

# DIRECT MOUNT SERIES 77SN HIGH PERFORMANCE ULTRA-PURE SANITARY BALL VALVES



**FIG. 77SN-10**  
Tri-Clamp



**FIG. 77SN-20**  
Extended Tube O.D. Butt Weld

## SPECIFICATIONS

### Sizes Range:

1/2" - 4"

### End connections:

Tri-Clamp  
Extended Tube OD Butt Weld

### Pressure Rating:

1500 PSI: 1/2" - 1"  
1000 PSI: 1 1/2" - 2"  
800 PSI: 2 1/2" - 4"

### Valve Material:

316L SS to ASTM A351-CF3M

### Ball and Stem Material:

316L SS to ASTM A351-CF3M

### Seat Materials:

PTFE  
R-PTFE  
TFM 1600  
UHMWPE  
Cavity-filled PTFE  
Cavity-filled R-PTFE

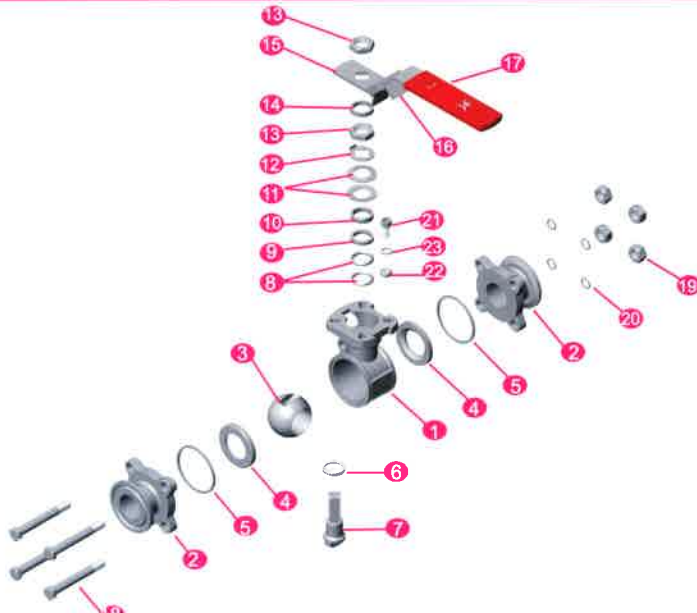
### Internal Parts Finish:

Standard finish on wetted parts  
20 - 20 Ra or 240 Grit

## DESIGN ADVANTAGES

- Direct Mount Design - Excellent For Automation Service**  
 ISO 5211 mounting pad and stem orientation allows direct mounting of actuator to valves, **No brackets and couplers are required**, making automation a lot easier with improved performance.
- Complete 316L stainless steel construction**
- True Tube Full Port Design:**  
 There are no dead space in the through path, eliminates trap areas and reduces pressure drop.
- Extra High Cycle Stem Packing Arrangement**  
 Mars unique SealMax® stem arrangement offers optimum stem seals with extremely high cycle life.
- In-Line Welding**  
 Extended Tube O.D. butt weld ends allows in-line welding without disassembly.
- Blow-Out Proof Stem**  
 Prevents stem blowing-out, for maximum operating safety
- Flush and Drain (CIP/SIP) Capability**  
 Bosses are provided in the end caps for both flush and drain capability in applications where material can become trapped in the body cavity.
- Easy in-Line Maintenance**  
 3-piece body swing-out design allows easy In-Line maintenance

## MATERIALS OF CONSTRUCTION



| NO. | PART NAME         | MATERIAL                      | QTY |
|-----|-------------------|-------------------------------|-----|
| 1   | Body              | CF3M                          | 1   |
| 2   | End Cap           | CF3M                          | 2   |
| 3   | Ball              | SUS316L                       | 1   |
| 4   | Seat              | PTFE                          | 2   |
| 5   | Joint Gasket      | PTFE                          | 2   |
| 6   | Stem Seal         | PTFE                          | 1   |
| 7   | Stem              | SUS316L                       | 1   |
| 8   | Gland Packing     | PTFE                          | 2   |
| 9   | Gland Packing     | 25% Glass Fiber Filled + PTFE | 1   |
| 10  | Gland Bush        | SUS 304                       | 1   |
| 11  | Belleville Washer | SUS 301                       | 2   |
| 12  | Stop Washer       | SUS 304                       | 1   |
| 13  | Stem Nut          | SUS 304                       | 2   |
| 14  | Stem Washer       | SUS 304                       | 1   |
| 15  | Handle            | SUS 304                       | 1   |
| 16  | Locking Device    | SUS 304                       | 1   |
| 17  | Handle Sleeve     | VINYL                         | 1   |
| 18  | Bolt              | SUS 304                       | 4   |
| 19  | Bolt Nut          | SUS 304                       | 4   |
| 20  | Bolt Washer       | SUS 304                       | 4   |
| 21  | Stop Pin          | SUS 304                       | 1   |
| 22  | Pin Nut           | SUS 304                       | 1   |
| 23  | Washer            | SUS 304                       | 1   |

## DIMENSIONS

### SERIES 77SN-10

Tri-Clamp

### SERIES 77SN-20

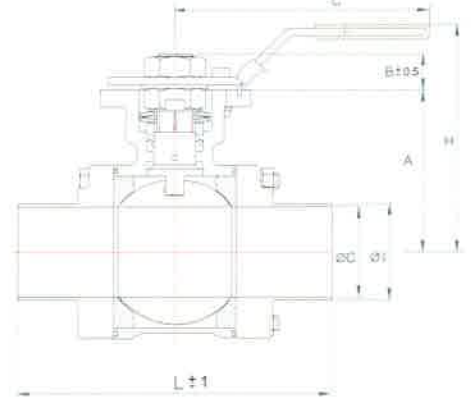
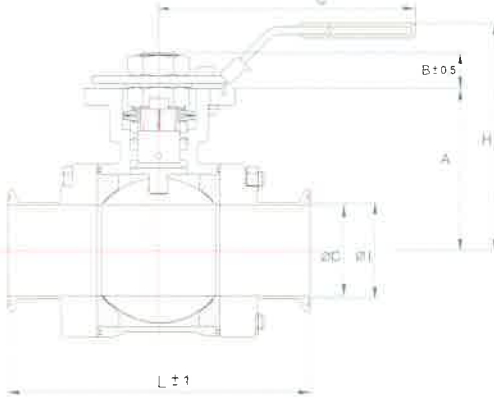
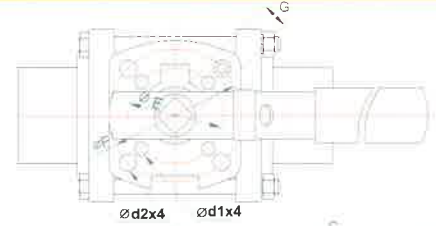
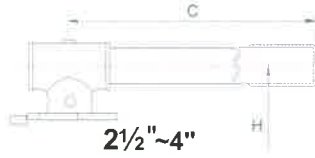
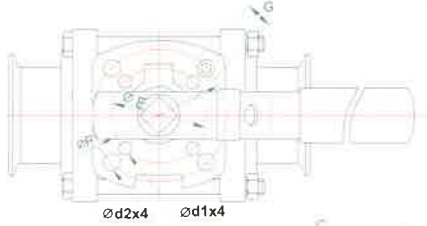
Extended Tube O.D Butt Weld

1/2"~2"- 1000 PSI WOG

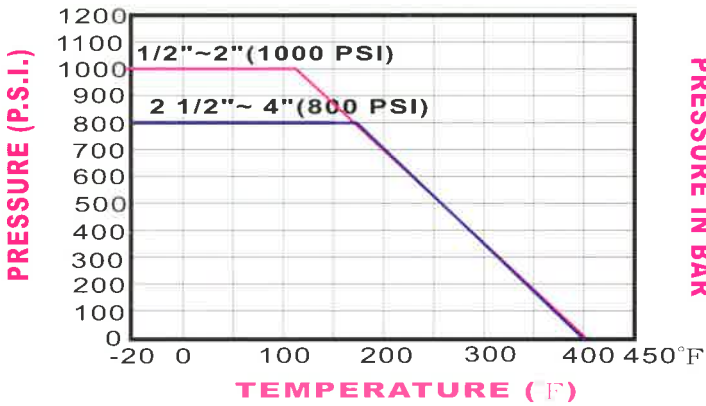
2 1/2"~4"- 800 PSI WOG

#### DIMENSIONS (mm)

| SIZE   | ∅C    | ∅I    | A     | B    | C   | ∅E | ∅F  | G  | H   | ∅d1 | ∅d2 | L Clamp | L Tube | Wt. (kg) Clamp | Wt. (kg) Tube | ISO5211 |
|--------|-------|-------|-------|------|-----|----|-----|----|-----|-----|-----|---------|--------|----------------|---------------|---------|
| 1/2"   | 9.4   | 12.7  | 42.1  | 6.4  | 139 | 36 | 42  | 9  | 77  | 6   | 6   | 89.1    | 139.8  | 0.76           | 0.71          | F03/F04 |
| 3/4"   | 15.75 | 19    | 48    | 6.9  | 139 | 36 | 42  | 9  | 83  | 6   | 6   | 101.6   | 146    | 0.87           | 0.91          | F03/F04 |
| 1"     | 22.2  | 25.4  | 56.6  | 11.2 | 165 | 42 | 50  | 11 | 96  | 6   | 7   | 114.5   | 158.7  | 1.44           | 1.26          | F04/F05 |
| 1 1/2" | 34.9  | 38.1  | 77.5  | 14.2 | 215 | 50 | 70  | 14 | 127 | 7.5 | 9   | 140.1   | 190.6  | 3.29           | 3.24          | F05/F07 |
| 2"     | 47.5  | 50.8  | 85.2  | 14.2 | 215 | 50 | 70  | 14 | 134 | 7.5 | 9   | 159     | 216    | 4.57           | 3.59          | F05/F07 |
| 2 1/2" | 60.3  | 63.5  | 108.7 | 17.1 | 300 | 70 | 102 | 17 | 167 | 10  | 12  | 174     | 247.6  | 9.46           | 9.90          | F07/F10 |
| 3"     | 73    | 76.2  | 117.7 | 18.1 | 370 | 70 | 102 | 17 | 176 | 10  | 12  | 193.2   | 266.8  | 12.81          | 13.19         | F07/F10 |
| 4"     | 97.4  | 101.6 | 132.6 | 17.1 | 370 | 70 | 102 | 17 | 192 | 10  | 12  | 226     | 317.6  | 20.33          | 21.13         | F07/F10 |



#### ■ PRESSURE V.S. TEMPERATURE CHART



#### ■ BREAK AWAY TORQUE AND Cv VALUE

| Valve Size | Break Away Torque |                          | Cv    |
|------------|-------------------|--------------------------|-------|
|            | PTFE Seats        | PTFE Cavity Filled Seats | USGPM |
| 1/2"       | 9                 | 10                       | 14    |
| 3/4"       | 10                | 12                       | 45    |
| 1"         | 16                | 17                       | 81    |
| 1 1/2"     | 36                | 40                       | 215   |
| 2"         | 44                | 48                       | 410   |
| 2 1/2"     | 91                | 98                       | 618   |
| 3"         | 104               | 111                      | 980   |
| 4"         | 117               | 124                      | 1840  |

\*Break Away Torque-30% safety factor included

## PRODUCTS OPTION

#### ■ SPRING RETURN SAFETY

**HANDLE** - Provides safe and positive fail close or open operation

#### ■ MARS TSM UNIT

- A Fugitive Emission Bonnet
- Compliance with EAP and TA - LUFT requirements
- Adds extra safety and high cycle life on standard valves

#### ■ CAVITY FILLED SEATS

No matter the orientation of the ball valves, secures handle always in position, make operation safe

