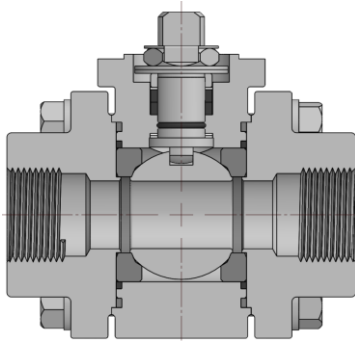


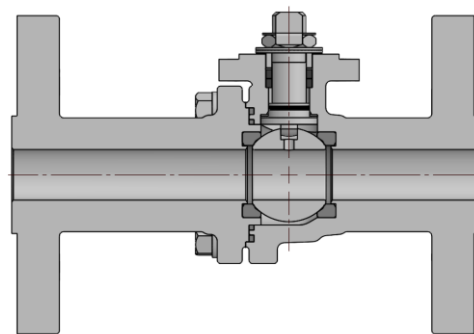
QUALIFICATION CERTIFICATE

FUGITIVE EMISSIONS		
Testing Standard Compliance	ISO 15848-1 2006	TA LUFT VDI 2440
Extended Standard Compliance	ISO 15848-1:2015 & TA LUFT:2021	
Report n°	201500280-C001	201500280-C002
Certification Body	TÜV SÜD	
Series	Floating ball valves design XF / CF / BF / SF / DF / QF XFH / CFH / BFH / SFH / DFH / QFH XFM-A / CFM-A / BFM-A / SFM-A /DFM-A / QFM-A	
Size	DN100 and below	
Design Type	FS – Fire Safe	
Applicable pressure	Up to CL800	
Packing	GRAPHITE + PEEK + FKM	
Seals	C-RPTFE + GRAPHITE	
Temperature Class	- 46°C to RT	
Performance Class	500 cycles (BH CO1)	500 cycles
Stem diameter	M16: 8 to 32 mm	
Stem seal	Measured leakage	$4 \times 10^{-6} \text{ atm} \cdot \text{cm}^3 \cdot \text{s}^{-1}$
	Allowable leakage	$2,8 \times 10^{-5} \text{ atm} \cdot \text{cm}^3 \cdot \text{s}^{-1}$ $5 \times 10^{-6} \text{ atm} \cdot \text{cm}^3 \cdot \text{s}^{-1}$
Body parts	Measured leakage	< 50 ppmV NA
	Allowable leakage	$\leq 50 \text{ ppmV}$ NA

Three pieces



Two pieces



José Jacinto
Technical Responsible

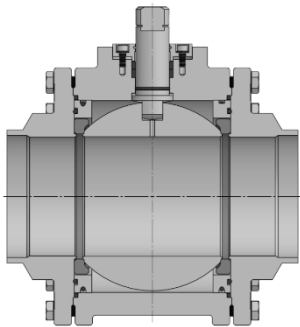


QUALIFICATION CERTIFICATE

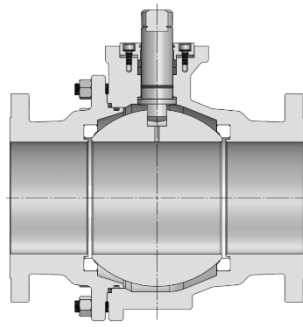
FUGITIVE EMISSIONS

Applicable Standard Compliance	ISO 15848-1:2015		
Extended Standard Compliance	TA LUFT:2021		
Report n°	PTC24.04176.5308		
Certification Body	SGS		
Series	Floating ball valves design	Trunnion ball valves design	
	BF / BFH / BFM-A CF / CFH / CFM-A SF / SFH / SFM-A XF / XFH / XFM-A	CTR / CTH / CTM-A	VTR / VTH / VTM-A
Size	DN150 to DN200	DN65 to DN300	DN65 to DN100
Design Type	FS – Fire Safe		
Applicable pressure	Up to CL300		
Packing	FKM + GRAPHITE		
Seals	FKM + GRAPHITE		
Temperature Class	RT to 200°C		
Performance Class	205 cycles (AH CO1)		
Stem diameter	M42: 21 to 84 mm		
Stem seal	Measured leakage	$7,1 \times 10^{-6}$ mbar.l.s ⁻¹	
	Allowable leakage	$7,49 \times 10^{-6}$ mbar.l.s ⁻¹	
Body parts	Measured leakage	22 ppmV	
	Allowable leakage	≤ 50 ppmV	

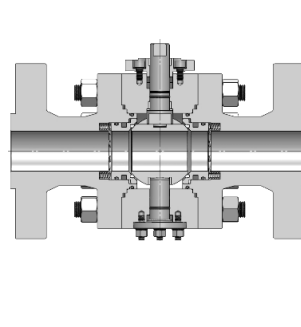
Floating (Three pieces)



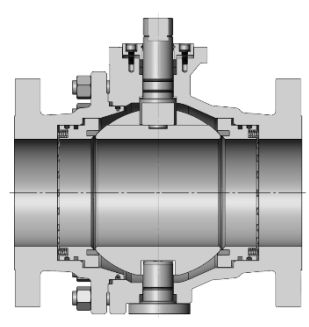
Floating (Two pieces)



Trunnion (Three pieces)



Trunnion (Two pieces)



José Jacinto
Technical Responsible



The tests were carried out in accordance with ISO 15848-1:2006/2015 and TA Luft:2002, as indicated in the referenced “**testing standard compliance**”. Since these standards have been updated – the latest editions being ISO 15848-1:2015+A1:2017 and TA Luft:2021 – it is necessary to evaluate the differences to confirm compliance with the current requirements. Based on the assessment presented in the following table, it can be confirmed that the tests performed remain in compliance with ISO 15848-1:2015+A1:2017 and TA Luft:2021.

Changes	ISO 15848-1:2006	ISO 15848-1:2015
RT Room temperature	-29°C to 40°C	5°C to 40°C
CO1 Number of cycles	500	205
Class AH Leakage rate	$1,76 \times 10^{-8} \text{ atm} \cdot \text{cm}^3 \cdot \text{s}^{-1} \text{ mm}^{-1}$ $1,78 \times 10^{-8} \text{ mbar} \cdot \text{l} \cdot \text{s}^{-1} \text{ mm}^{-1}$ (per diameter)	$1,76 \times 10^{-7} \text{ atm} \cdot \text{cm}^3 \cdot \text{s}^{-1} \text{ mm}^{-1}$ $1,78 \times 10^{-7} \text{ mbar} \cdot \text{l} \cdot \text{s}^{-1} \text{ mm}^{-1}$ (per diameter)
Changes	TA LUFT:2002	TA LUFT:2021
Leakage rate	TA LUFT para. 5.2.6.4 VDI 2440 para. 3.3.1.3	TA LUFT para. 5.2.6.4 defines ISO 15848:1 or similar has testing procedure
	$1 \times 10^{-4} \text{ mbar l s}^{-1} \text{ m}^{-1}$ (per perimeter) $3,14 \times 10^{-7} \text{ mbar l s}^{-1} \text{ mm}^{-1}$ (per diameter)	Leakage rate required: $\leq 40 \text{ bar @ } \leq 200^\circ\text{C}$: $1 \times 10^{-4} \text{ mg / s}^{-1} \text{ m}^{-1}$ (per perimeter) For other PT conditions $1 \times 10^{-2} \text{ mg / s}^{-1} \text{ m}^{-1}$ (per diameter) ISO 15848-1:2015 BH leakage rate $1 \times 10^{-4} \text{ mg / s}^{-1} \text{ m}^{-1}$ (per perimeter) $1,78 \times 10^{-6} \text{ mbar} \cdot \text{l} \cdot \text{s}^{-1} \text{ mm}^{-1}$ (per diameter) CH leakage rate $1 \times 10^{-2} \text{ mg / s}^{-1} \text{ m}^{-1}$ (per perimeter) $1,78 \times 10^{-4} \text{ mbar} \cdot \text{l} \cdot \text{s}^{-1} \text{ mm}^{-1}$ (per diameter)



Industrie Service

ITIS B.V.
Daniëlsweg 6
NL-4451 HP Heinkenszand
T + 31 113 568515
info@itis-nl.com
www.itis-nl.com

ITIS Certificate
201500280-C001



ISO 15848-1 QUALIFICATION CERTIFICATE

This certificate is to certify that the valve below has been tested according to standard: Industrial valves - Measurement, test and qualification procedures for fugitive emissions - Part 1: Classification system and qualification procedures for type testing of valves (ISO 15848-1:2006)

Test valve details

Manufacturer : Vinco Valvulas S.A.
Address : Rua do Progresso, Lote 15, 4760-841, Vilarinho das Cambas, Portugal
Nominal size : 1 ¼ inch
Pressure rating : 800lbs
Valve Type : FL Ball Valve
Valve Serial number : 2015LF220029002
Drawing number : E059-01-50 (17-06-2015)
Body material : F316/316L
Body gaskets mat. : 1st Soft carbon, 2nd Graphite
Stem material : F316/316L
Stem seal material : Graphite + PEEK
Stem seal brand : Vinco
Stem diameter (OD_{stem}) : 16.2mm
Gland torque : 25Nm at start of the tests.

Valve qualification range: (see par. 8 of ISO 15848-1)

Description	Tested valve	Scope
Stem Seal Material Type	Graphite+PEEK	Graphite+PEEK
Gland torque	25Nm	25Nm
Stem Diameter	16.2mm	8.1mm to 32.4mm
Body seal	1 st Soft carbon, 2 nd Graphite	1 st Soft carbon, 2 nd Graphite
Class	800	800 and below
Temperature Class	RT to -46°C	RT to -46°C
Tightness Class	BH	BH

Performance class:

ISO FE BH — CO1 — SSA 0 — t(RT, -46°C) — CL800 — ISO 15848-1

This certificate must be read in conjunction with the full ITIS BV test report number 201500280-R001

Name (ITIS)	Name authority (TÜV SÜD)
 J. Meijer	 P. Deleu
13-07-2015	13-07-2015



ITIS B.V.
 Daniëlsweg 6
 NL-4451 HP Heinkenszand
 T + 31 113 568515
 info@itis-nl.com
 www.itis-nl.com

ITIS Certificate
 201500280-C002



Industrie Service

VALVE TEST QUALIFICATION CERTIFICATE



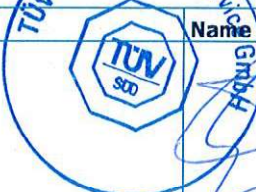
This certificate is to certify that the measured leak rates during the endurance test at room temperature and at -46°C on the test valve below, were within the limits according to the requirements of TA LUFT (Technische Anleitung zur Luft par. 5.2.6.4) Vom 24. Juli 2002 and VDI 2440 par. 3.3.1.3 November 2000, for 500 cycles at room temperature and 46°C.

Test valve details

Manufacturer : Vinco Valvulas S.A.
 Address : Rua do Progresso, Lote 15, 4760-841, Vilarinho das Cambas, Portugal
 Nominal size : 1 ¼ inch
 Pressure rating : 800lbs
 Valve Type : FL Ball Valve
 Valve Serial number : 2015LF220029002
 Drawing number : E059-01-50 (17-06-2015)
 Body material : F316/316L
 Body gaskets mat. : 1st Soft carbon, 2nd Graphite
 Stem material : F316/316L
 Stem seal material : Graphite + PEEK
 Stem seal brand : Vinco
 Stem diameter (OD_{stem}) : 16.2mm
 Gland torque : 25Nm at start of the tests.

Description	Tested valve
Stem seal material	Graphite + PEEK
Stem Ø/circumference	Ø0.0162m / 0.051m
Body/Bonnet gasket material	1 st Soft carbon, 2 nd Graphite
Class	800lbs
Temperature Class	Room temperature and -46°C
Operational Cycles	500

This certificate is only valid in conjunction with the full ITIS BV test report number 201500280-R002

Name (ITIS)	<input checked="" type="checkbox"/> TESTED <input type="checkbox"/> REVIEW <input type="checkbox"/> WITNESSED Date/Signature   Industrial Testing & Inspection Services 15-07-2015		Name Authority (TUV SUD)
P. van Tol	15-07-2015	P. Deleu	15-07-2015

Certificado Nº: PTC24.04176.5308
Certificate no

Job J24.0527.I&E.111
Manufacturer VINCO Válvulas, S.A.
Test Place Rua do Progresso, Lote 15, Vilarinho das Cambas
Test Date 03/07/2024 to 05/07/2024
Standard(s) Used ISO 15848-1: 2015
Type TR – Trunnion Ball Valves
DN 150
Class 300
Reference Nº CT.T R01/2024.R00
Material Body/End: A216 WCB
Ball: A479 316/L
Stem: A479 316/L
Body Seals: FKM + GRAPHITE
Stem Packing System: FKM + GRAPHITE
Stem dimension M42 (42 mm)
Test Report Nº CT.03/2024.R00

All the following values were determined and recorded together
with temperatures, cycles nº and pressures on fugitive emissions test report

Result of Tests
It was performed by Vinco Válvulas, S.A. the following tests:

Satisfactory
1- Production tests
2- Mechanical cycles at RT and T_{Test}
3- Leakage measurement through stem and body during mechanical cycles period
4- Visual inspection

Packing Torque 10 Nm at start of the tests
Endurance class CO1
Temperature class t(RT, 200 °C)
Tightness class AH
Performance class ISO FE AH – CO1 – SSA 0 – t(RT, 200 °C) – CL300 – ISO 15848-1

This is to certify that the type test has performed by VINCO Válvulas, S.A., under our witness as above, and the results are SATISFIED with the requirements of ISO 15848-1 for the above product, so SGS PORTUGAL, S.A. hereby confirm the qualification as follows:

STEM DIMENSION: M21 to M84
CLASS RATING: 300 and below

Date: 10/07/2024



Carlos Felgueiras
Technical Responsible

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SGS ICS, Lda | Pólo Tecnológico de Lisboa, Rua Cesina Adães Bermudes, Lote 11, nº1, 1600-604 Lisboa, t(+351)217 104 200
Parque Comercial do Chiolo (N14), Estrada Nacional 14, 2504 - Lugar Chiolo, 4475-045 Maia t(+351)229 994 500
Capital Social 5.000 Euros - Reg. Com. de Lisboa e Contribuinte n.º 500417660 - pt.info@sgs.com - www.sgs.pt - Linha SGS: 808 200 747