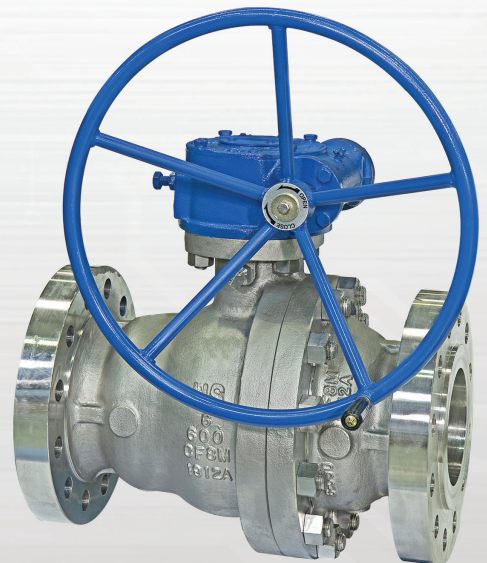


HS VALVE

FLOATING BALL VALVES



The leading Valve manufacturer **HS VALVE**

▣ GREETING

Ever since our foundation in 1987, we have produced and supplied various pipeline valves. As the Korea's largest general valve maker, we have constantly developed new products from small-sized valves to large-sized valves for various chemical, oil & gas and industrial plants and continually invested in a higher value-added business and quality upgrade. As a result, we have acquired varied international certifications such as KS, ISO, API, Fire Test and CE as well as developed and patented non-conductive ball valves for the first time throughout the world.

To maintain non-defect quality goods and services is our top priority and we believe it will be achievable through our properly organized quality management system. We also believe that our lofty goal of earning the trust of the customers must be realized with ceaseless efforts into the superior quality of products.

For this reason, not only do all employees work in harmony to satisfy our customers by conforming to the requirements of ISO 9001, API 6D, PED and the customers, but to provide reasonable quality and price which are the essential element for the member of international society as well as for the contribution to the development of Korea's economies.

With a slogan of "Global Marketing and Customer First", we are ready to lead the future of 21 century as a world-class general valve maker and a more advanced specialist of valves.

Won Gyu Chang / President

▣ COMPANY PROFILE

1987. 03	Established HS VALVE CO., LTD.	2003. 03	Awarded a model taxpayer
1987. 04	HS VALVE CO., LTD. incorporated.	2003. 06	Received a men of merit's award
1996. 12	Received mayor's award	2004. 01	Acquired CE(CE0036-TUV suddeutschland)
1997. 11	Received president's award	2004. 07	Selected of world leading SME appointed by gyeongsangbuk-do
1999. 03	Acquired ISO9001, API-6D	2004. 12	Acquired fire tests(ball valve)-API 6FA
1999. 09	Venture enterprise	2006. 05	Acquired ISO 9001:2000(0588)-API
1999. 10	Received president's award	2006. 05	Acquired ISO/TS 29001(TS-0125)-API
1999. 11	Received mayor's award	2006. 05	Acquired API Spec Q1(Q1-0319)-API
2000. 02	Designated excellent technical competition enterprise	2006. 11	Awarded the order of industrial service merit of silver tower
2000. 03	Listed in KOSDAQ	2007. 12	The head office building purchase/move
2000. 10	Started to manufacture gas filter	2008. 09	Acquired GOST R & HYGIENIC
2001. 03	Acquired fire tests for ball valve -API 607	2009. 06	Acquired GOST RTN
2001. 10	Superiority technology enterprise selection technique -KOREA TECHNOLOGY CREDIT GUARANTEE FUND-	2011. 03	Built 3rd factory
2001. 11	Received president's award	2013. 05	Awarded "The 20th Korea Gas Safety Awards" of Bronze Tower
		2014. 07	Acquired INNOBIZ(Innovation Business)
		2014. 12	Acquired Stainless Steel Welding Flanges (KS B1506)
		2015. 02	Approved by Petrolam National Berhas (PETRONAS)
		2015. 10	Vendor Approved by Kuwait National Petroleum Company (KNPC)
		2016. 09	Acquired TR CU 032
		2017. 04	Vendor Approved by National Iranian Gas Company (NIGC)

QUALITY

HS VALVE is guaranteed by ISO 9001 & 14001 audited quality standards.

HS VALVE provides the highest quality valves to meet customer's requirements and manufactures in accordance with API, ASME and other standards.
HS valves are tested and documented to the API 6D and API 598.

HS valves are manufactured to comply with NACE standard and provide complete material's traceability.

CERTIFICATES



API 6D 0308



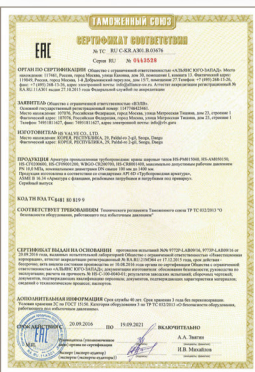
ISO 9001



ISO 14001



CE 0045



TR CU 032



API 607 Fire test



API 6FA Fire test



EN10204-3.1



HEAD OFFICE & FACTORY I

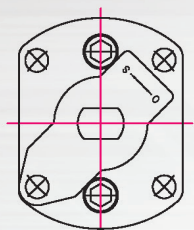


FACTORY II



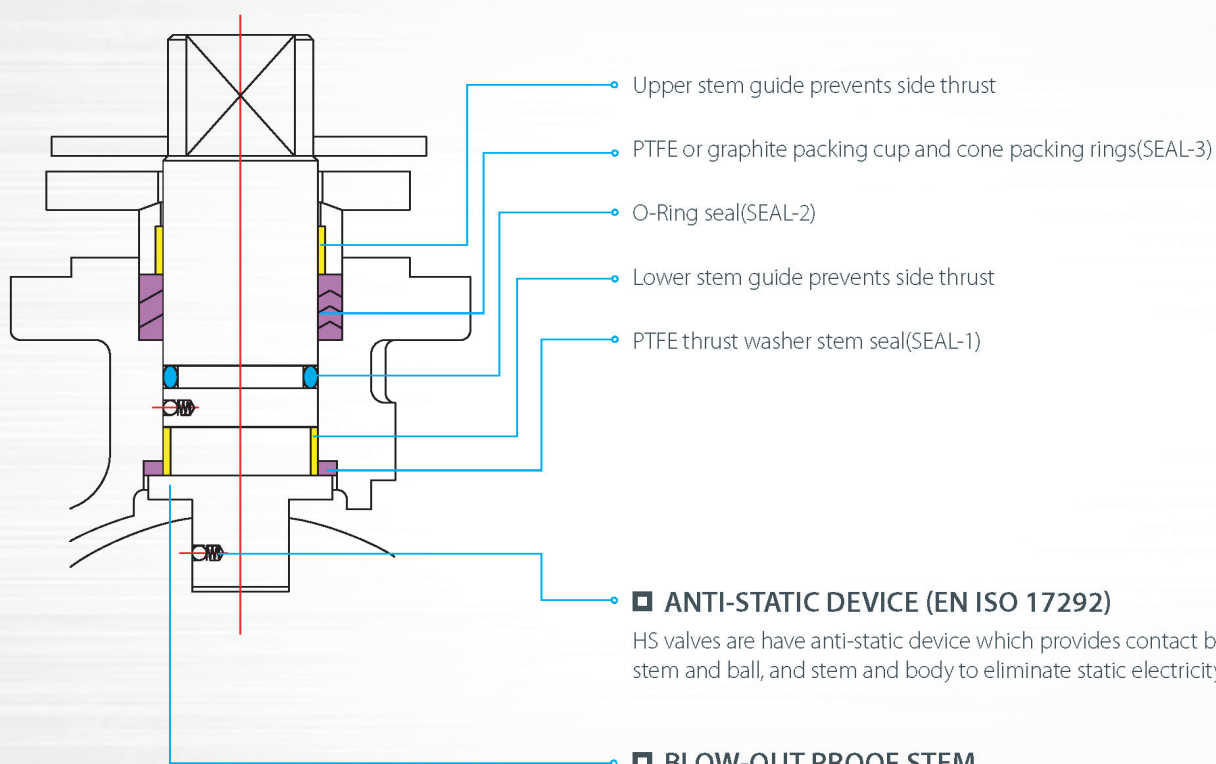
FACTORY III

CONSTRUCTION & FUNCTION



■ LOCKING DEVICE

HS valves are lockable in either full open or closed position

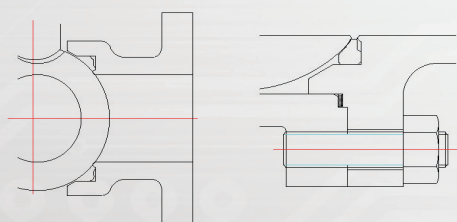


■ ANTI-STATIC DEVICE (EN ISO 17292)

HS valves have an anti-static device which provides contact between stem and ball, and stem and body to eliminate static electricity.

■ BLOW-OUT PROOF STEM

All HS valves have an anti blow out proof stem designed to back seat during any excess line pressure situation that is not higher than the design pressure of the valve and will help prevent product loss during a fire.



■ FIRE SAFE DESIGN (API 607 / API 6FA)

In the event of a fire, the valve is required to make a downstream seal. Even after the disintegration of the TEFLON seats, HS valves provide an excellent metal to metal seal. Special attention has been paid to the mechanical strength and sealing efficiency of the central flanged joint of the valve body & cap. Heavy casting & graphite filled spiral wound gasket assures zero body / joint leakage.

CLASS 150 & 300 FLOATING BALL VALVES



■ FIG. NO. B2FFA15, A30 / B2FRA15, A30

CONSTRUCTION

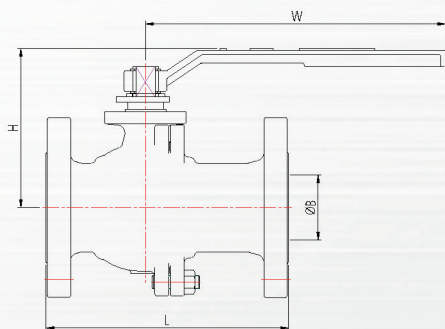
2-Piece body, Full & reduced bore.
Floating ball.
Fire safe design.
Anti-static device.
Locking device.
Blow-out proof stem.
ISO 5211 Mounting pad.
Cavity relieving seats.

■ BASIC MATERIALS

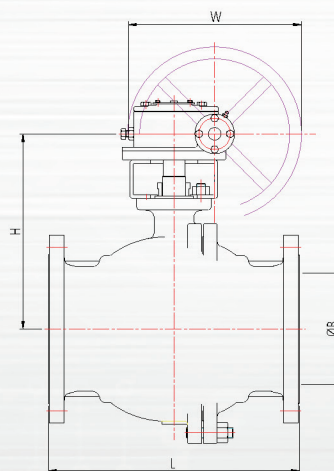
PART NAME	CARBON STEEL	STAINLESS STEEL
BODY	A216-WCB, A352-LCC	A351-CF8, CF8M
BALL	A351-CF8, CF8M	
SEAT	RPTFE	

■ PRODUCTION SPECIFICATIONS

BASIC DESIGN	API 6D & ASME B16.34
FACE TO FACE	ASME B16.10
END FLANGE	ASME B16.5
TEST & INSPECTION	API 6D & API 598



Size : 6" & Below



Size : 8" & Larger

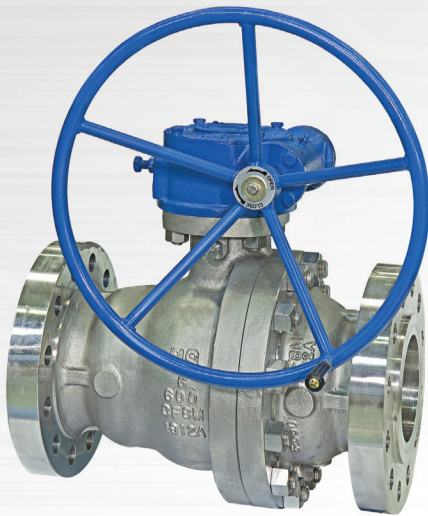
■ RANGE & DIMENSIONS

(unit : mm)

VALVE SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3 x 2"	3"	4 x 3"	4"	6 x 4"	6"	8 x 6"	8"	10 x 8"
B	13	19	25	32	38	51	51.0	76	76	102	102	152	152	203	203
L	150#	108	117	127	140	165	178	203	203	229	229	394	394	457	533
	300#	140	152	165	178	190	216	282	282	305	305	403	403	502	568
H	82	85	97	102	129	142	142	190	190	216	216	275	275	310	310
W	130	160	160	160	240	240	240	240	240	350	350	440	440	400	400
WEIGHT (kg)	150#	2.0	2.5	3.7	6.5	7.1	11.0	13.3	25.0	32.0	38.0	55.0	84.0	102.0	178.0
	300#	3.0	3.5	5.5	7.5	9.0	14.0	22.0	31.0	39.0	53.0	69.0	133.0	160.0	206.0

● Other material & size is available upon request.

CLASS 600 FLOATING BALL VALVES



■ FIG. NO. B2FFA60 / B2FRA60

CONSTRUCTION

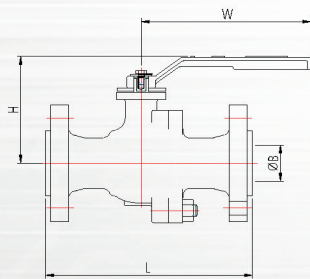
2-Piece body, Full & reduced bore.
Floating ball.
Fire safe design.
Anti-static device.
Locking device.
Blow-out proof stem.
ISO 5211 Mounting pad.
Cavity relieving seats.

■ BASIC MATERIALS

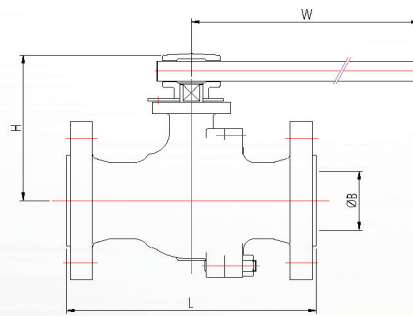
PART NAME	CARBON STEEL	STAINLESS STEEL
BODY	A216-WCB, A352-LCC	A351-CF8, CF8M
BALL	A351-CF8, CF8M	
SEAT	RPTFE, DEVLON	

■ PRODUCTION SPECIFICATIONS

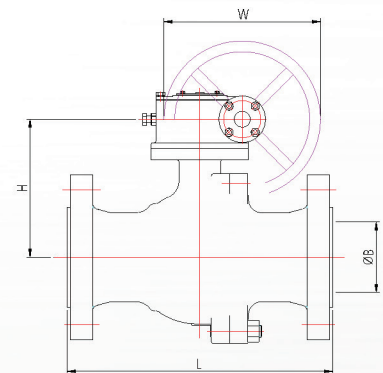
BASIC DESIGN	API 6D & ASME B16.34
FACE TO FACE	ASME B16.10
END FLANGE	ASME B16.5
TEST & INSPECTION	API 6D & API 598



Size : 3" & Below



Size : 4" & 6"



Size 6" & Larger

■ RANGE & DIMENSIONS

(unit : mm)

VALVE SIZE	2x1 1/2"	2"	3x2"	3"	4x3"	4"	6x4"	6"	8 x 6"
B	38	51	51	76	76	102	102	152	152
L	292	292	356	356	432	432	559	559	660
H	129	150	150	193	193	254	254	298	298
W	240	240	240	350	350	600	600	450	450
WEIGHT(kg)	16.0	21.0	30.0	42.0	62.0	85.0	116.0	215.0	246.0

● Other material & size is available upon request.

STANDARD MATERIAL SPECIFICATIONS



■ FIG NO. : B2FFA15, A30, A60 / B2FRA15, A30, A60

NO	PART NAME(API 6D)	MATERIALS			REMARKS
		WCB/316	LCB,LCC/316	CF8M	
1	BODY	A216-WCB	A352-LCB,LCC	A351-CF8M	
2	BODY CAP	A216-WCB	A352-LCB,LCC	A351-CF8M	
3	BALL	316SS			
4	SEAT	RPTFE, DEVLON			
6	STEM	316SS			
9	STOPPER	A283-D+Zn PLATE		304SS	
11	GLAND	A351-CF8			
12	STEM BEARING	RPTFE, NYLON			
13	STEM SEAL	PTFE, GRAPHITE, VITON			
14	BODY SEAL	316SS+GRAPHITE			SPIRAL WOUND G/K
15	BODY BOLT	A193-B7	A320-L7	A193-B8	
16	BODY NUT	A194-2H	A194-7	A194-8	
20	ANTI-STATIC DEVICE	316SS			
21	GLAND BOLT	AISI-4140		A193-B8	
36	GEAR BOX / LEVER	A536			

ENGINEERING DATA

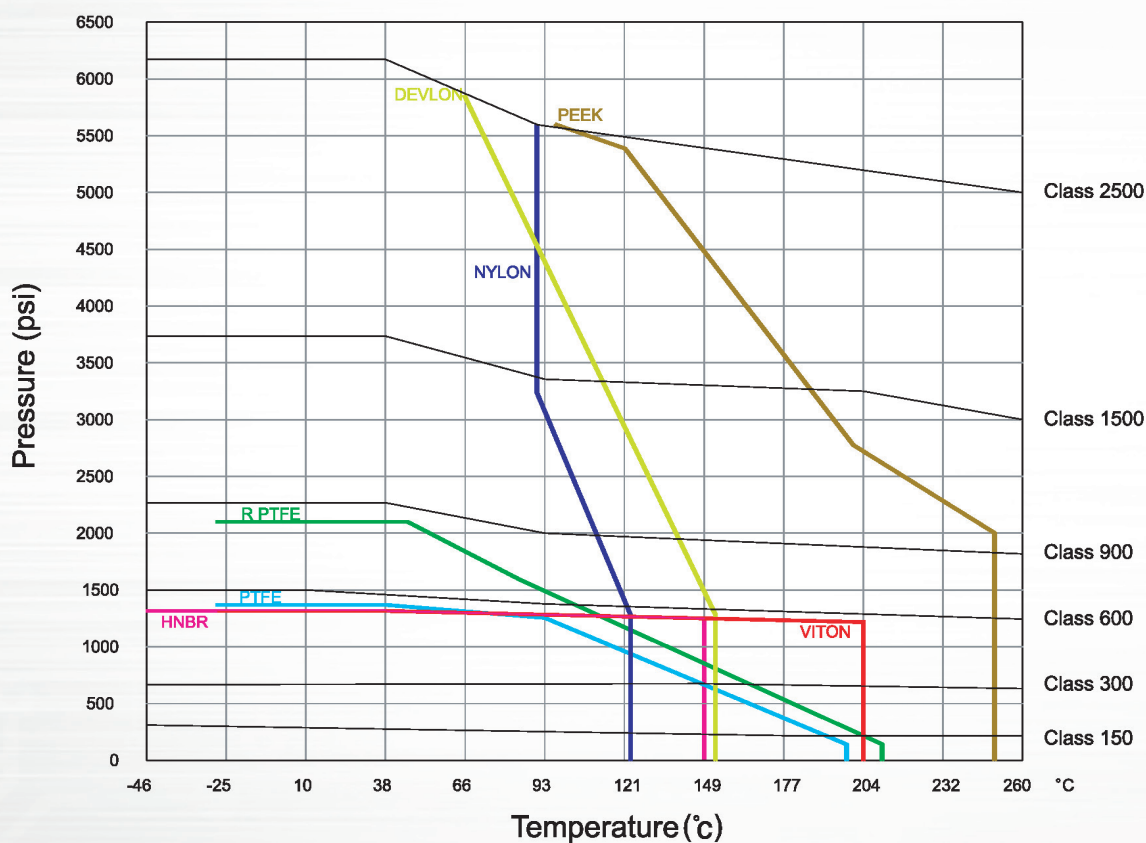
■ Cv FLOW COEFFICIENT VALUE

The coefficient of flow Cv expresses the rate of flow in gallons per minute at 60°F water with a pressure drop of 1 psig across the valve. The Cv coefficients for the various types and sizes, shown in the tables, have been determined from actual flow tests.

(unit : mm)

CLASS	SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
150#, 300#, 600#	FB	26	75	103	206	430	1,250	2,250	5,200	9,600	15,200	2,3000
	RB	-	-	-	-	136	220	630	820	2,200	4,350	7,600

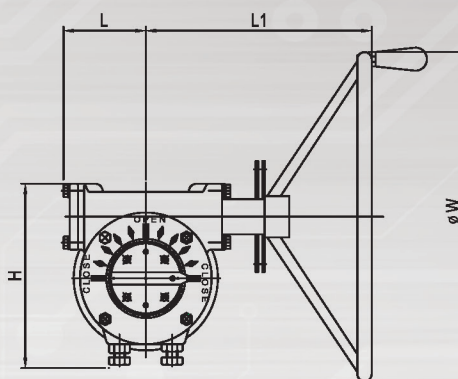
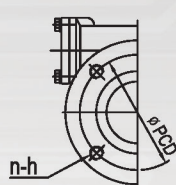
■ PRESSURE - TEMPERATURE RATINGS



■ SEAL MATERIALS

MATERIALS	TEMPERATURE(°C)		MATERIALS	TEMPERATURE(°C)	
	MIN.	MAX.		MIN.	MAX.
NBR	-37	100	FKM GLA (VITON GLA)	-40	180
HNBR	-40	150	DEVLON	-60	150
RPTFE (GLASS 15%)	-100	180	NYLON	-40	121
RPTFE (CARBON 25%)	-100	200	PEEK	-60	250
FKM A (VITON A)	-25	180			

ENGINEERING DATA



GEAR BOX DIMENSION & SELECTION CHART

MODEL NO.	H	L	L1	W	MAX. STEM DIA.	MAX. TORQUE(N.m)	GEAR RATIO
SBWG-BF	123	58	121	200	20	310	32 : 1
SBWG-0	151	72	155	250	28	600	36 : 1
SBWG-00	178	84	206	300	36	1,000	38 : 1
SBWG-01	203	93	230	400	46	1,550	42 : 1
SBWG-02	247	111	279	450	60	2,400	48 : 1
SBWG-03	288	124	312	560	75	4,300	52 : 1

ISO 5211 MOUNTING SELECTION

ISO FLANGE	PCD	n-Mh	MAX. TORQUE(N.m)	CLASS & SIZE(FB)	
				150 & 300	600
F04	42	4-M5	63	1/2", 3/4"	
F05	50	4-M6	125	1", 1 1/4"	
F07	70	4-M8	250	1 1/2", 2", 2 1/2"	1 1/2", 2"
F10	102	4-M10	500	3", 4"	2 1/2"
F12	125	4-M12	1,000	5", 6"	3"
F14	140	4-M16	2,000	8"	4"
F16	165	4-M20	4,000		6", 8"

TORQUE DATA

(Unit : N.m)

TYPE	FLOATING (FB)			FLOATING (RB)	
	RPTFE		DEVLOX	RPTFE	
	CLASS 150	CLASS 300	CLASS 600	CLASS 150	CLASS 300
1/2"	5	7	18	4	5
3/4"	7	9	26	5	6
1"	11	14	47	9	14
1 1/2"	29	57	133	18	23
2"	41	77	189	29	41
2 1/2"	56	112	246	41	54
3"	120	225	378	54	77
4"	176	387	666	86	171
5"	252	531	873	171	279
6"	414	702	1,134	225	360
8"	800	1,386		387	585
10"				729	1,116

● At working pressure states ● Safety factor : about 30%

ENGINEERING DATA

TEST PRESSURE

(Unit : psig)

MATERIALS		HYDROSTATIC SHELL & SEAT TEST PRESSURE					
		CLASS 150 (PN20)	CLASS 300 (PN50)	CLASS 600 (PN100)	CLASS 900 (PN150)	CLASS 1500 (PN250)	CLASS 2500 (PN420)
A216 WCB A105, LF2	SHELL	450	1,125	2,225	3,350	5,575	9,275
	SEAT	315	815	1,630	2,445	4,080	6,790
A352 LCB	SHELL	400	1,050	2,100	3,150	5,225	8,725
	SEAT	295	765	1,535	2,300	3,830	6,390
A352 LCC	SHELL	450	1,125	2,250	3,375	5,625	9,375
	SEAT	320	825	1,650	2,475	4,125	6,875
A351 CF8M A182 F316	SHELL	425	1,100	2,175	3,250	5,400	9,000
	SEAT	305	795	1,585	2,380	3,960	6,600

- According to API 6D / Refer to API 598 & ASME B16.34.
- Low-pressure closure test shall be performed by air at 60 to 100 psig.

TEST DURATION

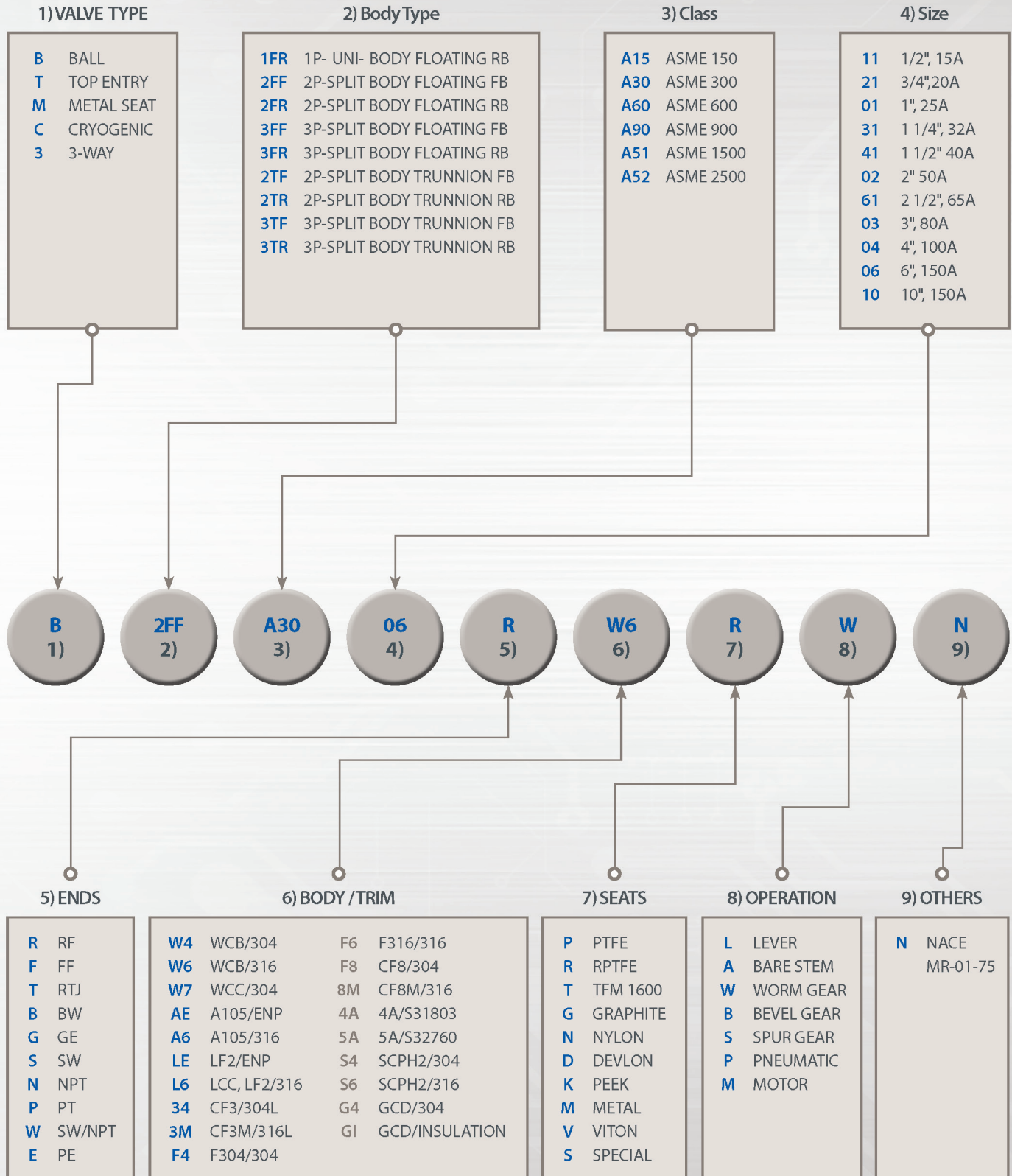
VALVE SIZE		SHELL TEST DURATION (minutes)
DN(mm)	NPS(inch)	
15 ~ 100	1/2" ~ 4"	2
150 ~ 250	6" ~ 10"	5
300 ~ 450	12" ~ 18"	15
500 and larger	20" and larger	30

VALVE SIZE		SHELL TEST DURATION (minutes)
DN(mm)	NPS(inch)	
15 ~ 100	1/2" ~ 4"	2
150 and larger	6" and larger	5

► According to API 6D

FIGURE NUMBER SYSTEM FOR HS VALVES

EX) BALL VALVE, SPLIT BODY FLOATING, FULL BORE, CLASS 300, SIZE 6"
RF FLANGE, WCB BODY, 316SS BALL & STEM, RPTFE SEAT, GEAR OP., NACE





THE MOST COMPETITIVE PRICE

THE HIGHEST QUALITY

THE ON TIME DELIVERY

HEAD OFFICE & FACTORY I

29, Paldal-ro 2-gil, Seo-gu,
Daegu, Korea(Zipcode: 41701)

T +82-53-353-5789 F +82-53-352-1179

FACTORY II

222, Gongdan 8-ro, Jillyang-eup, Gyeongsan-si,
Gyeongsangbuk-do, Korea(Zipcode: 38461)

T +82-53-857-5789 F +82-53-857-5784

FACTORY III

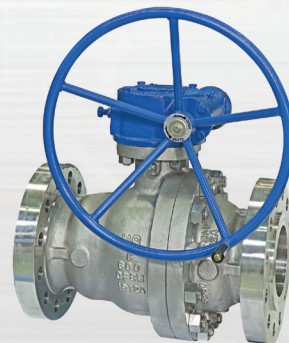
138, Damun-ro, Jillyang-eup, Gyeongsan-si,
Gyeongsangbuk-do, Korea(Zipcode: 38459)

T +82-53-854-5780 F +82-53-854-5784

www.hsvalve.com / www.hsvalve.co.kr

E-mail master@hsvalve.com

HS VALVE



WARRANTY

HS VALVE is guaranteed against defects in material and workmanship for period 12 months from date of installation or 18 month from date of shipment when products are properly installed and used within service.

This warranty includes limited replacements free of charge for any parts found to be defective by HS VALVE.

This liability does not extend to claims for any labor or any other loss, damage or expense of any consequential charges.

This warranty does not apply to products manufactured by others or unauthorized labor or material.