no bloc DAFRAM S.p.A.

VALVOLE A SFERA - BALL VALVES

SUBSEA BALL VALVES

Ex TÜV CERT LICENSE 6D-0265 CE 1370 RINA QUACER CISQ ISO 9001 CERTIFICATO N. 4/89

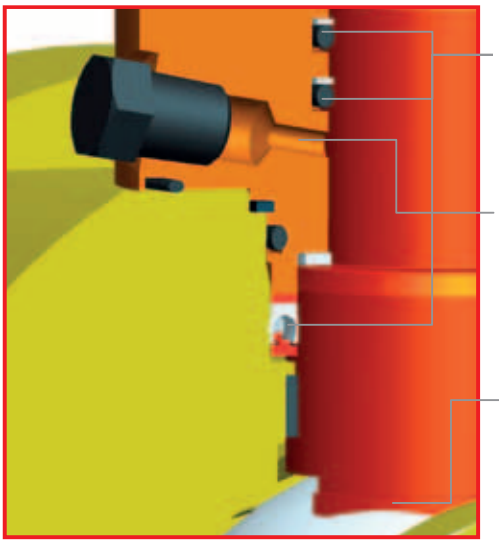
DAFRAM SUBSEA VALVE SOLUTIONS

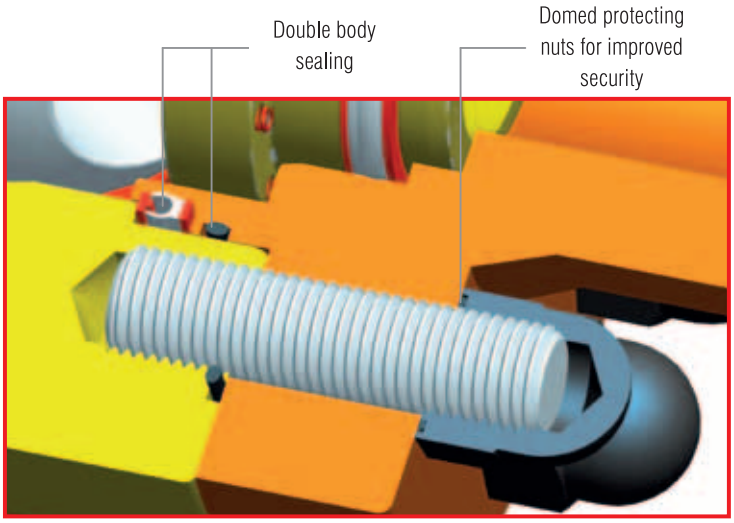
Trunnion mounted ball, side entry, top entry and Double Block&Bleed

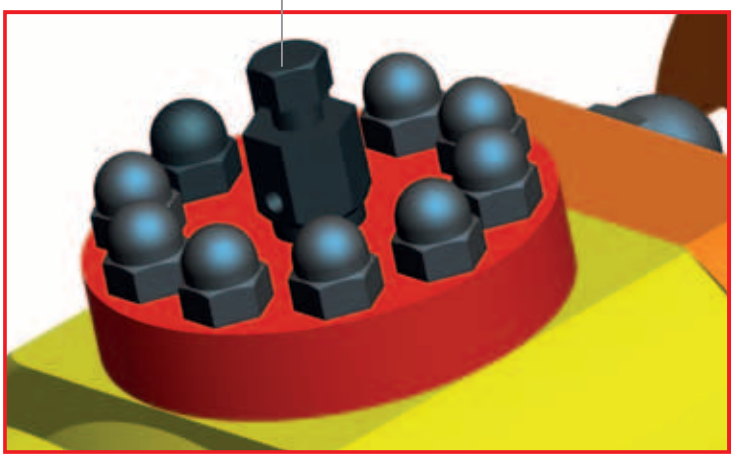
DAFRAM S.p.A., founded in 1956, was the first company to manufacture floating ball valves in Italy. The long experience gathered during more than 60 years of activity ensures that Dafram is one of the most famous and competitive ball valve companies in the world.

MAIN FEATURES

• Bore	Full Bore and Reduced Bore options are available, Full Bore valves are suitable for the passage of all types of pipeline scrapper and inspection pigs without causing damage to either the valve or the pig.
• Seats	Body cavity over pressurization is controlled via the self relieving seats. For double block and/or emergency Shut Down Valves (SSIV/SSDV), double piston effect seals will provide the secondary seal as per API 6D DIB-2.
• Seals	Tripple stem and dual body seals prevent leakage from the pipeline to the environment and prevent ingress of seawater into the valve body.
• Stem retention	Anti blow out stem to prevent stem ejection by internal pressure when the stem packing and/or retainer have been removed.
• Position indication	Ball position indication stops are provided for fully open and fully closed positions. Stops can be provided within any of the valve body, gearbox, ROV receptacle or the hydraulic actuator.
• Cathodic protection (CP)	Electrical continuity between all metallic components is guaranteed. Every valve is supplied with a permanent connection for linking up to the customers CP system.
• External coatings	Regardless of the body material, all subsea valves are supplied with an external protective paint. These protective coatings provide high visibility and/or minimize the build up of sea growth on the valve.
• Valve markings	Along with the stainless steel nameplates, antifouling subsea marking systems are used for improved visibility and long lasting resistance to marine bio fouling. These allow quick and precise diver and/or ROV orientation and identification in low visibility situations.







Manufacture

DAFRAM provides all Subsea valves designed and manufactured in-house. Our modern and comprehensive production facilities allow us to machine, weld, conduct non destructive examination processes and apply a wide range of protective paint systems, all under one roof.

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DAFRAM subsea trunnion mounted ball valves figures are defined by the following table:

First area: BORE	Second area: CLASS	Third area: ENDS TYPE	Fourth area: CONSTRUCTION
F = full bore R = reduced bore	1 = class 150lbs 3 = class 300lbs 6 = class 600lbs 9 = class 900lbs 15 = class 1500lbs 25 = class 2500lbs 83 = class 5000psi 84 = class 10000psi 85 = class 15000psi	J = ANSI B16.5 – RTJ F = ANSI B16.5 – RF H = HUB ENDS W = BUTT WELDING	S = 2 PIECES BODY, SIDE ENTRY, UP TO 4" FB AND 6"x4" RB (*) P = 3 PIECES BODY, SIDE ENTRY, FROM 6" FB AND 8"x6" RB AND ABOVE (*) TWO PIECES CONSTRUCTION (CODE "S") IS ALSO AVAILABLE FOR BIGGER SIZES IN CAST EXECUTION

i.e. a full bore trunnion mounted ball valve, class 300lbs, B16.5 300RF ends, DN600 is: F3FP
In the case of top entry ball valves the name is preceded by the letter T (i.e. TF3FP)
In the case of fully welded trunnion mounted ball valves the name is preceded by the letter W (i.e. WF3FP)

DAFRAM trunnion mounted ball valves are built as standard in accordance with the design requirements of API 6A/17D, API 6DSS and, upon request, B16.34; the body can be in two and three piece bolted or welded 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 a tight 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 to API 6D DIB-2.

Size And Pressure Range

API 6DSS 150 cl to 2500 cl, 2" to 24" NB
API 6A/17D 5000 psi to 15000 psi, 2-1/16" to 11"

Materials Of Construction

Manufactured in a range and combination of carbon steel, stainless steel and nickel alloys to suit the process conditions.

Metal Seated Ball Valves For Abrasive Service

Depending on service conditions required, different surface treatments are available on ball and seat rings, such as Tungsten Carbide Coating (TCC/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 most applications.

Subsea Trunnion Types Available

- Side Entry, single and double isolation
- Top Entry, single and double isolation
- Fully Welded, single and double isolation
- Modular Double Block & Bleed, bolted and all welded construction

Certification

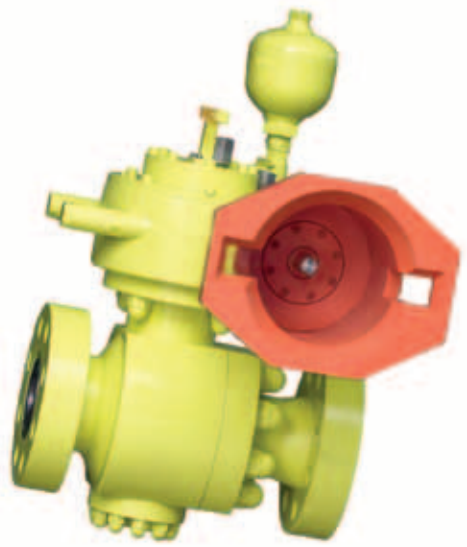
- API 6A
- API 6D
- API 6DSS

Qualification

- API 6A Annex F - PR2
- API 6DSS Annex B - Hyperbaric

FACE to FACE / END to END - [mm]

2 pcs	inches	2" 2"x1.1/2"	3" 3"x2"	4" 4"x3"	6"x4"
	mm	DN50 FB & RB	DN80 FB & RB	DN100 FB & RB	DN150 RB
150lbs					
J = RTJ	F1JP, R1JP	191	216	241	406
F = RF	F1FP, R1FP	178	203	229	394
W = BW	F1WP, R1WP	216	283	305	457
300lbs					
J = RTJ	F3JP, R3JP	232	298	321	419
F = RF	F3FP, R3FP	216	283	305	403
W = BW	F3WP, R3WP	216	283	305	457
600lbs					
J = RTJ	F6JP, R6JP	295	359	435	562
F = RF	F6FP, R6FP	292	356	432	559
W = BW	F6WP, R6WP	292	356	432	559
900lbs					
J = RTJ	F9JP, R9JP	371	384	460	613
F = RF	F9FP, R9FP	368	381	457	610
W = BW	F9WP, R9WP	368	381	457	610
1500lbs					
J = RTJ	F15JP, R15JP	371	473	549	711
F = RF	F15FP, R15FP	368	470	546	705
W = BW	F15WP, R15WP	368	470	546	705
2500lbs					
J = RTJ	F25JP, R25JP	454	584	683	927
F = RF	F25FP, R25FP	451	578	673	914
W = BW	F25WP, R25WP	451	578	673	914



FACE to FACE / END to END - [mm]

	2/3 pcs	inches	6"	8" - 8"x6"	10" - 10"x8"	12" - 12"x10"	14" - 14"x10"	16" - 16"x12"	18" - 18"x16"	20" - 20"x16"	24" - 24"x20"
		mm	DN150 FB	DN200 FB & RB	DN250 FB & RB	DN300 FB & RB	DN350 FB & RB	DN400 FB & RB	DN450 FB & RB	DN500 FB & RB	DN600 FB & RB
150lbs	J = RTJ	F1JP, R1JP	406	470	546	622	698	775	876	927	1.080
	F = RF	F1FP, R1FP	394	457	533	610	685	762	864	914	1.067
	W = BW	F1WP, R1WP	457	521	559	635	762	838	914	991	1.143
300lbs	J = RTJ	F3JP, R3JP	419	518	584	664	778	854	930	1.010	1.165
	F = RF	F3FP, R3FP	403	502	568	648	762	838	914	991	1.143
	W = BW	F3WP, R3WP	457	521	559	635	762	838	914	991	1.143
600lbs	J = RTJ	F6JP, R6JP	562	664	791	841	892	994	1.095	1.200	1.407
	F = RF	F6FP, R6FP	559	660	787	838	889	991	1.092	1.194	1.397
	W = BW	F6WP, R6WP	559	660	787	838	889	991	1.092	1.194	1.397
900lbs	J = RTJ	F9JP, R9JP	613	740	841	968	1.038	1.140	1.232	1.334	1.568
	F = RF	F9FP, R9FP	610	737	838	965	1.029	1.130	1.219	1.321	1.549
	W = BW	F9WP, R9WP	610	737	838	965	1.029	1.130	1.219	1.321	1.549
1500lbs	J = RTJ	F15JP, R15JP	711	841	1.000	1.146	1.276	1.406	1.559	1.686	1.702
	F = RF	F15FP, R15FP	705	832	991	1.130	1.257	1.384	1.537	1.664	1.698
	W = BW	F15WP, R15WP	705	832	991	1.130	1.257	1.384	1.537	1.664	1.698
2500lbs	J = RTJ	F25JP, R25JP	927	1.038	1.292	1.444	1.597	---	---	---	---
	F = RF	F25FP, R25FP	914	1.022	1.270	1.422	1.575	---	---	---	---
	W = BW	F25WP, R25WP	914	1.022	1.270	1.422	1.575	---	---	---	---

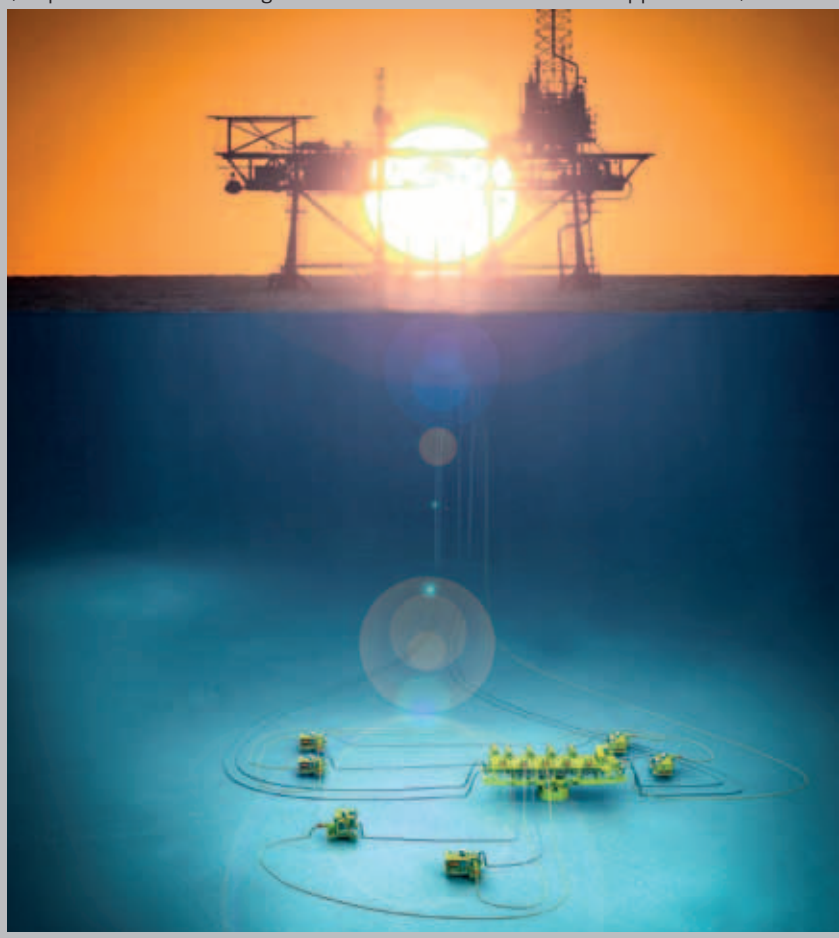
DIFFERENT BORE REDUCTIONS ARE AVAILABLE UPON REQUEST (i.e.: 12"X8", 14"x12", 16"x14", 20"x18")
ALL VALVES WITH HUB ENDS ARE MANUFACTURED AS STANDARD WITH FACE TO FACE AS PER TYPE RTJ BUT SPECIAL DIMENSIONS ARE AVAILABLE UPON SPECIFIC REQUEST

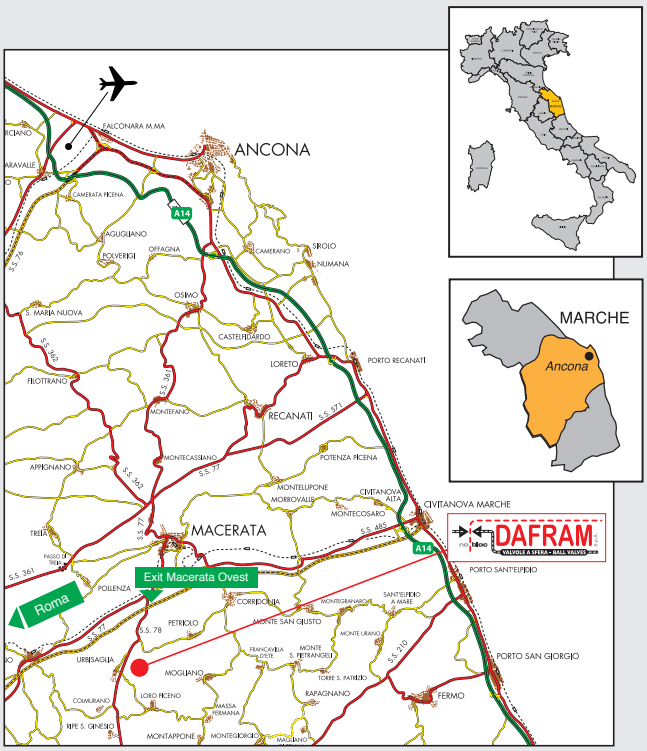
DAFRAM

SUBSEA VALVE SOLUTIONS

International Standards

API 6DSS (EN ISO 14723:2009) Pipeline Transportation Systems – Subsea Pipeline Valves
API 6A - Specification for Wellhead and Christmas Tree Equipment
API 598 (Inspection Testing)
ASME B16.34 (Valves-Flanged, Threaded And Welding End)
ASME B16.5 (Pipe Flanges And Flanged Fittings)
ASME B16.10 (Face to Face Dimensions)
ASME Boiler And Pressure Vessel Code VIII & IX
ASME B31.8 – Gas Transmission And Distribution Piping Systems
ASME B31.4 – Liquid Petroleum Transmission Piping Systems
ISO10433 Underwater Safety Valves
ISO 4406 Hydraulic Fluid Cleanliness
NORSOK U-001
BS EN 10204 Metallic Products Inspection Documents
EU Pressure Equipment Directive
EN ISO 9001:2000
NACE MR0175 / ISO 15156
(Sulphide Stress Cracking Resistant Materials For Offshore Applications)





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