

Dual Revolution Open Water Valve (IL-0501 Rev D)



HYDRAULICALLY OPERATED, COMPACT, DUAL STACK, INCORPORATING SHEAR AND SEAL REVOLUTION VALVE DESIGNED WITH HIGH CUTTING PERFORMANCE AND RELIABLE POST-CUT SEALING.

Features:

- ▷ Unidirectional coiled tubing cutting valve with recirculation capability.
- ▷ Demountable actuators to facilitate in-situ maintenance, without disturbing drive shaft wellbore seals.
- ▷ Compact & lightweight design.
- ▷ Separate cutting and sealing components in single Revolution device.
- ▷ Mechanical override interface.
- ▷ External Open and Closed indication.

DESIGN DATA

Nominal Bore Diameter	6-3/8" (161.93 mm). Minimum thru bore 6.40" (162.56 mm)
Design Pressure	Working: 15,000 psi (103.4 MPa) Test: 22,500 psi (155.1 MPa)
Design Standards	API 17G 3 rd Edition 2019, API 6A 21 st Edition (ISO 10423) 2019, NACE MR0175
Temperature Class (Design)	API 6A Class U (0°F to 250°F / -18°C to +121°C)
Service	Sour
Material Class	EE, with CRA inlaid seal surfaces (bore wetted)
Product Specification Level	PSL 3G
Shearing Class	Wireline / Slickline / Coiled Tubing

PERFORMANCE DATA

Maximum Hydraulic Pressure	5,000 psi (34.5 MPa)
Actuator Volume (Total, Approx.)	Valve OPEN 3.6 litres. Valve CLOSE 3.6 litres (1.8L per actuator)
Acceptable Hydraulic Fluid	Any water or oil based control fluid
Wireline Cutting Capabilities	All common slickline, e-line and braided cable grades
Coiled Tubing Cutting Capabilities	<u>Indicative Predicted</u> 100ksi min yield, up to 2-3/8" x 0.224" wall thickness 110ksi min yield, up to 2-3/8" x 0.203" wall thickness 130ksi min yield, up to 2" x 0.203" wall thickness <u>Tested</u> 1.75" OD x 0.175" wall thickness, QT-1300 Coiled Tubing c/w 0.464" 7-46P XS Cable 2.00" OD x 0.175" wall thickness, GT-90 Coiled Tubing c/w 0.464" 7-46P XS Cable

VALVE INTERFACES

Design Standard	API 6AF2 5 th Edition, 2013
Upper End Connection	Flange – 7-16" 15K API 6BX (BX-156) Studded
Lower End Connection	Flange – 11" 15K API 6BX (BX-158) Studded
Intermediate, Upper Connection	Flange – 11" 15K API 6BX (BX-158) Studded
Side Outlet, Below Upper Valve	Flange – 2-1/16" 15K API 6BX (BX-152) Studded
Side Outlet, Below Lower Valve	Flange – 2-1/16" 15K API 6BX (BX-152) Studded

WEIGHT AND DIMENSIONS

Overall Height (Nom.) – Flange-to-Flange	51.53" (1,309 mm)
Overall Height (Nom.) – Stud-to-Stud	67.91" (1,725 mm)
Outside Width (Max.) – Actuator-to-actuator	59.86" (1,520 mm)
Approximate Weight (Dry)	4,238 kg (9,343 lbs)
Approximate Weight (In Sea Water)	3,688 kg (8,130 lbs)

STRUCTURAL CAPACITIES: 11", 15K, API 6BX Flange

Maximum Tensile Load @ 0 psi	3,900 kip (limited by API flange capacity*)
Maximum Bending Moment @ 0 psi	1,730 ft-kip (limited by API flange capacity*)
Maximum Tensile Load @ 15,000 psi	1,170 kip (limited by API flange capacity*)
Maximum Bending Moment @ 15,000 psi	520 ft-kip (limited by API flange capacity*)

* As defined in API 6AF2 for studs with Sy = 105 ksi and pre-load tensile stress equal to 52.5 ksi

STRUCTURAL CAPACITIES: 7-1/16", 15K, API 6BX Flange

Maximum Tensile Load @ 0 psi	1,540 kip (limited by API flange capacity*)
Maximum Bending Moment @ 0 psi	410 ft-kip (limited by API flange capacity*)
Maximum Tensile Load @ 15,000 psi	300 kip (limited by API flange capacity*)
Maximum Bending Moment @ 15,000 psi	80 ft-kip (limited by API flange capacity*)

* As defined in API 6AF2 for studs with Sy = 105 ksi and pre-load tensile stress equal to 52.5 ksi

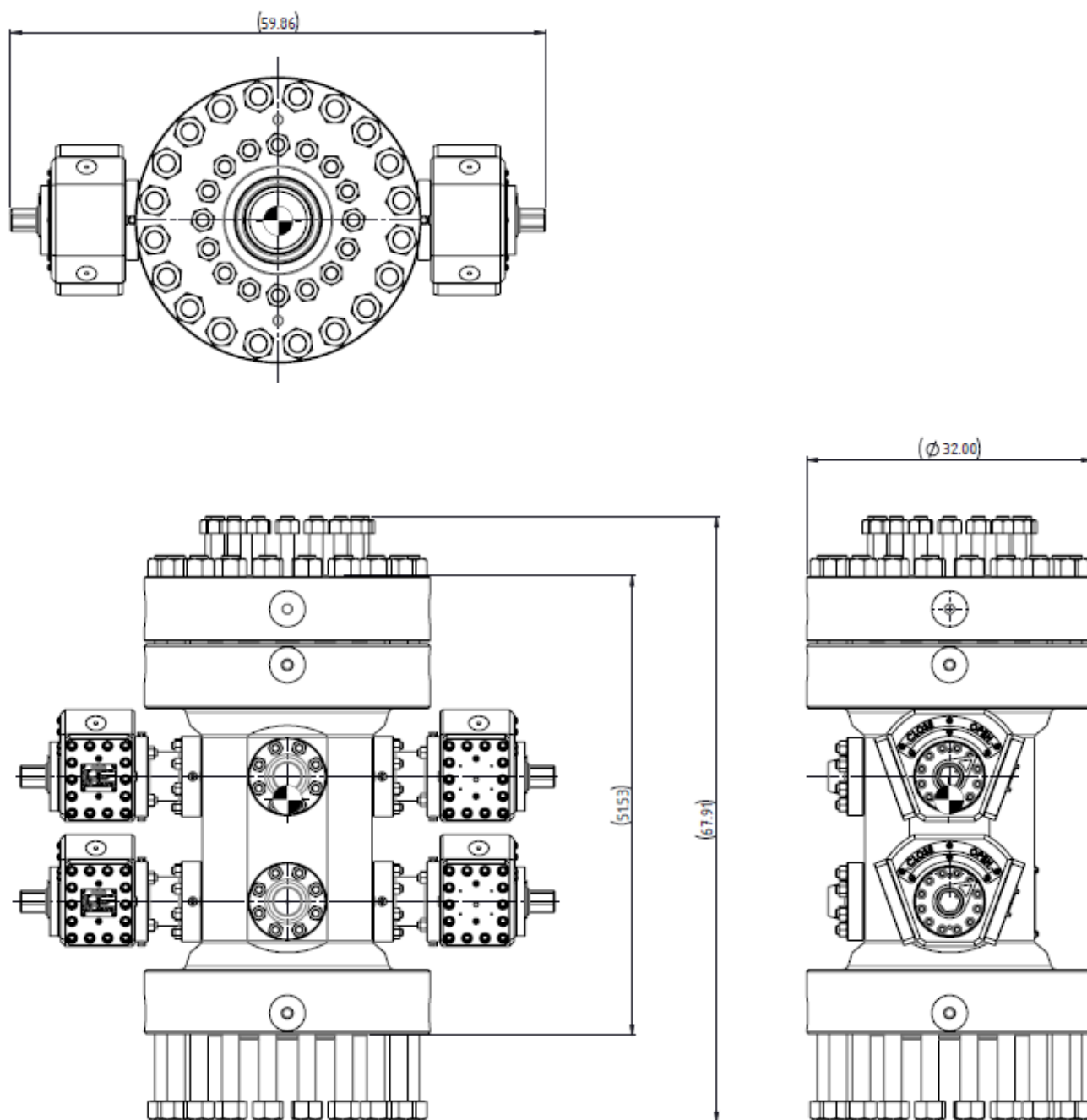
VALIDATION LEVEL

Service Specification Level	API 17G SSL-Gas	
Temperature Class (Operational)	Valve: 0°C to +92°C	Actuator: +2° to +66°C
Water Depth	10,000 ft (3,048 m)	
Shearing	API 17G Shear and Seal Class	

NOTES

API 6A, Annex F, Section F.2.2.2.2 – Dynamic Testing at Room Temperature

This valve is not designed with differential pressure breakout capability, therefore the dynamic test performed was in line with F.2.2.2.2.2, Check Valves and not F.2.2.2.2.1 Gate or Plug Valves.



Document Reference

The information in this document is uncontrolled and subject to change without notice.

CONTACT US: Interventek Subsea Engineering Ltd.

Unit 4 International View, ABZ Business Park, Dyce, ABERDEEN AB21 0BJ

+44 (0)1224 518 509 enquiries@interventek.com www.interventek.com