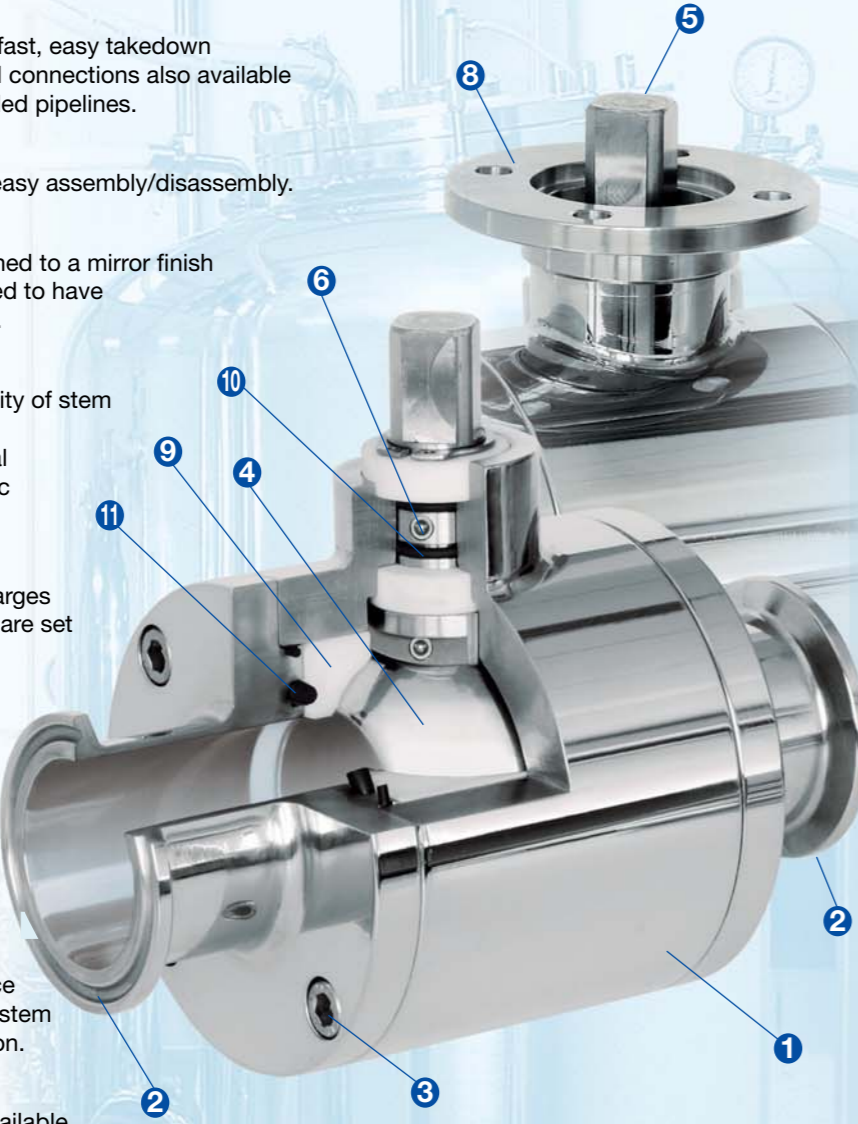


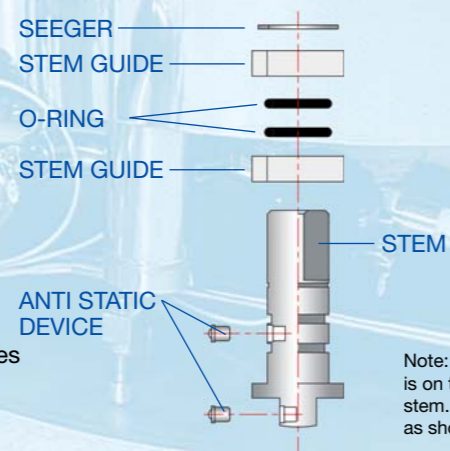
Features

- 1 BODY**
Three-Piece Sanitary design enables in-line maintenance of ball valve.
Full flow body design minimizes line turbulence and pressure drop through the valve.
- 2 END CONNECTION**
Clamp end connections are self-aligning for fast, easy takedown and reassembly without tools. Butt-weld end connections also available for dependable service in permanently installed pipelines.
- 3 BODY BOLTING**
Body bolting in 304 Stainless Steel permits easy assembly/disassembly.
- 4 BALL**
Precision machined from solid bar and polished to a mirror finish for bubble tight shut-off. Each ball is designed to have minimum torque and provides high life cycle.
- 5 STEM**
Stem and packing design eliminates possibility of stem becoming dislodged or blown out.
Designed for installation of handle for manual operation or for direct mounting of pneumatic actuator that meets ISO 5211 specifications.
- 6 ANTISTATIC DEVICE**
To eliminate possibility of static electrical charges within the valve, two grounding connections are set in the stem to ensure electrical continuity for the entire ball valve.
- 7 HANDLE**
Ball valves fall under the general category of "rotary valves": quarter-turn for open/close. Handle gives visual indication of flow with stop lug.
- 8 MOUNTING PAD**
A set of ISO 5211 mounting patterns are available to accommodate a range of pneumatic actuators. Machined flat surface ensures correct alignment of actuator to the stem top for minimum side loading during operation.
- 9 BALL SEAT**
Various seat materials and executions are available for different applications. Standard: TFM 1600 PTFE cavity-filler seat are intended to prevent the build up of product that may-when entrapped between the ball and body cavity-solidify or otherwise inhibit the smooth operation of the valve closure member on critical process applications. The valves used in steam service (24 hours continuously) should not utilize this seat arrangement.
- 10 STEM SEAT**
Two o-ring in Viton and two stem guide in 25%Glass Fiber filled PTFE ensuring sealing integrity of the stem.
- 11 BODY SEAT**
Two o-ring in Viton for each end connections ensuring sealing integrity of the valve body.



Benefits

- Ball valves are well proven in the most rigorous applications. Some key advantages of the design includes:
- Economical compared to most other valves design
 - High flow rate through an unobstructed flow path
 - Quick, quarter-turn operation
 - Easy to automate pneumatically
 - Inherently flexible to meet a wide range of pressures and temperatures
 - Simple maintainability
 - Self-flushing design

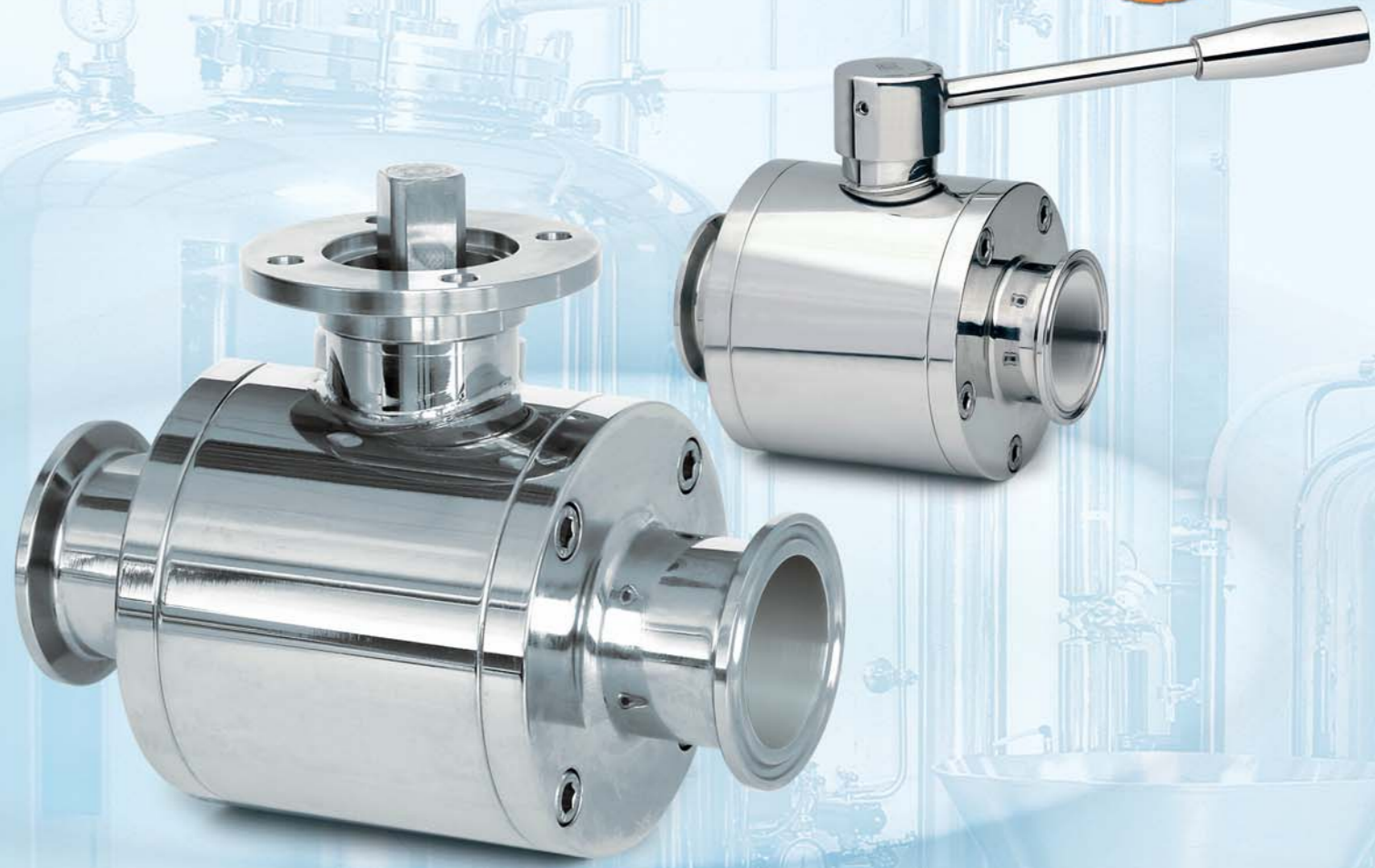


Note: Anti-static device for 1/2"-3/4" is on the side and bottom of the stem. For other sizes, is located as shown in the drawing.



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High purity
ball valves



High purity ball valves

■ FULL PORT

The VSS ball valves are engineered to be a true process piping component to specifically meet the demanding processes found in pharmaceutical industries.
Three pieces ball valve are machined from solid round bar in AISI 316L (1.4404 – 1.4435) and put quality and reliability into your process.
The VSS ball valves are a full bore / full port design according to ASTM A 269 dimensions, the tube-ID port opening is dimensionally identical to the adjacent tubing to comply with ASME-BPE Guidelines;
Full bore / full port design minimizes line turbulence and pressure drop.

■ SIZE RANGE

Model VSS....-TC – clamped from ½” up to 4” - Tube OD (2 way)
Model VSS....-SS – butt weld from ½” up to 4” - Tube OD (2 way)
Model VSS....-TB/BW – tank bottom flush weld from ½” up to 2”
Model VSS....-TB/TK – tank bottom TK-Conn removable from ½” up to 2”

■ END CONNECTIONS

Interchangeable end caps are available for different applications.
Completely machined from bar, no welded tube extension clamped – BS 4825
butt weld – Tube OD, or extended tube weld for orbital welding

■ SURFACE FINISH

Internal body surfaces 0,5 micron Ra or better
External mirror polished.
Enhanced surface finishes and electropolished valves also available on request.

■ SEAT MATERIAL

TFM 1600 PTFE cavity-filled complying with FDA guidelines and USP Class VI, is standard on VSS
Cavity filled seats are not suitable for steam service.
For more information on the seat characteristics please contact us

■ OPERATOR

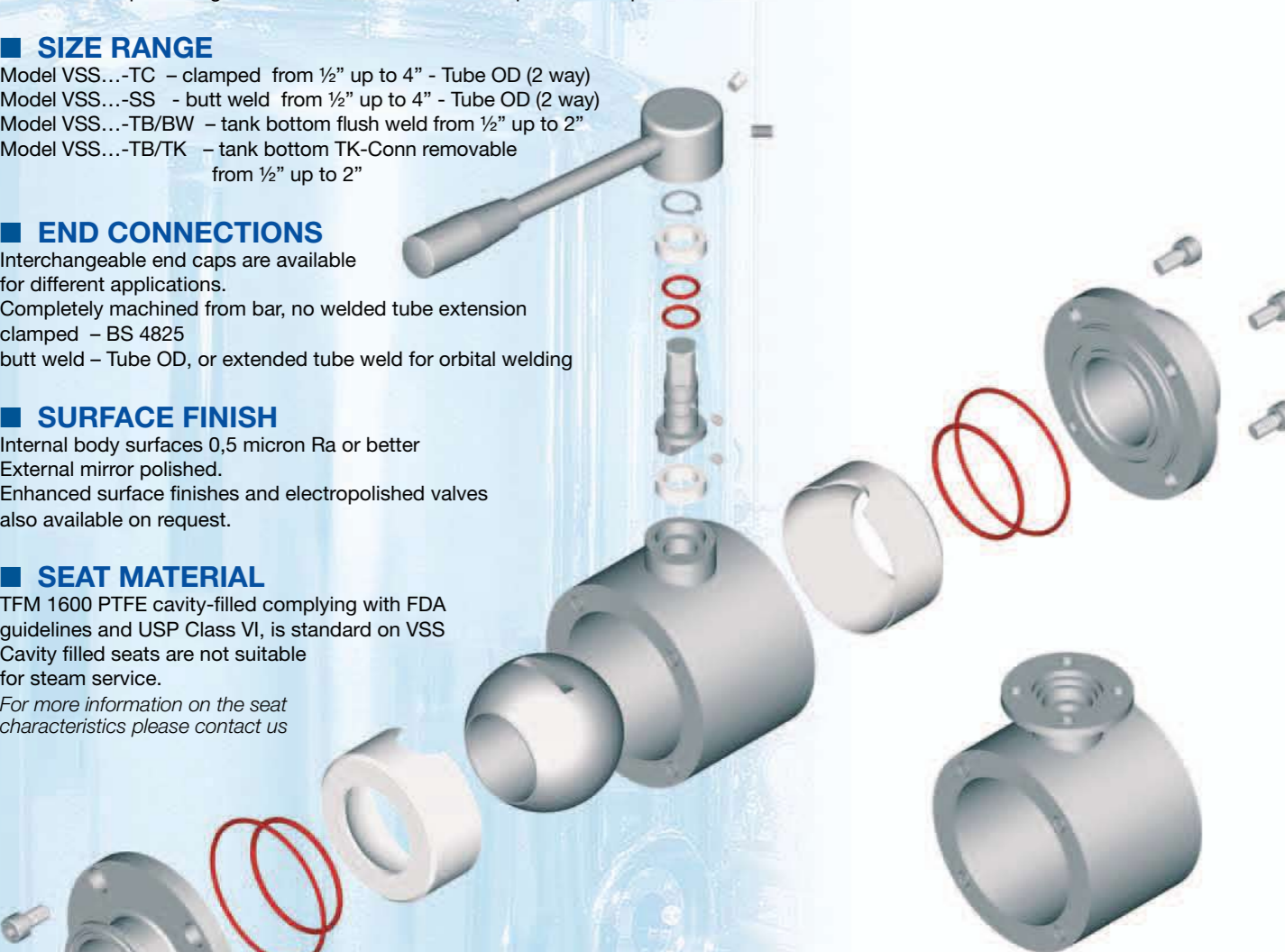
The valve can be fitted with manual handle or with ISO NAMUR mounting pad for pneumatic actuators
Stainless steel manual handle (quarter-turn for open/close)
Pneumatic actuator (DA double acting – SR spring return)

■ MARKING

To guarantee full traceability, following information will directly be marked on the valve body :
AR logo (identif. constructor) - code, material and size – max. operating pressure (30 bar) – CE Mark (when necessary) – internal code es. 0605 1623 where 0605 indicate year and month manufacturing and 1623 indicate our internal order confirmation.
Additional information such as customer tag number is available upon request

■ PRESSURE / TEMPERATURE RATING

Minimum / Maximum working pressure Vacuum / 30 bar g
Minimum / Maximum working temperature -10°C / 150°C



TFM™ as a seating material for High Purity Valves

AR Inox High Purity ball valves utilize Dyneon™ TFM 1600 PTFE as a standard seating material.

What is TFM™ ?

TFM is chemically modified PTFE that fills the gap between conventional PTFE and melt-processable PFA.
According to ASTM D 4894 and ISO Draft WDT 539-1.5, TFM is classified as a PTFE.
TFM-PTFE is a second-generation modified polytetra-fluoro-ethylene (PTFE) that maintains the exceptional chemical and heat resistance properties of conventional PTFE, but with significantly lower melt viscosity.
This property results in better particle fusion during sintering and much smoother ball-to-seat sealing surfaces.

TFM 1600 PTFE are ideal for ball valves in high purity applications. In addition, TFM complies with :
• 3A Sanitary standard for multiple-use plastic materials used as product contact surfaces for dairy equipment.
• FDA-21 CFR 177.1550 direct contact with meat or poultry food products prepared under FDA inspection.
• USP23, biological test for plastic Class VI

Properties

- Lower Porosity and Permeability
- Reduced “cold-flow” and deformation under load
- Lower void content
- Smoother Surfaces

Benefits

Dramatically reduces surface contamination
Greater pressure and temperature capabilities without the need for fillers
Improves wear resistance
Less operating torque and reduced particle generation
-70°F up to 475°F
1,500 psi Cold Working Pressure
150 psi Steam Pressure

*TFM™ is a trademark of Dyneon
For more information on the seat characteristics please contact us.*



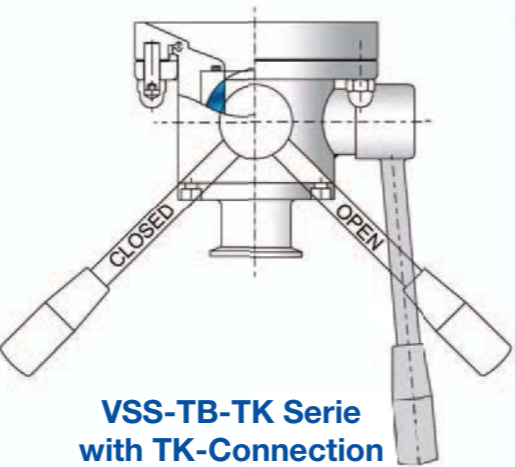
cavity filled seat
TFM 1600 PTFE
for high purity applications



TFM 1600 PTFE
for steam service

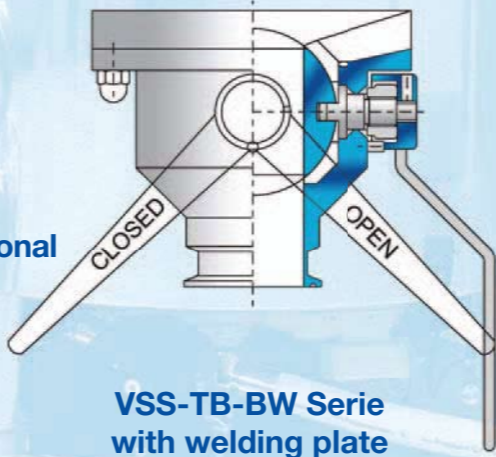
Flush Tank ball valve

The “TB” Series Flush Tank ball valve incorporates all the advantages of VSS
Available in different executions, may be fit at the tank bottom by welding plate or TK-Connection; for special applications on existing reactors, we also manufactures special adaptor plates in order to accommodate customer request.



VSS-TB-TK Serie
with TK-Connection

The special design of the welding plate, is an integral welded part of the tank surface and preventing stagnation of the media.



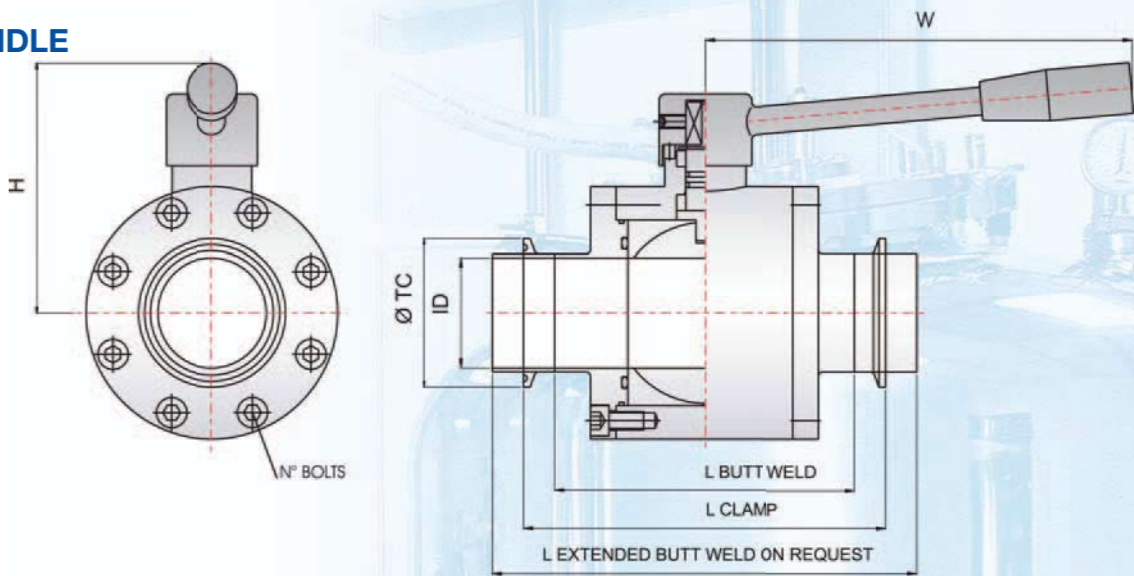
VSS-TB-BW Serie
with welding plate

Flush Tank Ball Valve advantages over conventional Flush Tank Valve

- Higher CV
- Direct flow
- Simple quarter-turn opening
- Less expensive
- Low weight
- Ease maintenance operation

Dimensions and torque values

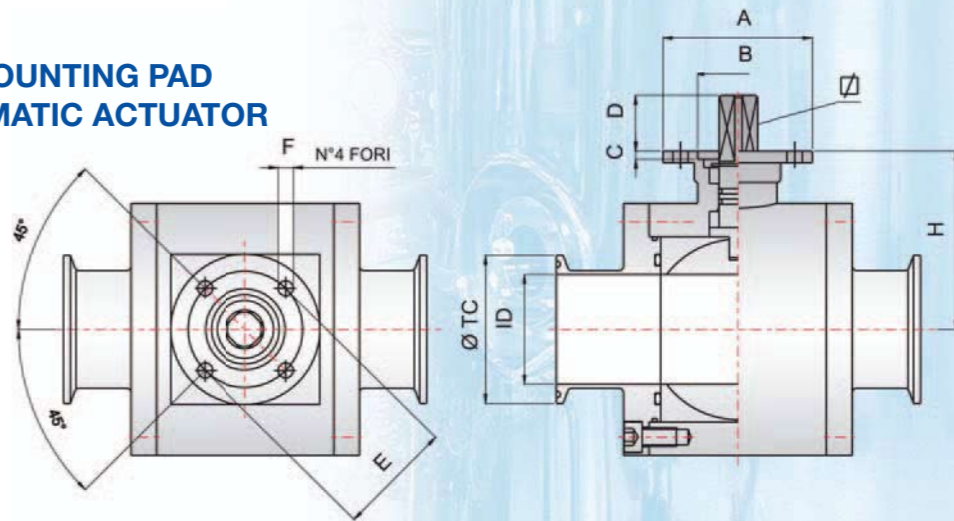
MANUAL HANDLE



CODE	INCH	DN	ØTC	ID	LBW	LTC	W	H	Kv	Kg
VSS 1/2"-97TC-6	½"	15	25	9,4	102	106	95	50	4,68	0,900
VSS 3/4"-97TC-6	¾"	20	25	15,7	102	106	95	50	10,2	0,850
VSS 1"-97TC-6	1"	25	50,4	22,1	120	120	155	75	24,6	2,500
VSS 1 1/2"-97TC-6	1 ½"	40	50,4	34,8	135	135	185	85	48,3	3,500
VSS 2"-97TC-6	2"	50	64	47,5	147	147	185	90	77,8	5,800
VSS 2 1/2"-97TC-6	2 ½"	65	77,4	60,2	160	160	240	105	87,0	6,900
VSS 3"-97TC-6	3"	80	90	72,9	180	180	240	115	105,6	14,800
VSS 4"-97TC-6	4"	100	118,8	97,6	215	215	370	150	129,0	24,500

Kv in mc/h = Kv value with fully open ball; fluids: water, ambient temperature 20°C
L overall length = LBW butt weld LTC clamped
special extended tube for orbital welding available on request

ISO 5211 MOUNTING PAD FOR PNEUMATIC ACTUATOR



CODE	A	B	C	D	E	F	ISO	□	Nm	H
ACTUATOR TYPE	SR-DA	SR-DA	SR-DA	SR-DA	SR-DA	SR-DA	SR-DA	SR-DA	@	
VSS 1/2"-97TC-6	Ø45	25	2,5	9,5	36	5,5	F03	9	15	38,5
VSS 3/4"-97TC-6	Ø45	25	2,5	9,5	36	5,5	F03	9	15	38,5
VSS 1"-97TC-6	Ø55-45	30-25	2,5	11,5-10	42-50	5,5-6,5	F04-F05	11-9	30	58,5
VSS 1 1/2"-97TC-6	Ø65	35	3,5	14,5-12	50	6,5	F05	14-11	60	67
VSS 2"-97TC-6	Ø65	35	3,5	14,5	50	6,5	F05	17-14	120	77
VSS 2 1/2"-97TC-6	Ø85	35	3,5	19-14,5	70	8,5	F07	22-17	180	83,5
VSS 3"-97TC-6	Ø85	35	3,5	19-14,5	70	8,5	F07	22-17	240	97
VSS 4"-97TC-6	Ø150-120	85-55	3,5	25-18	125-102	13-11	F12-F10	27-22	480	126

Pneumatic actuator type : **SR** = Simple Effect, spring return **DA**= Double Effect, air to close
@ = Maximum break-out torque in Nm.