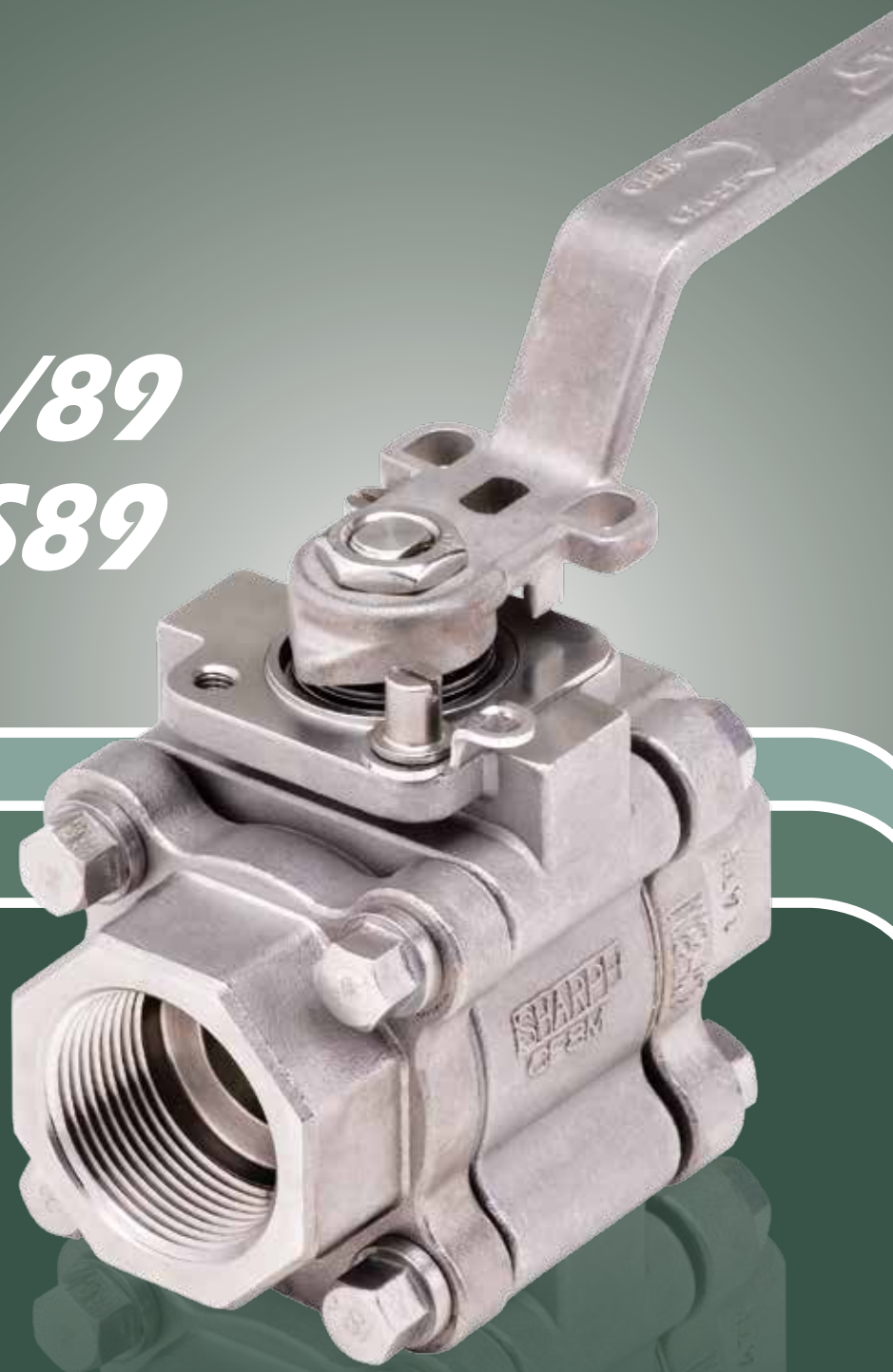
SHARPE®

Valves, Automation & Controls

# SERIES 80/89
# FS80/FS89



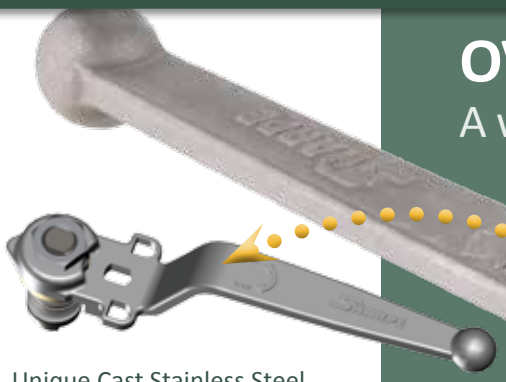

**Fully Compliant**
**API 608 5th Edition**
**Class 800 | 300**
**API 607 6th Edition**

*HIGH PERFORMANCE*
*STANDARD / FULL PORT*
*3-PIECE BALL VALVE*

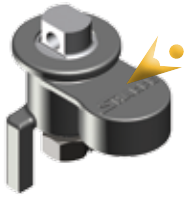
SMITH-COOPER®
INTERNATIONAL

# OVERVIEW:

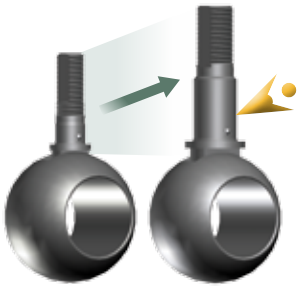
## A wider range of applications, functionality and control features



Unique Cast Stainless Steel handle for added strength and enhanced gripping power.



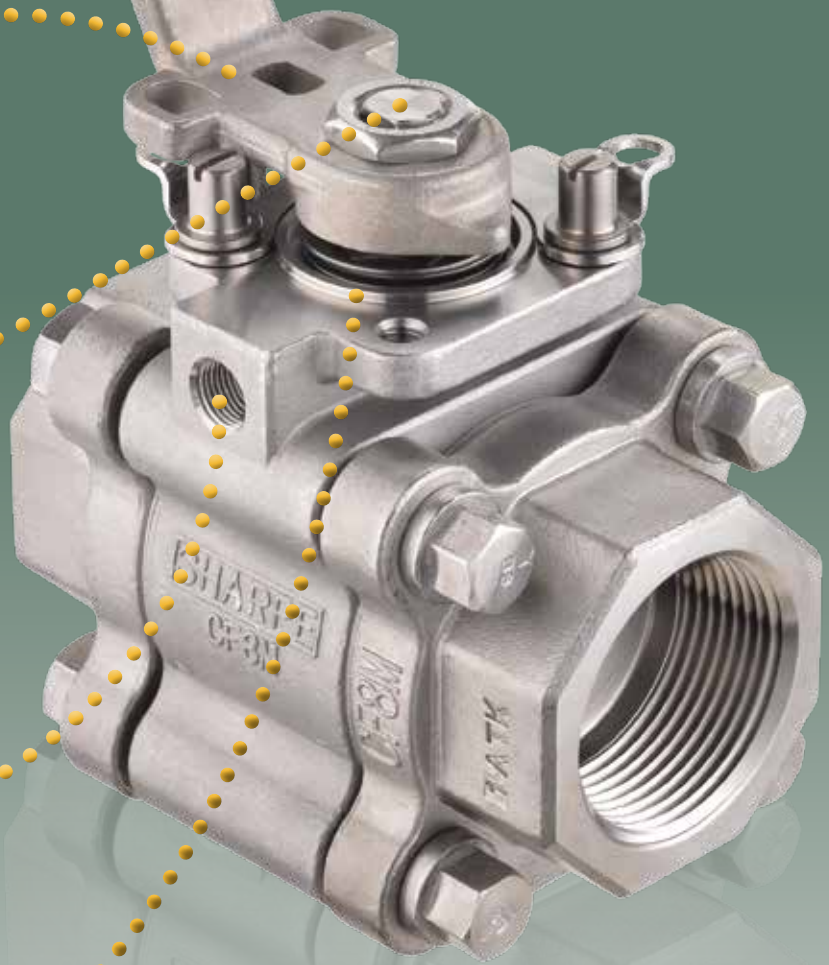
Optional tamper proof locking device.



Large, heavy duty stem shaft to comply with API 608 5th Edition.

Integral fugitive emission ports for monitoring.

Superior stem seal configuration for leakage protection and improved environmental performance.



The Series 80/FS80 Standard Port and Series 89/FS89 Full Port 3-piece ball valves are designed for high performance, long cycle life and exceptional durability. The valves are fully compliant to API 608 Class 800 for sizes up to 2½" Standard Port, 2" Full Port, and Class 300 up to 4" Standard Port, 3" Full Port.

# FEATURES:

Important construction components

## Body Material

316 Stainless Steel, Carbon Steel, Alloy 20 & 254 SMO®

## Rugged Body and End Pieces

Rugged body with higher and deeper stem packing area to allow for more stem seals.

Two cast bosses for optional fugitive emission ports.

Larger ISO 5211 bolt pattern for handling higher valve torques.

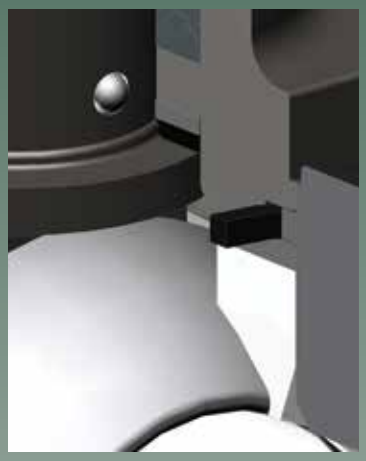
Extra thick end pieces to comply with Class 800 for sizes up to 2 1/2" Standard Port, 2" Full Port.

## Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

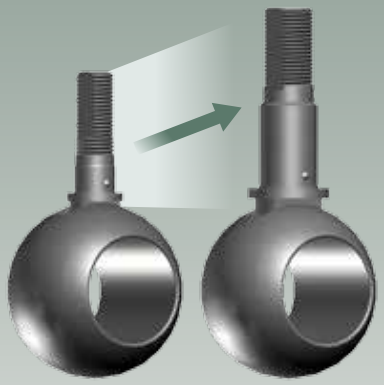


## Heavy Duty Stem Design

Stem diameters have been increased to meet the higher torque requirements of the most demanding applications.

Stem to ball contact area is wider and larger, allowing the valve to be used for higher torque applications.

Design allows for the use of 316 stainless steel stem material, rather than 17-4PH, for superior corrosion resistance.



# FEATURES:

## Larger Bolt Design

Larger diameter body bolts to comply with Class 800 for sizes up to 2 ½" Standard port, 2" Full Port

Encapsulated body bolts for added protection and wash down applications.

Optional bolts and nuts to comply with NACE MR-0175/ISO 15156.

## ISO 5211 Top-Works Compatibility

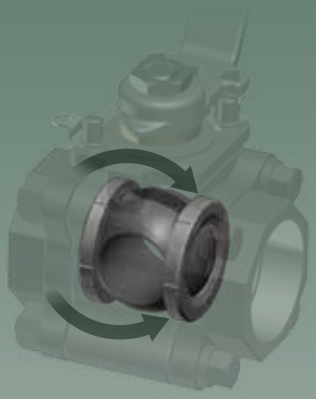
The top-works offer compatibility for mounting a wide range of accessories.

Sharpe® actuators and accessories may be retrofitted on existing valves without disruption of line integrity.

## Floating Ball Design

Solid stainless steel ball with wide selection of configurations for a variety of applications including; diverting, mixing, controlling, flushing, purging and more.

Floating ball seals on the downstream seat, reducing torque and assuring a bubble-tight shutoff.



## Unique Handle

A unique cast stainless steel handle specially designed to accommodate locking devices and high operating torques.

A comfortable, ergonomic, non-slip hand grip design.

Handle length according to API 608 requirements.

## Stem Assemblies

**Various stem assemblies are available based on application requirements.**

**Standard** – a multiple pack of Chevron "V" shaped stem seals for better sealing in TFM® or Nova materials.

**High Temperature** – double pack of flexible graphite seals for sealing under high temperature conditions.

**Fugitive Emission** – 2-pack stem seals in PTFE or graphite, with lantern ring to allow leak detection through the emission port(s).

**High Cycle** – unique design for demanding high cycle applications that consist of multi-system sealing devices in the stem bonnet.

## Stem Sealing

**Increased Stem Sealing Area**
Allows for a range of sealing combinations for severe applications and other stringent design demands.

**Live-Loaded Stem**
Two pairs of concave and opposing spring washers provide additional compensation for seal wear.

**Safe Design**
Blowout proof stem ensures the stem cannot be blown out by accidental medium pressure rise.

**Wear Resistance**
The thrust washer is either metallic for higher temperatures and wear resistance, or PEEK for lower temperatures.

**Anti-Static**
Static build-up discharges by anti-static device in stem or the metallic thrust washer.

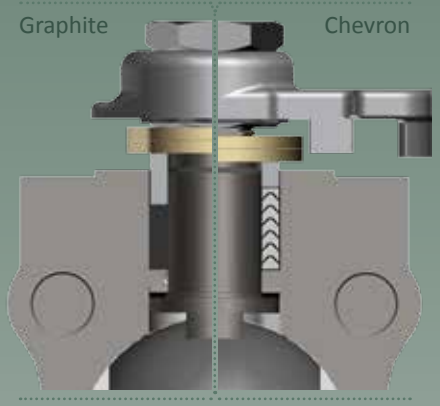
## Stem Trim for Sizes Greater Than 3"

According to API 608 all valve sizes greater than 3" have an adjustable packing gland with thru bolt holes. Gland bolts pass through the holes and thread to the valve body. The position stops are bolted to the body and are not integral to the packing gland, gland flange or gland bolting.

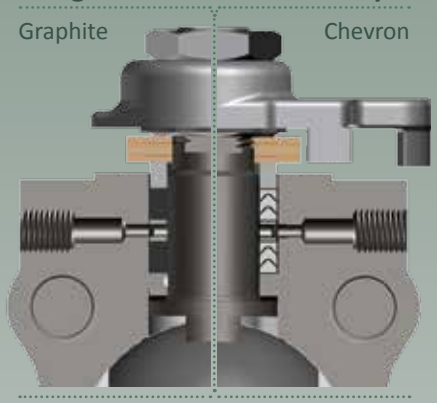
# VALVE TRIM

## Operational flexibility and process compatibility of stem assemblies

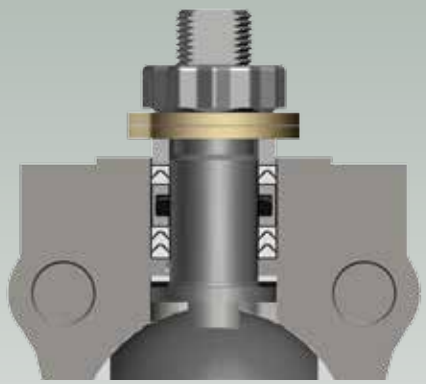
**Standard Stem Assembly**

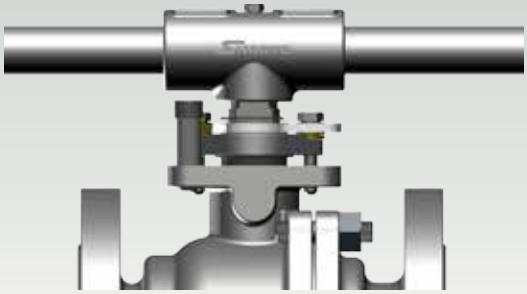



**Fugitive Emission Assembly**




**High Cycle Assembly**



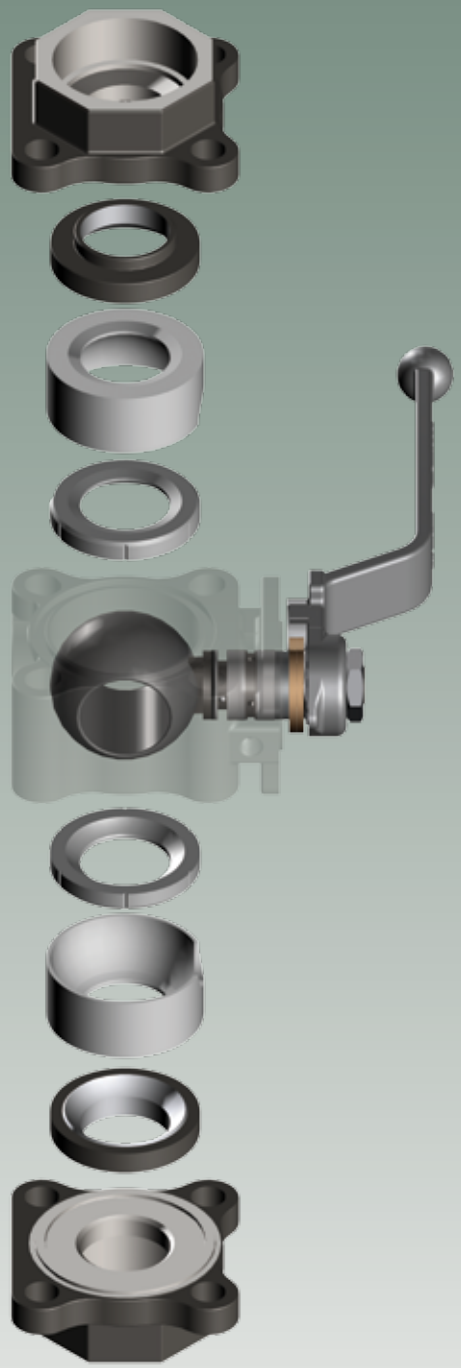


# SEAT AND SEAL:

## Options for demanding design solutions

### Choice of Seats and Seals

A wide variety of seat and seal materials are readily available for the most demanding applications including; TFE, RTFE, TFM®, Nova, Super Nova, Delrin®, PEEK, Buna, Graphite, Impregnated Graphite, EPDM and Viton®



### Seat Designs

All the seats are designed with circumferential relief slots to equalize body pressure and assure leak-tight sealing.

Aside from standard seats, Sharpe® also supplies seats designated for specific applications, including, but not limited to:

CAVITY FILLER SEATS
Seats that eliminate the voids in the valve body cavity to minimize solidification of the media.

METAL SEATS
Metal seats are the only option where high temperatures, severe abrasion and corrosive fluids are involved. See Sharpe® Valves M80/M89 and M70/M74 Metal Seated Series Brochure.

## End Connection Combinations

Customize your valve with the end connections of your choice including mixed ends. Threaded, socket weld, butt weld and extended butt weld ends are readily available.

## Integrated Fugitive Emission Ports

One or two ports can be drilled and tapped into our specially designed body.

Ports align with a lantern ring precisely located between an upper and lower set of stem packing to allow monitoring of emissions.

## Lockable Stem Extension

An option to move the valve top interface away from the pipe line to accommodate insulation.

## Tamper Proof Locking Device

Upgrade from the standard locking device found on all Sharpe® Valves to our unique spring loaded Tamper Proof Locking Device.

## Spring Return Handle

Spring return handle ensures that the valve cannot be left open (or closed).

## Cast Mounting Brackets

Cast stainless steel brackets with hole patterns conforming to ISO 5211 on top and bottom for actuation mounting.

Safety locking holes for securing valves during maintenance (requires special couplers).

Aesthetic design offers wide tool clearance for installation and open visual.

## Steam Jackets

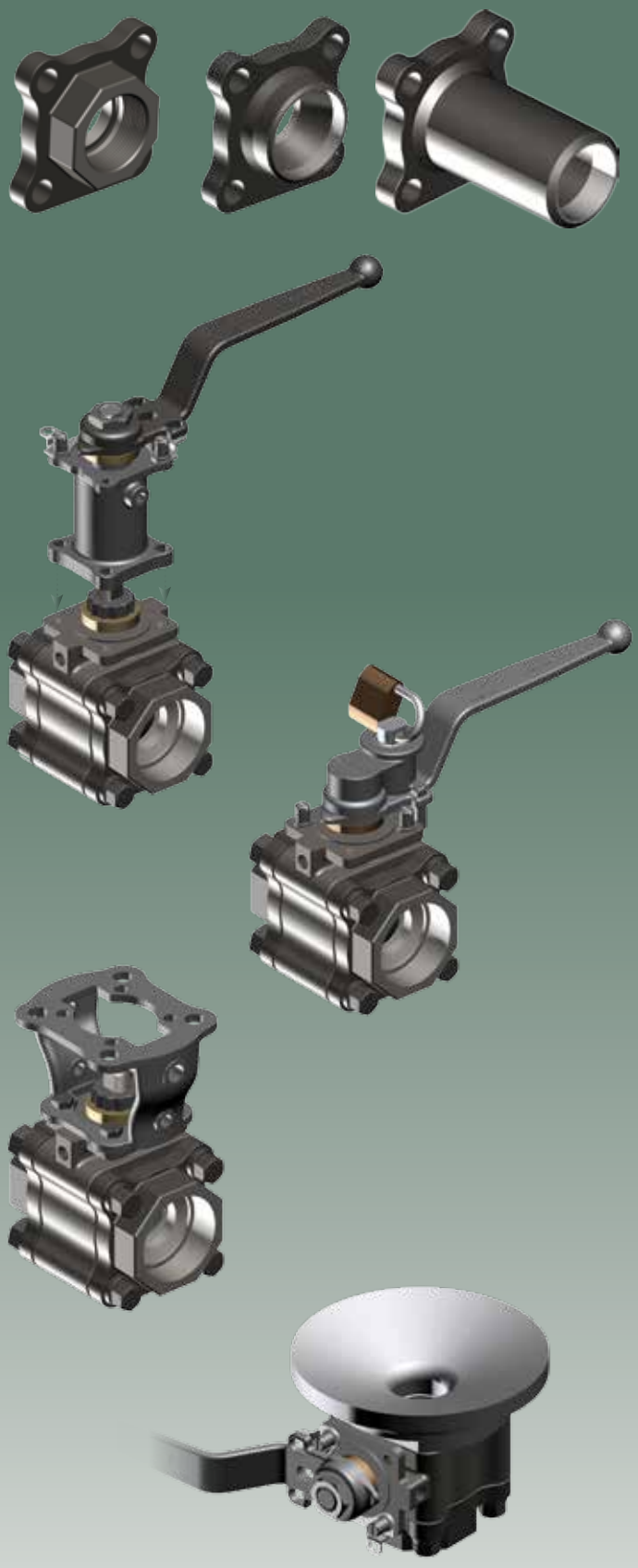
Steam jackets enable valves to be kept at a controlled temperature.

## Tank Bottom Valves

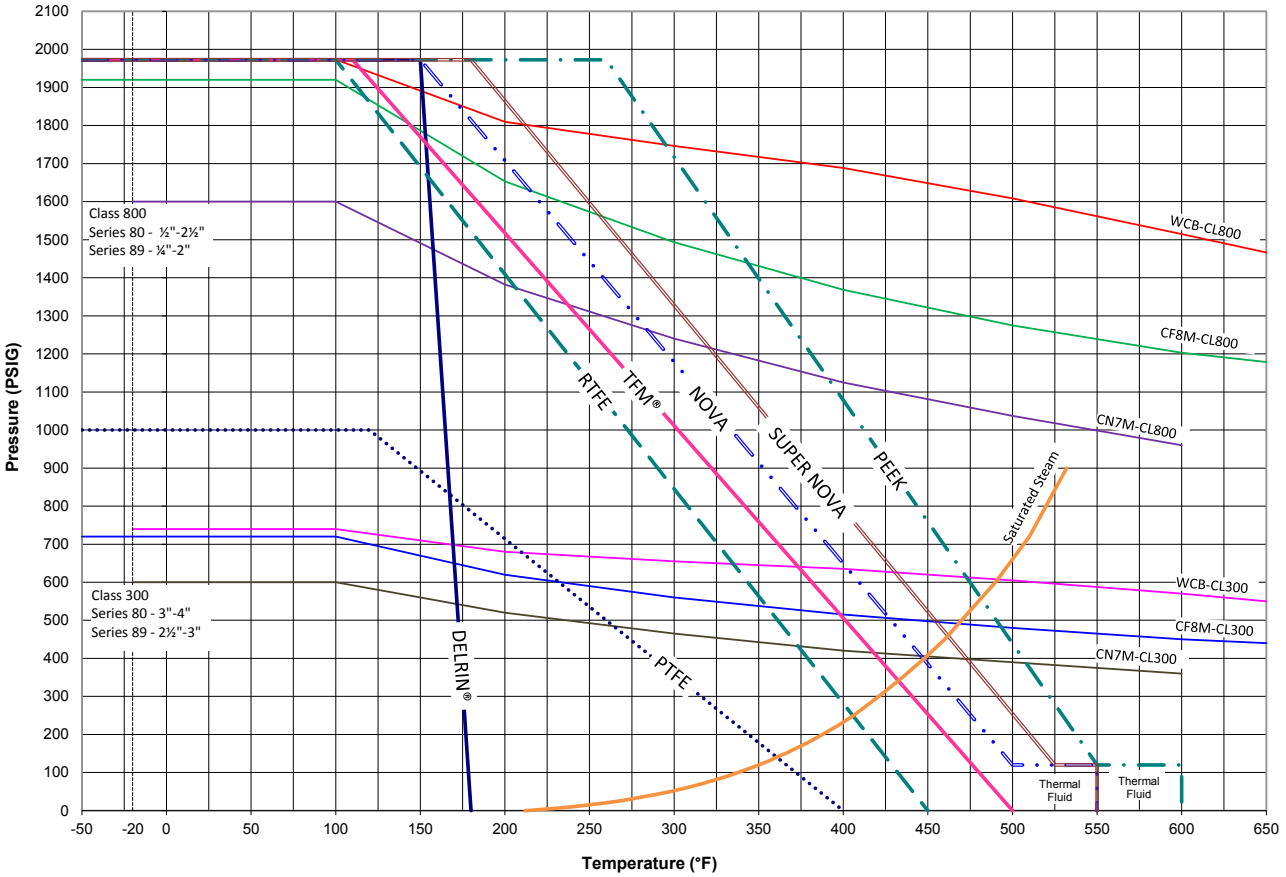
Valves with special dished flanges for welding directly to tank bottoms.

Minimizes the static volume common with standard fittings.

# ACCESSORIES:



## Pressure-Temperature Ratings Series 80/89




Standard Port
Class 800 ½" -2½"
Class 300 3" - 4"

Full Port
Class 800 ¼" -2"
Class 300 2½" - 3"

Note:
The maximum pressure/temperature ratings of the valve assemblies are limited to lowest of the body or seat material fitted.
The valve body ratings are based on ASME B16.34 rating for materials.
The graphs are based on laboratory testing and our experience in field.
The seat ratings depend on the material, design, application and function.
For higher pressure rating above 2000 psig, please consult with Sharpe® Valves.

## Sharpe® Seat Materials

**PTFE**
**T** - Virgin PTFE
Polytetrafluoroethylene is a Fluorocarbon-based polymer. This seating material has excellent chemical resistance and low coefficient of friction. Its temperature range is -100°F to 400°F (-73°C to 204°C). Color - white.

**TFM®**
**M** - TFM® PTFE
Dyneon TFM® PTFE is a second generation PTFE with improved chemical and heat resistant properties over first generation PTFE and exhibits better stress recovery. Its temperature range is -100°F to 500°F (-73°C to 260°C) Color - white.

**RTFE**
**R** - Reinforced Polytetrafluoroethylene (RTFE 15% Glass Filled). PTFE's mechanical properties are enhanced by adding filler material to provide improved strength, stability and wear resistance. Its temperature range is from -320°F to 450°F (-196°C to 204°C). Color-off-white.

**NOVA**
**N** - Nova
This is a Teflon base filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction-expansion than PTFE, and is ideal for steam or thermal fluid applications. Its temperature range is from -50°F to 550°F (-45°C to 288°C). Color - black.

**SUPER NOVA**
**B** - Super Nova is a free-flowing compound based on TFM® containing electro-graphitized carbon. It features: increased thermal dimensional stability and surface hardness, improved deformation under load, reduced friction and wear, and good chemical stability. It has a high limiting oxygen index (LOI), low coefficient of friction, very good mechanical properties and exceptional temperature resistance. It is used as a seat material in chemical processing and automotive industries. It is ideal to use with steam and thermal fluid applications up to 550°F (288°C) and as low as -40°F (-40°C). Color - black.

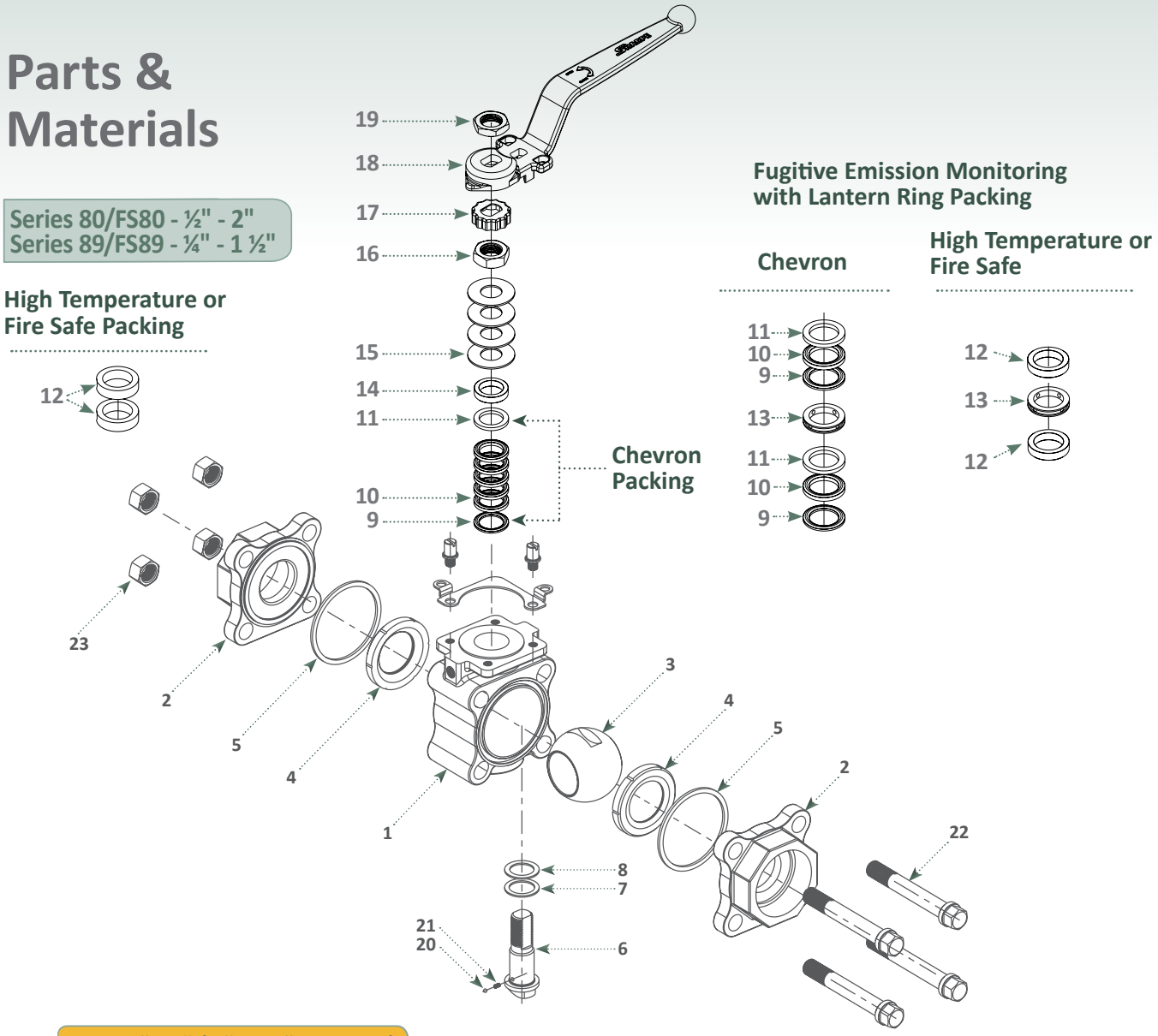
**DELRIN®**
**D** - Delrin®
This material is very rigid and does not undergo cold flow. It has a combination of strength, stiffness, hardness, dimensional stability, toughness, fatigue resistance, abrasion resistance, low wear and low friction. It can withstand pressure up to 6000 PSIG depending on valve size and class rating. Has a temperature range of -70°F to 180°F (-57°C to 82°C).

**PEEK**
P - PEEK (Unfilled) Polyetheretherketone
PEEK Polymer offers a unique combination of chemical, mechanical and thermal properties. Excellent for water and steam applications at elevated temperatures up to 600°F (315°C). Color - beige.

**OTHER**
Other seat materials
Other seat material are available according to the application, such as very high temperature or cryogenic conditions.

# Parts & Materials

**Series 80/FS80 - ½" - 2"**
**Series 89/FS89 - ¼" - 1 ½"**




## Sizes ½" - 2" (¼" - 1½" Full Port)

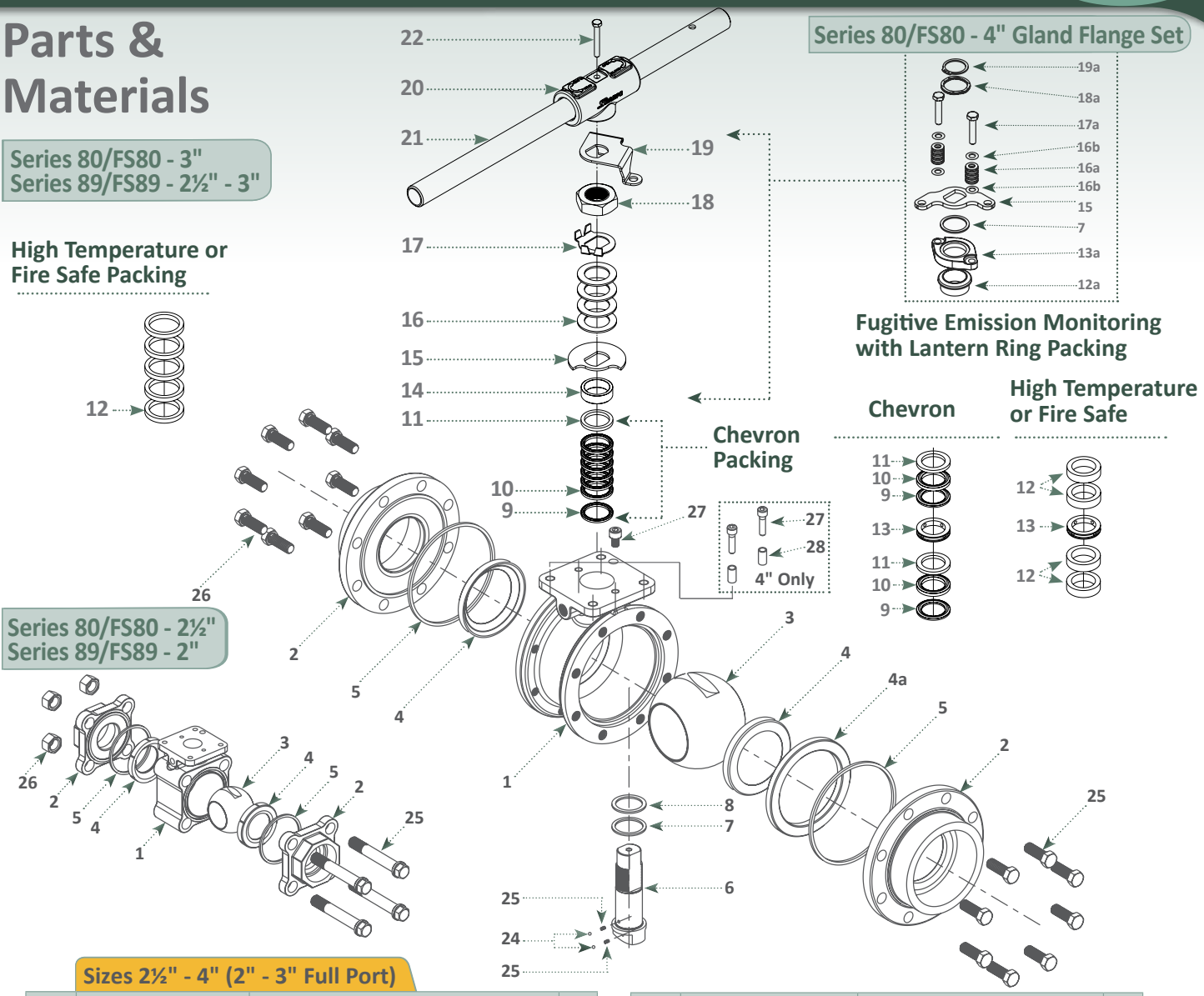
| ITEM | DESCRIPTION | MATERIAL | QTY |
|---|---|---|---|
| 1** | Body | Carbon Steel ASTM A216 WCB<br>316 Stainless Steel ASTM A351 CF8M<br>Alloy 20 ASTM A351 CN7M<br>SMO 254® ASTM A351 CK3MCuN | 1 |
| 2** | End Piece | Carbon Steel ASTM A216 WCB<br>316 Stainless Steel ASTM A351 CF8M<br>316L Stainless Steel ASTM A351 CF3M<br>(used for stainless steel weld ends)<br>Alloy 20 ASTM A351 CN7M<br>SMO 254® ASTM A351 CK3MCuN | 2 |
| 3** | Ball | 316 Stainless Steel<br>Alloy 20<br>SMO 254® | 1 |
| 4* | Seat | PTFE, RTFE, TFM®, Nova, Super Nova, PEEK, DELRIN® | 2 |
| 5* | Body Seal | Buna, EPDM, Graphite, Impregnated Graphite, PTFE, TFM®, Viton® | 2 |
| 6 | Stem | 316 Stainless Steel, Alloy 20, SMO 254®, 17-4PH | 1 |

| ITEM | DESCRIPTION | MATERIAL | QTY |
|---|---|---|---|
| 7* | Thrust Bearing - Bottom | Nova, PEEK | 1 |
| 8* | Thrust Bearing - Top | Nova | 1 |
| 9* | Stem Packing - Bottom | PTFE,TFM®,Nova | 2 |
| 10* | Stem Packing - Middle | PTFE,TFM®,Nova | 2 |
| 11* | Stem Packing - Top | PTFE,TFM®,Nova | 2 |
| 12* | Stem Packing | Graphite (FS or high temperature) | 2 |
| 13 | Lantern Ring | 300 Series Stainless Steel | 1 |
| 14 | Gland | 300 Series Stainless Steel | 1 |
| 15* | Belleville Washer | 17-7PH | 4 |
| 16 | Packing Nut | 300 Series Stainless Steel | 1 |
| 17 | Lock Tab | 300 Series Stainless Steel | 1 |
| 18 | Handle | 304 Stainles Steel ASTM A351 CF8 | 1 |
| 19 | Handle Nut | 300 Series Stainless Steel | 1 |
| 20 | Anti-Static Ball | 300 Series Stainless Steel | 2 |
| 21 | Anti-Static Spring | Hard Drawn Stainless Steel | 2 |
| 22 | Bolt | A193 Gr B8 | 4 |
| 23 | Nut | 300 Series Stainless Steel | 4 |
| 24 | Lock Plate | 300 Series Stainless Steel | 1 |
| 25 | Stop pin | 300 Series Stainless Steel | 2 |

The quantities listed in the stem arrangement are for fugitive emission assemblies. Standard stem assemblies carry more seals and no lantern rings.
*** these parts are used in repair kits.**
****Other materials available, call to discuss your special requirements**

# Parts & Materials

**Series 80/FS80 - 3"**
**Series 89/FS89 - 2½" - 3"**

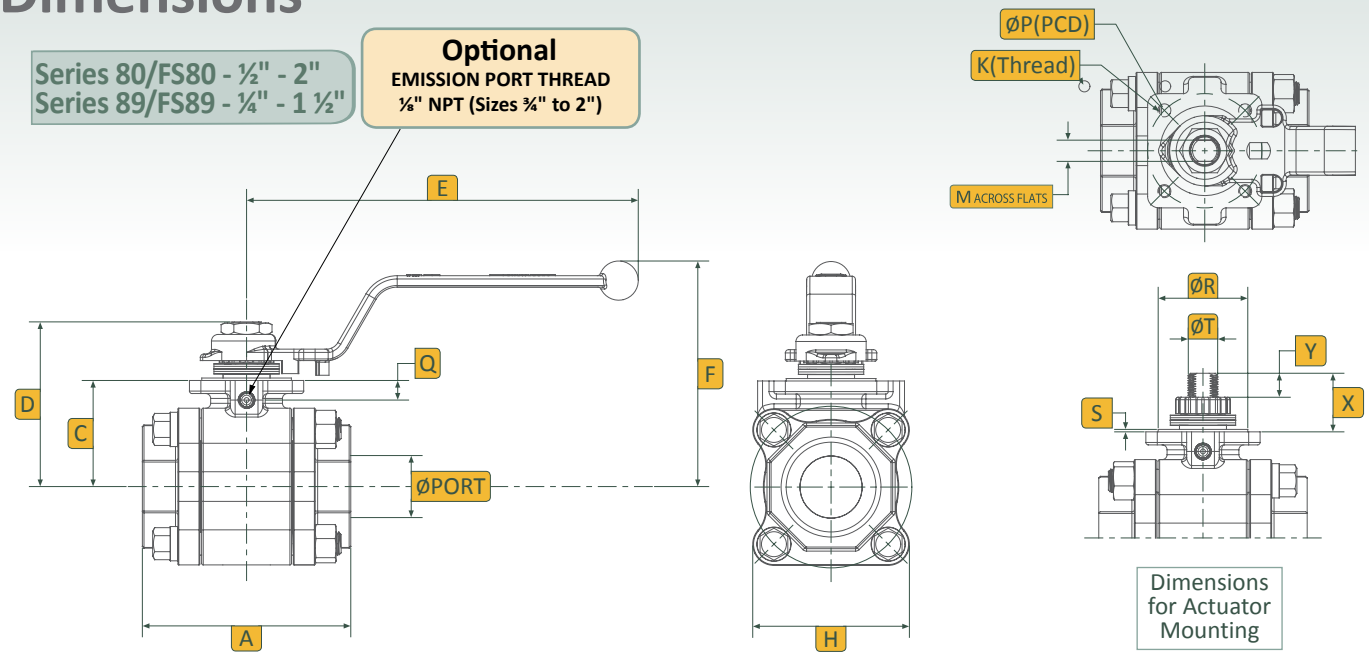


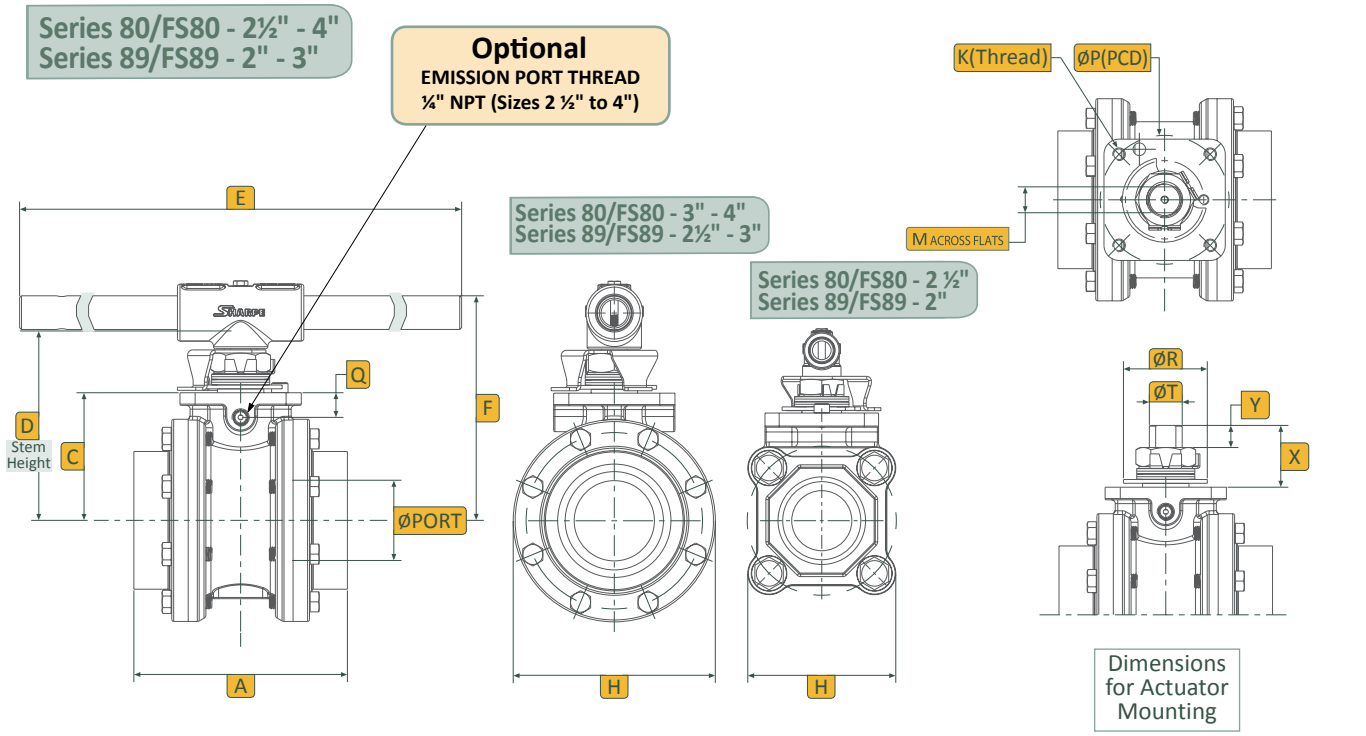

**Sizes 2½" - 4" (2" - 3" Full Port)**

| ITEM | DESCRIPTION | MATERIAL | QTY |
|---|---|---|---|
| 1** | Body | Carbon Steel ASTM A216 WCB<br>316 Stainless Steel ASTM A351 CF8M<br>Alloy 20 ASTM A351 CN7M | 1 |
| 2** | End Piece | Carbon Steel ASTM A216 WCB<br>316 Stainless Steel ASTM A351 CF8M<br>316L Stainless Steel ASTM A351 CF3M<br>(used for stainless steel weld ends)<br>Alloy 20 ASTM A351 CN7M | 2 |
| 3** | Ball | 316 Stainless Steel<br>Alloy 20 | 1 |
| 4* | Seat | PTFE, RTFE, TFM®, Nova, Super Nova, PEEK, DELRIN® | 2 |
| 4a | Seat Ring | Carbon Steel ASTM A216 WCB<br>316 Stainless Steel ASTM A351 CF8M | 1 |
| 5 | Body Seal | Buna, EPDM, Graphite, Impregnated Graphite, PTFE, TFM®, Viton® | 2 |
| 6 | Stem | 316 Stainless Steel, Alloy 20, 17-4PH | 1 |
| 7* | Thrust Bearing - Bottom | Nova, PEEK | 1 |
| 8* | Thrust Bearing - Top | Nova | 1 |
| 9* | Stem Packing - Bottom | PTFE,TFM®,Nova | 2 |
| 10* | Stem Packing - Middle | PTFE,TFM®,Nova | 2 |
| 11* | Stem Packing - Top | PTFE,TFM®,Nova | 2 |
| 12* | Stem Packing | Graphite (FS or high temperature) | 4 |
| 12a | Gland Position Ring | 300 Series Stainless Steel | 1 |

| ITEM | DESCRIPTION | MATERIAL | QTY |
|---|---|---|---|
| 13 | Lantern Ring | 300 Series Stainless Steel | 1 |
| 13a | Gland (Size 4" only) | 316 Stainless Steel A351 CF8M | 1 |
| 14 | Gland | 300 Series Stainless Steel | 1 |
| 15 | Stop Plate | 300 Series Stainless Steel | 1 |
| 16* | Belleville Washer | 17-7PH | 4 |
| 16a | Belleville Washer | 17-7PH | 16 |
| 16b | Washer | 300 Series Stainless Steel | 4 |
| 17 | Lock Tab | 300 Series Stainless Steel | 1 |
| 17a | Gland Bolt | 300 Series Stainless Steel | 2 |
| 18 | Packing Nut | 300 Series Stainless Steel | 1 |
| 18a | Retainer Spring | 300 Series Stainless Steel | 1 |
| 19 | Packing Nut | 300 Series Stainless Steel | 1 |
| 19a | Retainer Lock | 300 Series Stainless Steel | 1 |
| 20 | Wrench Block | 304 Stainles Steel ASTM A351CF8 | 1 |
| 21 | Handle Pipe | Zinc Plated Carbon Steel/ Stainless Steel | 1 |
| 22 | Wrench Bolt | 300 Series Stainless Steel | 1 |
| 23 | Anti-Static Ball | 300 Series Stainless Steel | 2 |
| 24 | Anti-Static Spring | Hard Drawn Stainless Steel | 2 |
| 25 | Bolt | A193 Gr B8 | 4/16 |
| 26 | Nut | 300 Series Stainless Steel | 4/na |
| 27 | Stop pin | 300 Series Stainless Steel | 2 |
| 28 | Stop pin Sleeve | 300 Series Stainless Steel | 2 |

# Dimensions




| Standard Port | Full Port | | TE/SW BW | Ext BW Full Port | Dimensions (Inches) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80/FS80 | 89/FS89 | ØPORT | A | A | C | D | E | F | H | K (Thread) | M | ØP (PCD) | Q | ØR | S | ØT | X | Y |
| ½" | ¼", ⅜" | 0.44 | 2.91 | - | 1.27 | 2.01 | 6.42 | 3.39 | 1.81 | M5-P0.8 | 0.264 | F04 (1.65) | NA | 1.18 | 0.051 | 0.394 | 0.74 | 0.33 |
| ¾" | ½" | 0.56 | 3.07 | 13.10 | 1.42 | 2.17 | 6.42 | 3.54 | 1.95 | M5-P0.8 | 0.264 | F04 (1.65) | 0.27 | 1.18 | 0.051 | 0.394 | 0.74 | 0.33 |
| 1" | ¾" | 0.81 | 3.72 | 13.25 | 1.74 | 2.57 | 7.28 | 3.83 | 2.39 | M6-P1.0 | 0.343 | F05 (1.97) | 0.39 | 1.38 | 0.059 | 0.472 | 0.81 | 0.30 |
| 1¼" | 1" | 1.00 | 4.25 | 13.61 | 1.91 | 2.74 | 7.28 | 4.00 | 2.85 | M6-P1.0 | 0.343 | F05 (1.97) | 0.37 | 1.38 | 0.059 | 0.472 | 0.81 | 0.30 |
| 1½" | 1¼" | 1.24 | 4.57 | 13.90 | 2.40 | 3.82 | 9.45 | 5.28 | 3.15 | M8-P1.25 | 0.512 | F07 (2.76) | 0.47 | 2.17 | 0.059 | 0.709 | 1.41 | 0.48 |
| 2" | 1½" | 1.50 | 5.04 | 14.21 | 2.56 | 3.98 | 9.45 | 5.43 | 3.78 | M8-P1.25 | 0.512 | F07 (2.76) | 0.47 | 2.17 | 0.059 | 0.709 | 1.41 | 0.48 |
| 2½" | 2" | 2.00 | 6.34 | 14.87 | 3.58 | 5.28 | 15.75 | 6.34 | 4.92 | M10-P1.5 | 0.630 | F10 (4.02) | 0.76 | - | - | 0.886 | 1.92 | 0.65 |
| 3" | 2½" | 2.50 | 6.65 | - | 3.98 | 5.87 | 23.62 | 7.48 | 6.30 | M10-P1.5 | 0.807 | F10 (4.02) | 0.77 | - | - | 1.024 | 1.93 | 0.65 |
| 4" | 3" | 3.25 | 8.43 | - | 4.59 | 6.50 | 23.62 | 8.07 | 7.99 | M10-P1.5 | 0.807 | F10 (4.02) | 0.77 | - | - | 1.024 | 1.93 | 0.65 |

The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

# How To Order Series 80/89 FS80/FS89

| 2" | FS80 | - | 6 | 6 | 6 | 6 | R | G | G | - | SW / TE | - | X | - | OH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | Series | | Body | Ends | Ball | Stem | Seat | Body Seal | Stem Packing | | Ends | | Service | | Options |

## Size

| 80 | 89 | Class |
|---|---|---|
| - | ¼" | 800 |
| ½" | ⅜" | 800 |
| ¾" | ½" | 800 |
| 1" | ¾" | 800 |
| 1¼" | 1" | 800 |
| 1½" | 1¼" | 800 |
| 2" | 1½" | 800 |
| 2½" | 2" | 800 |
| 3" | 2½" | 300 |
| 4" | 3" | 300 |

## Series

| | |
|---|---|
| 80 | Standard Port |
| 89 | Full Port |
| FS80 | Fire Safe |
| FS89 | Fire Safe |
| CF80 | Cavity Filler |
| CF89 | Cavity Filler |

Fire Safe valves must use: Graphite or Impregnated Graphite Body Seals and Stem Packing. PTFE, RTFE, TFM®, Nova, Super Nova Seats

Cavity Filler Seats available in PTFE.

## Body

| | |
|---|---|
| 2 | Alloy 20 |
| 4 | Carbon Steel |
| 6 | 316 Stainless Steel |
| S | 254 SMO®* |

## Ends

| | |
|---|---|
| 2 | Alloy 20 |
| 4 | Carbon Steel |
| 6 | 316 Stainless Steel (Welded ends will be type L) |
| S | 254 SMO®* |

## Ball

| | |
|---|---|
| 2 | Alloy 20 |
| 6 | 316 Stainless Steel |
| S | 254 SMO®* |

## Stem

| | |
|---|---|
| 2 | Alloy 20 |
| 6 | 316 Stainless Steel |
| 7 | 17-4 PH |
| S | 254 SMO®* |

## Seat

| | |
|---|---|
| B | Super Nova |
| D | Delrin® |
| M | TFM® |
| N | Nova |
| P | Virgin PEEK |
| R | RTFE 15% Glass Filled |
| T | PTFE |

## Body Seal

| | |
|---|---|
| B | Buna |
| E | EPDM |
| G | Graphite |
| I | Impregnated Graphite |
| M | TFM® |
| T | PTFE |
| V | Viton® |

## Stem Packing

| | |
|---|---|
| G | Graphite |
| I | Impregnated Graphite |
| M | TFM® |
| N | Nova |
| R | RTFE 15% Glass Filled |
| T | PTFE |
| U | UHMWPE |
| C | PEEK Carbon Filled |

## Ends

| | |
|---|---|
| TE | Threaded |
| SW | Socketweld |
| BW | Buttweld SCH 40 |
| BW10 | Buttweld SCH 10* |
| FB | Flush Bottom |

## Ends (89 FP Only)

| | |
|---|---|
| BW80 | Buttweld SCH 80 |
| EBW | Buttweld SCH 80 Extended |

## Service

| | |
|---|---|
| X | Oxygen Service***** |
| U | Vacuum |
| MN | Ammonia Service |
| SF | Silicone Free***** |

## Options

| | |
|---|---|
| OH | Oval Handle up to 2" SP or 1½" FP |
| F1 | 1 Emission Port** |
| F2 | 2 Emission Port** |
| L | Lockable Stem Extension*** |
| A | NACE |
| VB | Vented Ball |
| SJ | Steam Jacket |
| SJ3 | Steam Jacket With 3 Outlets |
| TP | Tamper Proof Locking Device |
| DMH | Spring Return Handle**** |
| HC | High Cycle Stem |
| PN4 | Packing Nut Design 4" Only |

* POA
** Available on Series 80 3/4" and larger Series 89 1/2" and larger
*** 3.25" Height on Full Port valves 1/4"-1" and Standard Port valves 1/2" - 11/4", 4" height on larger valve
**** Call Sharpe® Valves for sizing / application of DMH (1" and under only)
***** Per Sharpe® Standards

Other materials / options available please contact us with your unique requirement.

## Technical Information

| VALVE SIZE 80/ FS80 | VALVE SIZE 89/ FS89 | FLOW COEFF. Cv | APPROX. WEIGHT (lbs.) |
|---|---|---|---|
| ½" | ¼",⅜" | 8 | 2 |
| ¾" | ½" | 12 | 2 |
| 1" | ¾" | 32 | 4 |
| 1¼" | 1" | 46 | 6 |
| 1½" | 1¼" | 80 | 9 |
| 2" | 1½" | 120 | 12 |
| 2½" | 2" | 240 | 27 |
| 3" | 2½" | 350 | 32 |
| 4" | 3" | 720 | 53 |


## Applicable Standards

| | |
|---|---|
| Body Wall Thickness | ASME B16.34 |
| SW & Threaded Ends | ASME B16.11 |
| Butt-Weld Ends | ASME B16.25 |
| Basic Design | ASME B16.34, API 608 5th Ed |
| Fire Safe | API 607 6th Ed (FS versions only) |
| Pressure Test | API 598, MSS-SP 72 |
| Mounting Dimensions | ISO 5211 |
| NACE (Option A only) | MR-0175 / ISO 15156 |
| Marking | MSS-SP 25 |
| Fugitive Emission | ISO 15848-1 (with I or N stem packing) |



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