

SPECIAL USE VALVES

General



Habonim's Special Use product line valves are subject to the general Habonim valves design, materials, practices, methodologies and certifications – for more information, see Valves General chapter.



Habonim Special Use valves are equipped with the Total HermetiX integrity package for superior sealing, safety and environmental care.

Special use valves are Habonim valves that are specially adapted to be used and serve in applications that have unique requirements on one or more of the valve designs, materials in use, assembly, packing, testing or even certificating. Information on such applications and the valve adaptations are in the following pages. The full valve information is available on each valve series catalog chapter.

Disclaimer & Warning:

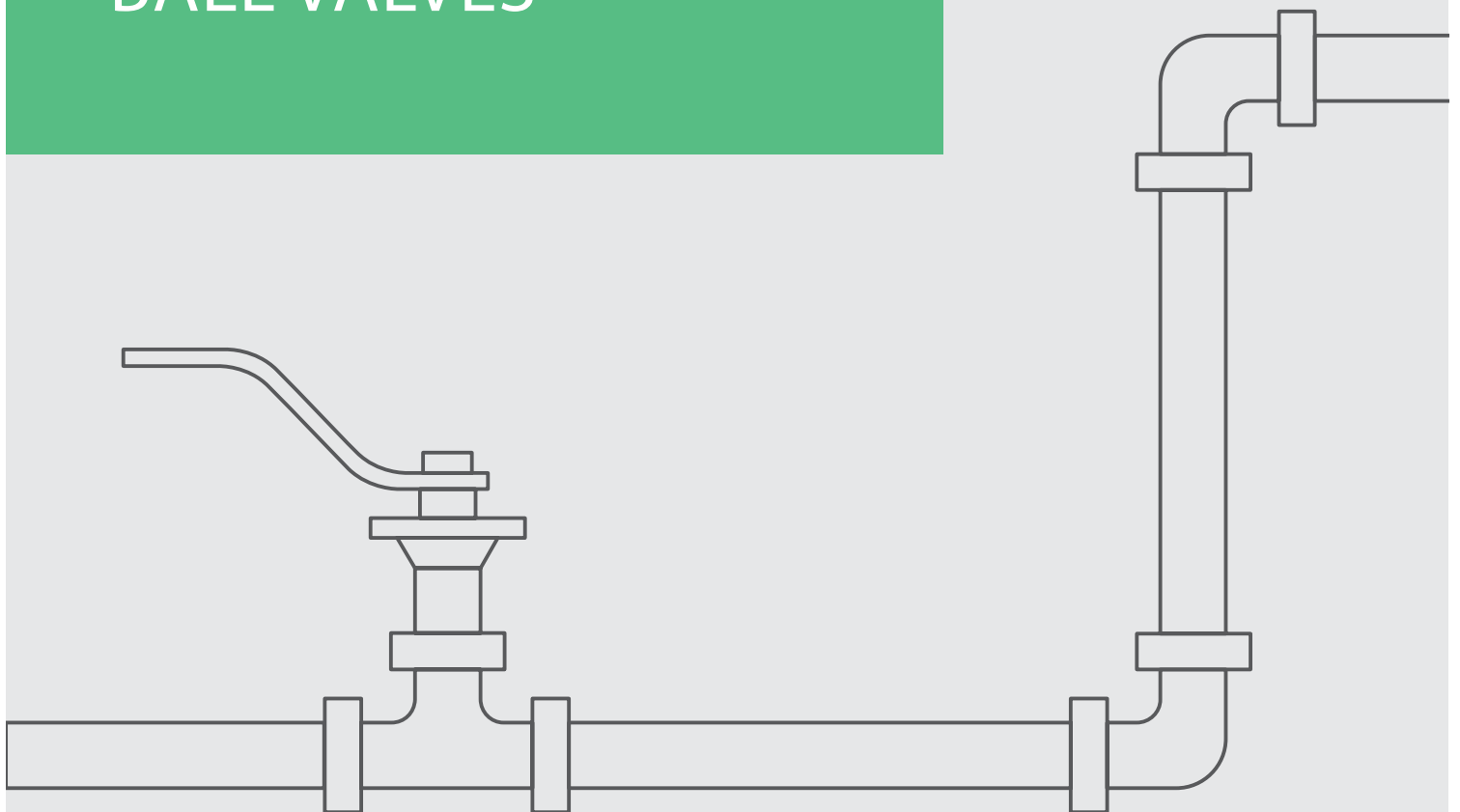
It is always the system designer and the end-user responsibility to verify all equipment use in their system is properly selected to ensure safety and integrity of their systems. Habonim offers only general information based on common market knowledge and standard market adaptations for its valves. For each system and use, the system designer and end-user must consider the particular operations conditions, media parameters and any other implication of their system for the proper selection of valves to be used on their solely responsibility.



Ammonia Service 12" Double Block and Bleed trunnion valve

HYDROGEN SERVICE

BALL VALVES



Hydrogen Service Ball Valves (H)

Habonim's hydrogen service ball valves are designed and tested to provide safe and durable use within diverse hydrogen application and address some leading industrial standards. With decades of proven safe and long-lasting use in hydrogen applications Habonim Hydrogen-service ball valves delivers reliability and integrity for industrial demanding applications.

Habonim is offering a full range of ball valves for hydrogen-use based on the legacy products families to cover low to very-high pressures, shut-off or control use, regular, multiport, Double Block & Bleed or custom-made designs, valve automation packages and much more.

Hydrogen

Hydrogen light atomic weight and molecule structure turning hydrogen-use equipment sealing into a challenge requires special designs, mechanisms and expertise. Hydrogen is highly combustion and flammable making leakage prevention an essence for safety and integrity of systems and materials selection should consider hydrogen effects as Hydrogen Embrittlement (HE).

Design

Habonim Hydrogen-use ball valves incorporate some design elements to best accommodate the hydrogen media:

Double Stem Sealing

Habonim HermetiX patented stem seal is used with additional O-ring sealing.

The HermetiX polymeric, non-graphite stem seal design is certified for ISO 15848-1 and API641 fugitive emission prevention standards, tested with He.

An additional O-ring stem seal is added as additional sealing point.

This design has been successfully tested for 100,000 open/close cycles under pressure without any maintenance or seals replacements and well performs in demanding hydrogen applications for decades.

Hydrogen-use material compatibility

All material used for the valve constructions are specified for safe use with hydrogen media.

Metallic materials to be used in the valves are selected to withstand the hydrogen embrittlement effects and are compatible for hydrogen use.

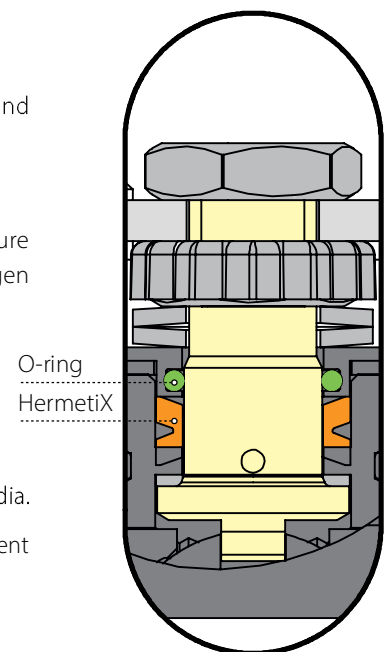
Testing & Certifications

Some of the ball valves series are tested or certified for specific standard relevant for hydrogen use such as:

ISO 19880-3:2018 Gaseous hydrogen – fueling stations valve

TPED – Transportable Pressure Equipment Directive

Marine classification (on demand): DNV GL, LR, BV, ABS, KR, RINA





Hydrogen Service Ball Valves (H)

Total HermetiX integrity package

Materials selection for Hydrogen use

Unless explicitly specified in our Ordering Codes for Hydrogen Service, when using our valves for Hydrogen Service (Feature "H") material selection should be:

- Body & ends - Stainless steel.
- Inner seal - Viton or consult Habonim.

Zero fugitive-emission stem sealing

- HermetiX stem sealing design with zero fugitive emission sealing capability.
- Tested according to ISO 15848-1 and API641 standards.
- Up to 500,000 cycles of operation with no maintenance.
- Field proven for millions of cycles.

Double body sealing

- Body double sealing for superior atmospheric sealing.
- Fugitive emission prevention.

Fire safe

- Design compatible with API 607 and ISO 10497.
- Clean fire-safe construction for no graphite contamination of the media flow.

Inline superior sealing

Quick Selection Table

Total Hermetix™ | **Port:** Standard Port Full Port Tube Size
 Ordering Code | **End Connections:** Threaded Coned & Threaded Flanged Welded

	Category	Ball Valve	Design Type	OC	Series	TH	Port	End Con.	Valve Size (Inches)																	
									MWP (ANSI Class)																	
									1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16
Temperature: -60°C - +260°C (-76 °F - +500 °F)	High Pressure	Trunnion	Threaded body	<input checked="" type="checkbox"/>	H99	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	1,000bar (15,000psi)																	
			3 Piece	<input checked="" type="checkbox"/>	H96	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2500																	
			3 Piece	<input checked="" type="checkbox"/>	H95	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1500																	
		Floating	Threaded body	<input checked="" type="checkbox"/>	H29	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	1,000bar (15,000psi) with TPED - 700bar (10,000psi)																	
			Threaded body	<input checked="" type="checkbox"/>	H25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	550bar (8,000psi)																	
			Threaded body	<input checked="" type="checkbox"/>	H24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	*500bar Class 2500 (7,250psi)																	
	Industrial Use	Trunnion	3 Piece	<input checked="" type="checkbox"/>	See Industrial	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2500 / 1500																	
			2 Piece	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	900/600/300/150																		
		Floating	3 Piece	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	900/600/400/300/150																	
			2/1 Piece	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	300/150/PN40/PN16																	
			DS/DBB	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	600/300/150/PN16																	
			Multiport / Diverter	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	600/300/150																	
Control	<input checked="" type="checkbox"/>	See Control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	900/400/300/150/PN40/PN16																				

* with TPED - Class 2500

Hydrogen Service High Pressure Trunnion Ball Threaded body

Technical Information

Operation

Maximum Working pressure 1,000bar (15,000psi).

Working temperature: -40°C up to +260°C (-40°F up to +500°F).

Design

- Threaded body
- Trunnion ball
- Automation-ready with standard ISO 5211 connecting plate
- Total HermetiX Integrity package with:
 - ISO 15848-01 and API 641 emission standard certificated design
 - ISO 10497 and API607 fire-safe standard certificated design
 - Double body sealing

Testing & Certifications

- ISO 19880-3:2018 Gaseous hydrogen – fueling stations valve
- TPED
- 100% shell & inline leak tested
- Marine classification (on demand): DNV GL, LR, BV, ABS, KR, RINA, others

Materials

- Stainless steel body & ends.
- All materials compatible for Hydrogen use.

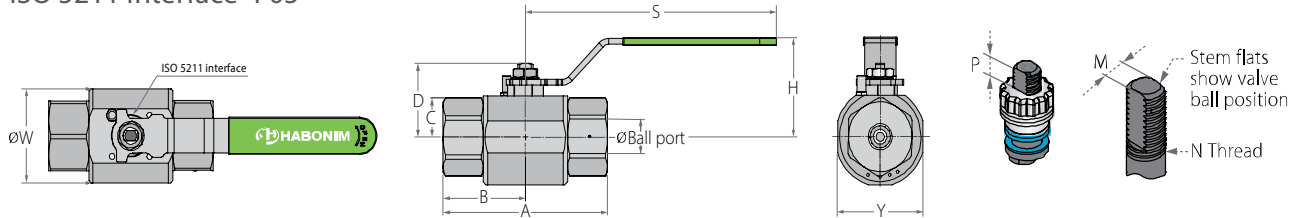
End connections

Valve size code	Connection			Minimum orifice mm(inch)	Cv	Kv
02	Medium Pressure Coned & Threaded	CTM	1/4"	2.8	0.33	0.29
03		CTM	3/8"	5.2	1.17	1.01
06		CTM	1/2"	7.9	4.39	3.80
07		CTM	3/4"	11.15	20.63	17.85
10		CTM	1"	11.15	9.81	8.49
02	High Pressure Coned & Threaded	CTH	1/4"	2.4	0.24	0.21
03		CTH	3/8"	3.2	0.43	0.37
06		CTH(F562C40)	1/2"	6.4	2.34	2.02
10		CTH	1"	11.15	20.63	17.85
02	Threaded	NPT/BSPP/DIN3852/BSPT	1/4"	6.35	1.62	1.40
03		NPT/BSPP/DIN3852/BSPT	3/8"	9.52	5.76	4.98
05		NPT/BSPP/DIN3852/BSPT	1/2"	11.15	8.6	7.44
07		NPT/BSPP/DIN3852/BSPT	3/4"	11.15	5.06	4.38
10		NPT/BSPP/DIN3852/BSPT	1"	11.15	4.7	4.07



Hydrogen Service High Pressure Trunnion Ball Threaded body

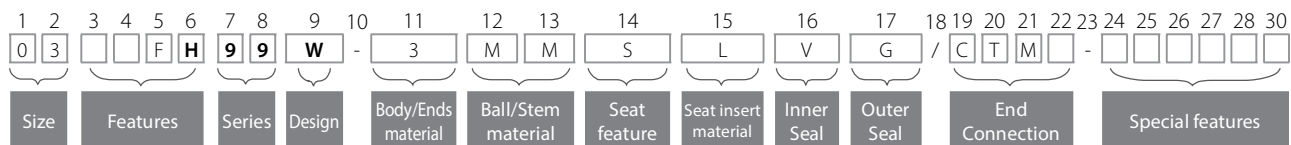
Valve dimensions
ISO 5211 Interface -F05



Full port	Unit	Ball port	A	B	C	D	H	M	N	P	W	S	Y
DN8	mm	11.15	155.4	77.7	33.00	48.00	84.4	8.65	1/16" UNF	19.5	85	237	80.5
1/4"	inch	0.44	6.12	3.06	1.30	2.48	3.32	0.34		0.77	3.46	9.33	3.17
DN10	mm	11.15	155.4	77.7	33.00	63.00	84.4	8.65		19.5	85	237	80.5
3/8"	inch	0.44	6.12	3.06	1.30	2.48	3.32	0.34		0.77	3.46	9.33	3.17
DN12	mm	11.15	155.4	77.7	33.00	63.00	84.4	8.65		19.5	85	237	80.5
1/2"	inch	0.44	6.12	3.06	1.30	2.48	3.32	0.34		0.77	3.46	9.33	3.17
DN14	mm	11.15	155.4	77.7	33.00	63.00	84.4	8.65		19.5	85	237	80.5
5/16"	inch	0.44	6.12	3.06	1.30	2.48	3.32	0.34		0.77	3.46	9.33	3.17
DN20	mm	11.15	155.4	77.7	33.00	63.00	84.4	8.65		19.5	85	237	80.5
3/4"	inch	0.44	6.12	3.06	1.30	2.48	3.32	0.34		0.77	3.46	9.33	3.17
DN25	mm	11.15	175.4	87.7	33.00	63.00	84.4	8.65		19.5	85	237	80.5
1"	inch	0.44	6.9	3.45	1.30	2.48	3.32	0.34		0.77	3.46	9.33	3.17

Ordering Code System

"Mandatory option" options are marked with **green background** | "Standard offer" options are marked with **light green background**



Size (1-2)		
Code	inch	mm
02	1/4"	8
03	3/8"	10
05 *	1/2"	13
06	3/4"	20
07	3/4"	20
10	1"	25

* Not applicable for CTM/CTH

Features (3-6)	
F	Fire safe
H	Hydrogen use
Series (7-8)	
99	HP Trunnion threaded body 3 pcs.

Design (9)	
W	Total HermetiX Integrity package
Body/Ends material (11)	
3	S. Steel DIN 1.4435
Ball/Stem material (12-13)	
M	High Strength S. Steel
Seat feature (14)	
S	Single Piston Effect (SPE) (API 6D DBB)
Seat Insert material (15)	
L	Virgin PEEK
Inner Seal material (16)	
V	Viton

Outer Seal material (17)	
G	Expanded graphite
End connections (19-22)	
Threaded Ends	
CTM	Coned & Threaded Medium pressure
CTH	Coned & Threaded High pressure
NPT	ASME B1.20.1 - National Pipe Taper thread
BSPP	ISO228-1 - Pipe Parallel thread
DIN3852	DIN3852 - Pipe Parallel thread
BSPT	EN 10226 - Pipe Taper thread
Special Features (24-30)	

Hydrogen Service High Pressure Floating Ball Threaded body

Technical Information

Operation

Maximum Working pressure 1,000bar (15,000psi), with TPED mark up to 700bar (10,000psi)

Working temperature: -40°C up to +260°C (-40°F up to +500°F).

Design

- Threaded body
- Automation-ready with standard ISO 5211 connecting plate
- Total HermetiX Integrity package with:
ISO 15848-1 and API 641 emission standard certificated design
ISO 10497 and API607 fire-safe standard certificated design
Double body sealing

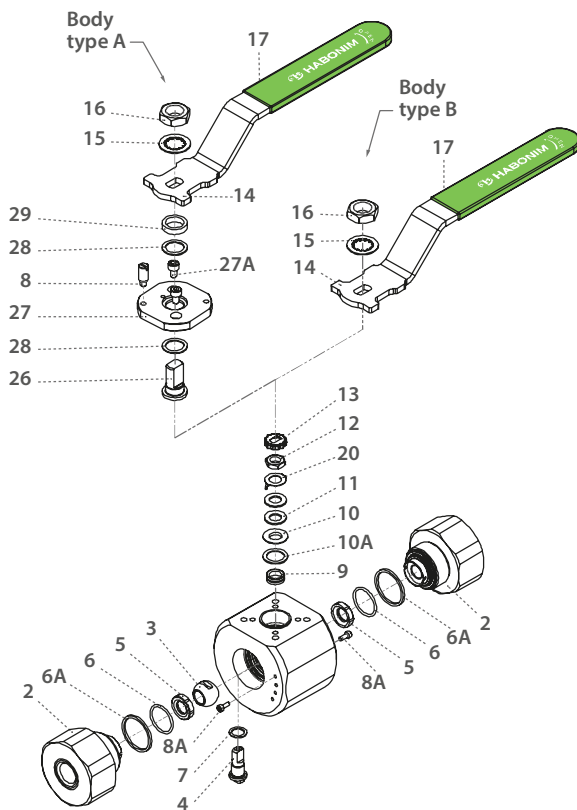
Testing & Certifications

- ISO 19880-3:2018 Gaseous hydrogen – fueling stations valve, Tested up to 700bar use (internal test with He)
- TPED, Certified (up to 700bar MWP)
- 100% shell & inline leak tested
- Marine classification (on demand): DNV GL, LR, BV, ABS, KR, RINA, others

Materials

- Stainless steel body & ends.
- All materials compatible for Hydrogen use.

Components & materials



Item	Description	Material specification	Qty.
1	Body	Acc. Ordering Code	1
2	Ends	Acc. Ordering Code	2
3	Ball	Acc. Ordering Code	1
4	Stem	Acc. Ordering Code	1
5*	Seat	Acc. Ordering Code	2
6*	Inner Seal	Acc. Ordering Code	2
6A*	Outer Seal	Acc. Ordering Code	2
7*	Stem Thrust Seal	PEEK, CF PEEK, PCTFE	1
8	Stop Pin	S. Steel	1
8A	Locking Screw	S. Steel	2
9	Stem Seal	CF PTFE, TFM	1
10	Follower	S. Steel	1
10A*	Slide Bearing	S. Steel	1
11	Disc Spring	S. Steel	2
12	Stem Nut	S. Steel	1
13	Locking Clip	S. Steel	1
14	Handle	S. Steel	1
15	Shrrated Washer	S. Steel	
16	Handle Nut	S. Steel	1
17	Sleeve	PVC	1
20	Anti Static Device	S. Steel	1
26	Adaptor	XM-19	1
27	Adaptor Plate	S. Steel	1
27A	Plate Bolts	S. Steel	2
28	Adaptor Bearing	S. Steel	2
29	Adaptor Ring	S. Steel	1

* Repair kit components



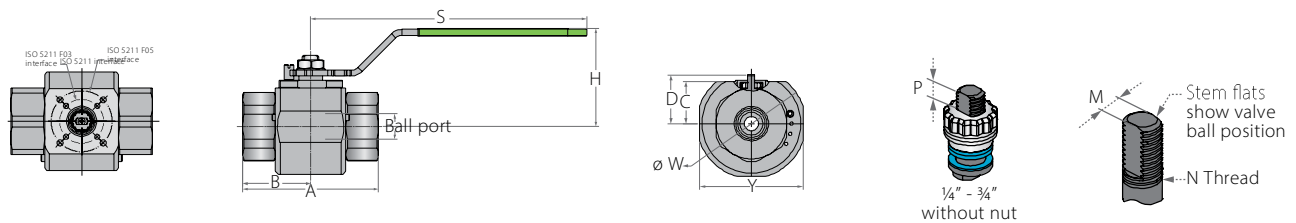
Hydrogen Service High Pressure Floating Ball Threaded body

End connections

Valve size code	Connection			Minimum orifice mm(inch)	Cv	Kv	
02	Medium Pressure Coned & Threaded	CTM	1/4"	Tube Size	2.8	0.33	0.29
03		CTM	3/8"		5.2	1.17	1.01
06		CTM	9/16"		7.9	4.39	3.80
07		CTM	3/4"		11.15	20.63	17.85
10		CTM	1"		11.15	9.81	8.49
02	High Pressure Coned & Threaded	CTH	1/4"	Thread Size	2.4	0.24	0.21
03		CTH	3/8"		3.2	0.43	0.37
06		CTH(F562C40)	9/16"		6.4	2.34	2.02
10		CTH	1"		11.15	20.63	17.85
02	Threaded	NPT/BSPP/DIN3852/BSPT	1/4"	Thread Size	6.35	1.62	1.40
03		NPT/BSPP/DIN3852/BSPT	3/8"		9.52	5.76	4.98
05		NPT/BSPP/DIN3852/BSPT	1/2"		11.15	8.6	7.44
07		NPT/BSPP/DIN3852/BSPT	3/4"		11.15	5.06	4.38
10		NPT/BSPP/DIN3852/BSPT	1"		11.15	4.7	4.07

Valve dimensions

ISO 5211 Interface - F03 / F05



End Connection size	Unit	Ball port	A	B	C	D	H	M	N	P	W	S	Y
DN8	mm	11.15	116.4	58.2	33.00	38.00	85.00	5.54	3/8" UNF	11.1	85	151	80.5
1/4"	inch	0.44	4.58	2.29	1.30	1.50	3.35	0.22		0.43	3.46	5.94	3.17
DN10	mm	11.15	116.4	58.2	33.00	38.00	85.00	5.54		11.1	85	151	80.5
3/8"	inch	0.44	4.58	2.29	1.30	1.50	3.35	0.22		0.43	3.46	5.94	3.17
DN12	mm	11.15	116.4	58.2	33.00	38.00	85.00	5.54		11.1	85	151	80.5
1/2"	inch	0.44	4.58	2.29	1.30	1.50	3.35	0.22		0.43	3.46	5.94	3.17
DN14	mm	11.15	116.4	58.2	33.00	38.00	85.00	5.54		11.1	85	151	80.5
9/16"	inch	0.44	4.58	2.29	1.30	1.50	3.35	0.22		0.43	3.46	5.94	3.17
DN20	mm	11.15	116.4	58.2	33.00	38.00	85.00	5.54		11.1	85	151	80.5
3/4"	inch	0.44	4.58	2.29	1.30	1.50	3.35	0.22		0.43	3.46	5.94	3.17
DN25	mm	11.15	136.4	68.2	33.00	38.00	85.00	5.54		11.1	85	151	80.5
1"	inch	0.44	5.37	2.685	1.30	1.50	3.35	0.22		0.43	3.46	5.94	3.17

H29 BODY SIZE B | 3/4"-1 1/2" | DN20-DN40 | PN 700 (10,000PSI)

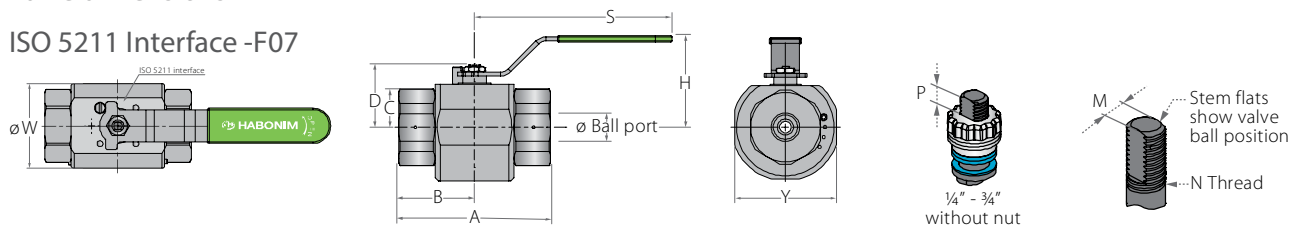
Hydrogen Service High Pressure Floating Ball Threaded body

End connections

Valve size code	Connection				Minimum orifice mm(inch)	Cv	Kv
10	Medium Pressure Coned & Threaded	CTM	1"	Tube Size	14.3	14.11	12.21
15		CTM	1 1/2"		20.6	50.41	43.60
07	Threaded	NPT/BSPP/DIN3852/BSPT	3/4"	Thread Size	19	30.93	26.76
10		NPT/BSPP/DIN3852/BSPT	1"		20.6	23.79	20.58

Valve dimensions

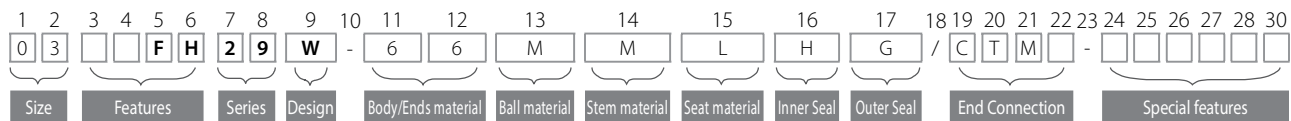
ISO 5211 Interface -F07



End Connection size	Unit	Ball port	A	B	C	D	H	M	N	P	W	S	Y
DN20	mm	20.6	215	107.5	48.25	68.00	95	8.65	1/16" UNF	8	119	273	116
3/4"	inch	0.81	8.46	4.23	1.90	2.67	3.74	0.34		0.31	4.68	10.75	0.56
DN25	mm	20.6	215	107.5	48.25	68.00	95	8.65		8	119	273	116
1"	inch	0.81	8.46	4.23	1.90	2.67	3.74	0.34		0.31	4.68	10.75	0.56
DN32	mm	20.6	215	107.5	48.25	68.00	95	8.65		8	119	273	116
1 1/4"	inch	0.81	8.46	4.23	1.90	2.67	3.74	0.34		0.31	4.68	10.75	0.56
DN38	mm	20.6	215	107.5	48.25	68.00	95	8.65		8	119	273	116
1 1/2"	inch	0.81	8.46	4.23	1.90	2.67	3.74	0.34		0.31	4.68	10.75	0.56

Ordering Code System

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Size (1-2)		
Code	inch	mm
02	1/4"	8
03	3/8"	10
05*	1/2"	13
06	5/16"	15
07	3/4"	20
10	1"	25
15	1 1/2"	40

* Not applicable for CTM/CTH

Features (3-6)	
F	Fire safe
H	Hydrogen use
B	Body size B (700bar / 10,000psi)
Series (7-8)	
29	HP Float 3 piece
Design (9)	
W	Total HermetiX Integrity package
Body/Ends material (11-12)	
6	S. Steel 316L

Ball material (13)	
M	High Strength S. Steel
Stem material (14)	
M	High Strength S. Steel
Seat material (15)	
L	Virgin PEEK
Inner Seal Material (16)	
H	HNBR
V	Viton
A	TFM

Outer Seal Material (17)	
G	Expanded graphite
A	TFM
End connections (19-22)	
CTM	Coned & Threaded Medium pressure
CTH	Coned & Threaded High pressure
NPT	ASME B1.20.1 - National Pipe Taper thread
BSPP	ISO228-1 - Pipe Parallel thread
DIN3852	DIN3852 - Pipe Parallel thread
BSPT	EN 10226 - Pipe Taper thread



Hydrogen Service High Pressure Floating Ball 3 Piece Threaded-Body

Technical Information

Operation

Maximum Working Pressure: 550bar (8,000psi)
 Working temperature: -40°C up to +85°C (-40°F up to +185°F).

Design

- Threaded body
- Automation-ready with standard ISO 5211 connecting plate
- Total HermetiX Integrity package with:
 - ISO 15848-1 and API 641 emission standard certificated design
 - ISO 10497 and API607 fire-safe standard certificated design
 - Double body sealing

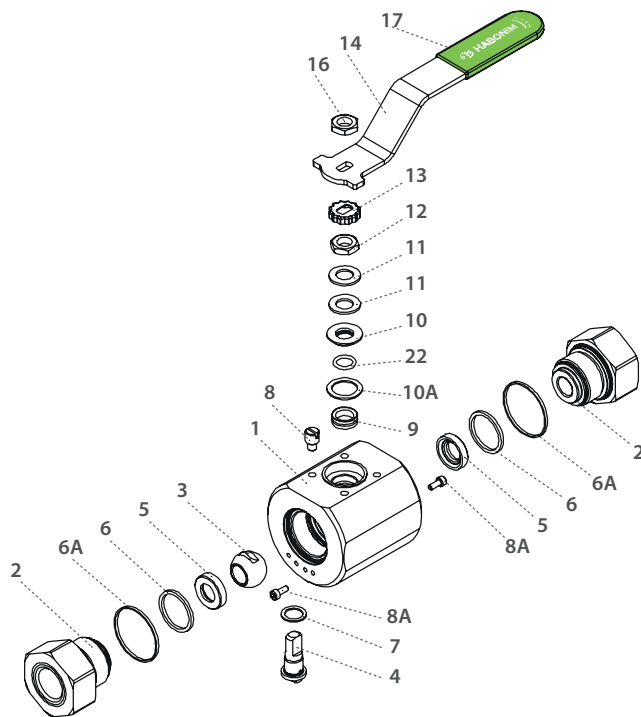
Testing & Certifications

- TPED Certified, up to 550bar (8,000psi) MWP
- 100% shell & inline leak tested
- Marine classification (on demand): DNV GL, LR, BV, ABS, KR, RINA, others

Materials

- Stainless steel body & ends
- All materials compatible for Hydrogen use

Components & materials



Item	Description	Material specification	Qty.
1	Body	Acc. Ordering Code	1
2	Ends	Acc. Ordering Code	2
3	Ball	Acc. Ordering Code	1
4	Stem	Acc. Ordering Code	1
5*	Seat	Acc. Ordering Code	2
6*	Inner Seal	Acc. Ordering Code	2
6A*	Outer Seal	Acc. Ordering Code	2
7a*	Anti-Abrasion Ring	PEEK, PCTFE	1
7A	Stem Thrust Seal	PEEK, PCTFE	1
8	Stop Pin	S. Steel	1
8A	Locking Bolt	S. Steel	2
9*	Stem Seal	CF PTFE, TFM	1
10	Follower	S. Steel	1
10A*	Slide Bearing	S. Steel	1
11	Disc Spring	S. Steel	2
12	Stem Nut	S. Steel	1
13	Locking Clip	S. Steel	1
14	Handle	S. Steel	1
16	Handle Nut	S. Steel	1
17	Sleeve	PVC	1
22	O-Ring	Acc. Ordering Code	1

* Repair kit components

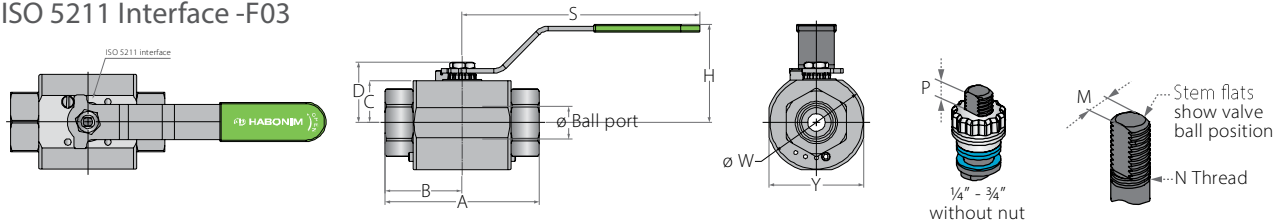
Hydrogen Service High Pressure Floating Ball Threaded body

End connections

Valve size code	Connection			Minimum orifice mm(inch)	Cv	Kv
02	Medium Pressure Coned & Threaded	CTM	1/4"	2.8	0.33	0.29
03		CTM	3/8"	5.2	1.17	1.01
06		CTM	9/16"	7.9	4.39	3.80
07		CTM	3/4"	11.15	20.63	17.85
10		CTM	1"	11.15	9.81	8.49
02	High Pressure Coned & Threaded	CTH	1/4"	2.4	0.24	0.21
03		CTH	3/8"	3.2	0.43	0.37
06		CTH(F562C40)	9/16"	6.4	2.34	2.02
10		CTH	1"	11.15	20.63	17.85
02	Threaded	NPT/BSPP/DIN3852/BSPT	1/4"	6.35	1.62	1.40
03		NPT/BSPP/DIN3852/BSPT	3/8"	9.52	5.76	4.98
05		NPT/BSPP/DIN3852/BSPT	1/2"	11.15	8.6	7.44
07		NPT/BSPP/DIN3852/BSPT	3/4"	11.15	5.06	4.38
10		NPT/BSPP/DIN3852/BSPT	1"	11.15	4.7	4.07

Valve dimensions

ISO 5211 Interface -F03



Port	Unit	Ball port	A	B	C	D	H	M	N	P	W	S	Y	Weight kg/ib
DN8	mm	11.5	98	49	21	38	62	5.54	3/8" UNF	5.8	60	151	60	1.8
1/4"	inch	0.45	3.86	1.93	0.83	1.50	2.44	0.22		0.23	2.36	5.94	2.36	3.96
DN10	mm	11.5	98	49	21	38	62	5.54		5.8	60	151	60	1.8
3/8"	inch	0.45	3.86	1.93	0.83	1.50	2.44	0.22		0.23	2.36	5.94	2.36	3.96
DN15	mm	11.5	98	49	21	38	62	5.54		5.8	60	151	60	1.8
1/2"	inch	0.45	3.86	1.93	0.83	1.50	2.44	0.22		0.23	2.36	5.94	2.36	3.96
DN14	mm	11.5	98	49	21	38	62	5.54		5.8	60	151	60	1.8
9/16"	inch	0.45	3.86	1.93	0.83	1.50	2.44	0.22		0.23	2.36	5.94	2.36	3.96
DN20	mm	11.5	108	49	21	38	62	5.54		5.8	60	151	60	2
3/4"	inch	0.45	4.25	1.93	0.83	1.50	2.44	0.22		0.23	2.36	5.94	2.36	4.4
DN25	mm	11.5	122	49	21	38	62	5.54		5.8	60	151	60	2.2
1"	inch	0.45	4.80	1.93	0.83	1.50	2.44	0.22		0.23	2.36	5.94	2.36	4.84



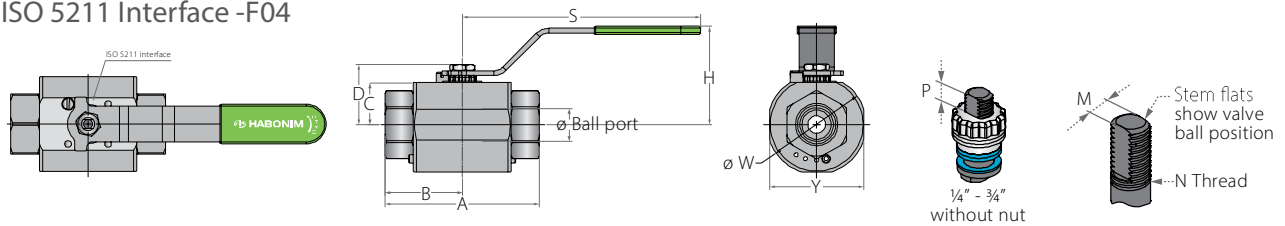
Hydrogen Service High Pressure Floating Ball Threaded body

End connections

Valve size code	Connection				Minimum orifice mm(inch)	Cv	Kv
10	Medium Pressure Coned & Threaded	CTM	1"	Tube Size	14.3	14.11	12.21
15		CTM	1 1/2"		20.6	50.41	43.60
07	Threaded	NPT/BSPP/DIN3852/BSPT	3/4"	Thread Size	19	30.93	26.76
10		NPT/BSPP/DIN3852/BSPT	1"		20.6	23.79	20.58

Valve dimensions

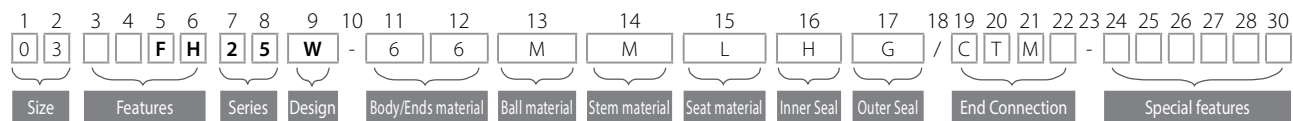
ISO 5211 Interface -F04



Port	Unit	Ball port	A	B	C	D	H	M	N	P	W	S	Y	Weight kg/lb
DN20	mm	20.6	149	89	40	55.6	82	7.5	7/16" UNF	11	92	186	87	5.5
3/4"	inch	0.81	5.87	3.50	1.57	2.19	3.23	0.30		0.43	3.62	7.32	3.43	12.1
DN25	mm	20.6	149	89	40	55.6	82	7.5		11	92	186	87	5.5
1"	inch	0.81	5.87	3.50	1.57	2.19	3.23	0.30		0.43	3.62	7.32	3.43	12.1
DN32	mm	20.6	169	89	40	55.6	82	7.5		11	92	186	87	6
1 1/4"	inch	0.81	6.65	3.50	1.57	2.19	3.23	0.30		0.43	3.62	7.32	3.43	13.2
DN40	mm	20.6	189	89	40	55.6	82	7.5		11	92	186	87	6.5
1 1/2"	inch	0.81	7.44	3.50	1.57	2.19	3.23	0.30		0.43	3.62	7.32	3.43	14.3

Ordering Code System

"Mandatory option" options are marked with **green background** | "Standard offer" options are marked with **light green background**



Size (1-2)		
Code	inch	mm
02	1/4"	8
03	3/8"	10
05*	1/2"	13
06	9/16"	15
07	3/4"	20
10	1"	25
15	1 1/2"	40

* Not applicable for CTM/CTH

Features (3-6)	
F	Fire safe
H	Hydrogen use
	Body size A
B	Body size B
Series (7-8)	
25	HP Float 3 piece
Design (9)	
W	Total HermetiX Integrity package
Body/Ends material (11-12)	
6	S. Steel 316L

Ball material (13)	
M	High Strength S. Steel
Stem material (14)	
M	High Strength S. Steel
Seat material (15)	
L	Virgin PEEK
Inner Seal Material (16)	
H	HNBR
V	Viton
A	TFM

Outer Seal Material (17)	
G	Expanded graphite
A	TFM
End connections (19-22)	
CTM	Coned & Threaded Medium pressure
CTH	Coned & Threaded High pressure
NPT	ASME B1.20.1 - National Pipe Taper thread
BSPP	ISO228-1 - Pipe Parallel thread
DIN3852	DIN3852 - Pipe Parallel thread
BSPT	EN 10226 - Pipe Taper thread

H24

1/4"-1/2" | DN8-DN15 | PN500 (7,250PSI)
 3/4"-1 1/2" | DN20-DN40 | CLASS 2500 PN420 (6,000PSI)

Hydrogen Service High Pressure Floating Ball 3 Piece Threaded-Body

Technical Information

Operation

Maximum Working Pressure:

Size 1/4"-1/2" - 500bar (7,250psi)

Size 3/4"-1 1/2" - Class 2500 414bar (6,000psi)

Working temperature: -60°C up to +260°C (-76°F up to +500°F).

Design

- Threaded body
- Automation-ready with standard ISO 5211 connecting plate
- Total HermetiX Integrity package with:
 - ISO 15848-1 and API 641 emission standard certificated design
 - ISO 10497 and API607 fire-safe standard certificated design
 - Double body sealing

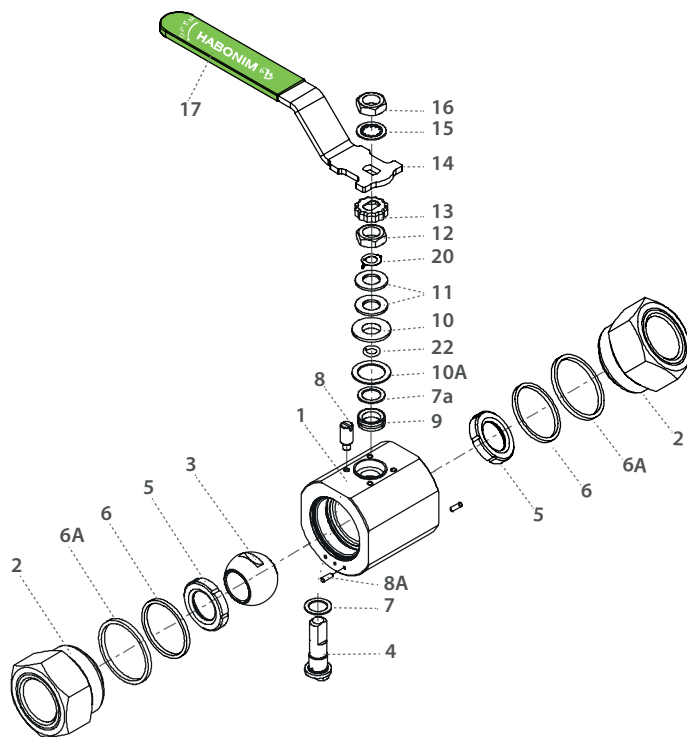
Testing & Certifications

- TPED Certified, up to 414bar (6,000psi) MWP
- 100% shell & inline leak tested
- Marine classification (on demand): DNV GL, LR, BV, ABS, KR, RINA, others

Materials

- Stainless steel body & ends
- All materials compatible for Hydrogen use

Components & materials



Item	Description	Material specification	Qty.
1	Body	Acc. Ordering Code	1
2	End	Acc. Ordering Code	2
3	Ball	Acc. Ordering Code	1
4	Stem	Acc. Ordering Code	1
5*	Seat	Acc. Ordering Code	2
6*	Inner seal	Acc. Ordering Code	2
6A*	Outer seal	Acc. Ordering Code	2
7*	Stem thrust seal	PEEK, PCTFE	1
7a*	Anti-abrasion ring	PEEK, PCTFE	1
8	Stop pin	S. Steel	1
8A	Locking bolt	S. Steel	2
9*	Stem seal	CF PTFE, TFM	1
10	Follower	S. Steel	1
10A*	Slide bearing	S. Steel	1
11	Disc spring	S. Steel	2
12	Stem nut	S. Steel	1
13	Locking clip	S. Steel	1
14	Handle	S. Steel	1
15	Serrated washer	S. Steel	1
16	Handle nut	S. Steel	1
17	Sleeve	PVC	1
20	Anti static device	S. Steel	1
22	O-ring	Acc. Ordering Code	1
23	Tag (not shown)	S. Steel	1

* Repair kit components

H24

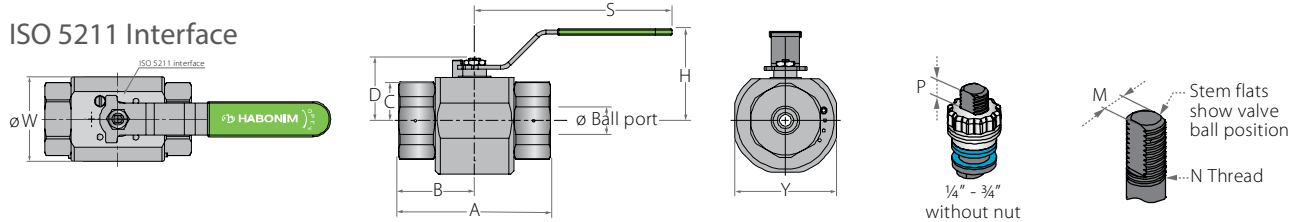
1/4"-1/2" | DN8-DN15 | PN500 (7,250PSI)
 3/4"-1 1/2" | DN20-DN40 | CLASS 2500 PN420 (6,000PSI)



Hydrogen Service High Pressure Floating Ball 3 Piece Threaded-Body

Valve dimensions

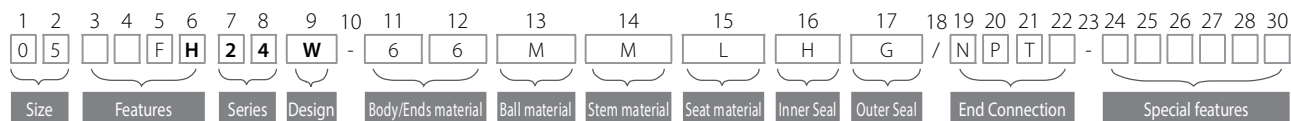
ISO 5211 Interface



Std. port	Full port	Unit	Ball port	A	B	C	D	H	M	N	P	W	S	Y	weight kg/lb	kv cv
	DN8	mm	11.15	91	45.5	21.50	37.90	42.1	5.54	3/8" UNF	11.1	54	179	45	0.8	4.3
	1/4"	inch	0.44	3.58	1.79	0.84	1.49	1.66	0.22		0.43	2.12	7.05	1.77	1.76	5.00
DN15	DN10	mm	11.15	91	45.5	24.50	37.90	42.1	5.54	3/8" UNF	11.1	54	179	45	0.8	6.9
	1/2"	inch	0.44	3.58	1.79	0.84	1.49	1.66	0.22		0.43	2.12	7.05	1.77	1.76	8.00
DN20	DN15	mm	14.3	104.25	52.12	23.90	40.30	45	5.54	3/8" UNF	11.1	62	179	60	1.27	10
	3/4"	inch	0.56	4.10	2.05	0.94	1.59	1.77	0.22		0.43	2.44	7.05	2.36	2.79	12.00
DN25	DN20	mm	20.6	126.6	63.3	37.90	55.60	60.3	7.54	7/16" UNF	15.4	84.5	193	77	2.1	28
	1"	inch	0.81	4.98	2.49	1.49	2.19	2.37	0.29		0.60	3.32	7.60	3.03	4.63	32.00
DN32	DN25	mm	25.4	137.25	68.62	42.50	60.2	68.7	7.54	7/16" UNF	15.4	93	193	85	2.9	49
	1 1/4"	inch	1.00	5.40	2.70	1.67	2.37	2.70	0.29		0.90	3.66	7.60	3.34	6.39	57.00
DN40	DN32	mm	31.8	161.94	80.97	43.55	73.00	81.1	8.7	9/16" UNF	19.6	99	287	95	4.8	69
	1 1/2"	inch	1.50	6.37	3.18	1.71	2.87	3.19	3.19		0.77	3.89	11.30	3.74	10.58	80.00

Ordering Code System

"Mandatory option" options are marked with **green background** | "Standard offer" options are marked with **light green background**



Size (1-2)			MWP bar (psi)	
Code	inch	mm	414 (6,000)	500 (7,250)
02	1/4"	8	+	+
03	3/8"	10	+	+
05	1/2"	15	Full port	Std. port only
07	3/4"	20	+	n/a
10	1"	25	+	n/a
12	1 1/4"	32	+	n/a
15	1 1/2"	40	Std. port only	n/a

Features (3-6)	
H	Hydrogen Service
F	Fire safe
B	Full port

Series (7-8)	
24	HP Float 3 piece

Design (9)	
W	Total HermetiX Integrity package
Body/Ends material (11-12)	
6	S. Steel 316L
Ball material (13)	
M	High Strength S. Steel
Stem material (14)	
M	High Strength S. Steel
Seat material (15)	
L	Virgin PEEK
Inner Seal Material (16)	
H	HNBR
V	Viton
T	PTFE
G	Expanded graphite

Outer Seal Material (17)	
G	Expanded graphite
A	TFM
End connections (19-22)	
Threaded Ends	
NPT	ASME B1.20.1 - National Pipe Taper thread
BSPP	ISO228-1 - Pipe Parallel thread
DIN3852	DIN3852 - Pipe Parallel thread
BSPT EN 10226	10226 - Pipe Taper thread
AS5202	AS 5202 on-face gasket sealing threaded connection
MNPT	Male NPT
SAE J1926-A	SAE J1926-A
Welded	
XBW80	Extended butt-weld ends (sch80)

