



We Make Automation Easy

# SERIES 78



**ECONOMICAL  
DIRECT MOUNT  
3-PIECE BALL VALVES**



**DIRECT MOUNTING OF  
ACTUATOR TO VALVES**

### DESIGN ADVANTAGES

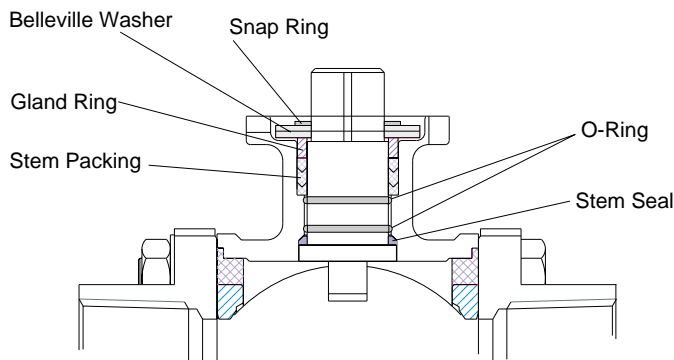
- **ISO 5211 DIRECT MOUNT PAD**  
Allows direct mounting of pneumatic and electric actuators, no brackets and couplings needed, easy and low cost for automated service.
- **SIMPLE AND LOW COST AUTOMATION**  
Constructed with a fully machined ISO 5211 mounting pad for direct installation of actuator, no brackets and couplings needed, saves time and labor.
- **LIVE LOADED HIGH CYCLE STEM SEAL**  
Insures tight seal and extends service life.
- **DOUBLE O-RING STEM BEARING**  
Maintains stem alignment, and reduces packing side loading and wear, enhances stem seal.
- **BLOW OUT PROOF STEM**
- **3-PIECE SWING OUT DESIGN**

### VALVE FIG. NO. AND END CONNECTIONS

- FIG. 78-10 THREADED END
- FIG. 78-20 SOCKET WELD
- FIG. 78-30 BUTT WELD
- FIG. 78-40 EXTENDED BUTT WELD
- FIG. 78-50 FLANGED END ( PN 25/40 F1 )
- FIG. 78-60 TRI-CLAMP END

### DOUBLE O-RING STEM BEARING SYSTEM

Maintains stem alignment, and reduces packing side loading and wear, provides extra longer service life.



### SPECIFICATIONS

Construction : 3-Piece Body, Full Bore  
 Size : 1/2" to 4" (DN15 to DN100)  
 Body : CF8M, WCB / 1.4408, 1.0619  
 Ball & Stem : 316 S.S.  
 Seats : PTFE  
 Rating : 1/2" ~ 2" 1000 PSI / PN 64  
           2 1/2" ~ 4" 800 PSI / PN 50  
 Temperature : -40° F ~ 385° F (PTFE)

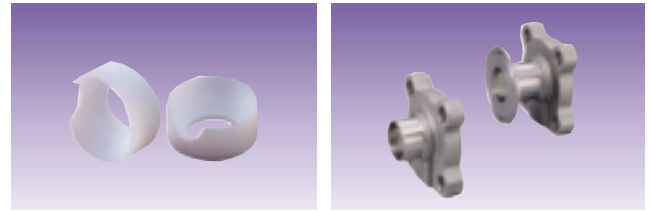
### OPTIONS

**SANITARY BALL VALVES**

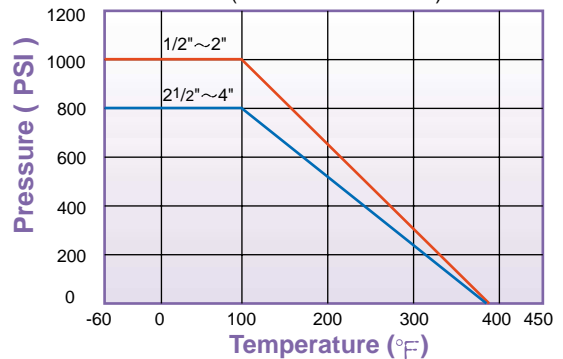
Seat : Cavity Fillers

End Connections : Tri-Clamp Ends, Tube OD BW

Body and End Material : 316L

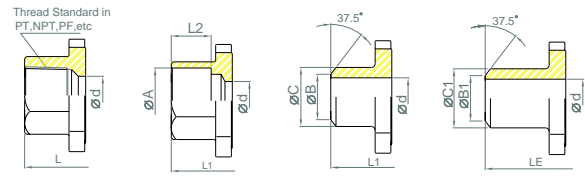


**Pressure / Temperature Chart**  
( PTFE Seats / Seals )

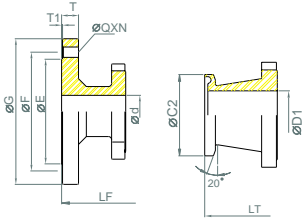


### BREAK AWAY TORQUE & Cv VALUES

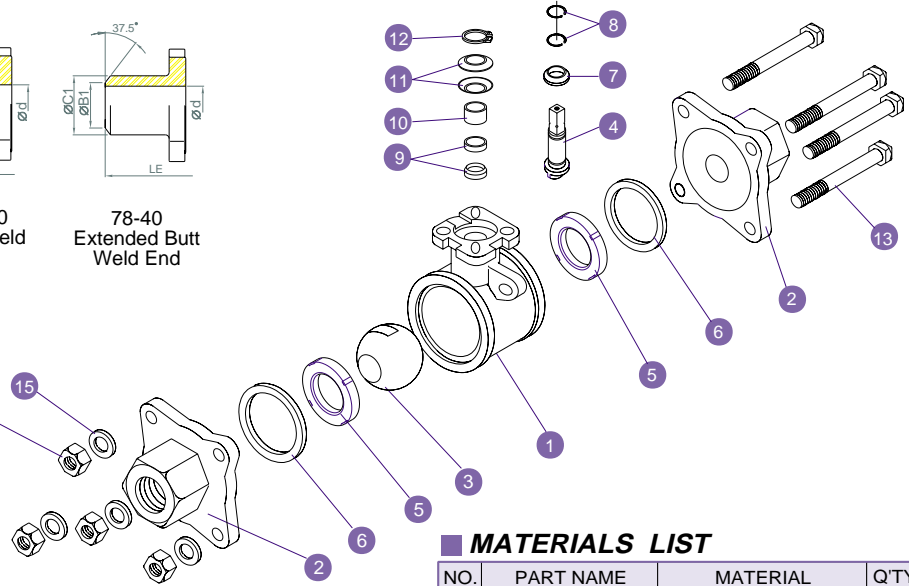
| SIZE   | BREAK AWAY TORQUE |        | Cv<br>U.S.GPM |
|--------|-------------------|--------|---------------|
|        | Nm                | In-Lb. |               |
| 1/2"   | 3                 | 30     | 13            |
| 3/4"   | 6                 | 45     | 33            |
| 1"     | 10                | 70     | 50            |
| 1 1/4" | 14                | 110    | 82            |
| 1 1/2" | 18                | 160    | 120           |
| 2"     | 22                | 200    | 240           |
| 2 1/2" | 32                | 270    | 325           |
| 3"     | 50                | 450    | 586           |
| 4"     | 80                | 710    | 1023          |



78-10 Threaded End  
78-20 Socket Weld End  
78-30 Butt Weld End  
78-40 Extended Butt Weld End



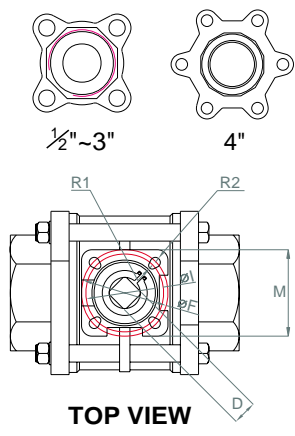
78-50 Flanged End (PN25/40 F1)  
78-60 Tri-Clamp End



**MATERIALS LIST**

| NO. | PART NAME         | MATERIAL           | Q'TY |
|-----|-------------------|--------------------|------|
| 1   | Body              | ASTM A351 GR. CF8M | 1    |
| 2   | End Cap           | ASTM A351 GR. CF8M | 2    |
| 3   | Ball              | ASTM A351 GR. CF8M | 1    |
| 4   | Stem              | ASTM A276 TYPE 316 | 1    |
| 5   | Seat              | PTFE               | 2    |
| 6   | Gasket            | PTFE               | 2    |
| 7   | Stem Seal         | PTFE               | 1    |
| 8   | O- Ring           | VITON              | 2    |
| 9   | Stem Packing      | PTFE               | *    |
| 10  | Gland Ring        | ASTM A276 TYPE 304 | 1    |
| 11  | Belleville Washer | ASTM A276 TYPE 301 | 2    |
| 12  | Snap Ring         | ASTM A276 TYPE 304 | 1    |
| 13  | Bolt              | ASTM A276 TYPE 304 | &    |
| 14  | Bolt Nut          | ASTM A276 TYPE 304 | #    |
| 15  | Bolt Washer       | ASTM A276 TYPE 304 | #    |

\* For 1/2"-1pcs; 3/4"-2pcs; 1"-4"-3pcs.  
 & For 1/2"-3"-4pcs; 4"-6pcs.  
 # For 1/2"-2"-4pcs; 2 1/2"-3"-8pcs; 4"-12pcs.



**TOP VIEW**

**DIMENSIONS(mm)**

| SIZE   | Ød   | H     | B4   | D    | ØF  | ØI  | M   | R1  | R2  | ØA    | ØD1  | ØB    | ØC    | ØB1   | ØC1   | ØC2   | ØE  | ØF  | ØG  | T  | T1 | ØQ  | N   | L    | L1   | L2   | LE  | LF   | LT      | W(kg) | ISO5211 |
|--------|------|-------|------|------|-----|-----|-----|-----|-----|-------|------|-------|-------|-------|-------|-------|-----|-----|-----|----|----|-----|-----|------|------|------|-----|------|---------|-------|---------|
| 1/2"   | 15.0 | 43.0  | 9.0  | 9.0  | 42  | 36  | 42  | 3   | 3   | 22    | 9.5  | 26.0  | 28.0  | 18.2  | 21.0  | 25.0  | 45  | 65  | 95  | 16 | 2  | 14  | 4   | 65.5 | 64.5 | 11.0 | 225 | 130  | 89      | 0.52  | F03/F04 |
| 3/4"   | 20.0 | 46.5  | 9.0  | 9.0  | 42  | 36  | 42  | 3   | 3   | 27.5  | 15.9 | 33.0  | 35.5  | 23.2  | 21.0  | 25.0  | 58  | 75  | 105 | 18 | 2  | 14  | 4   | 79   | 80   | 13.5 | 225 | 150  | 101     | 0.72  | F03/F04 |
| 1"     | 25.0 | 50.3  | 12.0 | 11.0 | 50  | 42  | 50  | 3   | 3.5 | 34.5  | 22.2 | 40.0  | 43.0  | 28.2  | 31.5  | 50.4  | 68  | 85  | 115 | 18 | 2  | 14  | 4   | 86   | 86   | 13.5 | 245 | 160  | 114     | 1.02  | F04/F05 |
| 1 1/4" | 32.0 | 55.0  | 12.0 | 11.0 | 50  | 42  | 50  | 3   | 3.5 | 43.3  | 49.0 | 52.5  | 35.2  | 39.0  | 78    | 100   | 145 | 18  | 2   | 18 | 4  | 105 | 105 | 14.0 | 255  | 180  | 172 | 1.72 | F04/F05 |       |         |
| 1 1/2" | 38.0 | 67.5  | 14.0 | 14.0 | 70  | 50  | 70  | 3.5 | 4.5 | 49.2  | 34.9 | 55.0  | 59.0  | 41.2  | 46.0  | 50.4  | 88  | 110 | 150 | 18 | 3  | 18  | 4   | 119  | 120  | 15.0 | 260 | 200  | 140     | 2.42  | F05/F07 |
| 2"     | 50.0 | 75.5  | 14.0 | 14.0 | 70  | 50  | 70  | 3.5 | 4.5 | 61.2  | 47.5 | 67.5  | 72.0  | 53.2  | 58.0  | 63.9  | 102 | 125 | 165 | 20 | 3  | 18  | 4   | 133  | 134  | 17.5 | 275 | 230  | 156     | 3.6   | F05/F07 |
| 2 1/2" | 65.0 | 95.0  | 18.0 | 17.0 | 102 | 70  | 102 | 4.5 | 5.5 | 77.0  | 60.3 | 86.0  | 92.0  | 69.0  | 75.0  | 77.4  | 122 | 145 | 185 | 22 | 3  | 18  | 8   | 163  | 163  | 18.5 | 334 | 290  | 197     | 7.52  | F07/F10 |
| 3"     | 80.0 | 105.0 | 18.0 | 17.0 | 102 | 70  | 102 | 4.5 | 5.5 | 89.9  | 73.0 | 100.0 | 107.0 | 84.0  | 90.0  | 90.9  | 138 | 160 | 200 | 24 | 3  | 18  | 8   | 183  | 184  | 20.0 | 354 | 310  | 229     | 10.8  | F07/F10 |
| 4"     | 100  | 126.0 | 24.0 | 22.0 | 125 | 102 | 125 | 5.5 | 6.5 | 115.0 | 97.4 | 127.5 | 136.0 | 104.0 | 113.0 | 118.9 | 162 | 190 | 235 | 24 | 3  | 22  | 8   | 228  | 228  | 25.0 | 365 | 350  | 243     | 19.5  | F10/F12 |

**HOW TO ORDER**

| VALVE TYPE |                      | SIZE      | BODY MATERIAL |      | SEAT |                        | HANDLE |                |
|------------|----------------------|-----------|---------------|------|------|------------------------|--------|----------------|
| 78-10      | Threaded Ends        | 03 1/2"   | S             | CF8M | P    | PTFE                   | None   | With Handle    |
| 78-20      | Socket Weld          | 04 3/4"   | W             | WCB  | R    | R-PTFE                 |        |                |
| 78-30      | Butt Weld            | 05 1"     | L             | 316L | S    | 50/50 S.S. filled PTFE | X      | Without Handle |
| 78-40      | Extended BW          | 06 1 1/4" | F             | CF8  |      | Carbon filled PTFE     |        |                |
| 78-50      | Flanged (PN25/40 F1) | 07 1 1/2" |               |      | C    | PTFE                   |        |                |
| 78-60      | Tri-Clamp End        | 08 2"     |               |      | D    | Delrin                 |        |                |
|            |                      | 10 3"     |               |      | M    | MG1241                 |        |                |
|            |                      | 11 4"     |               |      | U    | UHMWPE                 |        |                |



**MARS VALVE CO.,LTD.**  
 7F-6, NO.200, SEC.4, WEN-SHIN ROAD  
 TAICHUNG, TAIWAN, R.O.C.  
 TEL:++886-4-297 3808  
 FAX:++886-4-297 3608  
 E-MAIL:mars@marsvalve.com.tw  
<http://www.marsvalve.com.tw/>

Distributor: