

DESIGN FEATURES

- Built-in ISO 5211 Mounting Pad Easy Automation
- Fire Safe Design Approved
- Anti-static Devices for Ball-Stem-Body
- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- NACE standard MR0175 & MR0103 (Optional)
- Casting Approved by TÜV AD 2000-Merkblatt W0
- Options: 1.Actuator 2.Limit Switch 3.Positioner



APPLICABLE STANDARDS

- Design Standard : ASME B16.34
- Frie Design : API 607 5th 2005, ISO10497
- Face To Face : ASME B16.10
- Flanged End : ASME B16.5 Class 150 / 300
- Inspection & Testing : API 598

CV VALUES

| NPS | CV | |
|-------|-----------|-----------|
| | Class 150 | Class 300 |
| 1/2 | 16 | 16 |
| 3/4 | 23 | 23 |
| 1 | 41 | 41 |
| 1 1/4 | 96 | 96 |
| 1 1/2 | 170 | 170 |
| 2 | 270 | 270 |
| 2 1/2 | 470 | 470 |
| 3 | 690 | 690 |
| 4 | 1150 | 1150 |
| 6 | 2100 | 2100 |

WEIGHT

| NPS | KV-M1F/M1FF | | KV-M2F/M2FF | |
|-------|-------------|-------------|-------------|-------------|
| | Weight (kg) | Weight (lb) | Weight (kg) | Weight (lb) |
| 1/2 | 1.3 | 2.9 | 2.0 | 4.4 |
| 3/4 | 1.6 | 3.6 | 2.9 | 6.4 |
| 1 | 2.4 | 5.3 | 4.1 | 9.1 |
| 1 1/4 | 3.3 | 7.3 | 5.4 | 11.9 |
| 1 1/2 | 4.6 | 10.2 | 8.0 | 17.7 |
| 2 | 6.7 | 14.8 | 10.2 | 22.5 |
| 2 1/2 | 10.5 | 23.2 | 15.9 | 35.1 |
| 3 | 14.5 | 32.0 | 22.8 | 50.3 |
| 4 | 22.6 | 49.8 | 35.2 | 77.6 |
| 6 | 45.0 | 99.2 | 51.6 | 113.7 |

TORQUE VALUES

Close to Open Torque at Various Differential Pressure (ΔP), Standard Seats (TFM1600&PTFE)

unit : in-lb / N-m

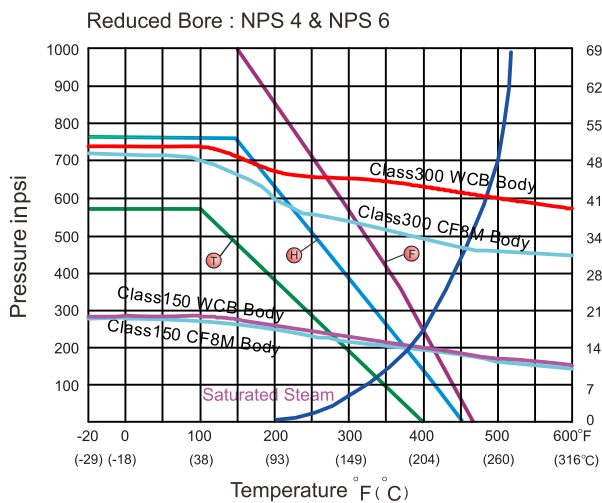
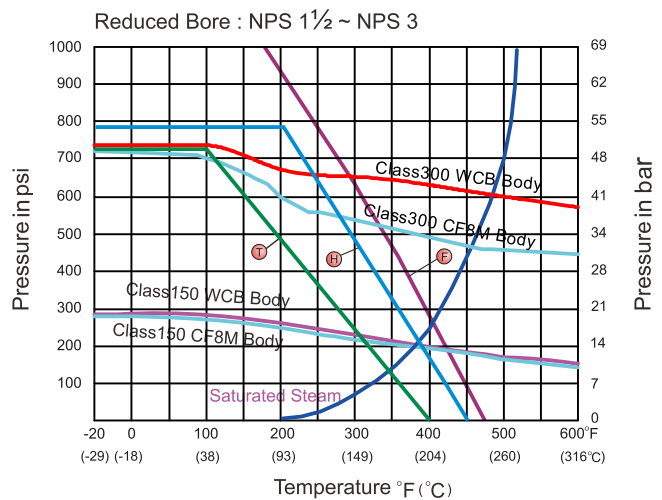
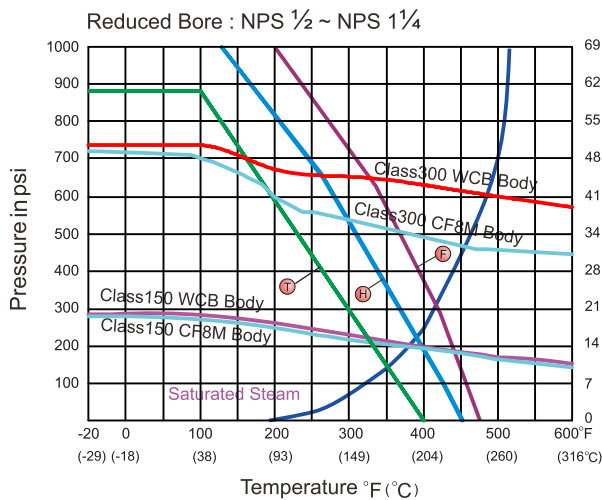
| Size/ ΔP | 75 psig | | 150 psig | | 300 psig | | 700 psig | |
|------------------|---------|-------|----------|-------|----------|-------|----------|-------|
| | 5 bar | | 10 bar | | 20 bar | | 50 bar | |
| NPS | N-m | In-lb | N-m | In-lb | N-m | In-lb | N-m | In-lb |
| 1/2 | 5 | 44 | 5 | 44 | 5 | 44 | 5 | 44 |
| 3/4 | 6 | 53 | 6 | 53 | 6 | 53 | 6 | 53 |
| 1 | 8 | 72 | 8 | 72 | 8 | 72 | 9 | 80 |
| 1 1/4 | 12 | 106 | 12 | 106 | 13 | 116 | 13 | 116 |
| 1 1/2 | 15 | 133 | 15 | 133 | 17 | 152 | 19 | 168 |
| 2 | 22 | 195 | 23 | 204 | 25 | 220 | 28 | 248 |
| 2 1/2 | 31 | 275 | 33 | 292 | 36 | 320 | 40 | 354 |
| 3 | 48 | 425 | 51 | 461 | 55 | 487 | 60 | 531 |
| 4 | 72 | 638 | 80 | 708 | 90 | 795 | 96 | 850 |
| 6 | 130 | 1151 | 140 | 1239 | 156 | 1380 | 164 | 1450 |

- Remark : 1.Torques will increase about 30% if seat materials are Reinforced Fiber-Glass PTFE, Carbon-filled, PTFE or EK+PTFE or EK+PTFE or TFM4215.
2.The torque figures at 5 bar pressure are maximum values to be tested after the valves are placed for 24 hours.
3.For actuator sizing, a safety factor of minimum 30% is recommended.

TECHNICAL INFORMATION

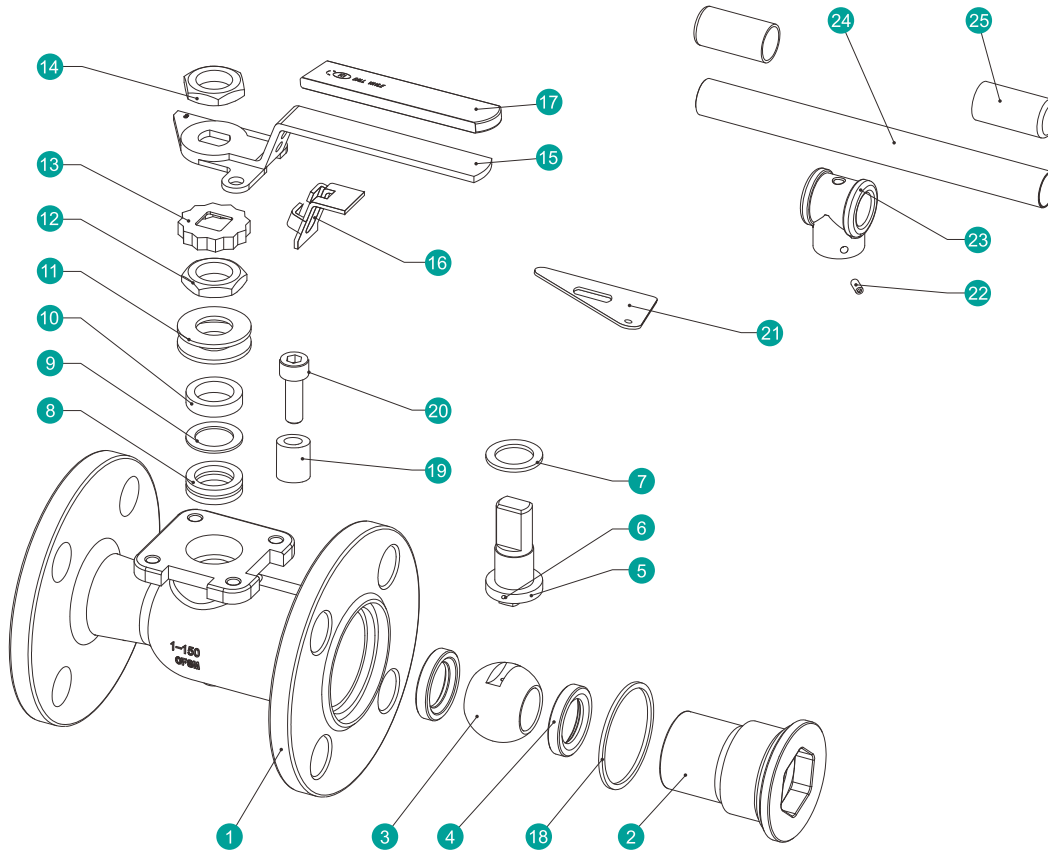
PRESSURE - TEMPERATURE DATA

The pressure-temperature data of ball valves is determined not only by valve shell materials but also by sealing materials used for ball seats, gland packings and flange gaskets.



Seat Materials : T PTFE H TFM1600 F TFM4215

Body Ratings: Shown above are for ASTM A351 Gr.CF8M and A216 Gr.WCB For ratings of other valve shell materials, please refer to the last edition of ASME B16.34.

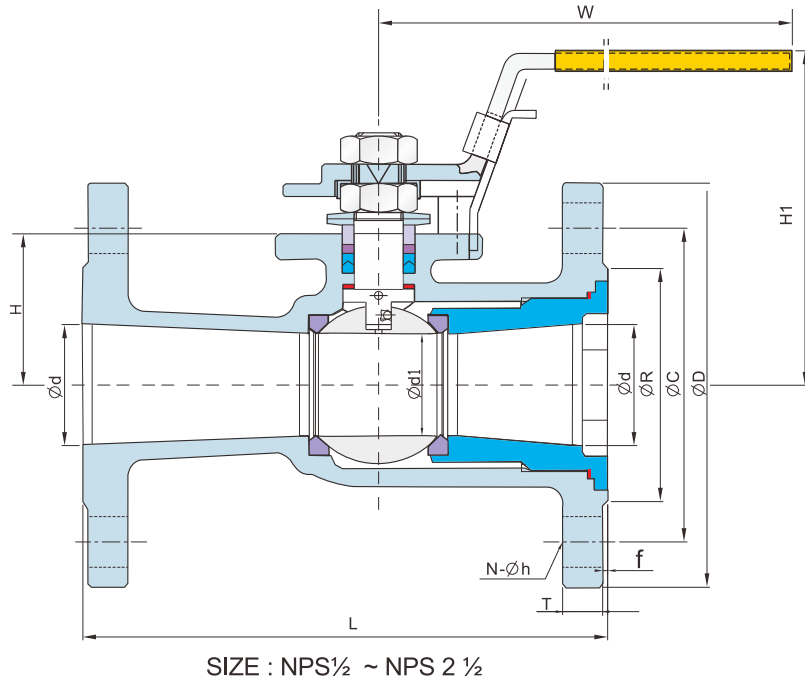
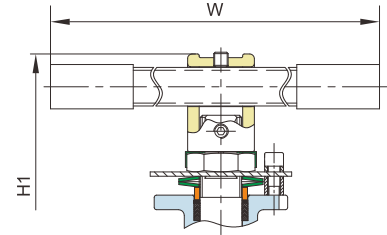


MATERIAL OF CONSTRUCTION

| NO. | PART NAME | MATERIALS | | |
|-----|--|--------------------------|----------|----------|
| 1 | Body | A351-CF8M | A351-CF8 | A216-WCB |
| 2 | End Cap | A351-CF8M | A351-CF8 | A216-WCB |
| 3 | Ball | A351-CF8M | A351-CF8 | |
| 4 | Ball Seat | TFM1600 / PTFE / TFM4215 | | |
| 5 | Stem | 316 | 304 | |
| 6 | Anti-Static | 316 | 304 | |
| 7 | Thrust Washer | PTFE / TFM1600 | | |
| 8 | Packing | PTFE/GRAPHITE* | | |
| 9 | Bushing | 50%SS+50%PTFE / 304* | | |
| 10 | Gland | 316 | | |
| 11 | Belleville Washer | 301 | | |
| 12 | Stem Nut | A194-8 | | |
| 13 | Stop-lock-Cap | 304 | | |
| 14 | Handle Nut (NPS ^{1/2} ~ NPS ^{2 1/2}) | A194-8 | | |
| 15 | Handle (NPS ^{1/2} ~ NPS ^{2 1/2}) | 304 | | |
| 16 | Lock Device (NPS ^{1/2} ~ NPS ^{2 1/2}) | 304 | | |
| 17 | Handle Sleeve(NPS ^{1/2} ~NPS ^{2 1/2}) | PVC | | |
| 18 | Body Gasket | PTFE / GRAPHITE* | | |
| 19 | Washer | 304 | | |
| 20 | Stop Bolt | A2-70 | | |
| 21 | Triangle Stopper (NPS3 ~ NPS6) | 304 | | |
| 22 | Set Screw (NPS3 ~ NPS6) | A2-70 | | |
| 23 | Handle Adapter (NPS3 ~ NPS6) | A351-CF8 | | |
| 24 | Pipe Handle (NPS3 ~ NPS6) | A53+PLATED Zn | | |
| 25 | Handle Sleeve (NPS3 ~ NPS6) | PVC | | |

*Materials for KV-M1FF/KV-M2FF Series (Fire Safe Models)

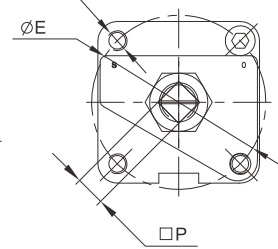
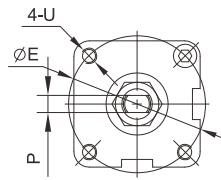
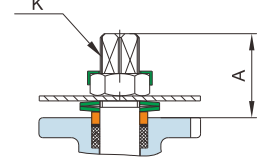
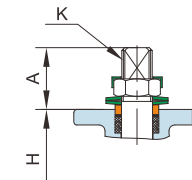
SIZE : NPS 3 ~ NPS 6



SIZE : NPS 1/2 ~ NPS 2 1/2

SIZE : NPS 1/2 ~ NPS 4

SIZE : NPS 6



DIMENSION TABLE

ASME Class 150 DIMENSION TABLE KV-M1F/KV-M1FF

Unit : mm

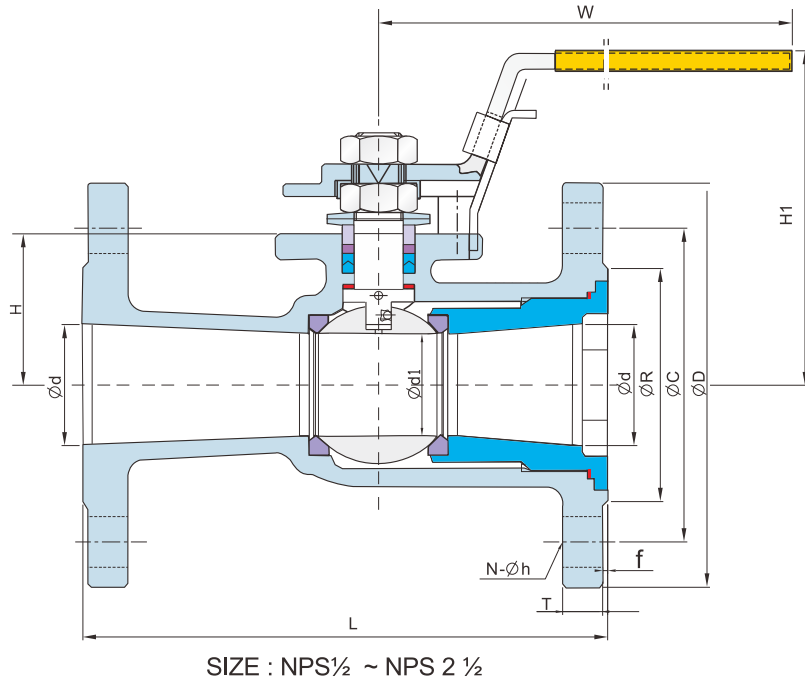
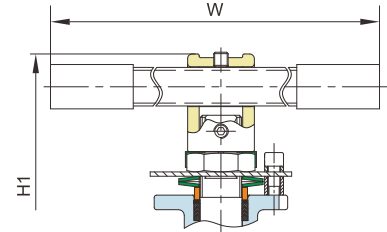
| NPS | d | d1 | L | R | D | C | f | T | N | h | H | H1 | W | P | K | A | U | E | ISO 5211 |
|-------|-------|-------|-----|------|-----|-------|---|------|---|------|-------|-----|-----|------|-------------|------|-----|-----|----------|
| 1/2 | 12.5 | 10.0 | 108 | 35 | 90 | 60.3 | 2 | 8.0 | 4 | 16.0 | 23.0 | 74 | 136 | 6.3 | 3/8-24UNF | 21.0 | M5 | 42 | F04 |
| 3/4 | 19.0 | 12.5 | 117 | 43 | 100 | 69.9 | 2 | 8.9 | 4 | 16.0 | 23.0 | 74 | 136 | 6.3 | 3/8-24UNF | 21.0 | M5 | 42 | F04 |
| 1 | 25.0 | 17.5 | 127 | 51 | 110 | 79.4 | 2 | 9.6 | 4 | 16.0 | 33.5 | 88 | 170 | 9.0 | 9/16-18UNF | 21.5 | M6 | 50 | F05 |
| 1 1/4 | 32.0 | 25.0 | 140 | 63.5 | 115 | 88.9 | 2 | 11.2 | 4 | 16.0 | 41.5 | 96 | 170 | 9.0 | 9/16-18UNF | 21.5 | M6 | 50 | F05 |
| 1 1/2 | 38.0 | 32.0 | 165 | 73 | 125 | 98.4 | 2 | 12.7 | 4 | 16.0 | 47.5 | 105 | 200 | 9.6 | 5/8-18UNF | 32.0 | M8 | 70 | F07 |
| 2 | 50.0 | 38.0 | 178 | 92 | 150 | 120.7 | 2 | 14.3 | 4 | 19.0 | 56.5 | 114 | 200 | 9.6 | 5/8-18UNF | 32.0 | M8 | 70 | F07 |
| 2 1/2 | 62.0 | 50.0 | 190 | 105 | 180 | 139.7 | 2 | 15.9 | 4 | 19.0 | 66.5 | 133 | 250 | 16.0 | 7/8-14UNF | 42.5 | M10 | 102 | F10 |
| 3 | 76.0 | 60.3 | 203 | 127 | 190 | 152.4 | 2 | 17.5 | 4 | 19.0 | 75.5 | 158 | 300 | 16.0 | 7/8-14UNF | 42.5 | M10 | 102 | F10 |
| 4 | 98.0 | 76.0 | 229 | 157 | 230 | 190.5 | 2 | 22.3 | 8 | 19.0 | 96.0 | 191 | 400 | 18.0 | 1-1/8-12UNF | 55.0 | M10 | 102 | F10 |
| 6 | 146.0 | 100.0 | 267 | 216 | 280 | 241.3 | 2 | 23.9 | 8 | 22.3 | 133.0 | 236 | 600 | 27.0 | 1-3/8-12UNF | 56.0 | M12 | 125 | F12 |

ASME Class 150 DIMENSION TABLE KV-M1F/KV-M1FF

Unit : inch

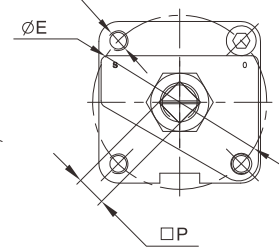
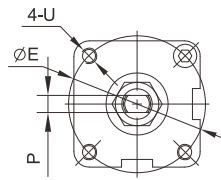
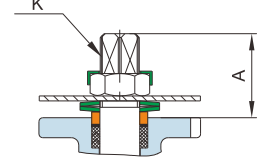
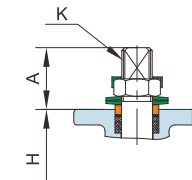
| NPS | d | d1 | L | R | D | C | f | T | N | h | H | H1 | W | P | K | A | U | E | ISO 5211 |
|-------|------|------|-------|------|-------|------|------|------|---|-----|------|------|-------|-------|-------------|------|-----|------|----------|
| 1/2 | 0.49 | 0.40 | 4.25 | 1.38 | 3.50 | 2.38 | 0.06 | 0.31 | 4 | 5/8 | 0.91 | 2.91 | 5.35 | 0.248 | 3/8-24UNF | 0.83 | M5 | 1.42 | F04 |
| 3/4 | 0.75 | 0.49 | 0.62 | 1.69 | 3.88 | 2.75 | 0.06 | 0.34 | 4 | 5/8 | 0.91 | 2.91 | 5.35 | 0.248 | 3/8-24UNF | 0.83 | M5 | 1.42 | F04 |
| 1 | 0.98 | 0.69 | 5.00 | 2.01 | 4.25 | 3.12 | 0.06 | 0.38 | 4 | 5/8 | 1.32 | 3.44 | 6.75 | 0.354 | 9/16-18UNF | 0.85 | M6 | 1.65 | F05 |
| 1 1/4 | 1.26 | 0.99 | 5.50 | 2.50 | 4.62 | 3.50 | 0.06 | 0.44 | 4 | 5/8 | 1.63 | 3.76 | 6.75 | 0.354 | 9/16-18UNF | 0.85 | M6 | 1.65 | F05 |
| 1 1/2 | 1.50 | 1.26 | 6.50 | 2.88 | 5.00 | 3.88 | 0.06 | 0.50 | 4 | 5/8 | 1.87 | 4.13 | 7.95 | 0.378 | 5/8-18UNF | 1.26 | M8 | 2.76 | F07 |
| 2 | 1.97 | 1.50 | 7.00 | 3.62 | 6.00 | 4.75 | 0.06 | 0.56 | 4 | 3/4 | 2.22 | 4.49 | 7.95 | 0.378 | 5/8-18UNF | 1.26 | M8 | 2.76 | F07 |
| 2 1/2 | 2.44 | 1.97 | 7.50 | 4.12 | 7.00 | 5.50 | 0.06 | 0.62 | 4 | 3/4 | 2.62 | 5.22 | 9.92 | 0.630 | 7/8-14UNF | 1.67 | M10 | 4.02 | F10 |
| 3 | 2.99 | 2.38 | 8.00 | 5.00 | 7.50 | 6.00 | 0.06 | 0.69 | 4 | 3/4 | 2.97 | 6.20 | 11.90 | 0.630 | 7/8-14UNF | 1.67 | M10 | 4.02 | F10 |
| 4 | 3.86 | 2.99 | 9.00 | 6.19 | 9.00 | 7.50 | 0.06 | 0.88 | 8 | 3/4 | 3.78 | 7.52 | 15.90 | 0.709 | 1-1/8-12UNF | 2.17 | M10 | 4.02 | F10 |
| 6 | 5.75 | 3.94 | 10.50 | 8.50 | 11.00 | 9.50 | 0.06 | 0.94 | 8 | 7/8 | 5.24 | 9.25 | 23.75 | 1.603 | 1-3/8-12UNF | 2.20 | M12 | 4.92 | F12 |

SIZE : NPS 3 ~ NPS 6



SIZE : NPS 1/2 ~ NPS 4

SIZE : NPS 6



DIMENSION TABLE

ASME Class 300 DIMENSION TABLE KV-M2F/KV-M2FF

Unit : mm

| NPS | d | d1 | L | R | D | C | f | T | N | h | H | H1 | W | P | K | A | U | E | ISO 5211 |
|-------|-------|-------|-----|------|-----|-------|---|------|----|------|-------|-----|-----|------|-------------|------|-----|-----|----------|
| 1/2 | 12.5 | 10.0 | 140 | 35 | 95 | 66.7 | 2 | 12.7 | 4 | 16.0 | 23.0 | 74 | 136 | 6.3 | 3/8-24UNF | 21.0 | M5 | 42 | F04 |
| 3/4 | 19.0 | 12.5 | 152 | 43 | 115 | 82.6 | 2 | 14.3 | 4 | 19.0 | 23.0 | 74 | 136 | 6.3 | 3/8-24UNF | 21.0 | M5 | 42 | F04 |
| 1 | 25.0 | 17.5 | 165 | 51 | 125 | 88.9 | 2 | 15.9 | 4 | 19.0 | 33.5 | 88 | 170 | 9.0 | 9/16-18UNF | 21.5 | M6 | 50 | F05 |
| 1 1/4 | 32.0 | 25.0 | 178 | 63.5 | 135 | 98.4 | 2 | 17.5 | 4 | 19.0 | 41.5 | 96 | 170 | 9.0 | 9/16-18UNF | 21.5 | M6 | 50 | F05 |
| 1 1/2 | 38.0 | 32.0 | 190 | 73 | 155 | 114.3 | 2 | 19.1 | 4 | 22.3 | 47.5 | 105 | 200 | 9.6 | 5/8-18UNF | 32.0 | M8 | 70 | F07 |
| 2 | 50.0 | 38.0 | 216 | 92 | 165 | 127.0 | 2 | 20.7 | 8 | 19.0 | 56.5 | 114 | 200 | 9.6 | 5/8-18UNF | 32.0 | M8 | 70 | F07 |
| 2 1/2 | 62.0 | 50.0 | 241 | 105 | 190 | 149.2 | 2 | 23.9 | 8 | 22.3 | 66.5 | 133 | 250 | 16.0 | 7/8-14UNF | 42.5 | M10 | 102 | F10 |
| 3 | 76.0 | 60.3 | 282 | 127 | 210 | 168.3 | 2 | 27.0 | 8 | 22.3 | 75.5 | 158 | 300 | 16.0 | 7/8-14UNF | 42.5 | M10 | 102 | F10 |
| 4 | 98.0 | 76.0 | 305 | 157 | 255 | 200.0 | 2 | 30.2 | 8 | 22.3 | 96.0 | 191 | 400 | 18.0 | 1-1/8-12UNF | 55.0 | M10 | 102 | F10 |
| 6 | 146.0 | 100.0 | 403 | 216 | 320 | 269.9 | 2 | 35.0 | 12 | 22.3 | 133.0 | 236 | 600 | 27.0 | 1-3/8-12UNF | 56.0 | M12 | 125 | F12 |

ASME Class 300 DIMENSION TABLE KV-M2F/KV-M2FF

Unit : inch

| NPS | d | d1 | L | R | D | C | f | T | N | h | H | H1 | W | P | K | A | U | E | ISO 5211 |
|-------|------|------|-------|------|-------|-------|------|------|----|-----|------|------|-------|-------|-------------|------|-----|------|----------|
| 1/2 | 0.49 | 0.40 | 5.50 | 1.38 | 3.70 | 2.62 | 0.06 | 0.50 | 4 | 5/8 | 0.91 | 2.91 | 5.35 | 0.248 | 3/8-24UNF | 0.83 | M5 | 1.42 | F04 |
| 3/4 | 0.75 | 0.49 | 6.00 | 1.69 | 4.62 | 3.25 | 0.06 | 0.56 | 4 | 3/4 | 0.91 | 2.91 | 5.35 | 0.248 | 3/8-24UNF | 0.83 | M5 | 1.42 | F04 |
| 1 | 0.98 | 0.69 | 6.50 | 2.01 | 4.88 | 3.50 | 0.06 | 0.62 | 4 | 3/4 | 1.32 | 3.44 | 6.75 | 0.354 | 9/16-18UNF | 0.85 | M6 | 1.65 | F05 |
| 1 1/4 | 1.26 | 0.99 | 7.00 | 2.50 | 5.25 | 3.88 | 0.06 | 0.69 | 4 | 3/4 | 1.63 | 3.76 | 6.75 | 0.354 | 9/16-18UNF | 0.85 | M6 | 1.65 | F05 |
| 1 1/2 | 1.50 | 1.26 | 7.50 | 2.88 | 6.12 | 4.50 | 0.06 | 0.75 | 4 | 7/8 | 1.87 | 4.13 | 7.95 | 0.378 | 5/8-18UNF | 1.26 | M8 | 2.76 | F07 |
| 2 | 1.97 | 1.50 | 8.50 | 3.62 | 6.50 | 5.00 | 0.06 | 0.81 | 8 | 3/4 | 2.22 | 4.49 | 7.95 | 0.378 | 5/8-18UNF | 1.26 | M8 | 2.76 | F07 |
| 2 1/2 | 2.44 | 1.97 | 9.50 | 4.12 | 7.50 | 5.88 | 0.06 | 0.94 | 8 | 7/8 | 2.62 | 5.22 | 9.92 | 0.630 | 7/8-14UNF | 1.67 | M10 | 4.02 | F10 |
| 3 | 2.99 | 2.38 | 11.12 | 5.00 | 8.25 | 6.62 | 0.06 | 1.06 | 8 | 7/8 | 2.97 | 6.20 | 11.90 | 0.630 | 7/8-14UNF | 1.67 | M10 | 4.02 | F10 |
| 4 | 3.86 | 2.99 | 12.00 | 6.19 | 10.00 | 7.88 | 0.06 | 1.19 | 8 | 7/8 | 3.78 | 7.52 | 15.90 | 0.709 | 1-1/8-12UNF | 2.17 | M10 | 4.02 | F10 |
| 6 | 5.75 | 3.94 | 15.88 | 8.50 | 12.50 | 10.62 | 0.06 | 1.38 | 12 | 7/8 | 5.24 | 9.29 | 23.75 | 1.603 | 1-3/8-12UNF | 2.20 | M12 | 4.92 | F12 |