OCEANEERING®

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Pressure-Balanced Breakaway Joint

Protecting subsea assets from unplanned loading

The Pressure-Balanced Breakaway Joint (PBBJ) provides a connector solution that enables separation if an externally applied tension load exceeds a preset value.

The intentional separation of the joint protects the pipeline and prevents overloading and costly damage to structures to which the pipeline is attached. The PBBJ protects structures including platforms, risers, offshore tanker loading installations, subsea production systems, and lateral pipeline tie-ins from potential loads caused by anchor drags, mudslides, iceberg scouring, and violent sea states.

FEATURES

- **Factory assembled and tested with preset, project-defined separation loads**
- **Separation load can be adjusted**
- **Separation is independent of internal and external pressures**

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The separation load of the PBBJ can be adjusted by a qualified Oceaneering technician prior to installation and without requiring disassembly of pressure containing components. A split locking ring is used to prevent installation loads from causing an unwanted separation of the PBBJ during pipe lay.

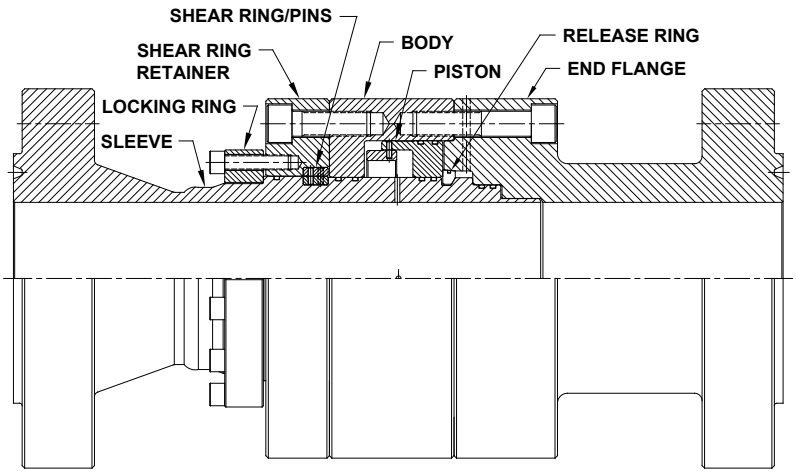
Additionally, the separation of the joint is independent of both the pipeline internal pressure and external water depth pressure. In the event that the PBBJ is activated due to excessive loading, it can be refurbished by Oceaneering for reuse.

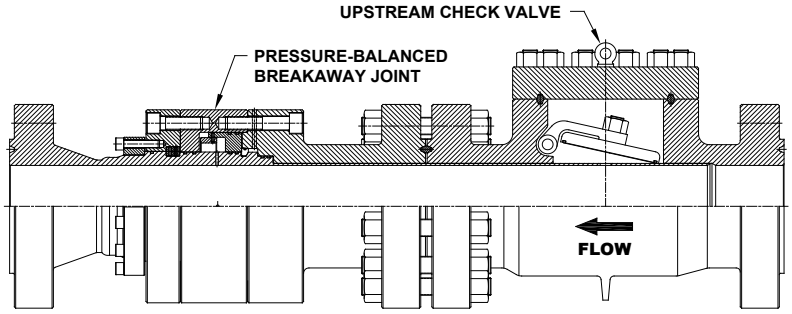
Design Parameters
Nominal pipe size (NPS): Any API Specification 5L pipe, wall thickness, and grade
Service: Standard (e.g., crude oil, natural gas, hydrocarbons, water, or chemical injection) and sour (e.g., hydrogen sulfide, carbon dioxide)
Design pressure rating: Up to ANSI 2,500 psig or API 10,000 psig WP
Design temperature range: 25°F to 250°F / -4°C to 121°C
Design life: 25 years

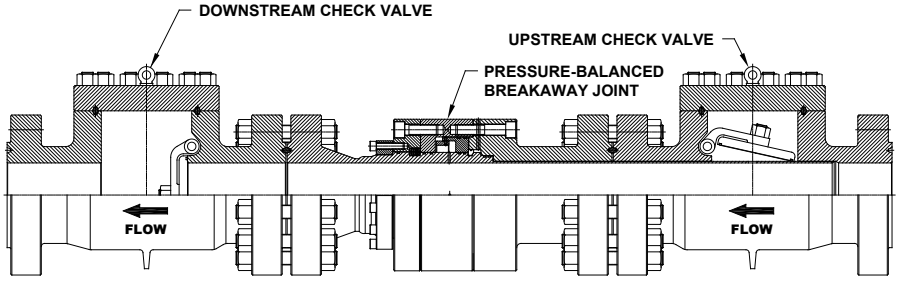
Material Specifications
End flange, body, and shear ring retainer: ASTM A105 forging
Sleeve and RTJ weld neck flange: ASTM A694 F52 forging
Locking ring, piston, and shear rings: AISI 4130
Shear pins: ASTM A564 Type 630 annealed
O-Ring seals: Viton®
Hex socket head cap screws: ASTM A193 Gr. B7, Xylan coated (i.e., PTFE, dark blue)
External coating: Carboline® 890 epoxy paint system, safety yellow color

Applicable Design Codes, Standards, and Specifications (latest editions)
PCRS Group Pressure-Balanced Breakaway Joint Drawings, Bill of Materials (Controlled Copies), and Vendor Supplied Material Test Reports
OIE ISO 9001:2000 Quality Assurance – Quality Control Procedures and PCRS Operating Procedures
ASME Boiler Pressure Vessel Code, Section V Nondestructive Examination
ASME Boiler Pressure Vessel Code, Section VIII, Divisions 1 and 2
ASME Boiler and Pressure Vessel Code, Section IX Welding and Brazing Qualifications
ASME B16.5, Pipe Flanges and Flanged Fittings
ASME B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
ASME B31.8, Gas Transmission and Distribution Systems
ASME B18.2.1, Square and Hex Bolts and Screws Inch Series
API 6H, Specification on End Closures, Connectors, and Swivels
API 5L, Specification for Line Pipe
MSS SP-44, Steel Pipeline Flanges
NACE MR0175, Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment
Code of Federal Regulations, Title 49, Parts 192 and 195

Certifications
ISO 9001:2015 – World Certification Services Ltd. – Accredited by UKAS Quality Management
EN 10204 Section 3.1B (DIN 50049), Inspection Documents for the Delivery of Metallic Products







Pressure-Balanced Breakaway Joints		
NPS	Max. Design Load (kips)	Max. Design Load (kips)
	Separation	Installation
2 in	85	55
3 in	125	85
4 in	165	110
6 in	250	170
8 in	335	225
10 in	415	275
12 in	500	335
14 in	585	390
16 in	665	445
18 in	750	500
20 in	835	555
24 in	1,000	670

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