



DAFRAM fire-safe ball valves The right choice for high performance and critical applications



COMPANY PROFILE

DAFRAM S.p.A., founded in 1956, was the first company to manufacture floating ball valves in Italy. The long experience gathered during more than 50 years of activity ensures that DAFRAM are one of the most famous and competitive companies in the world.

DAFRAM's factory is located in Urbisaglia (Macerata), the centre of Italy on an industrial complex covering 32,000 square meters, 12,000 of which are covered workshops.

The factory consists of commercial, technical and engineering offices and of two extremely modern workshops the latest of which, 4200 square meters, 10 meters high, completed in February 2008, allows the production, assembly, testing, sandblasting and painting of ball valves up to extremely large sizes and weights.

The DAFRAM design and production staff includes highly qualified engineers with a long experience in all technical standards and meeting customer's special requirements. Modern design methods are employed to analyse specific stresses and deformation limits of valve bodies and main valve components.

The manufacturing process is continually improved and changed using the most advanced manufacturing technologies such as: multi-function machining centers and several computer controlled lathes.

Special testing centers are used for testing of all products and are specifically used for high pressure and large size TRUNNION MOUNTED valves. Both vertical and horizontal testing machines as well as equipment used to determine valve operating torques testing valves at low and high temperatures, allow DAFRAM's prototypes to be checked and verified on site and 100% of production to be tested, checked and certified before leaving DAFRAM's plant.

PRODUCTS and SERVICE

The range consists exclusively of TOP QUALITY BALL VALVES for high performance and critical applications in FLOATING, TRUNNION MOUNTED and special configurations, size 1/4" to 36", 150lbs to 2500lbs, PN10 to PN450, FULL and REDUCED bore, in Carbon Steel, Stainless Steel, Nickel and exotic alloys, for the following services:

Chemical, Petrochemical, Refining, Pharmaceutical, Food industry, Power and co-generation plants, Desalting units, Pulp and Paper industry, Ship building (Chemical, LPG, LNG - DNV, ABS approved), ON-shore & OFF-shore OIL and GAS production, ON-shore OIL and GAS pipelines, OIL and GAS storage, Transportation and Gathering Systems, Gas re-injection plants, Gas treatment plants, LPG and LNG production storage and transportation.

Special products covering the entire pressure range are available for use in special services, such as:

- BALL VALVES with PTFE STEM PACKING for AGGRESSIVE CHEMICAL SERVICE without O-RINGS in TA-LUFT and Fire Safe BS 6755 part 2 executions
- METAL SEATED ball valves for both ABRASIVE and HIGH TEMPERATURE
- CRYOGENIC ball valves with special STEM EXTENSION
- FULLY JACKETED ball valves with oversize flanges
- TOP ENTRY ball valves
- FULLY WELDED ball valves
- LOW EMISSIONS ball valves, TA-LUFT certified and HELIUM tested both to VACUUM and to SNIFFER methods



DAFRAM S.p.A. is a specialised manufacturer of High Performance ball valves for Chemical, Petrochemical, Oil & Gas, Power Generation, OFF and ON-SHORE services with extensive experience in the most advanced sealing technologies

WORKSHOP

Because of continuous product development and modernisation, DAFRAM's workshop is constantly being renewed. It utilises the most advanced manufacturing technologies in valve component machining, drilling and testing.

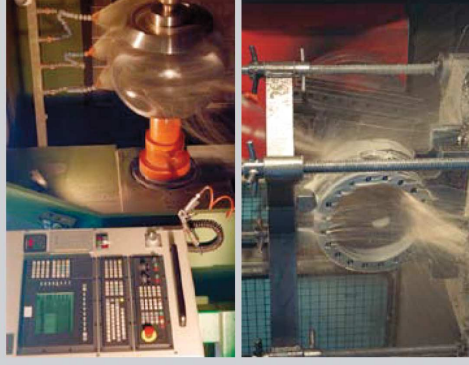
Eleven modern, computer controlled lathes and seven machining centres ensure complete control over the entire manufacturing process.

Both vertical and horizontal testing machines, as well as two special machines which automatically detect the valves operating torques, allow DAFRAM's production to be 100% tested, controlled and certified before leaving our plant.

Standard testing for every valve is performed according to BS 6755 part 1 (floating ball valves), API 6D (TRUNNION mounted ball valves) and API 598. Other testing specifications or procedures may be followed upon customer request.

The castings used by DAFRAM are produced in sand and with a sophisticated REPLICAST moulding method by an innovative local foundry located on site. The "Moulding System" method used by the foundry, based on a special ceramic process, allows DAFRAM to supply high quality cast valves with excellent surface finish.

A special quality laboratory has been developed to perform all the main tests required by the valve industry, such as: a quantummeter to define the chemical composition of 24 elements, dedicated machines to verify the Carbon content in Low Carbon alloys and the Oxygen and Nitrogen content in Super Nickel alloys. All most important Non Destructive Tests like X-RAYS, Ferrite Content Examination, Magnetic Particles Inspections, DPE & PMI. Corrosion Tests are available upon request.



QUALITY SYSTEM

DAFRAM design and production processes are covered by the following certificates:

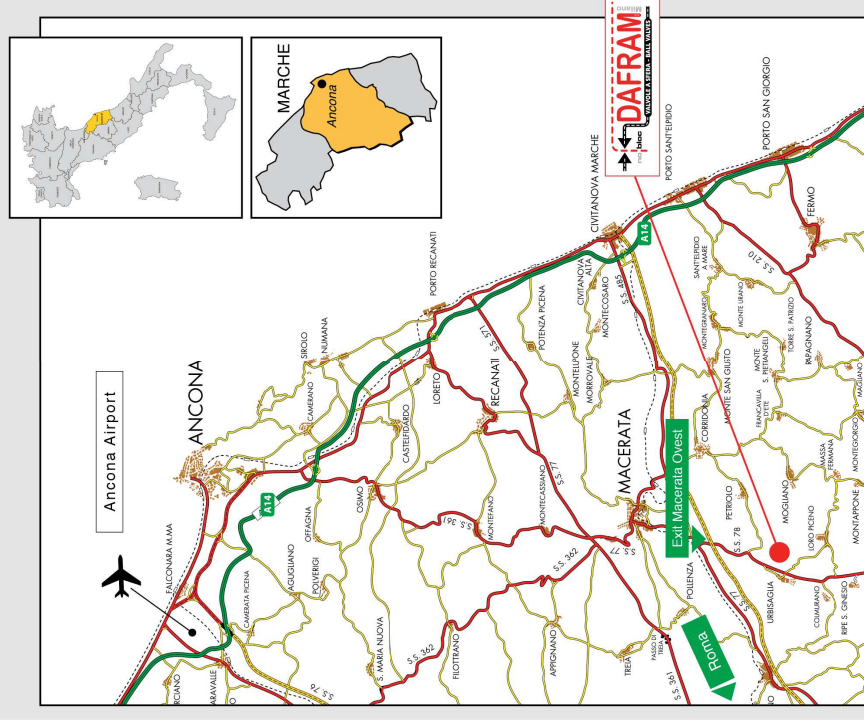
- API 6D, license N. 0265
 - API 6DSS, license N. 0029
 - API 6A, license N. 1175
 - PED 2014/68/EU by Bureau Veritas,
 - TRD 100 / HP 0 by TÜV
 - TA-Luft by TÜV
 - DIRECTIVE 2014/34/EU (ATEX)
 - SIL3 for functional safety
- DAFRAM management system is covered by the following certificates:
- ISO 9001
 - ISO 14001
 - ISO 45001

DAFRAM valves are tested according to:

- API 6D, API 6DSS, API 598, API 6A
- BS 6755 part 1
- EN 12266-1
- IEC 60534

and Fire Safe tested and certified according to:

- API 607 5th Edition, API 6FA
- BS 6755 Part 2
- ISO 10497



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FLOATING BALL VALVES

ANSI EXECUTION				CONSTR.
TYPE	CLASS	BORE		
160MC	150lbs	Reduced	1pc Inert Body	
160RC	150lbs	Reduced	2pcs Split Body	
150TC	150lbs	Full	2pcs Split Body	
150TM	150lbs	Full	2pcs Split Body	
300MC	300lbs	Reduced	1pc Inert Body	
300RC	300lbs	Reduced	2pcs Split Body	
300TM	300lbs	Full	2pcs Split Body	
600R	600lbs	Reduced	2pcs Split Body	
600T	600lbs	Full	2pcs Split Body	
900R	900lbs	Reduced	2pcs Split Body	
900T	900lbs	Full	2pcs Split Body	
1500R	1500lbs	Reduced	2pcs Split Body	
1500T	1500lbs	Full	2pcs Split Body	
2500R	2500lbs	Reduced	2pcs Split Body	
2500T	2500lbs	Full	2pcs Split Body	

DIN EXECUTION					
TYPE	CLASS	BORE	CONSTR.		
16R	PN16	Reduced	1pc insert Body		
16TE	PN16	Full	2pcs Split Body		
16TL	PN16	Full	2pcs Split Body		
16VL	PN16	Full	2pcs Split Body		
16V	PN16	Full	2pcs Split Body		
40R	PN40	Reduced	1pc insert Body		
40NE	PN40	Full	1pc insert Body		
40TE	PN40	Full	2pcs Split Body		
40TL	PN40	Full	2pcs Split Body		
40VK	PN40	Full	2pcs Split Body		
40V	PN40	Full	2pcs Split Body		

Inches mm	FACE TO FACE (END TO END - 1mm)													
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
	15	20	25	32	40	50	65	80	100	125	150	200	250	300
ANSI BALL VALVES														
150MC	108	117	127	140	165	178	191	203	229	254	267	292	330	356
150RC					165	178	191	203	229	254	267	292	330	610
150TC					165	178	191	203	229					
150TM	108	117	127	140	165	203	222	241	305	366	384	457	533	610
300MC	140	152	165		190	216	241	263	305	381	403	419	457	502
300RC					190	216	241	263	305	381	403	419	457	502
300TM					190	216	241	263	305	381	403	502	568	648
600R	140	152.5	165		190	241	292	330	356	432	559	660		
600T					190	241	292	330	356	432	559	660		
900R-RF	165	190	216		241	292	330	356	432					
900R-J					241	292	330	356	432					
900T-RF					241	292	330	356	432					
900T-J					241	292	330	356	432					
1500R-RF	216	229	254	280	305	368								
1500R-J					305	368								
1500T-RF					305	368								
1500T-J					305	368								
2500R-RF	216	229	254	280	305	371								
2500R-J					384	451								
2500T-RF					384	451								
2500T-J					384	451								
160STA	35	39	45	50	60	72	95	116	140		210			
300STA					60	72	95	116	140		210			
DN BALL VALVES														
168	115	120	125	130	140	150	170	180	190	325	350	400	450	
180E					140	150	170	180	190	325	350	400	450	
180T					140	150	170	180	190	325	350	400	450	
181L	130	150	160	180	200	230	290	310	350	400	480	600	730	
181K					200	230	290	310	350	400	480	600	730	
181V	115	120	125	130	140	150	170	180	190	325	350	400	450	
181VL	130	150	160	180	200	230	290	310	350					
40R	115	120	125	130	140	150	170	180	190	325	350	400	450	
40ME	115	120	125	130										
40TE	115	120	125	130	140	150	170	180	190	325	350	400	450	
40TL	130	150	160	180	200	230	290	310	350	400	480	600	730	
40VK	115	120	125	130	140	150	170	180	190					
40VL	130	150	160	180	200	230	290	310	350					
40VLL					200	230	290	310	350					
168TA	35	39	45	50	60	72	95	116	140					
168TA					60	72	95	116	140					
168T	35	39	45	50	60	72	95	116	140					
168T					60	72	95	116	140					
40WT	41	42	50	60	52	67	80	100	125	155	200	234	310	
3-WAY BALL VALVES														
SV3P-E (°)	90	90	90	95	111	130	140	150	165	180	215	248	310	
SV3T (°)	90	100	102	125	135	135	170	178.5	194.5		236	315		
SV3L-P-E (°)	122-100	122-100	122-100		169-165	160-160	175-175	195-195	215-215	245-245	285-285	335-335	405-405	
SV3LT (°)	122-100	132-106	132-106		180-150	180-170	220-200	230-200	265-265		315-315	405-370		
NIPPLED AND THREADED ENDS BALL VALVES														
D800F (°)	75	85	95	110	120	135								
D800R (°)	65	75	85	105	120	130								

GEAR operator is suggested for these diameters

(*) THE VALUE GIVEN IS: DISTANCE BETWEEN CENTER VALVE AND BODY CONNECTOR FLANGE

(**) THE VALUES GIVEN ARE: DISTANCE BETWEEN THE ALIGNED FLANGES / ALIGNED FLANGED AXIS AND LATERAL BODY FLANGE

(***) THE FACE TO FACE OF NPT VALVES IS INDICATIVE ONLY. IN CASE OF NIPPLED ENDS THESE VALVES ARE SUPPLIED WITH NIPPLES 100mm LONG

Other product constructions both with ANSI flanges and DIN face to face and with DIN flanges and ANSI design under the following figures: 16MC, 40MC, 16ML, 40ML, 16RE, 40RE, 16RL, 16TM, 40TM, 16TC, 40TC.

All FLOATING BALL VALVES are manufactured according to BS5531, AP640 and B16.34 (available upon request), and supplied complete with UNWEN 10204 3.1B certificates showing the materials mechanical and chemical properties plus the pressure tests and any other special tests performed. Tests are carried out as standard to BS 6745 part 1 or according to other international rules upon specific request by the user. All floated arms are equipped with anti-static device, All Blow-out stem, flanged arms B16.3 or DIN with different finish: RE, RE 10, RE 15, RE 20 and RE 30.

with standard ISO 5211 TOP FLANGE to ensure easy mounting of any actuation system. Fire Safe Certified executions to BS 6755 part 2 and API 607 4th Edition are available for all valves' types; TA-LUFT low emission certificates are available for most common types and executions. Special accessories may be installed on the whole range, such as: Gearboxes, Actuators.

Chain Wheels, Locking Devices, Stern extensions for insulation, cryogenic and high temperature service, limit switches, pup pieces, heating jackets.



VALVES with NIPPLED AND THREADED ENDS

DAFRAMI's NIPPLED AND THREADED ENDS ball valves figures are defined by the following "fields"

FIGURE	1st "field"	D	standard
2nd "field"	class	800, 1500, 3000	
3rd "field"	bore	F = Full / R = reduced	
4th "field"	ends	BW, SW, PE, NPT, BSP, GAS	
5th "field"	optional	3P in case of three piece body	
6th "field"	optional	CRYO = Cryogenic /// HT = High Temperature	

i.e. Ball valve - cl. 800 - Full Bore - one end BW/one end NPT female = **D800-F-BW/NPT** (if 3 pcs body = **D800-F-BW/NPT-3P**)

FACE to FACE / END TO END - [mm]

ANSI BALL VALVES										
1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
32	40	50	65	80	100	125	150	200	250	300
140	165	178	191	203	229	254	267	292	330	356
140	165	178	191	203	229	254	267	292	330	610
140	165	203	222	241	305	386	394	457	533	610
190	216	241	263	305	381	403	419	457	502	502
190	216	241	263	305	381	403	419	457	502	648
241	292	330	356	432	559	559	660			
241	292	330	356	432	559	559	660			
305	368									
305	371									
305	368									
305	371									
280	305	368								
280	305	371								
384	451									
384	454									
384										
50	60	72	95	116	140		210			
50	60	72	95	116	140		210			
DIN BALL VALVES										
130	140	150	170	180	190	325	350	400	450	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
130	140	150	170	180	190					
180	200	230	290	310	350					
130	140	150	170	180	190	325	350	400	450	
180	200	230	290	310	350	400	450	450	450	
130	140	150	170	180	190	325	350	400	450	
180	200	230	290	310	350	400	480	600	730	
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180	200	230	290	310	350	400	480	600	730	
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180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
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140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
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180	200	230	290	310	350	400	480	600	730	
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180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230	290	310	350	400	480	600	730	
140	150	170	180	190	325	350	400	450	450	
180	200	230								

METAL SEATED BALL VALVES for HIGH TEMPERATURE SERVICE

DAFRAM's ball valve range (cl. 150lbs to 2500lbs / PN 10 to PN400 - from 1/4" to 36") is available in METAL to METAL seated design for HIGH TEMPERATURE SERVICE up to +400°C, equipped with specially designed stem extensions in FLOATING BALL and TRUNNION MOUNTED execution.

Basic standards are : API, ANSI, DIN

Depending on the service required, different surface treatments are available on ball and seat rings, such as : Tungsten Carbide Coating (WC) and Chromium Carbide Coating (CrC).

Different materials are available to suit the most common applications.

DAFRAM has conducted laboratory tests at high temperature on different prototypes.

DAFRAM laboratories are equipped to test the valves with gas at the temperature pressure of the actual service conditions. Cycling tests as well as leakage tests to the environment or through the seats may be performed, upon request, with gas at high pressure and high temperature conditions.

METAL SEATED BALL VALVES for ABRASIVE SERVICE

The DAFRAM ball valve range (cl. 150lbs to 2500lbs / PN10 to PN400 - from 1/4" to 36") is available in METAL TO METAL seated design for ABRASIVE SERVICE in FLOATING BALL and TRUNNION MOUNTED execution.

Basic standards are : API, ANSI, DIN

Depending on service conditions required different surface treatments are available on ball and seat rings, such as: Tungsten Carbide Coating (WC) and Chromium Carbide Coating (CrC) while a special hardening process (DAFRADUR) has been specially developed for abrasive conditions. Different materials are available to suit the most applications.

CRYOGENIC BALL VALVES

The DAFRAM ball valve range (cl. 150lbs to 2500lbs / PN10 to PN4000 - from 1/4" to 36") is available in special design for CRYOGENIC use for service temperatures from -140°C up to 150°C, in FLOATING BALL and TRUNNION MOUNTED, Double Block and Bleed, with SELF RELIEVING facility for normal uses and for dangerous expanding fluids (LPG).

Basic standards are : API, ANSI, DIN

Depending on the service conditions and on the lowest working temperature DAFRAM's CRYOGENIC ball valves are assembled with special stem extensions (vapour space to SHELL 77/200) and in Fire Safe design.

Different materials are available to suit most common applications, such as:

ASTM A350 gr. LF2.

ASTM A352 gr. ICC

ASTM A182 gr E316(I)

ASTM A351 gr. CF8M/CF3M

Special alloys are available upon specific request.

ACTUATED BALL VALVES

The DAFRAM ball valves are supplied with standard manual operators :

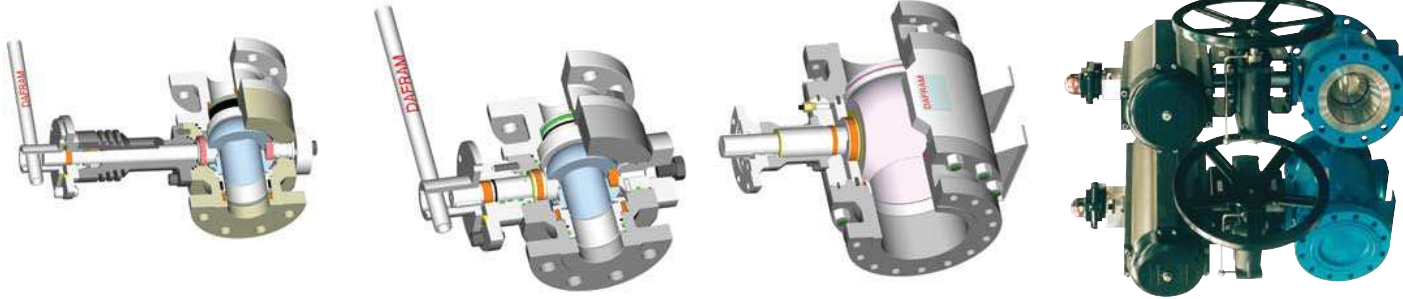
- Levers / Hand Wheel Worm Gear Operators

All valves are designed with standard TOP FLANGE ISO 5211 for easy mounting of any of the most advanced remote actuating systems, such as :

- ELECTRIC MOTOR OPERATORS for MOV service,
- PNEUMATIC and HYDRAULIC Actuators for regular ON-OFF service or for continuous cycling
- PNEUMATIC and HYDRAULIC Actuators for EMERGENCY SHUT DOWN (ESD) services

Specific manuals have been developed for the sizing of any actuation systems and special equipments are used for the detection of the valves torque upon delivery.

Assembling and functional pressure tests are carried out in DAIFRAM's own testing workshop with the most advanced actuation and control facilities.



Ball valves for underground service - gas distribution



Special valves for UNDERGROUND SERVICE are manufactured by DAFRAM for GAS DISTRIBUTION services.

Depending on the specific case, DAFFRAM's valves are designed acc. To API6D, BS5531, ASME B16.34 and UNI-CIG 9734 – D.M.54/11/84, and available with bolted, seal welded or fully welded bodies, Full and Reduced Bore, from 1" up to 36", body ratings 150lbs to 2500lbs / PN10 to PN400

All valves may be supplied for installation in pit or buried, Floating and Trunnion Mounted with BW ends according to ASME B16.25, anti blow out stem, antistatic device, equipped with stem extensions to the main international standards and rules. Special executions with welded on pipe nipples (cup pieces), special purging bleed connections and stem extensions of specific length are available on request.

Trunnion Mounted Ball Valves are Double Block and Bleed to API-6D and with Self Relieving or Double Piston effect seats.

External surface protection for underground applications is generally given by Epoxidic Resin Coating with thickness 100µm to 1500µm. Other painting cycles may be performed upon request.



TOP ENTRY BALL VALVES

On request DAFRAM can manufacture valves, Floating and Trunnion mounted, cl. 150lbs to 2500lbs / PN10 to PN400, Carbon Steel, Stainless Steel and Nickel alloys are available in TOP ENTRY design for easy maintenance on the internal components without removing the valve from the line.

SELECTION OF MAIN MATERIALS

Part name	Standard Carbon Steel	Standard Low Temperature Carbon Steel	Standard Stainless Steel	Standard 22Cr Duplex and 25Cr Super Duplex Alloys	6Mo
Abbreviation	CS	LTCS	SS	DUP & S/DUP	SMO
BODY and CONNECTOR	ASTM A216 gr. WCB	ASTM A352 gr. LOC	ASTM A351 gr. CF8M	ASTM A890 gr. 4A	ASTM A351 CK3M/CUN
	ASTM A105 - A105N	ASTM A350 gr. LF2	ASTM A351 gr. CF3M	ASTM A890 gr. 5A	ASTM A182 gr. F44
			ASTM A182 gr. F316	ASTM A182 gr. F51	
			ASTM A182 gr. F316L	ASTM A182 gr. F53 or F55	
	ASTM A351 gr. CF8M/ CF3M	ASTM A351 gr. CF8M/ CF3M	ASTM A890 gr. 4A		ASTM A351 CK3M/CUN
	ASTM A216 gr. WCB + ENP		ASTM A890 gr. 5A	ASTM A182 gr. 5A	ASTM A182 gr. F44
	ASTM A352 gr. LOC + ENP	ASTM A352 gr. LOC + ENP	ASTM A182 gr. F316/ F316L	ASTM A182 gr. F51	
BALL	ASTM A182 gr. F316/ F316L	ASTM A182 gr. F316/ F316L	ASTM A182 gr. F51	ASTM A182 gr. F53 or F55	
	ASTM A105 - A105N + ENP				
	ASTM A350 gr. LF2 + ENP	ASTM A350 gr. LF2 + ENP			
STEM	ASTM A182 gr. F316/ F316L	ASTM A182 gr. F316/ F316L	ASTM A182 gr. F316/ F316L	ASTM A182 gr. F51	ASTM A182 gr. F44
	ASTM A182 gr. F51	ASTM A182 gr. F51	ASTM A182 gr. F51	ASTM A182 gr. F53 or F55	
	ASTM A105 - A105N + ENP	ASTM A350 gr. LF2 + ENP			
	ASTM A350 gr. LF2 + ENP	ASTM A546 gr. F50 (17-4Ph)			
	ASTM A546 gr. F50 (17-4Ph)	AlSi 4140 + ENP			
	AlSi 4140 + ENP				
SEAT / INSERT	PTEE, PTFE+15%GF, PTFE+25%GF, PTFE+50%SS, PTFE+20%Carbon+5%Grafite, NYLON, PEEK, KEL-F, VITON				
SPRINGS (Turn.)	INCONEL X-750 - INCONEL 625				
FIRE SAFE SEALS	EXPANDED GRAPHITE				
	ASTM A193 B7/A194-2H	ASTM A320 L7/A194 G-7	ASTM A193 B8/A194-8	ASTM A193 B8/ A194-8	ASTM A193 B8/ A194-8
BOLTS	ASTM A193 B7M/A194-2HM	ASTM A320 L7M/A194 G-7M	ASTM A193 B8M/A194-8M	ASTM A320 L7/A194 G-7 HDG	ASTM A320 L7/A194 G-7 HDG
				ASTM A320 L7/A194 G-7 HDG	

CAST ALLOY FORGED or BAR STOCK

Other materials normally used : ASTM A182 gr. F6a cl. 2, ASTM A743 gr. CA15, Nickel Alloy 625 ASTM B564 UNS N06625, Nickel Alloy 625 ASTM A494 gr. CW-6MC, Titanium B348 gr. 215/711

ENP = Electroless Nickel Plating 30mic or 75mic

Other alloys available upon specific request.

BALL VALVES FOR FUGITIVE EMISSIONS

DAFRAM's ball valve range may be supplied with special stem extensions to reduce the fugitive emission to the environment and equipped with stem leakage detection plugs.

Most of the standard valves are TA-LUFT certified while special executions may be tested and certified with Helium tests according to the following methods:

- Quantitative : vacuum - ASME V Art. 10 App. V par. 1062.2 (method of detection) - "Detector Probe technique" - for leakage of 1 x 10⁻⁶ mBar x L / sec. (this test is able to quantify the leak entity)
- Qualitative : SNIFFER METHOD - ASME V Art. 10 Par. 1000 "Detector Probe technique" - for leakage of 1 x 10⁻⁶ mBar x L / sec. (this test is able to verify if the sniffer detects a leak within its sensitivity range)

Level 2, ASNT TC-1A: 2001 Qualified Inspectors

TRUNNION MOUNTED BALL VALVES

DAFRAM's TRUNNION MOUNTED ball valves figures are defined by the following table:

[illegible]

i.e. a Full Bore ball valve, TRUNNION MOUNTED, Class 300lbs, B16.5 300RF ends, DN600 is : F3FP

DAFRAM TRUNNION mounted ball valves are built as standard in accordance with the design requirements of API 6D and, upon request, B16.34: both in two and three piece bolted construction.

Independent floating spring loaded seat rings are always in contact with the ball to provide an effective tight seal at low differential pressures.

At higher differential pressures, the upstream seat ring becomes pressure energised against the ball to ensure the seal, whilst the downstream seat remains spring loaded. The single sealing feature standard on

DAFRAM TRUNNION mounted ball valves, is ideal for block and bleed service to API 6D. The valve body cavity can be vented to atmosphere through a bleed valve and completely drained by removing the drain plug with the bleed valve. This feature allows the operator to safely drain the valve without the need for opening a venting or venting

ball in closed position, even when the line is pressurised. This feature also allows easy replacement of upper stem seal and the checking of the sealing of the seats, while the valve is installed in the pipeline. The wholeline handle may be supplied with two basic seating design criteria:

- SELF-RELIEVING SEATS (standard) providing the self-relieving of the body cavity overpressure
- DOUBLE PISTON EFFECT (upon request) providing a double barrier against the fluid. In this case when the upstream seat fails, the downstream seat ensures the seat tightness the valve body is equipped with an automatic safety valve to release the body overpressures in case of expanding fluids)

All valves meet the antistatic requirements of BS 5351. Positive anti blow-out stem design retained by the valve body on complete product range prevents the stem removal when valve is installed. The body and top flange

joints incorporate double sealing components. (secondary seal is made of expanded graphite) to ensure safe body sealing even in the event of a fire. All valves are tested to resist fire exposure, both outside and on-line.

with very low losses, in compliance with BS 6755 part. 2 and API 607 IV Ed. Valves size 6" and above may be equipped with seat injection fittings to perform the emergency sealing by the injection of sealant through an

orifice and special grooves of the seat ring into seating area. Valves up to 4" can be equipped with a body cavity port through which the sealant spreads on the ball surface and then reaches the seat area when the

ball rotates to close. In all DAFRAM TRUNNION mounted ball valves the ball turns on two dry bushes to reduce the operating torque. These bushes are maintenance free, even under the most severe service conditions.

[illegible]

DIFFERENT BORE REDUCTIONS ARE AVAILABLE UPON REQUEST (i.e.: 12"x8", 14"x12", 16"x14", 20"x18")

ALL VALVES WITH HUBENDS ARE MANUFACTURED AS STANDARD WITH FACE TO FACE AS PER TYPE. DAFRAM SUGGESTS THE USE OF GEAR OPERATORS FOR ALL VALVES SIZE 6" AND LARGER.

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