

# Dual-safe valves



## Introduction

The Habonim Dual-Safe valve series presents an optimal design solution and guarantees isolation on critical applications and service when an emergency shut-down (ESD) valve is a necessity.

The Dual-Safe unit incorporates two main isolation valves and one bleed valve in a single body construction.

This special construction offers the lowest possible number of potential leakage points from a process connection and reduces the overall valve envelope size and weight by integrating valves, piping, and fittings into one compact design.

## Technical summary

<b>Size range</b>	¼" - 8" (DN8 - DN200)
<b>Design</b>	Single Body Construction (SBC) with reduced number of body seals
<b>Pressure range</b>	ANSI Class 150 to 2500
<b>Temperature range</b>	-200 °C to +260 °C ( -328 °F to 500 °F)
<b>Materials</b>	Carbon Steel, Stainless Steel ,Alloy C22, Duplex, Super Duplex, 254SMO and more
<b>End connections</b>	Threaded, welded, flanged and more
<b>Operation</b>	Manual, actuated and coupled actuation

## Standards of compliance

<b>Factory certification</b>	ISO 9001:2015	Quality management system
<b>Valve design &amp; tests</b>	ASME B16.34 :2013,ISO17292 :2004	Valve design
	API 6D / ISO14313 :2007	
	ASME B16.5:2017, EN 1092 -1:1997	Flange dimensions
	ASME B16.10:2017, EN 558:2017	Face-to-Face dimensions
	NACE MR-0175:2015/ISO 15156 -1:2015	Materials for use in H2S-containing environments in oil and gas production
	NACE MR0103/ISO 17945:2015	Metallic materials resistant to sulfide stress cracking in corrosive petroleum refining environments
<b>Certifications</b>	EN 12266-1:2012, API 598:2016	Testing of metallic valves - Pressure tests, test procedures and acceptance criteria
	API 607:2016, ISO 10497:2010	Testing of valves - fire type-testing requirements
	ISO 15848-1:2015	Industrial valves - measurement, test and qualification procedures for fugitive emissions
	PED 2014/68/EU Module H	Pressure equipment directive
<b>Documentation</b>	ATEX 2014/34/EU	Equipment and protective systems intended for use in potentially explosive atmospheres (optional for actuated unit only)
	IEC 61508-2/3:2010 SIL2/3	Safety integrity level - functional safety of electrical/electronic/programmable electronic safety-related systems (optional for actuated unit only)
	EN 10204:2004 2.2/3.1/3.2	Metallic materials - types of inspection documents

## Series in range

### Standard series

<b>47X/47W</b>	<b>Standard and full port</b>
Size range	¼"-2" (DN8-DN50)
Pressure range	ANSI Class 900
Size range	2½" (DN65)
Pressure range	ANSI Class 600
End connections	Threaded, welded, flanged
<b>73X/73W</b>	<b>Full port</b>
Size range	1½"-8" (DN32-DN200)
Pressure range	ANSI Class 150
End connections	Flanged ANSI
<b>74X/74W</b>	<b>Full port</b>
Size range	1½"-8" (DN32-DN200)
Pressure range	ANSI Class 300
End connections	Flanged ANSI
<b>78X/78W</b>	<b>Full port</b>
Size range	1½"-2" (DN32-DN50)
Pressure range	DIN PN40
End connections	Flanged DIN
<b>77X/77W</b>	<b>Full port</b>
Size range	3"-8" (DN80-DN200)
Pressure range	DIN PN16
End connections	Flanged DIN
<b>28X/28W</b>	<b>Standard and full port</b>
Size range	¼"-1¼" (DN8-DN32)
Pressure range	ANSI Class 2500
End connections	Threaded, welded, flanged

### Cryogenic series

<b>C47C/C47W</b>	<b>Standard and full port</b>
Size range	¼"-8" (DN8-DN200)
Pressure range	ANSI Class 600
End connections	Threaded, welded, flanged
<b>C73C/C73W</b>	<b>Full port</b>
Size range	1½"-8" (DN40-DN200)
Pressure range	ANSI Class 150
End connections	Flanged ANSI
<b>C74C/C74W</b>	<b>Full port</b>
Size range	1½"-8" (DN40-DN200)
Pressure range	ANSI Class 300
End connections	Flanged ANSI
<b>C78C/C78W</b>	<b>Full port</b>
Size range	1½"-2" (DN40-DN50)
Pressure range	DIN PN40
End connections	Flanged DIN
<b>C77C/C77W</b>	<b>Full port</b>
Size range	3"-8" (DN80-DN200)
Pressure range	DIN PN16
End connections	Flanged DIN
<b>C28C/C28W</b>	<b>Standard and full port</b>
Size range	¼"-1¼" (DN8-DN32)
Pressure range	ANSI Class 2500
End connections	Threaded, welded, flanged

For temperature 260° C (500° F) and above, please consult with Habonim engineering team for metal seated valve solution.

### Prevention of explosions in fuel, oil and natural gas furnaces

Furnace explosions are caused by the ignition of an accumulated combustible mixture within the boiler furnace enclosure.

- An interruption of the fuel or air supply or ignition energy to the burners, sufficient to result in momentary loss of flames, followed by restoration and delayed reigniting of an accumulation
- Repeated unsuccessful attempts to light off without appropriate purging can result in an accumulation of an explosive mixture
- Fuel leakage into an idle furnace and the ignition of the accumulation by a spark or other source of ignition

Explosions, including "furnace puffs", are the result of improper equipment design, improper procedures by operating personnel or control system malfunctions.

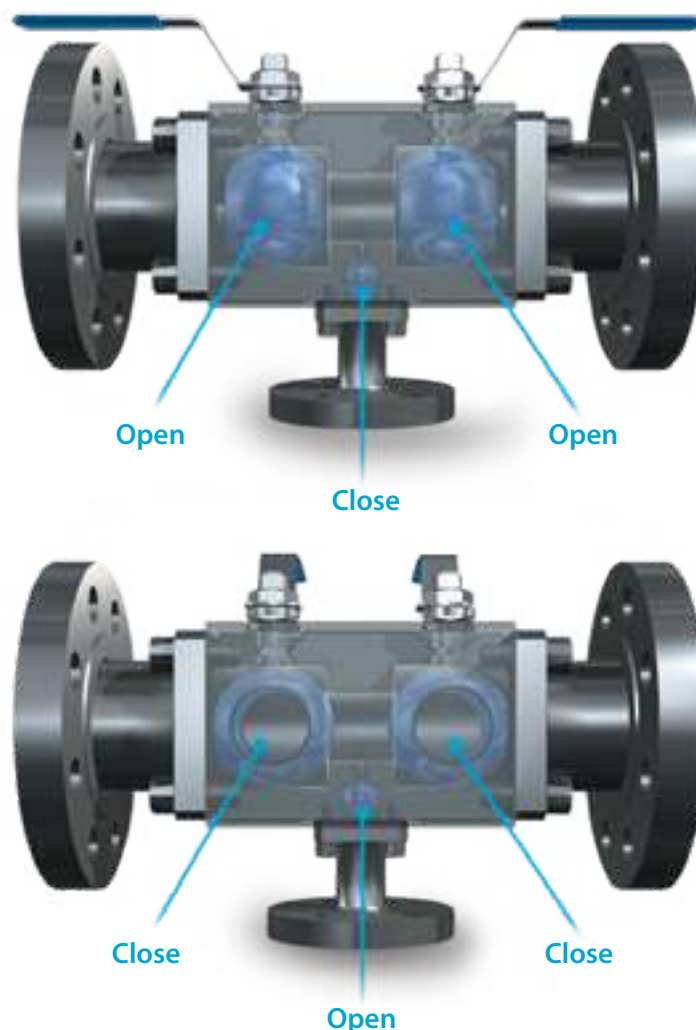
### How Dual-Safe Works

The two main isolation valves are operated by one actuator with a coupled mechanical link system that ensures they rotate together. The bleed valve is actuated separately.

This unit presents a simple concept that will assure zero flow to the furnace and maximum operational safety.

### Standard Operation

In a standard application, the primary line valves are set to the "fail to close" position, and the bleed valve is set to the "fail to open" position. During normal operation, the primary line valves are open; the bleed valve is closed, and gas flows to the furnace.



### Shutting down

When shutting down the system, the isolation valves are closed, while the bleed valve is switched to its open position. A pipeline connected to the bleed valve releases the trapped pressure between the two isolation valves out into the atmosphere. Any trace of leakage detected between the isolation valves triggers a sensor on the bleed line and sets off an alarm in the control room.

### Dual-Safe Advantage

- Minimizes the risk of furnace explosion.
- Increases system reliability.
- Saves space and reduces weight.
- Reduces installation time.
- Streamlines maintenance operations.
- Reduces number of items in repair kits.
- Rugged construction.
- Bubble tight shutoff on all three valves.
- Coupled operating mechanism reduces the number of actuators on the main line
- Tongue and groove design for all body seals Variety of end connections (welded, threaded, flanged)

### Optional configurations

A complete in-house package solution that includes: valves, actuators, and accessories, Assembled, calibrated, and factory tested. tested.

Dual-Safe basic version manually operated suitable mainly for sampling system and instrumentation.



# Floating Ball Valves

## Dual-Safe (DB&B) valve

General

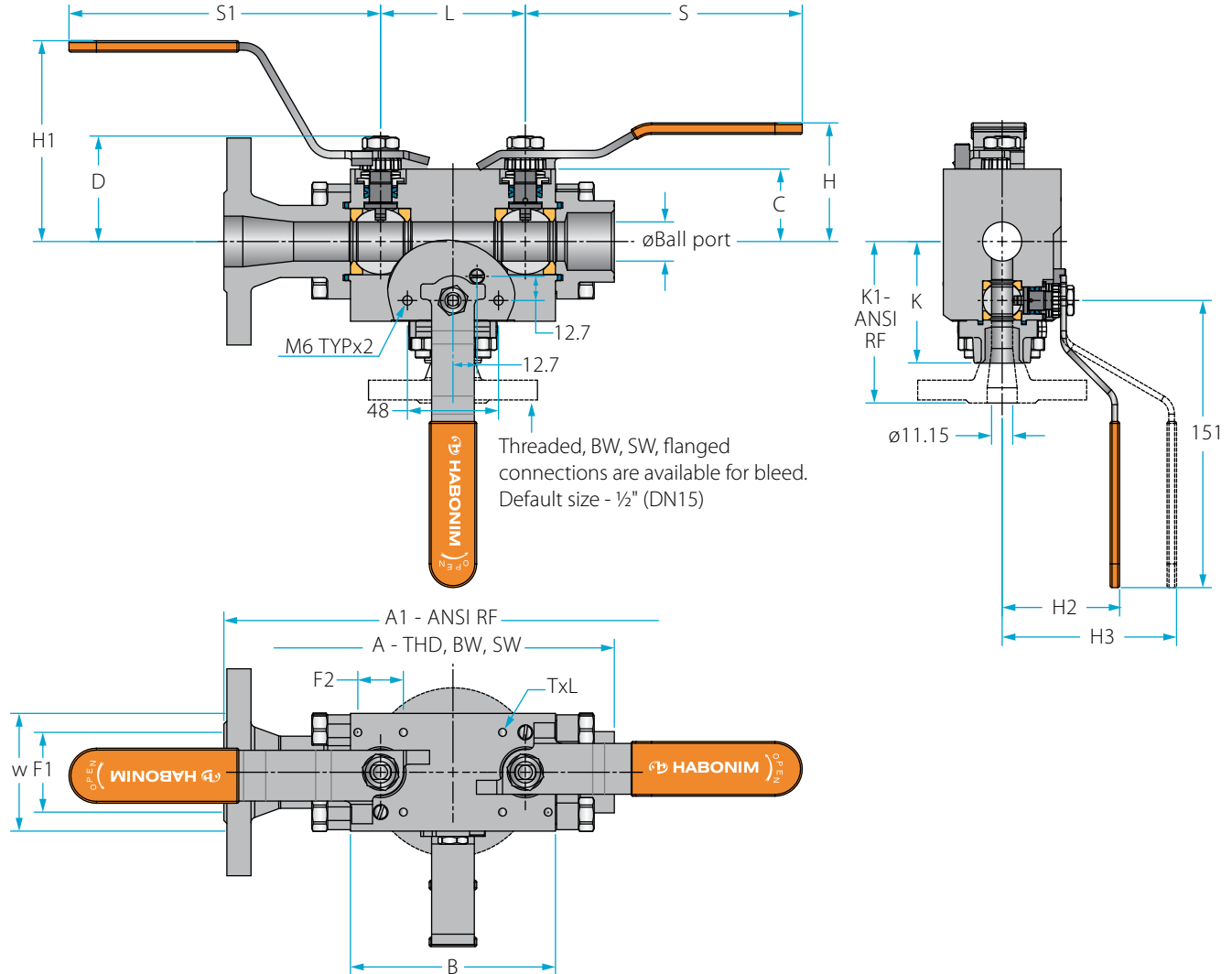
DB&B

Ordering code system

Size 1/2" - 2" | DN15-DN50 | Class 900 | 47W DS05 Series

Size 2 1/2" | DN65 | Class 600 | 47W DS05 Series

### Valve dimensions



Std. port	Unit	Ball Port <sup>(1)</sup>	A1-RF <sup>(2)</sup>		A	B	C	D	H	H1	H2	H3	K	K1 <sup>(2)</sup>		L	S	S1	W	N	P	F	F1	F2	TxL	Kv	Cv	
			150	300										150	300													
DN15	mm	11.15	162.20	194.20	121.00	75.00	23.50	37.80	91.00	47.00	62.00	92.00	52.00	71.00	87.00	54.40	114.50	152.50	54.00	3/8 UNF	7.20	-	-	34.00	-	M5X10	7	
1/2"	inch	0.44	6.39	7.65	4.76	2.95	0.93	1.49	3.58	1.85	2.44	3.62	2.05	2.80	3.43	2.14	4.51	6.00	2.13		0.28	-	-	1.34	-		8	
DN20	mm	14.30	182.80	217.80	152.00	90.00	27.00	40.30	93.00	49.00	62.00	92.00	54.00	75.00	91.00	65.50	114.50	152.50	54.00	3/8 UNF	7.20	-	-	34.00	15.00	M5X10	10	
3/4"	inch	0.56	7.20	8.57	5.98	3.54	1.06	1.59	3.66	1.93	2.44	3.62	2.13	2.95	3.58	2.58	4.51	6.00	2.13		0.28	-	-	1.34	0.59		12	
DN25	mm	20.65	203.10	241.30	174.90	107.90	38.00	55.60	106.00	62.00	62.00	92.00	64.00	89.00	105.00	76.00	146.00	163.00	60.00	7/8 UNF	7.20	-	-	42.00	24.00	M5X10	27	
1"	inch	0.81	8.00	9.50	6.89	4.25	1.50	2.19	4.17	2.44	2.44	3.62	2.52	3.50	4.13	2.99	5.75	6.42	2.36		0.28	-	-	1.65	0.94		32	
DN32	mm	25.50	276.70	276.70	206.90	139.90	42.65	60.20	109.50	90.50	88.00	118.00	65.00	87.00	103.00	98.70	146.00	163.00	91.00	7/8 UNF	7.20 (F04)	42.00	-	-	-	M5X10	37	
1 1/4"	inch	1.00	10.89	10.89	8.15	5.51	1.68	2.37	4.31	3.56	3.46	4.65	2.56	3.43	4.06	3.89	5.75	6.42	3.58		0.28	-	1.65	-	-		43	
DN40	mm	31.80	246.40	271.20	201.20	129.60	43.55	73.00	121.50	99.60	88.00	118.00	66.00	88.00	104.00	81.24	180.00	259.00	99.00	9/16 UNF	8.00 (F05)	50.00	-	-	-	M6X12	70	
1 1/2"	inch	1.25	9.70	10.68	7.92	5.10	1.71	2.87	4.78	3.92	3.46	4.65	2.60	3.46	4.09	3.20	7.09	10.20	3.90		0.32	-	1.97	-	-		82	
DN50	mm	38.15	266.60	304.60	230.40	145.00	48.25	77.80	125.00	103.00	88.00	118.00	69.00	91.00	107.00	88.70	180.00	259.00	92.00	9/16 UNF	8.50 (F05)	50.00	-	-	-	M6X12	103	
2"	inch	1.50	10.50	11.99	9.07	5.71	1.90	3.06	4.92	4.06	3.46	4.65	2.72	3.58	4.21	3.49	7.09	10.20	3.62		0.33	-	1.97	-	-		120	
DN65	mm	51.05	383.60	383.60	300.80	215.00	70.00	88.10	138.00	116.00	88.00	118.00	88.00	114.00	130.00	142.40	180.00	259.00	70.00	9/16 UNF	13.50 (F07)	70.00	-	-	-	M8X12	219	
2 1/2"	inch	2.01	15.10	15.10	11.84	8.46	2.76	3.47	5.43	4.57	3.46	4.65	3.46	4.49	5.12	5.61	7.09	10.20	2.76		0.53	-	2.76	-	-		256	

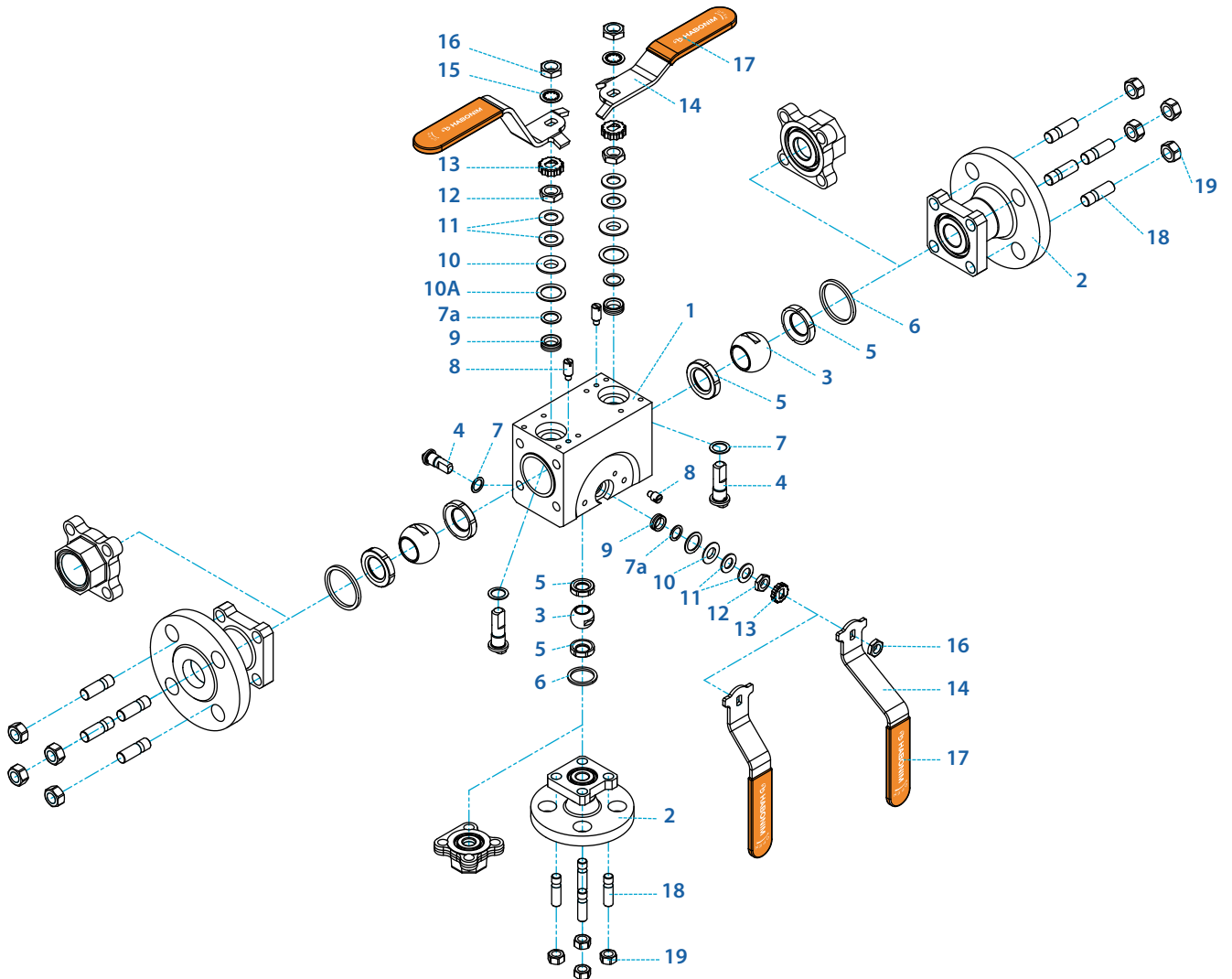
<sup>(1)</sup> For full port valve use one size up for all dimensions except of A1 and K1 (ask Habonim team to provide).

<sup>(2)</sup> #600 and #900 flanges are available (for 2 1/2" only #600) as well as DIN EN 1092 flanges.

The product weight is not specified in this section due to the variety of end configurations.

Size 1/2" - 2" | DN15-DN50 | Class 900 | 47W DS05 Series  
 Size 2 1/2" | DN65 | Class 600 | 47W DS05 Series

## Components & materials



Item	Description	Material specifications	Qty.
1	Body	S.St A479 316/316L, C.St A350 LF2	1
2	Ends	A351 CF3M, A351 CF8M, A216 WCB, A105, S.St A479 316/316L, C.St A350 LF2	3
3	Ball	A351 CF8M, S.St A479 316/316L	3
4	Stem	A276 316, A564 Gr.630 H1150D 17-4PH	3
5*	Seat	PTFE, RPTFE, CF PTFE, PEEK, CF PEEK, TFM, UHMWPE, VESPEL, PVDF, DELRIN, PCTFE (KEL-F)	6
6*	Body seal	PTFE, RPTFE, TFM, UHMWPE, Graphite	3
7*	Stem thrust seal	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	3
7a**	Anti-abrasion ring	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	3
8	Stop pin	A582 303	3
9*	Stem seal	CF PTFE, TFM, Graphite	3
10	Follower	B783 316L	3
10A	Slide bearing	TF316	3

Item	Description	Material specifications	Qty.
11	Disc spring	A693 631 17-7PH	6
12	Stem nut	DIN 3506 A4-80, A194 Gr 8M	3
13	Locking clip	A164 8, 8A	3
14	Handle	C.St. A29 G10200 Zinc plated, A240 430	3
15	Serrated washer	A194 6	2
16	Handle nut	A194 Gr 8M, DIN 3506 A4-80	3
17	Sleeve	PVC	3
18	Body bolt	EN 3506-1 A2-70 / A4-80, A193 Gr B7 Zinc plated, A193 Gr B8M	12
19	Body nut	EN 3506-2 A4, A194 Gr 2H Zinc plated, A194 Gr 8M	12
20	Anti static spring	A313 302	3
21	Anti static plunger	A479 304	3
23	Tag (not shown)	A167 304	1

# Floating Ball Valves

## Dual-Safe (DB&B) valve

General

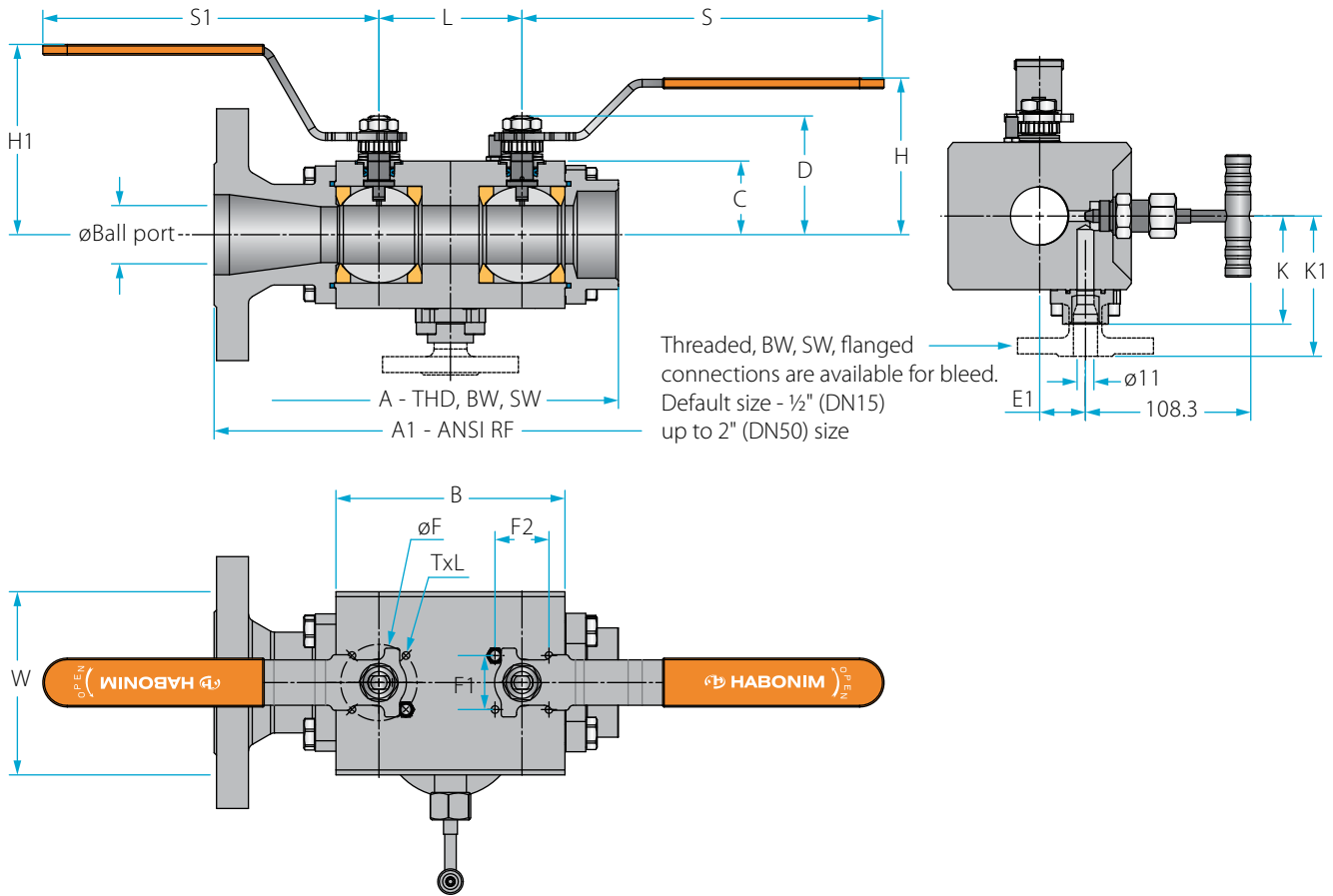
DB&B

Ordering code system

Size 1/2" - 2" | DN15-DN50 | Class 900 | 47W DSN05 Series

Size 2 1/2" | DN65 | Class 600 | 47W DSN05 Series

### Valve dimensions



Std. port	Unit	Ball Port <sup>(1)</sup>	A1 - RF <sup>(2)</sup>		A	B	C	D	E1	H	H1	K	K1 <sup>(2)</sup>		L	S	S1	W	N	P	F	F1	F2	TxL	Kv	Cv	
			150	300									150	300													
DN15	mm	11.15	162.20	194.20	120.20	75.00	23.50	37.80	5.00	60.00	90.00	52.00	71.00	87.00	54.40	115.00	153.00	54.00	3/8 UNF	7.20	-	-	34.00	-	M5X10	7	
1/2"	inch	0.44	6.39	7.65	4.73	2.95	0.93	1.49	0.20	2.36	3.54	2.05	2.80	3.43	2.14	4.53	6.02	2.13	3/8 UNF	0.28	-	-	1.34	-	M5X10	8	
DN20	mm	14.30	182.80	217.80	136.00	90.00	27.00	40.30	7.00	61.00	91.00	53.00	74.00	90.00	65.40	115.00	153.00	54.00	3/8 UNF	7.20	-	-	34.00	15.00	M5X10	10	
3/4"	inch	0.56	7.20	8.57	5.35	3.54	1.06	1.59	0.28	2.40	3.58	2.09	2.91	3.54	2.57	4.53	6.02	2.13	3/8 UNF	0.28	-	-	1.34	-	M5X10	12	
DN25	mm	20.65	203.20	241.20	170.00	108.00	38.00	55.60	10.00	81.00	103.00	64.00	85.00	101.00	76.30	146.00	164.00	60.00	7/16 UNF	7.20	-	-	42.00	24.00	M5X10	27	
1"	inch	0.81	8.00	9.50	6.69	4.25	1.50	2.19	0.39	3.19	4.06	2.52	3.35	3.98	3.00	5.75	6.46	2.36	7/16 UNF	0.28	-	-	1.65	-	M5X10	32	
DN32	mm	25.50	236.50	274.50	206.90	139.90	42.65	60.20	20.00	86.00	108.00	65.00	86.00	102.00	98.70	146.00	164.00	91.00	7/16 UNF	7.20 (F04)	42.00	-	-	-	M5X10	37	
1 1/4"	inch	1.00	9.31	10.81	8.15	5.51	1.68	2.37	0.79	3.39	4.25	2.56	3.39	4.02	3.89	5.75	6.46	3.58	7/16 UNF	0.28	1.65	-	-	-	M5X10	43	
DN40	mm	31.80	246.40	271.20	196.60	129.60	43.55	73.00	20.00	98.00	120.00	67.00	88.00	104.00	81.30	263.00	219.00	99.00	3/4 UNF	8.00 (F05)	50.00	-	-	-	M6X12	70	
1 1/2"	inch	1.25	9.70	10.68	7.74	5.10	1.71	2.87	0.79	3.86	4.72	2.64	3.46	4.09	3.20	10.35	8.62	3.90	3/4 UNF	0.32	1.97	-	-	-	M6X12	82	
DN50	mm	38.15	271.60	309.60	220.00	150.00	48.25	77.80	30.00	103.00	125.00	71.00	92.00	108.00	93.70	263.00	219.00	92.00	3/4 UNF	8.50 (F05)	50.00	-	-	-	M6X12	103	
2"	inch	1.50	10.69	12.19	8.66	5.91	1.90	3.06	1.18	4.06	4.92	2.80	3.62	4.25	3.69	10.35	8.62	3.62	3/4 UNF	0.33	1.97	-	-	-	M6X12	120	
DN65	mm	51.05	338.60	338.40	255.40	170.00	70.00	88.10	42.00	113.00	135.00	60.00	82.00	98.00	97.40	263.00	219.00	70.00	3/4 UNF	13.50 (F07)	70.00	-	-	-	M8X12	219	
2 1/2"	inch	2.01	13.33	13.32	10.06	6.69	2.76	3.47	1.65	4.45	5.31	2.36	3.23	3.86	3.83	10.35	8.62	2.76	3/4 UNF	0.53	2.76	-	-	-	M8X12	256	

<sup>(1)</sup> For full port valve use one size up for all dimensions except of A1 and K1 (ask Habonim team to provide).

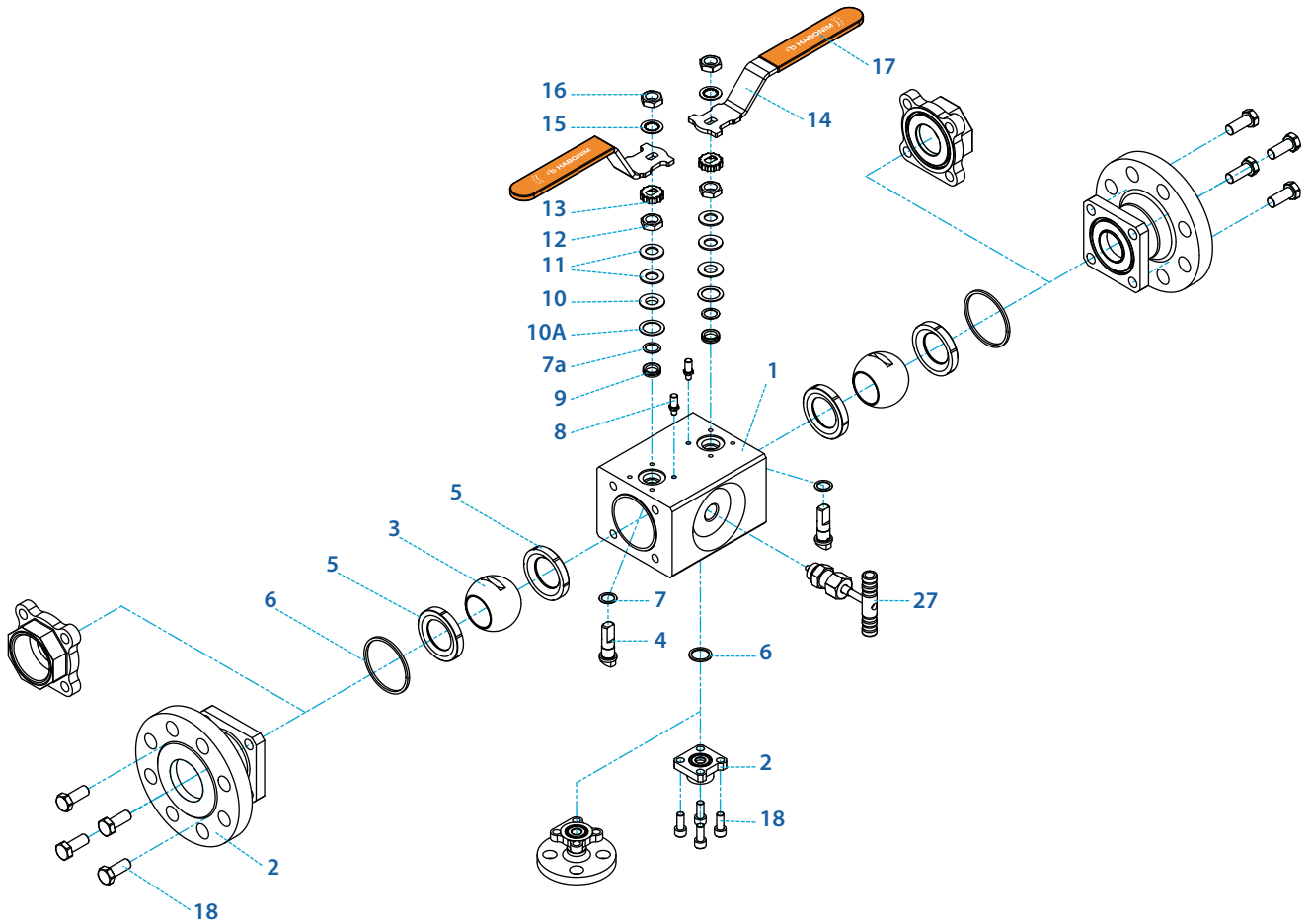
<sup>(2)</sup> #600 and #900 flanges are available (for 2 1/2" only #600) as well as DIN EN1092 flanges.

The product weight is not specified in this section due to the variety of end configurations.



Size 1/2" - 2" | DN15-DN50 | Class 900 | 47W DSN05 Series  
 Size 2 1/2" | DN65 | Class 600 | 47W DSN05 Series

## Components & materials



Item	Description	Material specifications	Qty.
1	Body	S.St A479 316/316L, C.St A350 LF2	1
2	Ends	A351 CF3M, A351 CF8M, A216 WCB, A105, S.St A479 316/316L, C.St A350 LF2	3
3	Ball	A351 CF8M, S.St A479 316/316L	3
4	Stem	A276 316, A564 Gr.630 H1150D 17-4PH	2
5*	Seat	PTFE, RPTFE, CF PTFE, PEEK, CF PEEK, TFM, UHMWPE, VESPEL, PVDF, DELRIN, PCTFE (KEL-F)	6
6*	Body seal	PTFE, RPTFE, TFM, UHMWPE, Graphite	3
7*	Stem thrust seal	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	2
7a**	Anti-abrasion ring	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	2
8	Stop pin	A582 303	2
9*	Stem seal	CF PTFE, TFM, Graphite	2
10	Follower	B783 316L	2
10A	Slide bearing	TF316	2

Item	Description	Material specifications	Qty.
11	Disc spring	A693 631 17-7PH	4
12	Stem nut	DIN 3506 A4-80, A194 Gr 8M	2
13	Locking clip	A164 8, 8A	2
14	Handle	C.St. A29 G10200 Zinc plated, A240 430	2
15	Serrated washer	A194 6	2
16	Handle nut	A194 Gr 8M, DIN 3506 A4-80	2
17	Sleeve	PVC	2
18	Body bolt	EN 3506-1 A2-70 / A4-80, A193 Gr B7 Zinc plated, A193 Gr B8M	12
20	Anti static spring	A313 302	2
21	Anti static plunger	A479 304	2
23	Tag (not shown)	A167 304	1
27	Needle valve 1/2" NPT	S.St 316	1

# Floating Ball Valves

## Dual-Safe (DB&B) valve

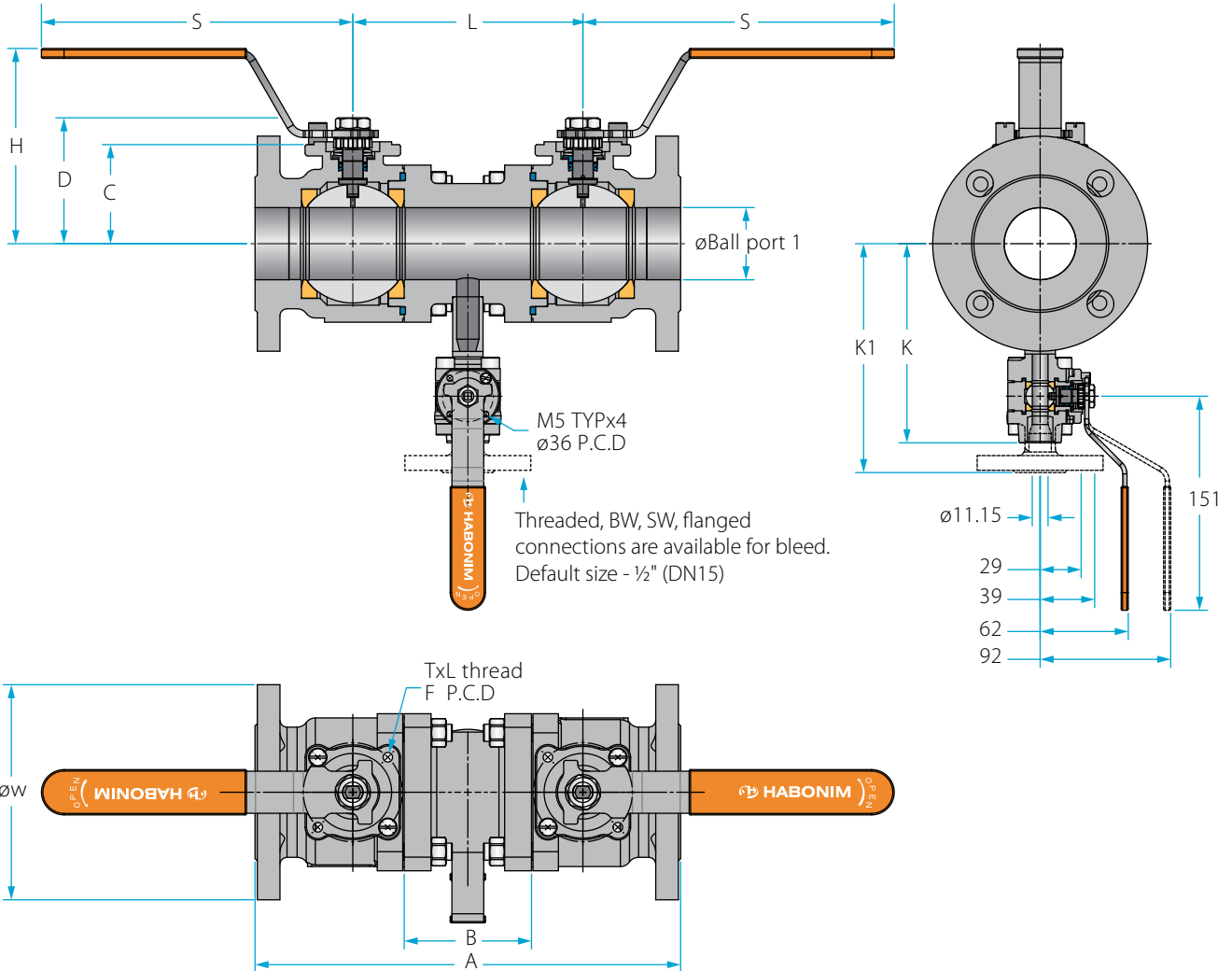
General

DB&B

Ordering code system

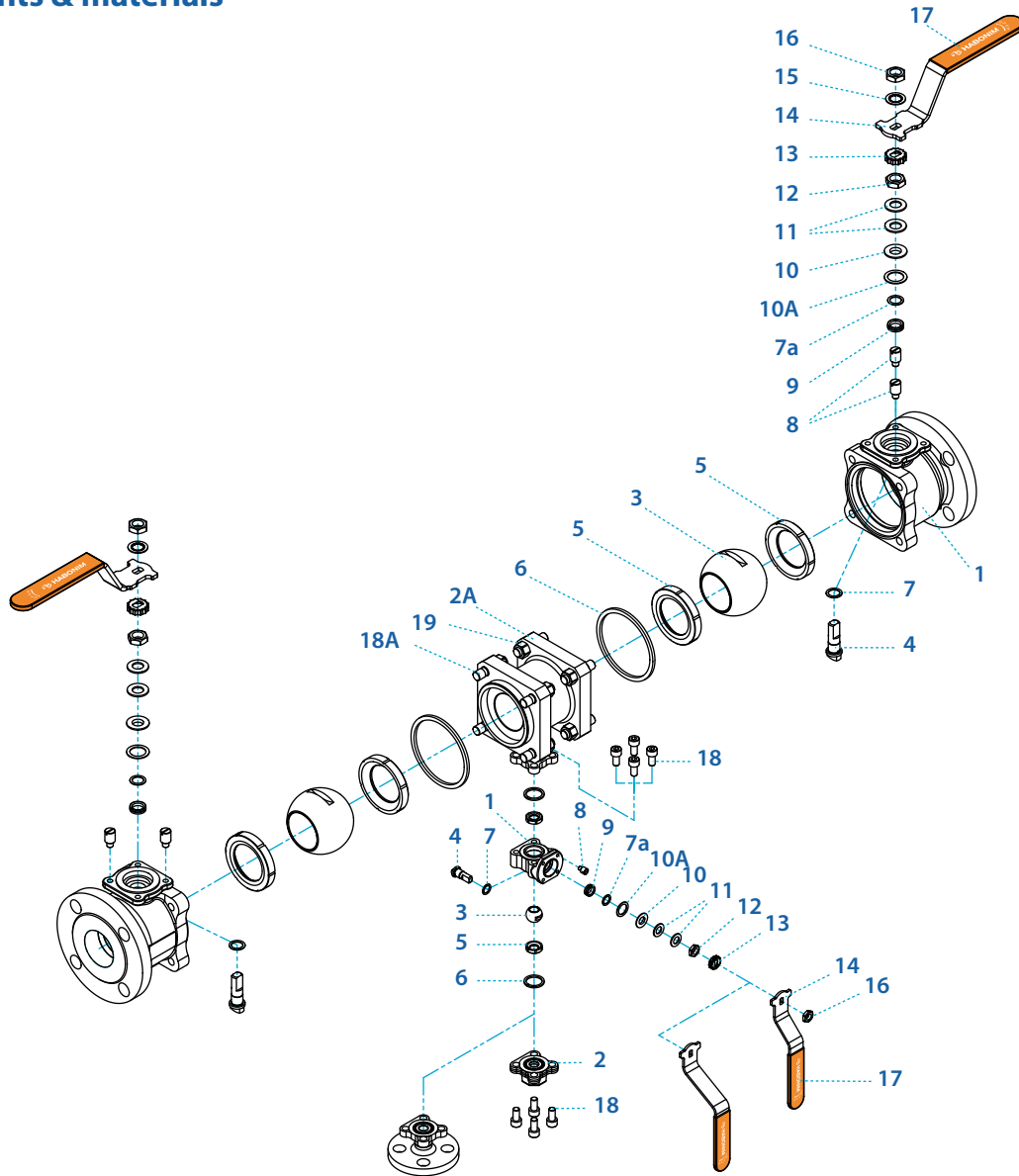
Size 1½"- 2" | DN40-DN50 | Class 150 / 300 | 73W/74W DS05 Series

### Valve dimensions



Std. port	Unit	Ball Port	A		B	C	D	H	K	K1		L	S	W	N	P	F	TxL	Weight		Kv
			150	300						150	300								kg	lb	
DN40	mm	38.10	295.00	310.00	90.00	48.30	77.80	124.00	130.00	151.00	167.00	159.00	220.00	127.00	¾"-18 UNF-2A	19.60 (F05)	50.00	M8X12	13	16	214
1½"	inch	1.50	11.61	12.52	3.54	1.90	3.06	4.88	5.12	5.94	6.57	6.26	8.66	5.00	UNF-2A	0.77	1.97		28.6	35.3	250
DN50	mm	50.80	300.00	318.00	90.00	70.00	88.00	134.00	140.00	161.00	177.00	163.00	220.00	152.00	¾"-18 UNF-2A	19.60 (F07)	70.00	M8X12	20	22	410
2"	inch	2.00	11.81	12.20	3.54	2.76	3.46	5.28	5.51	6.34	6.97	6.42	8.66	5.98	UNF-2A	0.77	2.76		44	48.5	480

Components & materials



Item	Description	Material specifications	Qty.
1	Body	A351 CF8M, A216 WCB	3
2	Ends	A351 CF8M, A216 WCB, S.St A479 316/316L, C.St A350 LF2, C.St A105	1
2A	Connection spool	S.St A479 316/316L, C.St A350 LF2	1
3	Ball	A351 CF8M	3
4	Stem	S.St A479 316/316L, A564 Gr.630 H1150D 17-4PH	3
5*	Seat	PTFE, RPTFE, CF PTFE, PEEK, CF PEEK, TFM, UHMWPE, VESPEL, PVDF, DELRIN, PCTFE (KEL-F)	6
6*	Body seal	PTFE, RPTFE, TFM, UHMWPE, Graphite	4
7*	Stem thrust seal	PEEK, CF PEEK, PCTFE (KEL-F), TFM <sup>(2)</sup> , CF PTFE <sup>(2)</sup>	3
7a*	Anti-abrasion ring	PEEK, CF PEEK, PCTFE (KEL-F), TFM <sup>(2)</sup> , CF PTFE <sup>(2)</sup>	3
8	Stop pin	A582 303	5
9*	Stem seal	CF PTFE, TFM, Graphite	3
10	Follower	B783 316L	3

Item	Description	Material specifications	Qty.
10A*	Slide bearing	TF316	3
11	Disc spring	A693 631 17-7PH	6
12	Stem nut	DIN 3506 A4-80, A194 Gr 8M	3
13	Tab lock washer	A240 304	3
14	Handle	C.St. A29 G10200 Zinc plated, A240 430	3
15	Serrateg washer	A194 6	2
16	Handle nut	A194 Gr 8M, DIN 3506 A4-80	3
17	Sleeve	PVC	3
18	Body bolts	EN 3506-1 A2-70 / A4-80, A193 Gr B7 Zinc plated, A193 Gr B8M	8
18A	Body studs	EN 3506-1 A2-70 / A4-80, A193 Gr B7 Zinc plated, A193 Gr B8M	8
19	Body nuts	EN 3506-2 A4-80, A193 Gr B8M	8
20	Anti static spring	A313 302	3
21	Anti static plunger	A479 304	3
23	Tag (not shown)	A167 304	1

# Floating Ball Valves

## Dual-Safe (DB&B) valve

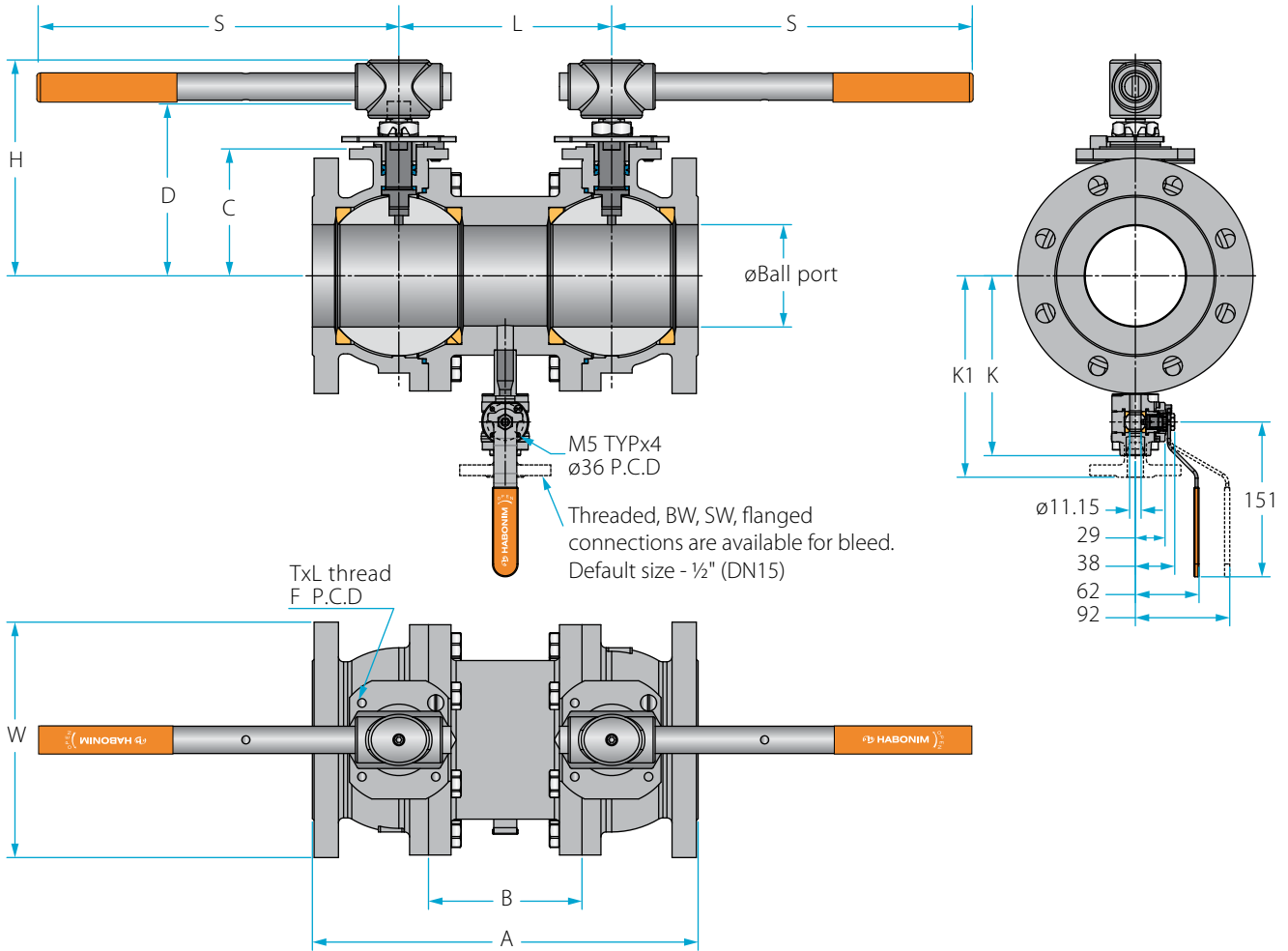
General

DB&B

Ordering code system

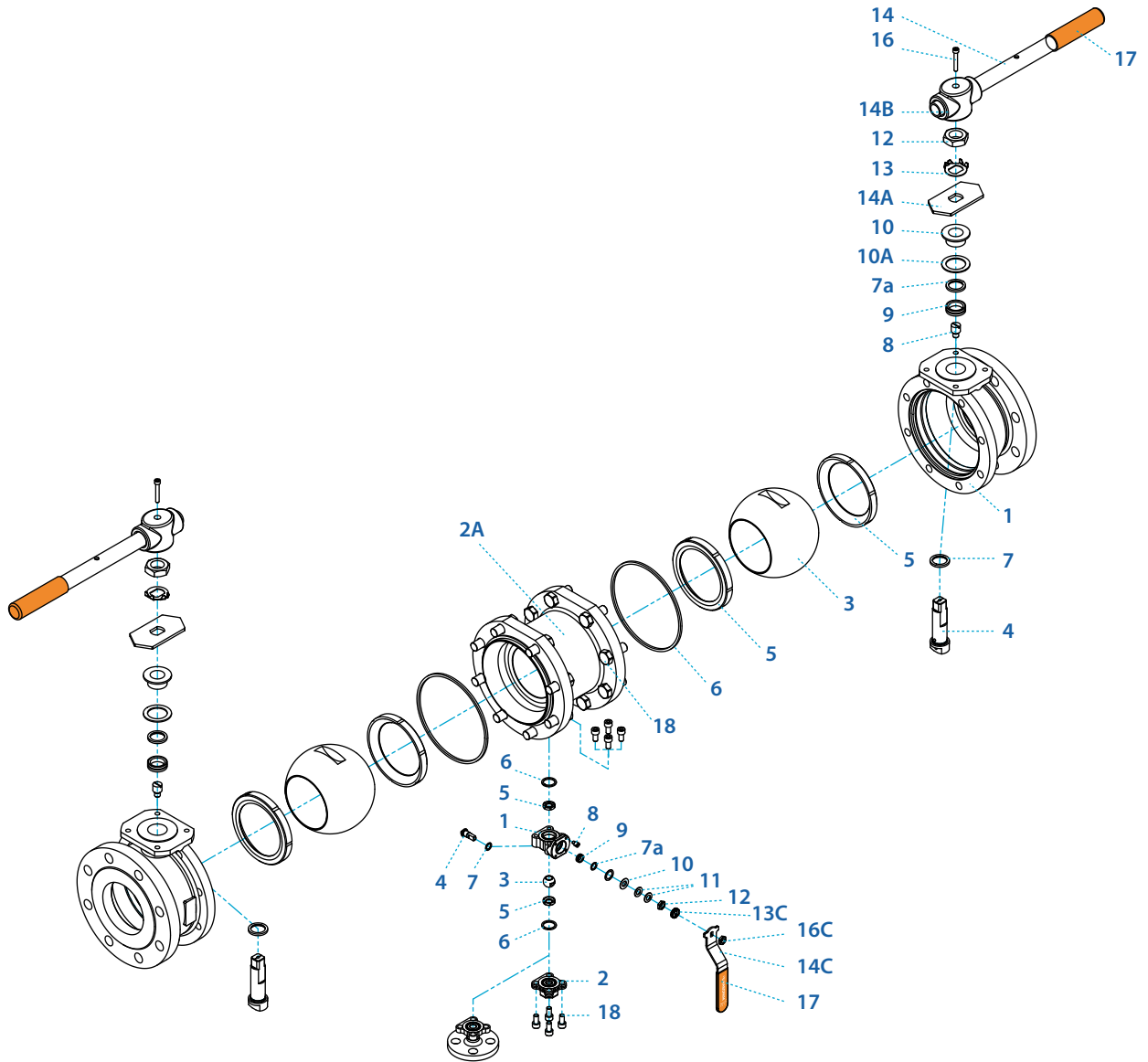
Size 3"- 8" | DN80-DN200 | Class 150 / 300 | 73W/74W DS05 Series

### Valve dimensions



Std. port	Unit	Ball Port 1	A		B	C	D	H	K	K1		L	S	W	N	P	F	TxL	Weight		Kv	
			150	300						150	300								150	300		Cv
DN80	mm	80.00	339.00	381.00	130.00	108.00	154.50	194.90	161.20	182.20	198.20	184.00	350.00	190.50	1"-14	16.70	(F10)	102.00	M10X20	44	50	1111
3"	inch	3.15	13.35	15.00	5.12	4.25	6.08	7.67	6.35	7.17	7.80	7.24	13.78	7.50	UNF-2A"	0.66	4.02	M10X20	97	110.2	1300	
DN100	mm	100.00	377.00	417.00	150.00	124.00	170.50	210.90	175.70	196.70	212.70	208.00	350.00	230.00	1"-14	16.70	(F10)	102.00	M10X20	71	82	2051
4"	inch	3.94	14.84	16.42	5.91	4.88	6.71	8.30	6.92	7.74	8.37	8.19	13.78	9.06	UNF-2A"	0.66	4.02	M10X20	156.5	180.8	2400	
DN150	mm	150.00	651.00	673.00	250.00	179.00	248.40	302.20	218.20	239.20	255.20	324.00	846.50	279.40	1½"-12	26.20	F(12)	125.00	M12X20	201	220	4615
6"	inch	5.91	25.63	26.50	9.84	7.05	9.78	11.90	8.59	9.42	10.05	12.76	33.33	11.00	UNF-1A"	1.03	4.92	M12X20	443.2	485	5400	
DN200	mm	200.00	929.00	925.00	300.00	241.00	353.60	-	258.20	279.20	295.20	-	-	343.00	2"	56.00	(F14)	140.00	M16X30	433	455	7949
8"	inch	7.87	36.57	36.42	11.81	9.49	13.92	-	10.17	10.99	11.62	-	-	13.50	UN-2A"	2.20	5.51	M16X30	954.6	1003.1	9300	

Components & materials



Item	Description	Material specifications	Qty.
1	Body	A351 CF8M, A216 WCB	3
2	Ends	A351 CF8M, A216 WCB, S.St A479 316/316L, C.St A350 LF2, C.St A105	1
2A	Connection spool	S.St A479 316/316L, C.St A350 LF2	1
3	Ball	A351 CF8M	3
4	Stem	S.St A479 316/316L, A564 Gr.630 H1150D 17-4PH	3
5*	Seat	PTFE, RPTFE, CF PTFE, PEEK, CF PEEK, TFM, UHMWPE, VESPEL, PVDF, DELRIN, PCTFE (KEL-F)	6
6*	Body seal	PTFE, RPTFE, TFM, UHMWPE, Graphite	4
7*	Stem thrust seal	PEEK, CF PEEK, PCTFE (KEL-F), TFM <sup>(2)</sup> , CF PTFE <sup>(2)</sup>	3
7a*	Anti-abrasion ring	PEEK, CF PEEK, PCTFE (KEL-F), TFM <sup>(2)</sup> , CF PTFE <sup>(2)</sup>	3
8	Stop pin	A582 303	3
9*	Stem seal	CF PTFE, TFM, Graphite	3
10	Follower	B783 316L	3

Item	Description	Material specifications	Qty.
10A*	Slide bearing	TF316	3
11	Disc spring	A693 631 17-7PH	2
12	Stem nut	C.st B18 ZP	3
13	Tab lock washer	A240 304	2
13C	Locking clip	A167 304	1
14	Handle	C.St. Zinc plated, A240 316L	2
14C	Handle	C.St. A29 G10200 Zinc plated, A240 430	1
14A	Stop plate	C.St. 1.0402 Zinc plated, A240 430	2
14B	Wrench head	Ductile Iron A536 Gr. 65-45-12, A216 WCB, A351 CF8M	2
16	Wrench bolt	EN3506-1 A-70, A193 Gr B8/B8M	2
16C	Handle nut	A194 Gr 8M, DIN 3506 A4-80	1
17	Sleeve	PVC	3
18	Body bolt	EN 3506-1 A2-70 / A4-80, A193 Gr B7 Zinc plated, A193 Gr B8M	24-32
20	Anti static spring	A313 302	3
21	Anti static plunger	A479 304	3
23	Tag (not shown)	A167 304	1

# Floating Ball Valves

## Dual-Safe (DB&B) valve

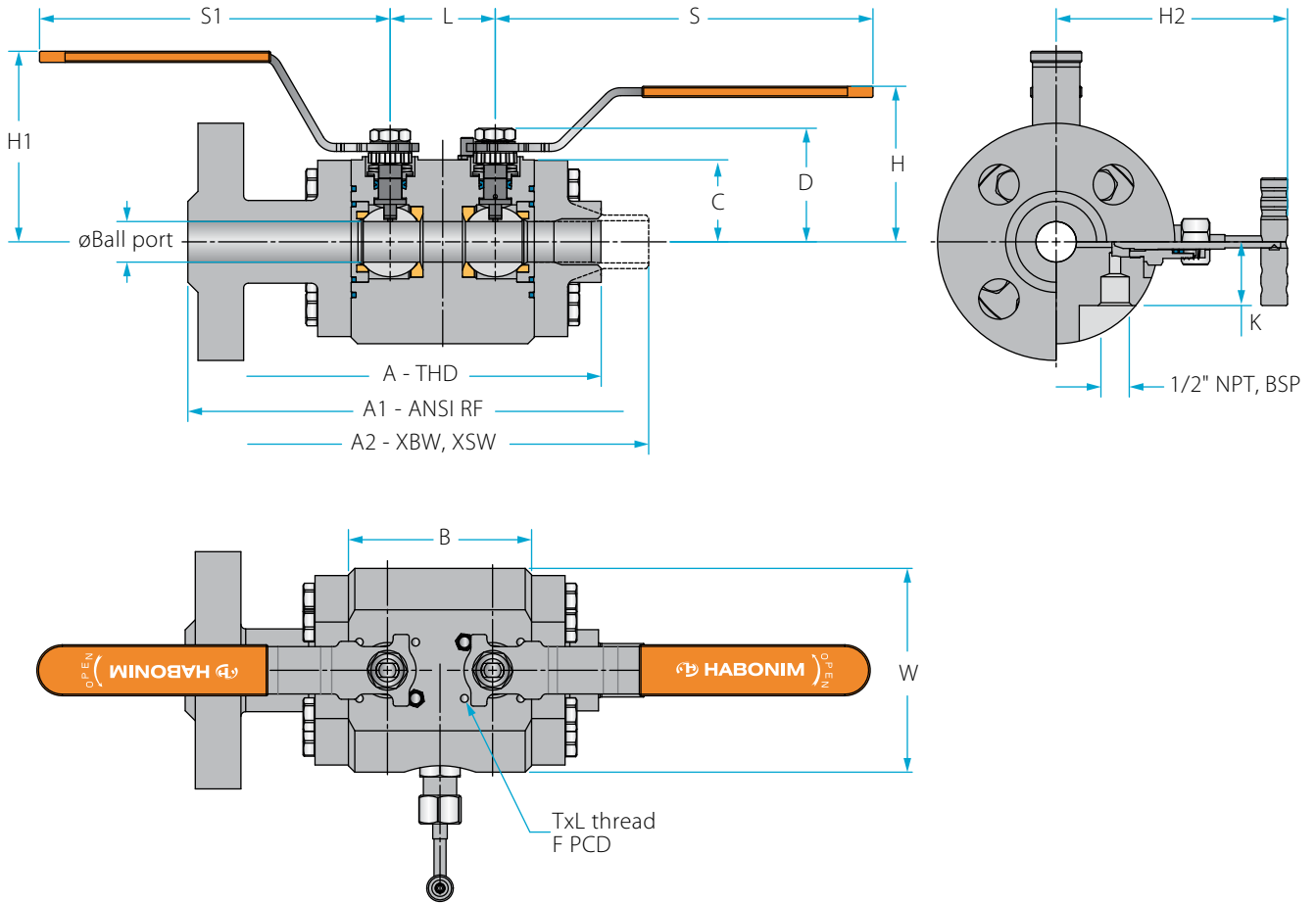
General

DB&B

Ordering code system

Size 1/2"- 1 1/4" | DN15-DN32 | Class 1500 / 2500 | 28W DSN05NPT Series

### Valve dimensions



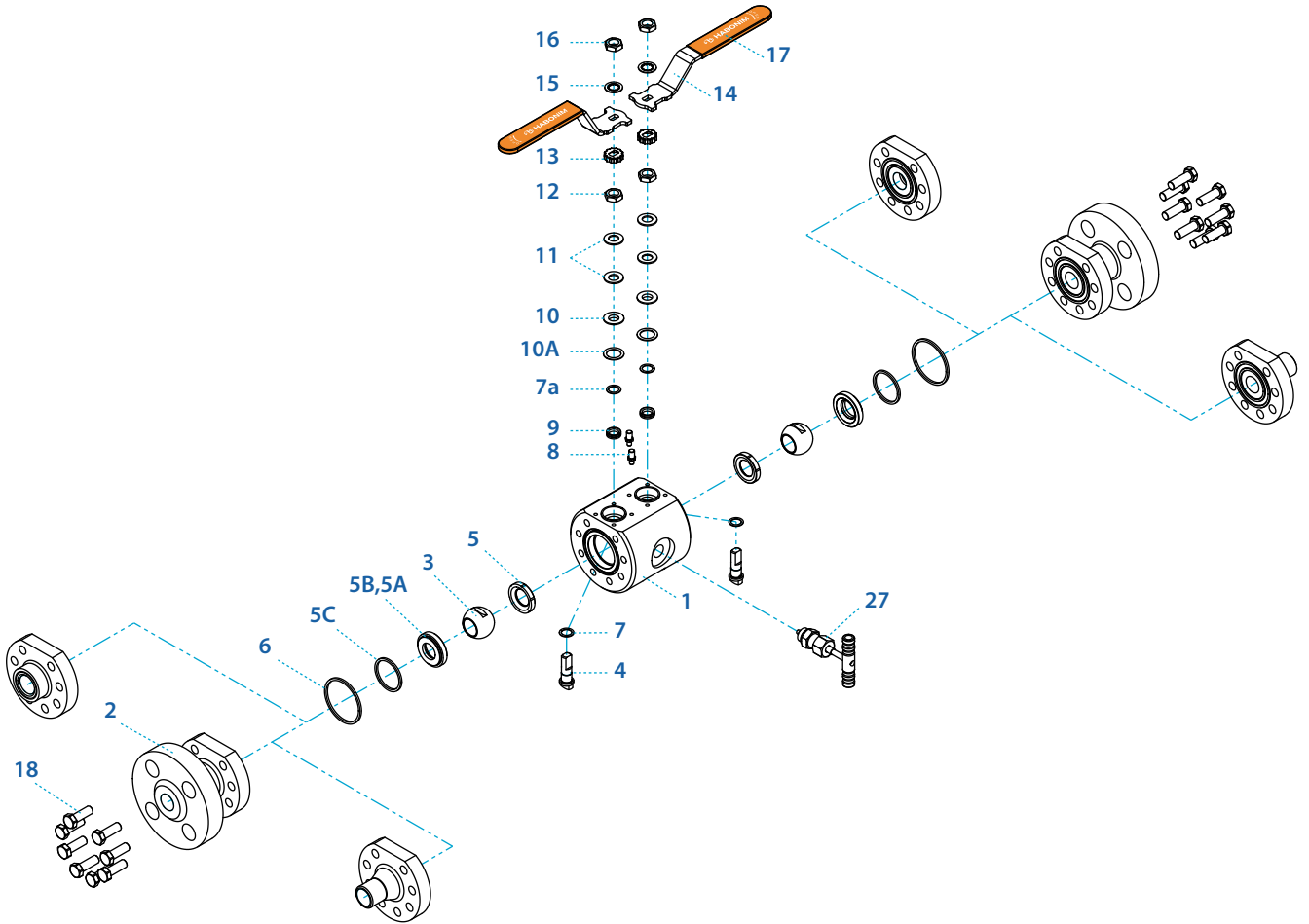
Std. port	Unit	Ball Port 1	A			A2	B	C	D	H	H1	H2	K	L	S	S1	W	M	N	P	F	TxL	Kv
			1500	2500	Cv																		
DN15	mm	11.10	144.00	267.00	315.00	210.00	86.00	29.00	37.80	62.00	92.00	117.00	31.00	51.00	152.00	152.00	79.00	5.50	3/8" UNF	6.70 (F03)	36.00	M5X8	6.9
1/2"	inch	0.44	5.67	10.51	12.40	8.27	3.39	1.14	1.49	2.44	3.62	4.61	1.22	2.01	5.98	5.98	3.11	0.22		0.26	1.42		8.0
DN20	mm	13.00	146.00	275.00	319.00	214.00	86.00	31.00	51.00	82.00	101.00	117.00	31.00	46.00	187.00	170.00	79.00	7.50	7/16" UNF	5.50 (F04)	36.00	M5X8	9.4
3/4"	inch	0.51	5.75	10.83	12.56	8.43	3.39	1.22	2.01	3.23	3.98	4.61	1.22	1.81	7.36	6.69	3.11	0.30		0.22	1.42		10.9
DN25	mm	20.60	191.00	320.00	374.00	255.00	115.00	43.75	66.00	93.00	115.00	127.00	40.40	66.00	237.00	220.00	108.00	8.70	1/2" UNF	14.30 (F05)	50.00	M6X8	27.6
1"	inch	0.81	7.52	12.60	14.72	10.04	4.53	1.72	2.60	3.66	4.53	5.00	1.59	2.60	9.33	8.66	4.25	0.34		0.56	1.97		32.0
DN32	mm	25.40	201.00	350.00	429.00	261.00	115.00	51.50	69.50	95.50	119.00	137.00	40.00	66.00	237.00	220.00	128.00	8.70	5/8" UNF	14.30 (F05)	50.00	M6X8	49.3
1 1/4"	inch	1.00	7.91	13.78	16.89	10.28	4.53	2.03	2.74	3.76	4.69	5.39	1.57	2.60	9.33	8.66	5.04	0.34		0.56	1.97		57.0

(1) For full port valve use one size up for all dimensions except of A1 (ask Habonim team to provide)

(2) ANSI #1500 RTJ and ANSI #2500 RTJ are available as well as PN250, PN350, PN400.

The product weight is not specified in this section due to the variety of end configurations.

Components & materials



Item	Description	Material specifications	Qty.
1	Body	S.St A479 316/316L, C.St A350 LF2	1
2	Ends	S.St A479 316/316L, C.St A350 LF2	2
3	Ball	A351 CF8M, S.St A479 316/316L	2
4	Stem	A564 Gr.630 H1150D 17-4PH	2
5*	Seat	PEEK, CF PEEK, PVDF, DELRIN, PCTFE (KEL-F)	2
5A	Seat insert	PEEK, CF PEEK, PVDF, DELRIN, PCTFE (KEL-F)	2
5B	Seat housing	S.St A479 316/316L, C.St A350 LF2	2
5C	Seat seal	PTFE, NBR, Graphite, Viton	2
6*	Body seal	PTFE, RPTFE, TFM, UHMWPE, Graphite	2
7*	Stem thrust seal	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	2
7a**	Anti-abrasion ring	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	2
8	Stop pin	A582 303	2
9*	Stem seal	CF PTFE, TFM, Graphite	2

Item	Description	Material specifications	Qty.
10	Follower	B783 316L	2
10A	Slide bearing	TF316	2
11	Disc spring	A693 631 17-7PH	4
12	Stem nut	DIN 3506 A4-80, A194 Gr 8M	2
13	Locking clip	A164 8, 8A	2
14	Handle	C.St. A29 G10200 Zinc plated, A240 430	2
15	Serrated washer	A194 6	2
16	Handle nut	A194 Gr 8M, DIN 3506 A4-80	2
17	Sleeve	PVC	2
18	Body bolt	EN 3506-1 A2-70 / A4-80, A193 Gr B7 Zinc plated, A193 Gr B8M	16
20	Anti static spring	A313 302	2
21	Anti static plunger	A479 304	2
23	Tag (not shown)	A167 304	1
27	NEEDLE VALVE	S.St. 316/17-4PH	1

# Floating Ball Valves

## Dual-Safe (DB&B) valve

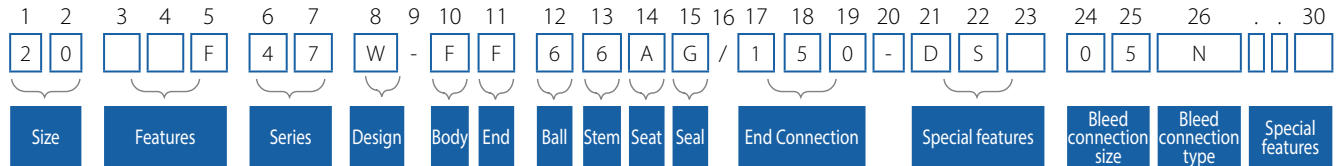
General

DB&B

## Ordering code system

### Ordering code system

The Habonim high pressure ball valve identification code



Size		
Code	inch	mm
02	1/4"	8
03	3/8"	10
05	1/2"	15
07	3/4"	20
10	1"	25
12	1 1/4"	32
15	1 1/2"	40
20	2"	50
25	2 1/2"	65
30	3"	80
40	4"	100
60	6"	150
80	8"	200

Features	
A	Antistatic
F	Firesafe
C	Cryogenic
K	Chlorine service
O	Clean assembly for O <sub>2</sub> service
M	Ammonia service

Series	
47	ANSI #900 std. port <sup>(1)</sup>
73	ANSI #150 Full port
74	ANSI #300 Full port
28	ANSI #2500 std. port

Design	
P	ISO pad basic design
X	HermetiX™ stem seal
W	HermetiX™ graphite free fire safe stem seal
G	HermetiX™ graphite free fire safe stem seal FDA compliant

Body / End	
4	C. Steel A216 WCB / A105
R	C. Steel A352 LC1
9	C. Steel A352 LCB
F	C. Steel A350 LF2
6	S. Steel A351 CF8M, A479 316\316L
7	Monel A494 M-35-1
I	Inconel 625 A494 CW-6MC
A	Alloy-20 A351 CN7M
C	Alloy C276 A494 CW-12MW
W	Alloy C22 A494 CX-2MW
D	Duplex A995 CD3MN 4A
K	Super Duplex A995 CE3MN 5A
S	254SMO A351 CK3MCuN

Ball / Stem	
6	S. Steel A351 CF8M, A479 316\316L
8	S. Steel A479 304\304L
M	17-4PH A564 Gr 630 H1150D
Z	Inconel 718 B637 N07718
7	Monel B164 N04400
A	Alloy-20 B473 N08020
C	Alloy-C276 B574 N10276
W	Alloy-C22 B574 N06022
D	Duplex A479 S31803
K	Super Duplex A479 S32750
S	254SMO A479 S31254

Seat	
A	TFM
C	PTFE
K	CF PEEK
L	Virgin PEEK
P	CF PTFE
R	15% Glass filled RPTFE
S	VESPEL
T	PTFE
U	UHMWPE
Y	Derlin
W	PVDF

Seal	
G	Expanded graphite
I	Impregnated Graphite
R	15% Glass filled RPTFE
T	PTFE
U	Uhmwpe
V	Viton®
B	NBR

End connections welded	
BW5	Buttweld schd. 5
BW10	Buttweld schd. 10
BW	Buttweld schd. 40
BW80	Buttweld schd. 80
XBW	Extended buttweld schd. 40
XBW80	Extended buttweld schd. 80
XBW160 <sup>(2)</sup>	Extended buttweld schd. 80
SW	Socket weld
XSW <sup>(2)</sup>	Extended socket weld
BWO	Buttweld tube OD
ETO	Extended tube OD
SWO	Socket weld tube OD
BWI	Buttweld ISO 1127
BWD	Buttweld DIN 11860

Threaded	
NPT	ANSI B1.20.1 - National Pipe Taper thread
MNPT	Male NPT
BSPT	EN 10226-2 - BSP Taper thread, on thread sealing
MBSPT	Male BSPT
DIN2999	EN 10226-1 - BSP parallel thread, on thread sealing
DIN3852	DIN 3852 - BSP parallel thread with gasket sealing
AS5202	SAE Internal Straight Thread

Clamp	
LL	Compression fitting (Imperial)
LM	Compression fitting (metric)
TC	Tri-Clamp
GR	Graylock

Flanged	
150	ANSI B16.5 #150 RF
300	ANSI B16.5 #300 RF
600	ANSI B16.5 #600 RF
900	ANSI B16.5 #900 RF
1500	ANSI B16.5 #1500 RF
2500	ANSI B16.5 #2500 RF
1500RTJ	ANSI B16.5 #1500 RTJ
2500RTJ	ANSI B16.5 #2500 RTJ
PN16	EN1092 PN16 RF
PN40	EN1092 PN40 RF
PN64	EN1092 PN64 RF
PN100	EN1092 PN100 RF
PN160	EN1092 PN160 RF
PN250	EN1092 PN250 RF
PN350	EN1092 PN350 RF
PN400	EN1092 PN400 RF

Special features <sup>(5)</sup>	
03, 06, 09	In-line stems special orientation

Dual safe features	
Dual safe designation	
DS	Dual Safe with ball valve bleed
DSN	Dual Safe with needle valve bleed

Bleed connection size	
02	1/4" (DN8)
03	3/8" (DN10)
05 <sup>(3)</sup>	1/2" (DN15)
07	3/4" (DN20)
10	1" (DN25)

Bleed connection <sup>(4)</sup>	
-	The same as the line connections
N	ANSI B1.20.1 - NPT
D	EN 10226-1 - BSP parallel thread
B	EN 10226-2 - BSP taper thread
BW	Buttweld schd. 40

In some applications the available options above are limited to specific sizes. Please consult with Habonim for details.

- (1) Class #900 for 47 series up to 2" regular port. For 2 1/2" - class #600.
- (2) Default for 28 series.
- (3) 1/2" bleed connection default for all dual safe valves up to size 2". For sizes 2 1/2" and up contact Habonim for details.
- (4) Other connections available on request.
- (5) Other special features available on request.







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Three piece valves Cat.

