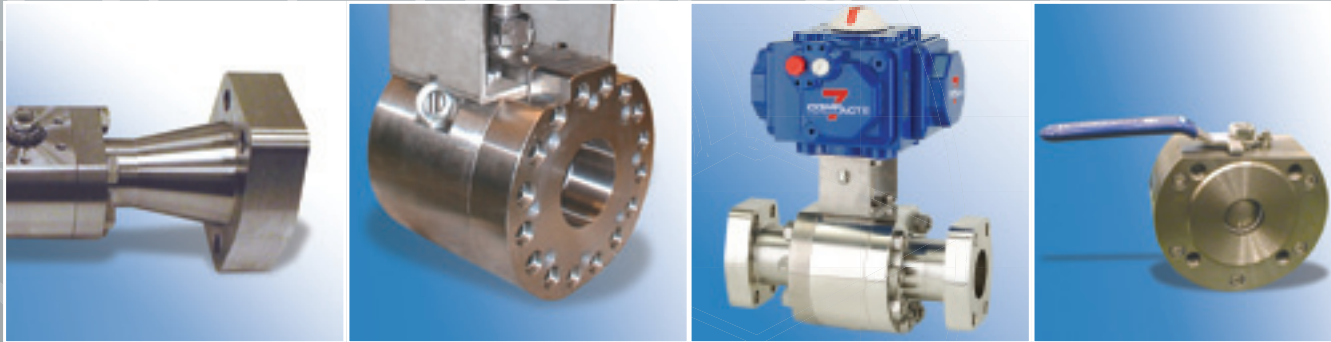


METRIC



HIGH PRESSURE BALL VALVES

H27 SERIES



 **HABONIM**
Industrial Valves & Actuators

DEDICATED TO INNOVATION

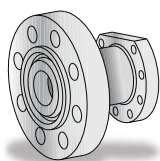
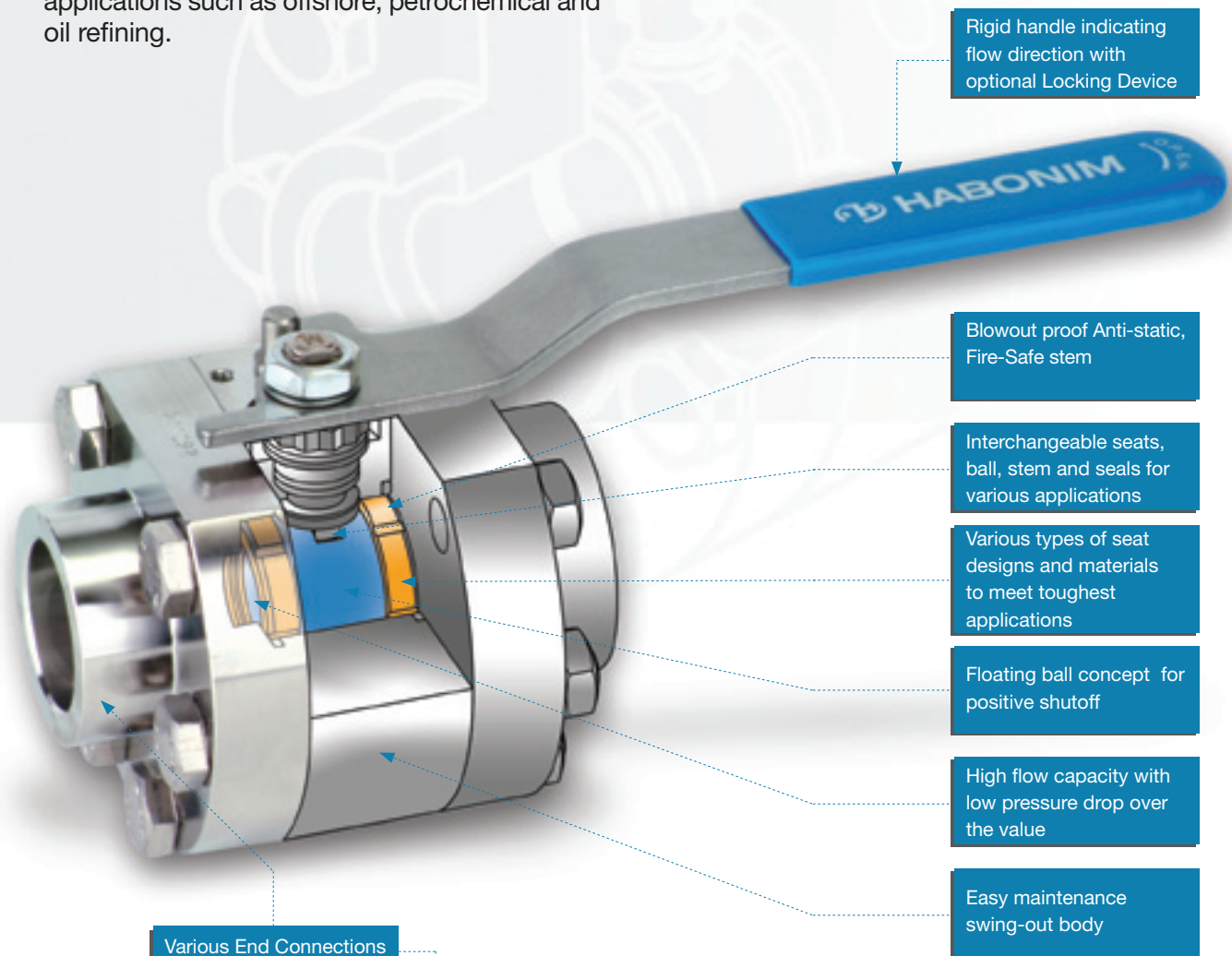
HIGH PRESSURE BALL VALVES

Introduction

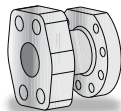
The H27 Series is built for endurance and specifically designed for high pressure applications, with a working pressure range up to 6,000 psi; ANSI Class up to 2500.

The unique ball and seats configuration assures a smooth two-way flow, tight shut off, and instant adaptability to changing pressures and temperature variations. The H27 Series delivers reliable performance in the most demanding applications such as offshore, petrochemical and oil refining.

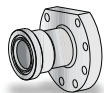
The H27 Series features long-life valve construction for less maintenance, and comes in carbon steel, stainless steel and various exotic materials. A range of end connections can be used such as welded, threaded and any flange type. Other options available include high cycle operation, fire safe and more. The H27 valves are NACE compliant.



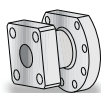
ANSI-RTJ



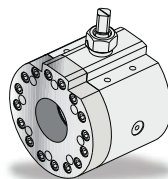
SAE



SAE Connector



ISO 6164



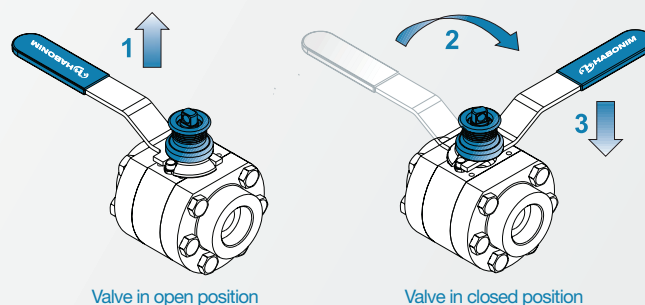
Wafer

Technical Summary

Size Range:	1/2" - 8" (DN15 - DN200)
Class Range:	1/2" - 2" (DN15 - DN50): up to Class 2500 (414 bar, 6000 psi) 2 1/2" - 8" (DN65 - DN200): up to Class 1500 (255 bar, 3700 psi)
End Connections:	Threaded, Socket Weld, Butt weld, Flanged (ANSI, ISO, SAE, DIN)
Design:	ASME/ANSI B16.34
Application:	Offshore Drilling, Oil & Gas Production, Chemical, Petrochemical, Refining, Energy
Service:	Liquids, Gases, Chemicals, Oil, Steam water and other solvents.
Materials:	Stainless Steel, Carbon Steel, duplex, super duplex, nickel alloys and more
Certification:	Fire Safe to API 607, ISO 10497 PED 97/23/EC, Module H Lloyds Type approved to ISO 17292 & API 6D DNV 2.9 No. 5-794.40
Operation:	Hand or Gear Operated, Pneumatic or Electric Actuated.

Locking Device

The Habonim spring loaded Locking Device (LD) is ideal for applications where it is critical to keep the valve position without the risk of accidental operation. The Locking Device fits easily to the valve stem by simply removing the stem nut and threading the lock stem above the handle. The LD can lock the valve in closed or open position. The LD can be fitted to the valve in-line, and is available 1/2" to 2".



Valve Size	Flow Coefficients		Limiting Stem Input Torque*	
			17-4PH Stem Material	
	Cv	Kv	NM	Inch-Lb
1/2"	8	6.9	91	800
3/4"	12	10.3	91	800
1"	32	27.6	165	1,460
1 1/4"	57	49.1	165	1,460
1 1/2"	80	69.0	268	2,370
2"	104	89.7	268	2,370
2 1/2"	240	206.9	497	4400
3"	320	275.9	1920	17,000
4"	580	500.0	1920	17,000
6"	820	706.9	7500	66,300
8"	1540	1327.6	7500	66,300

Cv - Flow in US GPM at 1 psi pressure drop

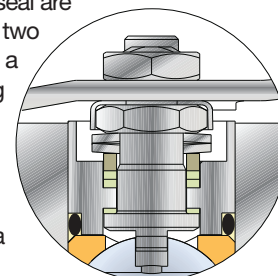
Kv - Flow in m3/hr at 1 bar pressure drop

Valve flow rates are determined in full open position with water at 15° C (60° F).

* Limiting Stem torque figures are based on random laboratory tests. These are not to be confused with valve operating torque.

Standard Stem Assembly

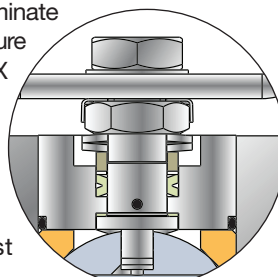
A blowout-proof stem and thrust seal are inserted in the valve cavity. A set of two or three stem seals followed by a stem centering follower are spring loaded and fastened by a nut and a locking clip from the outside. A rigid handle is fastened above it by a second nut and a serrated washer by a serrated washer and a second nut.



Hermetix Stem Packing

Named after its distinctive X-shaped design, the patent-pending HermetiX seal is designed to eliminate stem leakage. Even as fluid pressure or side load increases, the HermetiX seal dynamically adjusts to prevent fugitive emission.

As Standard the HermetiX stem assembly is comprised of X-shaped NRG (carbon filled PTFE) and carbon filled PEEK thrust bearings. For FDA and other clean applications (where carbon particles are prohibited), a TFM HermetiX gland packing and virgin PEEK thrust bearings are available.



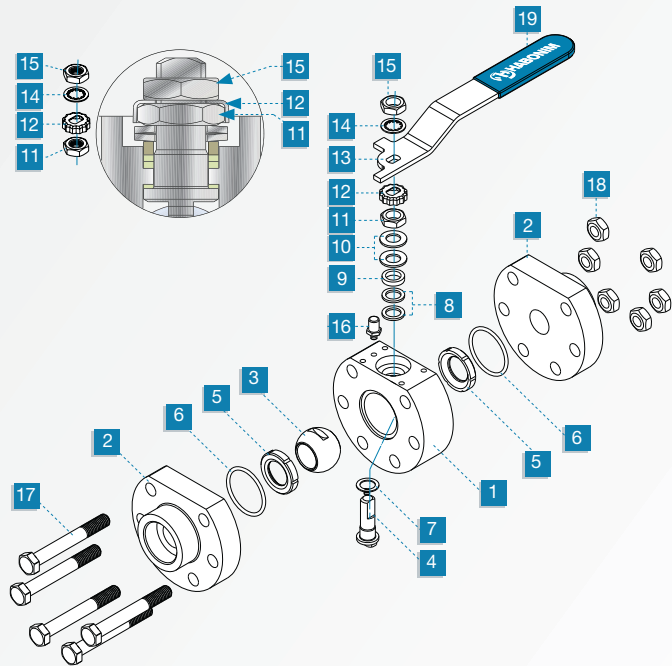
HIGH PRESSURE BALL VALVES

Material Specifications 1/2" - 2" DN15 - DN50

Item	Description	Material Specifications	Qty.
1**	Body	Stainless St. ASTM A479 316, Carbon St. ASTM A350 LF2	1
2	End Connector	Stainless St. ASTM A479 316 / 316L, Carbon St. ASTM A350 LF2	2
3	Ball (1/2" -3/4")	Stainless St. ASTM A564 17-4PH	1
3	Ball (1" -2")	Stainless St. ASTM A 351 CF8M	1
4	Stem	Stainless St. ASTM A564 17-4PH, Inconel 718	1
5*	Seat	Delrin, C.F. PEEK, V PEEK, PVDF, Devlon, Vespel, PCTFE	2
6*	Body Seal	NBR shore 90, Graphite, Viton	2
7	Stem Thrust Seal	Nylatron, PEEK, V PEEK	1
8*	Stem Packing	25% Carbon Filled PTFE, Graphite	2 1
9*	Follower	Stainless St. ASTM B783 316L	1
10	Disc Spring	Stainless St. ASTM A693 17-7PH	2
11	Stem Nut	Stainless St. ASTM A194 316	1
12	Locking Clip	Stainless St. ASTM A164 304	1
13	Handle	Stainless St. ASTM A240 430 Carbon St. ST 37 Zinc Plated	1
14	Serrated Washer	Stainless St. AISI 410	1
15	Handle Nut	Stainless St. ASTM A194 316	1
16	Stop Pin	Stainless St. ASTM A582 303	1
17	Body Bolts	Stainless St. ISO 4014 A4-80 Carbon St. ISO 4014 Gr. 8.8 Zinc Plated	6-8
18	Body Nuts	Stainless St. ISO 4032 A4 Carbon St. ISO 4032Gr. 8.8 Zinc Plated	6-8
19	Handle Sleeve	Vinyl Plastisol	1

* Standard items for repair kits

** Other material are available on request

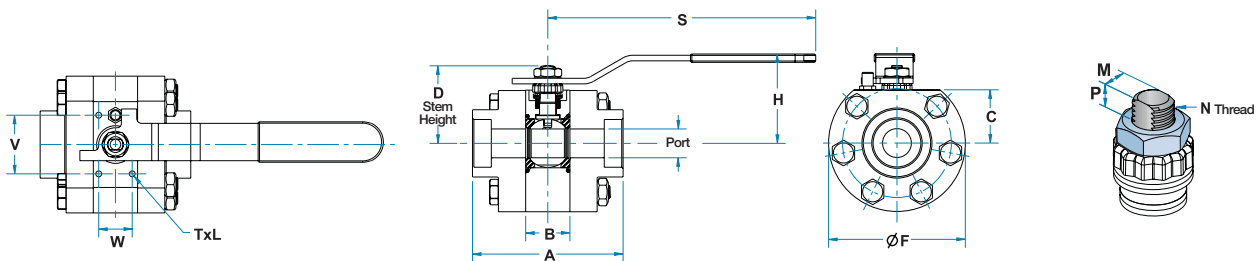


Stem Arrangement for Actuated Valves

Release the handle nut **15** and serrated washer **14**. Remove the handle **13** and refasten the nut **15** on the locking clip **12**. Valves 1/2" to- 3/4" reduced bore (1/2" full bore) do not require the handle nut **15**.

The H27/ AH27X series, 1/2" ~ 2", DN15 ~ DN50, Class 2500 PN414 bar, is designed for full B16.34 rating and shutoff against full B16.34 differential pressure.

Dimensions of Valves 1/2" - 2" DN15 - DN50

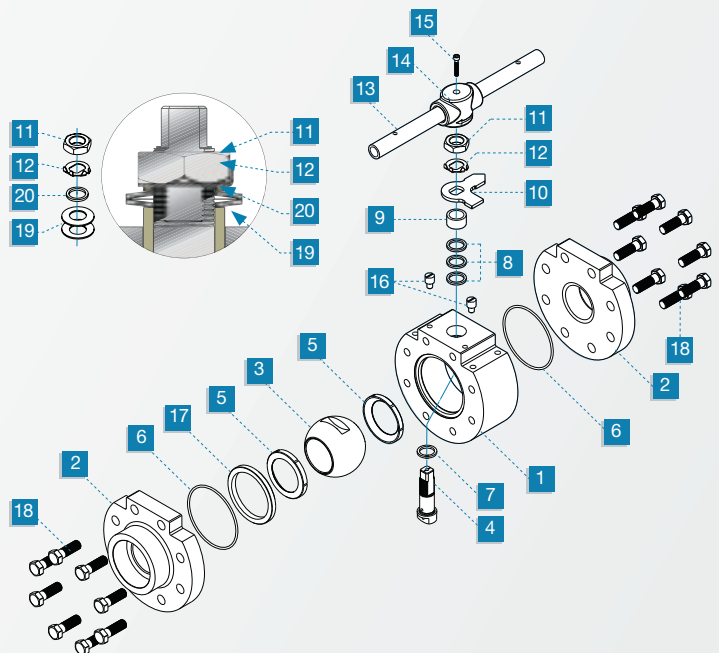


Size	Port	Kv . Cv	A	B	C	D	ØF	H	M	N	P	S	TxL	W	V	Weight Kg
DN15	11.1	6.9	77.8	20.6	27.0	38.0	69.5	46.0	5.5							
1/2"	0.44	8.0	3.06	0.81	1.06	1.5	2.74	1.81	0.22	3/8" UNF	7.0	179.0	M5x8	0.0	34.0	1.6
DN20	14.3	10.3	85.0	24.6	29.4	40.4	79.0	48.0	5.5							
3/4"	0.56	12.0	3.35	0.97	1.16	1.59	3.11	1.89	0.22	3/8" UNF	7.0	179.0	M5x8	0.0	1.34	3.5
DN25	20.6	27.6	107.9	31.8	38.2	55.7	98.0	64.0	7.5							
1"	0.81	32.0	4.25	1.25	1.5	2.19	3.86	2.52	0.3	7/16" UNF	7.0	192.0	M5x8	15.0	34.0	2.4
DN32	25.4	49.1	120.7	41.2	38.2	60.3	109.0	68.7	7.5							
1 1/4"	1.0	57.0	4.75	1.62	1.5	2.37	4.29	2.7	0.3	7/16" UNF	0.28	7.56	M5x8	0.59	1.34	5.3
DN40	31.8	69.0	131.2	48.4	50.0	72.8	128.0	81.1	8.71							
1 1/2"	1.25	80.0	5.17	1.91	1.97	2.87	5.04	3.19	0.34	9/16" UNF	7.0	192.0	M5x8	24.0	42.0	5.4
DN50	38.2	89.7	142.9	56.3	55.0	77.8	145.0	81.1	8.7							
2"	1.5	104.0	5.63	2.22	2.17	3.06	5.71	3.19	0.34	9/16" UNF	10.0	287.0	M6x8	0.94	1.65	9.9
											0.39	11.3	M6x8	1.42	1.57	20.9
											0.39	11.3	M6x8	40.0	58.0	13.1
														1.57	2.28	28.9

Cv - Flow in US GPM at 1 psi pressure drop. | Kv - Flow in m³/hr at 1 psi pressure drop. | Valve flow rates are determined in full open position with water at 15° C (60° F)

Material Specifications 2 1/2" - 8" DN65 - DN200

Item	Description	Material Specifications	Qty.
1**	Body	Stainless St. ASTM A479 316/316L, Carbon St. ASTM A350 LF2	1
2**	End Connector	Stainless St. ASTM A479 316 / 316L, Carbon St. ASTM A350 LF2	2
3	Ball	Stainless St. ASTM A 351 CF8M, Stainless S. ASTM A479 316	1
4	Stem	Stainless St. ASTM A564 17-4PH, Inconel 718	1
5*	Seat	Delrin, C.F. PEEK, V. PEEK, PVDF, Devlon, Vespel, PCTFE	2
6*	Body Seal	NBR shore 90, Graphite, VITON	2
7	Stem Thrust Seal	Naylatron, PEEK, V. PEEK	1
8*	Stem Packing	25% Carbon Filled PTFE, Graphite	3
9*	Follower	Stainless St. ASTM B783 316L	1
10	Stop Plate	Carbon St. ST 37 Zinc Plated	1
11	Stem Nut	Carbon St. Zinc Plated	1
12	Tab Lock Washer	Stainless St. ASTM A164 304	1
13	Wrench Handle	Carbon St. Zinc Plated	1
14	Wrench Head	ASTM A47 Maleable Iron	1
15	Wrench Bolt	Stainless St. ISO 4014 A2-70	1
16	Stop Pin	Stainless St. ASTM A582 303	2
17	Seat Retaining Ring	Stainless St. ASTM A479 316, Carbon St. ASTM A105, Carbon St. ASTM A350 LF2	1
18	Body Bolts	Stainless St. ISO 4014 A4-80, Carbon St. ISO 4014 Gr. 8.8 Zinc Plated	16-28
19	Disc Spring	Stainless St. ASTM A693 17-7PH	2
*20	Stem Locking Ring	Stainless St. ASTM A240 316	1



Stem Arrangement for Actuated Valves

Release the wrench bolt 15 and remove the wrench handle 13, the wrench head 14, the stem nut 11, the tab lock washer 12, and the stop plate 10. Assemble the two disc springs 19, stem location ring 20, tab lock washer 12 and refasten the stem nut 11.

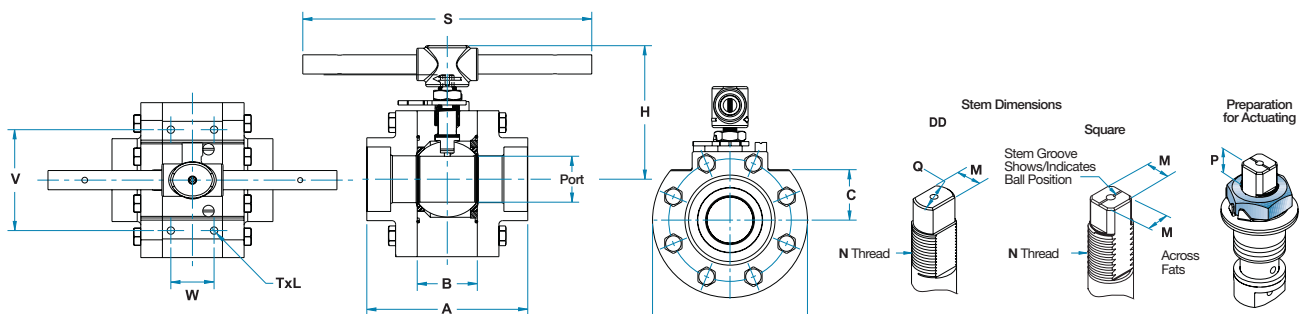
The H27/AH27X series, 2 1/2"-8", (DN65 - DN200), Class 1500, are designed for limited operation differential pressure of maximum 70 bar / 1000psi.

For higher differential pressure, please consult Habonim engineering team.

* Standard items for repair kits

** Other material are available on request

Dimensions of Valves 2 1/2" - 8" DN65 - DN200



Size	Port	Kv . Cv	A	B	C	D	ØF	H	M	M(DD)	N	P	Q	S	TxL	W	V	Weight Kg
DN65	50.8	206.9	172.6	72.6	77.2	115.8	190.0	147.0	13.9		M20x2.5	16.5		256.0	M12x16	50.0	92.0	25.0
2 1/2"	2.0	240.0	6.8	2.86	3.04	4.56	7.48	5.79	0.55		M20x2.5	0.65		10.08		1.97	3.62	55.1
DN80	65.0	275.9	224.0	83.3	70.0	144.9	215.0	185.0	18.9	15.9	1"-14" UNC	16.6	22.7	402.0	M10x12	60.0	140.0	39.0
3"	2.56	320.0	8.82	3.28	2.76	5.7	8.46	7.28	0.74	0.62	1"-14" UNC	0.65	0.89	15.83		2.36	5.51	85.98
DN100	82.7	500.0	268.0	108.8	90.0	160.7	250.0	201.0	18.9	15.9	1"-14" UNC	16.6	22.7	610.0	M10x12	70.0	150.0	64.0
4"	3.26	580.0	10.55	4.28	3.54	6.33	9.84	7.91	0.74	0.62	1"-14" UNC	0.65	0.89	24.02		2.76	5.91	141.1
DN150	114.0	706.9	336.0	146.1	120.0	226.3	295.0	280.0	28.5	23.8	1 1/2"-12" UNC	26.2	35.2	916.0	M16x18	66.0	140.0	120.0
6"	4.49	820.0	13.23	5.57	4.72	8.91	11.61	11.02	1.12	0.94	1"-14" UNC	1.03	1.39	36.06		2.6	5.51	264.55
DN200	131.7	1327.6	558.6	178.6	136.0	300.7	348.0	-	35.9		2"-8" UNC	58.0			M20x25	96.0	170.0	225.0
8"	5.19	1540.0	21.99	7.03	5.35	11.84	13.7	-	1.41		1"-14" UNC	2.28				3.78	6.69	496.04

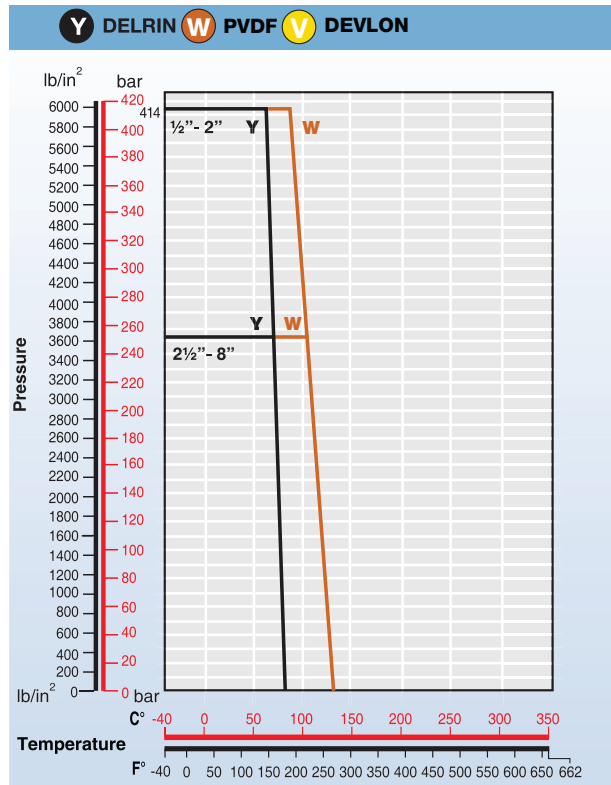
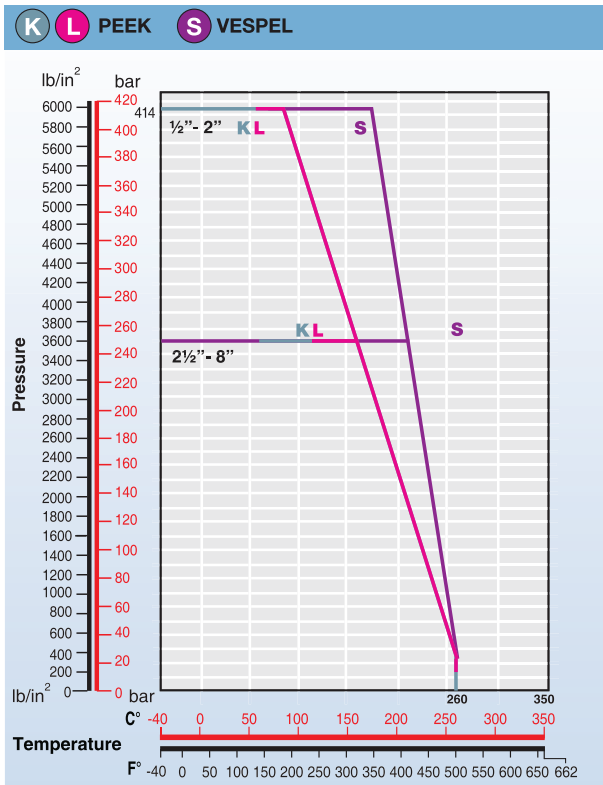
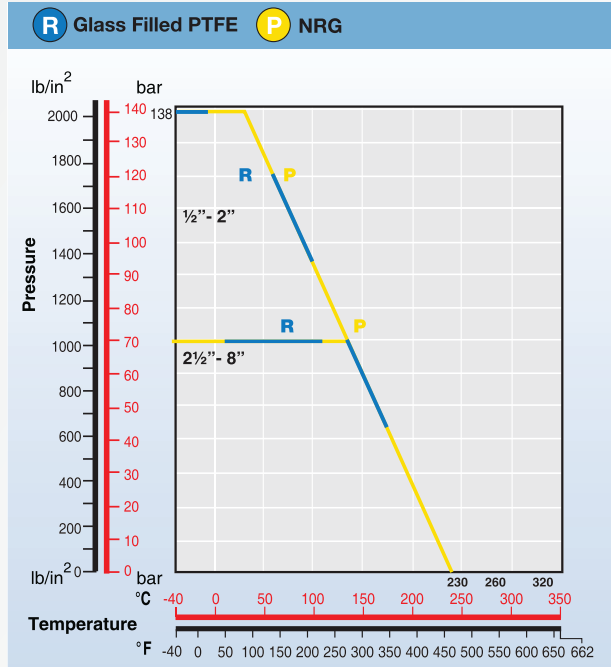
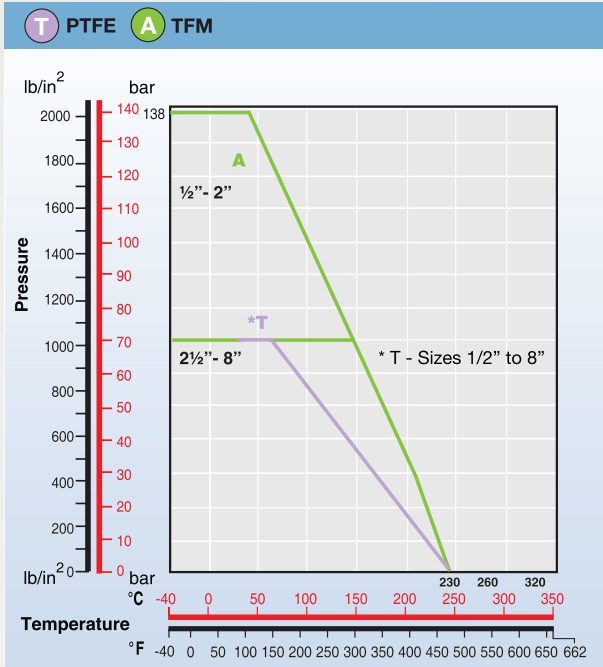
Cv - Flow in US GPM at 1 psi pressure drop. | Kv - Flow in m³/hr at 1 psi pressure drop. | Valve flow rates are determined in full open position with water at 15° C (60° F)

HIGH PRESSURE BALL VALVES

Pressure / Temperature Rating (Seat Materials)

The solid lines in the Pressure/Temperature (PT) graphs are the maximum seat ratings for each material*, and are not the valve body ratings. Valves above 2" have a limited seat rating of 70 bar for all seat materials.

The PT lines are based on the maximum allowable differential pressure that can be applied on a valve in closed position before attempting to open it. Data is given from field applications and laboratory tests.



Dimensions of H27 Series Automated Valves

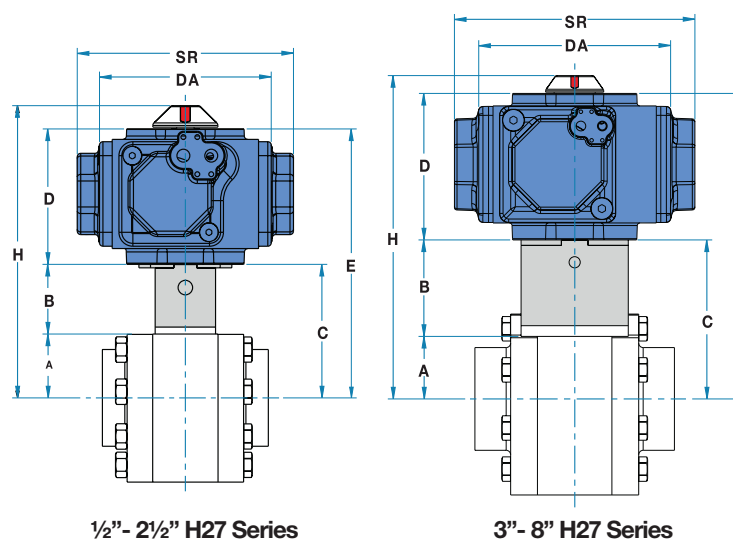
Actuation

Where automation is required, the H27 Series Ball Valves are available with Habonim's unique 4-piston pneumatic compact actuator. The Compact Actuator is available in 8 sizes, spring return, or double acting. All the valve mounting flanges are suitable for accommodating any quarter turn actuator (pneumatic or electric) for valve automation. Valves can be operated at On-Off or Control valves for high pressure applications. The actuators have a NAMUR air connection interface for attaching solenoids. Limit switches and positioners can be mounted on the actuator top face according to VDI / VDE 3845.

For more information, please refer to Bulletin B360.

Actuator Sizing

The sizing tables are based on valve size, differential pressure, valve seat types, working temperature, flowing media and frequency of operation. The valve torque figures are calculated from tests using water at room temperature at different pressure drops for each seat material and actuator air pressure. Please consult with Habonim for more details.

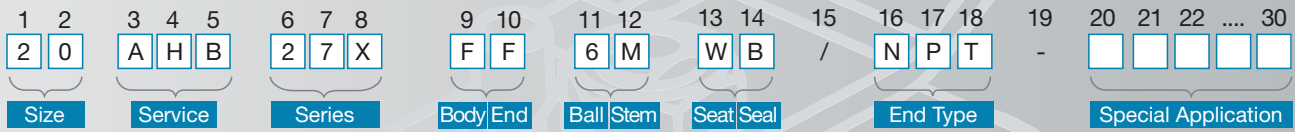


Valve Size	Actuator Size	H27 Series					Compact Actuator		
		A	B	C	E	H	D	DA	SR
1/2"	C20	27.0	40.0	67.0	147.7	167.7	80.7	102.0	131.0
	C25		40.0	67.0	164.2	184.2	97.2	132.0	161.0
3/4"	C20	29.4	40.0	69.4	150.1	170.1	80.7	102.0	131.0
	C25		40.0	69.4	166.6	186.6	97.2	132.0	161.0
1"	C25	38.2	50.0	88.2	185.4	205.4	97.2	132.0	161.0
	C30		50.0	88.2	204.8	224.8	116.6	151.0	186.0
1 1/4"	C25	38.2	50.0	88.2	185.4	205.4	97.2	132.0	161.0
	C30		50.0	88.2	204.8	224.8	116.6	151.0	186.0
1 1/2"	C30	50.0	60.0	110.0	226.6	246.6	116.6	151.0	186.0
	C35		60.0	110.0	245.5	265.5	135.5	182.0	222.0
2"	C30	55.0	60.0	115.0	231.6	251.6	116.6	151.0	186.0
	C35		60.0	115.0	250.5	270.5	135.5	182.0	222.0
2 1/2"	C35	77.2	60.0	137.2	272.7	292.7	135.5	182.0	222.0
	C45		60.0	137.2	301.2	321.2	164.0	221.0	269.0
3"	C45	70.0	108.0	178.0	342.0	362.0	164.0	221.0	269.0
	C60		108.0	178.0	395.5	425.5	217.5	285.0	360.0
4"	C60	90.0	105.0	195.0	412.5	442.5	217.5	285.0	360.0
	C75		105.0	195.0	465.0	495.0	270.0	342.0	437.0
6"	C60	120.0	137.0	257.0	474.5	504.5	217.5	285.0	360.0
	C75		137.0	257.0	527.0	557.0	270.0	342.0	437.0
8"	C75	136.0	127.5	263.5	533.5	563.5	270.0	342.0	437.0

HIGH PRESSURE BALL VALVES

H27 SERIES

How to Order The Habonim H27 Ball Valve Identification Code



Size		
Code	inch	mm
05	½"	15
07	¾"	20
10	1"	25
12	1¼"	32
15	1½"	40
20	2"	50
25	2½"	65
30	3"	80
40	4"	100
60	6"	150
80	8"	200

Service
A Anti-static
B Full Bore
F Fire Safe
D Diverter Bottom Entry
H High Pressure
I High Purity
S Diverter Side Entry

Body / End / Ball / Stem
6 Stainless Steel A316/316L
F Carbon Steel A350 LF2
M 17-4PH
Z Inconel 718

* Other material available upon request

Seat
K PEEK
L Virgin PEEK
S Vespel
V Devlon
W PVDF

Seal
B NBR Sh90
G Graphite
I Impregnated Graphite
V Viton Sh90

End Connection	
1500 ANSI 1500 RF	
2500 ANSI 2500 RF	
SW2500 Socket Weld Class #2500	
BW160 Butt Weld SCH 160	
XBW160 Extended BW SCH 160	
SAE3000 SAE Flanged 3000 psi Code 61	
SAE6000 SAE Flanged 6000 psi Code 62	
CON61 SAE Split Flange Code 61	
CON62 SAE Split Flange Code 62	
ISO 6164 ISO 6164 Flanged	
DIN3852 Threaded DIN 3852	
SAEJ1926 SAE J1926 & ISO 11926	
NPT ANSI B1.20.1	

Other special end types are available on request

Special Application	
P250 Ball With Pressure Relief Hole	
RTJ Flanged With Ring Type Joint	
WR Double D Stem	
TV Twin Valve	
DS Dual Safe (Double Block & Bleed)	
BYP Integral Bypass	

Standards of Compliance

Design	ANSI B16.34
Threaded End Connections	NPT ANSI B1.20.1 DIN 3852, SAE J1926 (ISO 11926)
Socket Weld End Connections	ANSI B16.11
Buttweld End Connections	ANSI B16.25
Flanged End Connections	ANSI B16.10, SAE J518 (ISO 6162), ISO 6164, ANSI B16.5
Pressure Testing	API 598, API 6D, EN 12266-1
Certification	ISO 9001-2008 PED 97/23/EC Module H
Anti-static	ISO 17292
Fire Safe	API 607, ISO 10497
NACE	MR-0175 ISO 15156

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