 19.0       |

### • Mark 708TP Threaded & FSW Ends, Metric

| VALVE SIZE | DIMENSIONS, MM |     |    |     | WEIGHT KGS |
|------------|----------------|-----|----|-----|------------|
|            | A              | B   | C  | D   |            |
| DN8        | 89             | 295 | 23 | 160 | 3,2        |
| DN15       | 89             | 295 | 23 | 160 | 3,2        |
| DN20       | 111            | 297 | 30 | 160 | 4,1        |
| DN25       | 111            | 346 | 30 | 241 | 8.6        |

### • Mark 708TP Flanged Ends

| VALVE SIZE | ANSI FLANGE | DIMENSIONS, INCHES |      |     |     | WEIGHT LBS |
|------------|-------------|--------------------|------|-----|-----|------------|
|            |             | A1                 | B    | C   | D   |            |
| 1/2"       | 150#        | 7.25               | 11.6 | 0.9 | 6.3 | 10         |
|            | 300#        | 7.50               | 11.6 | 0.9 | 6.3 | 11         |
| 3/4"       | 150#        | 7.25               | 11.7 | 1.2 | 6.3 | 13         |
|            | 300#        | 7.62               | 11.7 | 1.2 | 6.3 | 15         |
| 1"         | 150#        | 7.25               | 13.6 | 1.2 | 5.5 | 26.5       |
|            | 300#        | 7.75               | 13.6 | 1.2 | 5.5 | 26.5       |

### • Mark 708TP Flanged Ends, Metric

| VALVE SIZE | FLANGE PN | DIMENSIONS, MM |     |      |     | WEIGHT KGS |
|------------|-----------|----------------|-----|------|-----|------------|
|            |           | A1             | B   | C    | D   |            |
| DN15       | 10/16     | 184            | 295 | 22,9 | 160 | 4,5        |
|            | 25/40     | 191            | 295 | 22,9 | 160 | 5,0        |
| DN20       | 10/16     | 184            | 297 | 30,5 | 160 | 5,9        |
|            | 25/40     | 194            | 297 | 30,5 | 160 | 6,8        |
| DN25       | 10/16     | 184            | 346 | 30,5 | 241 | 12,0       |
|            | 25/40     | 197            | 346 | 30,5 | 241 | 12,0       |

### MK708 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 |          |
|-------|----------|
| 708   | Standard |

| SIZE |             |
|------|-------------|
| 025  | 1/4" (DN8)  |
| 050  | 1/2" (DN15) |
| 075  | 3/4" (DN20) |
| 100  | 1" (DN25)   |

| BODY MATERIAL |                                   |
|---------------|-----------------------------------|
| CB#           | A105 Carbon Steel Barstock        |
| CS#           | WCB Carbon Steel                  |
| HC#           | Hastelloy C                       |
| SB#           | 316/316L Stainless Steel Barstock |
| S6#           | CF8M Stainless Steel              |
| MN#           | Monel                             |
| A2#           | Alloy 20                          |

| 1 & 2 END CONNECTIONS |                    |    |        |
|-----------------------|--------------------|----|--------|
| PT                    | NPT                | BT | BSPT** |
| SW                    | FSW                | BP | BSPP** |
| F5                    | 150# FE            | F7 | PN10   |
| F3                    | 300# FE            | F8 | PN16   |
| TN*                   | Integral Tube Nuts | F6 | PN25   |
| ZZ                    | Non-standard       | F4 | PN40   |

\*max Cv of 0.2 1/4" size

\*\* Barstock body only 1" size

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

| 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               | 17-4Stellite/Stell-Lin. Hard  | G | 0.001   |
| N               | 17-4/Stellite/Stell =% Hard   | H | 0.002   |
| P               | 17-4/Stellite/Stell Q.O. Hard | I | 0.005   |
|                 |                               | J | 0.01    |
|                 |                               | K | 0.02    |
|                 |                               | L | 0.05    |
|                 |                               | M | 0.1     |
|                 |                               | N | 0.2     |
|                 |                               | P | 0.5     |
|                 |                               | Q | 1.0     |
|                 |                               | R | 2.0     |
|                 |                               | S | 4.0     |
|                 |                               | T | 3.0     |
| ZZ              | Non-standard                  |   |         |

| 7,8,9,10,11,12 ACTUATOR |              |
|-------------------------|--------------|
| Range                   | Diaphragm    |
| N4Q4N4                  | 3-15 DIR     |
| Q4Q4N4                  | 3-15 REV     |
| G4T4D4                  | 6-30 DIR     |
| H4T4R4                  | 6-30 REV     |
| A3B3D3                  | 3-15 DIR     |
| B3B3R3                  | 3-15 REV     |
| G3B3D3                  | 6-30 DIR     |
| H3B3R3                  | 6-30 REV     |
| ZZ                      | Non-standard |

| 13 & 14 ACCESSORIES |                                  |
|---------------------|----------------------------------|
| 00                  | None                             |
| A7                  | Air Regulator for 14M Actuator   |
| A5                  | Air Regulator for 35M 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                         |
| 4      | I/P 14M Act. 4-20Ma/3-15 psi |
| 3      | I/P 35M Act. 4-20Ma/3-15 psi |
| 9      | I/P 14M Act. 4-20Ma/6-30 psi |
| Z      | Non-standard                 |





## MK708TP/708SP 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 | 17 |
|-----------|------|------------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|
|           |      |            |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |

| MODEL |                       |
|-------|-----------------------|
| 708TP | Top Mount Positioner  |
| 708SP | Side Mount Positioner |

| SIZE |             |
|------|-------------|
| 025  | 1/4" (DN8)  |
| 050  | 1/2" (DN15) |
| 075  | 3/4" (DN20) |
| 100  | 1" (DN25)   |

| BODY MATERIAL |                                   |
|---------------|-----------------------------------|
| CB#           | A105 Carbon Steel Barstock        |
| CS#           | WCB Carbon Steel                  |
| SB#           | 316/316L Stainless Steel Barstock |
| S6#           | CF8M Stainless Steel              |
| HC#           | Hastelloy C                       |
| MN#           | Monel                             |
| A2#           | Alloy 20                          |

| 1 & 2 END CONNECTIONS |                    |    |       |
|-----------------------|--------------------|----|-------|
| PT                    | NPT                | BT | BSPT* |
| SW                    | FSW                | BP | BSPP* |
| F5                    | 150# FE            | F7 | PN10  |
| F3                    | 300# FE            | F8 | PN16  |
| TN                    | Integral Tube Nuts | F6 | PN25  |
| ZZ                    | Non-standard       | F4 | PN40  |

\* Barstock body only

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

| 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               | 17-4/Stellite/Stell-Lin. Hard | G | 0.001   |
| N               | 17-4/Stellite/Stell =% Hard   | H | 0.002   |
| P               | 17-4/Stellite/Stell Q.O. Hard | I | 0.005   |
|                 |                               | J | 0.01    |
|                 |                               | K | 0.02    |
|                 |                               | L | 0.05    |
|                 |                               | M | 0.1     |
|                 |                               | N | 0.2     |
|                 |                               | P | 0.5     |
|                 |                               | Q | 1.0     |
|                 |                               | R | 2.0     |
|                 |                               | S | 4.0     |
|                 |                               | T | 3.0     |
| ZZ              | Non-standard                  |   |         |

| 7,8,9,10,11,12 ACTUATOR |              |               |                    |
|-------------------------|--------------|---------------|--------------------|
|                         | Range        | Diaphragm     | Actuator           |
| N4Q4N4                  | 3-15 DIR     | Nylon/Nitrile | 14M<br>(1/4" - 1") |
| Q4Q4N4                  | 3-15 REV     |               |                    |
| G4T4S4                  | 6-30 DIR     |               |                    |
| H4T4S4                  | 6-30 REV     |               |                    |
| B3B3S3                  | 3-15 REV     | Buna-N        | 35M (1/4" - 1")    |
| ZZ                      | Non-standard |               |                    |

| 13 & 14 ACCESSORIES |                            |    |                                  |
|---------------------|----------------------------|----|----------------------------------|
| 00                  | None                       | SH | 304SS Strain Hardened            |
| A7                  | Air Regulator for 14M Act. | S2 | 3-way Solenoid Energize to Open  |
| A5                  | Air Regulator for 35M Act. | S3 | 3-way Solenoid Energize to Close |
| G2                  | Two Gages on TMP           | ZZ | Non-standard                     |

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

| 16 I/P |                              |
|--------|------------------------------|
| 0      | None                         |
| 4      | I/P 14M Act. 4-20Ma/3-15 psi |
| 3      | I/P 35M Act. 4-20Ma/3-15 psi |
| 9      | I/P 14M Act. 4-20Ma/6-30 psi |
| Z      | Non-standard                 |

| 17 SMP |                        |
|--------|------------------------|
| G      | SMP - 16IQ-S Dir/Rev   |
| 0      | None                   |
| A      | SMP - P/P Dir/Rev 3-15 |
| D      | SMP - I/P Dir/Rev 4-20 |
| H      | MK16IQ-B Dir/Rev       |
| J      | MK16IQ-FF Dir/Rev      |
| Z      | Non-standard           |