



THREE DECADES OF INNOVATION

# PRODUCT OVERVIEW



PREMIUM BALL VALVE MANUFACTURING /

MADE IN TAIWAN

# **Transworld Steel Enterprise**

### Three Decades of Innovation

Since its establishment in 1992, Transworld Steel Enterprise Co., Ltd. (TAWD) has dedicated over 30 years to manufacturing premium ball valves, supplying to over 30 countries in sectors like pharmaceuticals, food and beverage, pulp and paper, chemistry, oil and natural gas, and electricity, etc. We manage the entire production process, from design to final product, offering a comprehensive services to our customers.

In 1999, founder Michael Huang introduced the innovative direct mounting ball valve, securing patents in the USA, Germany, and China, which solidified the company's presence in the international market. Acknowledging the need for persistent innovation in the dynamic valve industry, Transworld has a notable portfolio with around 30 patents and is on track to obtain more.



In response to market demands, an investment casting foundry was established in Vietnam in 2008. This strategic decision enhances the manufacturing capabilities and provides a unique advantage over competitors. With an integrated approach connecting upstream and downstream processes, the company ensures efficiency and quality control, and adaptability to market shifts.

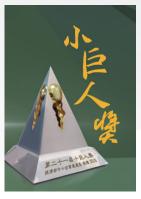
Adhering to Industry 4.0 trends, significant investments have been made in IIoT initiatives, such as the integration of robotic arms and intelligent visual monitors. Consequently, the second factory, established in 2010, features an automated machining line. Furthermore, the advanced valve lab houses a wide range of testing equipment, and a certified clean room with a classification of 10,000 and 100 for vacuum packing is also part of the infrastructure.



# Transworld's Commitment to Excellence

Transworld holds key certifications, including ISO9001, API 6D, PED 2014/68/EU Module H, EN10204-3.1, SIL, API 607, ISO 15848, TA-Luft, ISO 10497, ATEX, REACH, ROHS ...etc. Moreover, commitment to sustainability values is evident by the integration of solar panels and by securing certifications like ISO 14001 and ISO 14064-1, Transworld stand as trailblazers in Taiwan's valve industry.

In recognition of the efforts invested, Transworld has received prestigious awards from Taiwanese authorities, including the "Rising Star Award" from the Ministry of Economic Affairs and the "Model of Entrepreneurs" from the National Innovation and Entrepreneurship Association. These esteemed awards, along with the consistent track record, further underscore Transworld's position as a trusted and esteemed collaborator in the industry.



















# One-Piece Ball Valve

# E301-10

Rating: WOG 800 Bore: Full Bore

Body & Caps (ASTM): CF8M, WCB Body & Caps (EN): 1.4408, 1.0619

Seats: PTFE, RTFE, STFE Handle Type: Flat V-Port Ball Option: N/A

With Anti-static Device Option: N/A



Size: NPS 1/4 to 1 (DN 8 to 25)

Rating: WOG 800 Bore: Full Bore

Body & Caps (ASTM): CF8M Body & Caps (EN): 1.4408 Seats: PTFE, RTFE, STFE

Handle: Flat

V-Port Ball Option: N/A

With Anti-static Device Option: N/A





# Two-Piece Ball Valve

# R301

Rating: WOG 1000 Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB,

Titanium Alloy (Gr. C-2)

Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE Handle: Flat, Butterfly, Oval, Economical Stem Extension

V-Port Ball Option: N/A

With Anti-static Device Option: Yes







# R502

Rating: WOG 1000 Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3 Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE Handle: Flat, Oval, Cast, SRS, Economical Stem Extension

V-Port Ball Option: N/A

With Anti-static Device Option: Yes



SIL 3 ATEX IIB / IIC DIRECT MOUNT PAD

# R701

Size: NPS 1/4 to 2 (DN 8 to 50)

Rating: WOG 800, 1000

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, Economical Stem Extension

V-Port Ball Option: N/A

With Anti-static Device Option: Yes







### Three-Piece Ball Valve

# **S400**

Size: NPS 1/4 to 4 (DN 8 to 100)

Rating: WOG 1500, 2000

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN, CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2) Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK,

Delrin, UHMWPE, PCTFE

Handle Type: Flat, Oval, Cast, T-Bar, SRS,

**Economical Stem Extension** V-Port Ball Option: Yes

With Anti-static Device Option: Yes





S600

Rating: WOG 1000, 2000 Bore: Full / Reduced Bore

Body & Caps ( ASTM ): CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN, CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2) Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK,

Delrin, UHMWPE, PCTFE

Handle: Flat, Oval, Cast, T-Bar, SRS, Economical Stem Extension

V-Port Ball Option: Yes

With Anti-static Device Option: Yes Reduced Port Version: \$603 Firesafe Version: S60X-XF Sanitary Version: \$604 Diverter Version: S605 (T, L)





S701

Size: NPS 1/4 to 4 (DN 8 to 100)

Rating: WOG 800, 1000

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE Handle: Flat, Oval, Economical Stem Extension

V-Port Ball Option: Yes

With Anti-static Device Option: Yes



SIL 3 ATEX IIB / IIC



Size: NPS 1/4 to 4 (DN 8 to 100)

Rating: WOG 800, 1000

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, Oval, Cast, T-Bar, SRS,

Economical Stem Extension V-Port Ball Option: Yes

With Anti-static Device Option: Yes





**S300** 

Size: NPS 1/4 to 2 (DN 8 to 50) Rating: WOG 1500, 2000 Bore: Full / Reduced Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN, CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2) Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK, Delrin,

UHMWPF, PCTFF

Handle: Flat, Oval, Cast, T-Bar, **Economical Stem Extension** V-Port Ball Option: Yes With Anti-static Device Option: Yes



CE ATEX IIB / IIC SIL 3 API 607



S501

Size: NPS 1/4 to 4 (DN 8 to 100)

Rating: WOG 800, 1000

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE Handle: Flat, Butterfly, Oval, Economical Stem Extension

V-Port Ball Option: Yes



CE ATEX IIB / IIC





### Three-Piece Ball Valve

# S900

### Loose Flange

Size: NPS 1/4 to 4 ( DN 8 to 100 )

Rating: WOG 800, 1000

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, Oval, Cast, T-Bar, SRS, **Economical Stem Extension** V-Port Ball Option: Yes

With Anti-static Device Option: Yes





# T801

### Double Block and Bleed

Size: NPS 1/4 to 2-1/2 (DN 8 to 65) Rating: WOG 1000, 1500, 2000

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK,

Delrin, UHMWPE, PCTFE

Handle: Flat

V-Port Ball Option : N/A

With Anti-static Device Option: Yes





# Flange End Ball Valve

# F301

Size: NPS 1/2 to 6 (DN 15 to 150) Rating: CLASS 150 / PN16, PN40

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619

Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK, Delrin,

UHMWPE, PCTFE

Handle: Flat, T-Bar, Economical Stem Extension

V-Port Ball Option: Yes

With Anti-static Device Option: Yes





# F303

Size: NPS 1/2 to 6 (DN 15 to 150) Rating: CLASS 150, CLASS 300

Bore: Reduced Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN, CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2) Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK, Delrin,

UHMWPE, PCTFE

Handle: Flat, T-Bar, Economical Stem Extension

V-Port Ball Option : Yes

With Anti-static Device Option: Yes





# F501

Size: NPS 1/2 to 4 (DN 15 to 100) Rating: CLASS 150 / PN16, PN40

Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN, CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2) Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470

Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK, Delrin,

UHMWPE, PCTFE

Handle: Flat. Oval. T-Bar. **Economical Stem Extension** V-Port Ball Option: Yes

With Anti-static Device Option: Yes



CE API 607 SIL 3 ATEX IIB / IIC



# F502

Size: NPS 1/2 to 12 (DN 15 to 300) Rating(ANSI): CLASS 150, 300, 600

Rating(DIN): PN16, 40 Pressure(JIS): 10K Bore: Full Bore

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN,

CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2)

Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK,

Delrin, UHMWPE, PCTFE Handle: Flat. Oval. T-Bar. **Economical Stem Extension** V-Port Ball Option: Yes

With Anti-static Device Option: Yes





# Sanitary Ball Valve

Size: NPS 1/2 to 2 (DN 15 to 50)

Rating: WOG 1000 Bore: Full Bore

End Connections: Clamp / Tube End

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3 Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, Oval, **Economical Stem Extension** V-Port Ball Option : N/A With Anti-static Device Option: Yes

EC 1935 SIL 3 ATEX IIB / IIC

Size: NPS 1/2 to 4 (DN 15 to 100)

Rating: WOG 800, 1000

Bore: Full Bore

End Connections: Clamp / Tube End

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3 Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, Butterfly, Oval, **Economical Stem Extension** V-Port Ball Option : Yes

With Anti-static Device Option: Yes

CE EC 1935

PDA ATEX IIB / IIC



**S604** 

Size: NPS 1/2 to 4 (DN 15 to 50)

Rating: WOG 800, 1000

Bore: Full Bore

End Connections: Clamp / Tube End

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3 Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, Oval, Cast, T-Bar, SRS, **Economical Stem Extension** V-Port Ball Option: N/A

With Anti-static Device Option: Yes



DIRECT MOUNT PAD



S704

Size: NPS 1/2 to 4 (DN 15 to 100)

Rating: WOG 800, 1000

Bore: Full Bore

End Connections: Clamp / Tube End

Body & Caps ( ASTM ): CF8M, CF3M, CF8, CF3 Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE Handle: Flat, Oval, Economical Stem Extension

V-Port Ball Option: Yes

With Anti-static Device Option : Yes

EC 1935 SIL 3 ATEX IIB / IIC



S904

Size: NPS 1/2 to 4 (DN 15 to 100)

Rating: WOG 800, 1000

Bore: Full Bore

End Connections: Clamp / Tube End

Body & Caps (ASTM): CF8M, CF3M, CF8, CF3 Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, Oval, Cast, T-Bar, SRS, **Economical Stem Extension** V-Port Ball Option: Yes With Anti-static Device Option: Yes

PDA

EC 1935 SIL 3 ATEX IIB / IIC

DIRECT MOUNT PAD



Size: NPS 1/4 to 4 (DN 15 to 100)

Rating: WOG 300, 1000

Bore: Full Bore

End Connections: Clamp / Tube End

Body & Caps ( ASTM ) : CF8M, CF3M, CF8, CF3 Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE Handle: Flat, T-Bar, , Economical Stem Extension

V-Port Ball Option: N/A

With Anti-static Device Option: Yes











# Multi-port Ball Valve

# M302

### Multi-port 3-4-5 way Ball Valve

Size: NPS 1/4 to 4 ( DN 8 to 100 ) Rating: WOG 300, 600, 800, 1000

Bore: Full Bore

Body & Caps ( ASTM ): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619 Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE

Handle: Flat, T-Bar, Economical Stem Extension V-Port Ball Option: N/A

With Anti-static Device Option: Yes

Option: NACE MR-0175





# M602

Size: NPS 1-1/2 to 6 (DN 40 to 150)

Rating: WOG 1500, 2000

Bore: Full Bore

Body & Caps ( ASTM ): CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN, CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2) Body & Caps ( EN ) : 1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470

Seats: PTFE, RTFE, CTFE, TFM1600, MG1241, STFE Handle: Cast, T-Bar, Economical Stem Extension

V-Port Ball Option: N/A

With Anti-static Device Option: Yes





# *M202*

Rating: WOG 1000 Bore: Full Bore

Body & Caps ( ASTM ): CF8M, CF3M, CF8, CF3, WCB Body & Caps (EN): 1.4408, 1.4409, 1.4308, 1.4309, 1.0619

Handle: Flat, Economical Stem Extension

V-Port Ball Option: N/A

With Anti-static Device Option: Yes





# Cryogenic Valve

Size: NPS 1/4 to 2 (DN 8 to 50)

Rating: WOG 1000 Bore: Full / Reduced Bore

Body & Caps (ASTM): CF8M, CF3M Body & Caps (EN): 1.4408, 1.4409

Seats: PCTFE Handle: Cast

V-Port Ball Option: Yes

With Anti-static Device Option: Yes





# Check Valve

Size: NPS 3/8 to 4 (DN 10 to 100)

Rating: WOG 800,1000

Bore: Full Bore

Body & Caps (ASTM): CF8M Body & Caps (EN): 1.4408

Handle: N/A

V-Port Ball Option: N/A

With Anti-static Device Option: N/A





# **Valve Accessories**

# **Handle Options**



Oval Handle Material: 304, 316



Flat ( with / without Spring Return Lock ) Material : 304, 316



**Economical Stem Extension** 



Spring Return Safety (SRS) Handle Option : Fail Open / Fail Close assembly



T-Bar Handle Material: 304, 316

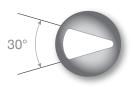


S.S Investment Casting Handle Material: CF8, CF8M



Butterfly Handle

### V-Port Ball







### **Accessories**



TSM



TSM with Handle



Actuator



# **Digital Traceability Passport**

### **Rapid Traceability System**

The Digital Traceability Passport(DTP) is a groundbreaking tool that enhances traceability and transparency in supply chain management. By making material test report accessible, DTP advances the digital revolution in manufacturing, focusing on efficiency, reliability, and quality. It reflects our commitment to ethics and helps businesses quickly identify and address issues.





# **Key Benefits of the Digital Traceability Passport**



### **Comprehensive Traceability Service (Optional)**

Each valve is assigned a unique number in the DTP system, providing complete traceability. This allows for precise issue tracking back to the specific valve and supplier, enhancing accountability.



### **Transparency and Reliability**

DTPs offer detailed, secure insights into material composition, boosting transparency and reliability while ensuring all stakeholders understand their chemical components.



### **Streamlined Process**

The DTP system integrates seamlessly into digital workflows. This integration streamlines business process in material management and enhance supply chain coordination.



### **Verifying Compliance**

The DTP system ensures the materials comply with industry standards and regulations, while also maintaining adherence to quality standards and ensuring material conformity.

# Available Seats

PTFE 100% Virgin Polytetrafluoroethylene

RTFE Reinforced Teflon: 85% PTFE, 15% Glass Fiber

**50/50 STFE** 50% 316 SST Powder, 50% PTFE

**TFM 1600** TFM Modified PTFE 1600

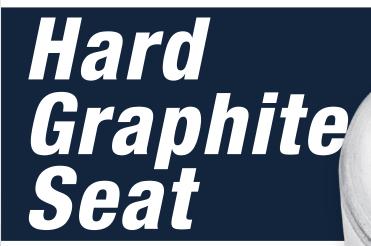
CTFE 25% Carbon Graphite, 75% PTFE

MG1241 5% Graphite, 20% Glass Fiber, 75% PTFE

PCTFE Polychlorotrifluoroethylene
PEEK Polyether Ether Ketone

**UHMWPE** Ultra High Molecular Weight Polyethylene

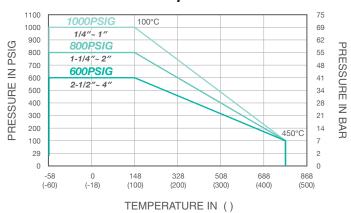
**Delrin** DuPont Polyoxymethylene







### ✓ Pressure vs. Temperature Chart



SS 316 + Graphite Seat Unidirectional ball valve / Recommended for low abrasion application

Specification Sp	
Body material	Standard in WCB, CF8M (Special material is available according to application)
Nominal size	1/4 to 4
End connections	Thread / Socket Weld / Butt Weld / Flanged
Temperature range	-60 °C to 450 °C
Body pressure testing	EN 12266-1 / API 598
Seat leakage testing	EN 12266-1 Rate A





Transworld Steel Enterprise Co., Ltd.



Established in 1992 TAWD has dedicated over 30 years to manufacturing premium ball valves