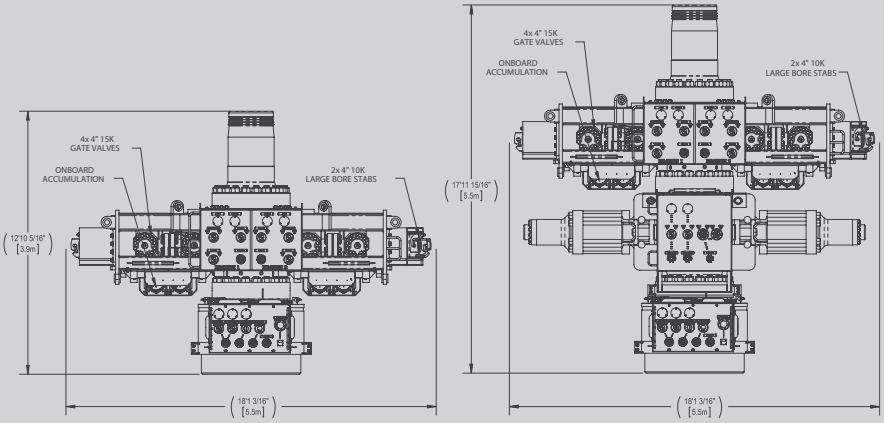
TECHNICAL INFORMATION SHEET

RELIEF WELL INJECTION SPOOL

RWIS
RELIEF WELL INJECTION SPOOL

Key Facts

- Rated to 10,000 FSW &15,000 psi
- Designed to API Specifications
- I3P design verified
- Valve based design
- Erosion resistant and high flow capacity
- Air Freightable and Rapid Deployable
- Configurable with or without a RAM
- Manufactured by Trendsetter Engineering



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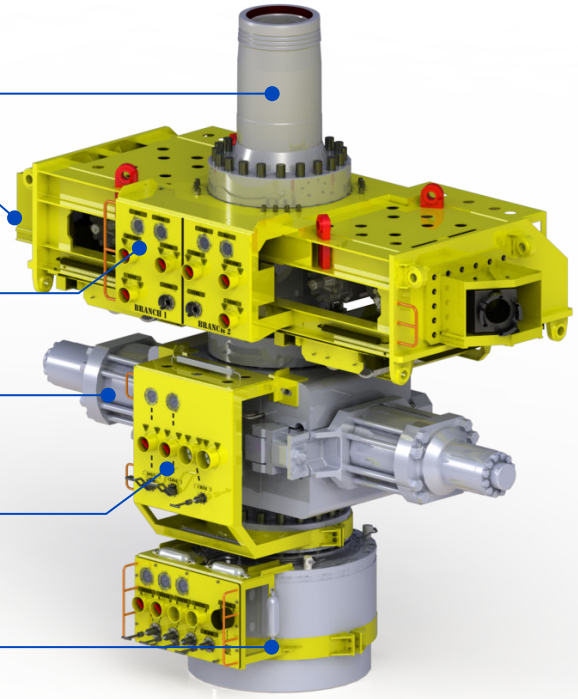
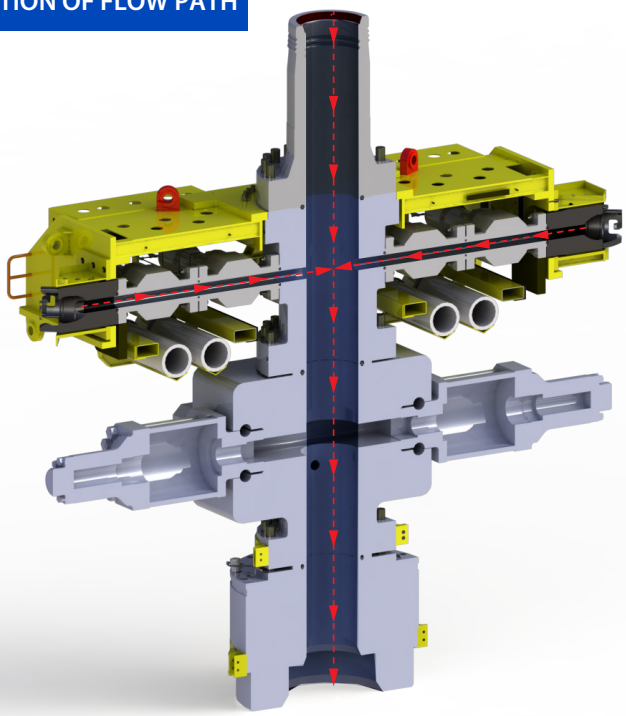


KEY FEATURES

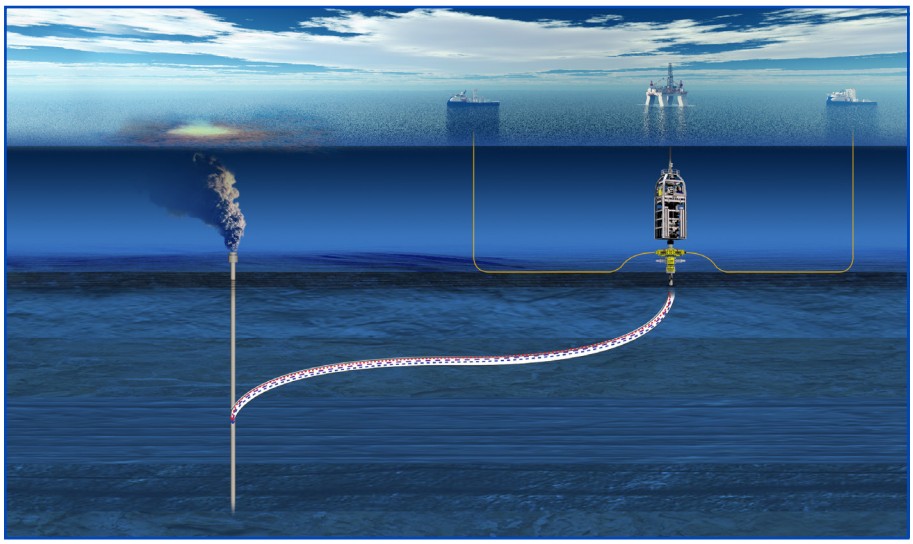
- ☑ Device developed to ensure single relief well contingency for offshore blowouts
- ☑ Gives operators permission to drill wells in challenging/sensitive areas
- ☑ Offers cost savings on well and field development projects
- ☑ Mounted on top of the Relief Well Wellhead
- ☑ Sits between the wellhead and the BOP and has the same bore as the BOP (18 ¾")
- ☑ Includes two valve inlets for high rate pumping
- ☑ Permits significantly more flow capacity
- ☑ Requires no modifications to existing rig systems
- ☑ Does not interfere with primary well control equipment
- ☑ Includes additional well isolation barrier (Optional Lower Pipe Shear RAM)
- ☑ Operated from surface (RIG) and ROV

CROSS SECTION OF FLOW PATH



WEIGHT (AIR): 135,000 LBS APPROX.
62,250 KG APPROX. W/ RAM

WEIGHT (AIR): 70,000 LBS APPROX.
31,750 KG APPROX. W/O RAM



SPECIFICATION

Relief Well Injection Spool

Design Life	1/20 yrs *1
Design Life (pumping)	6 hours *2
Exposure Time (seal exposure to corrosive kill mud)	24 hours *3
Water Depth rating	10,000 ft
Design Pressure – System	10,000 psig
Design Pressure – Wellhead connector, BOP, Chemical Injection lines, Inlet Diverter, Bore Isolation Valves, Upper Mandrel	15,000 psig
Design Pressure – 4" Horizontal Connectors	10,000 psig (minimum)
Rated Working Pressure – Wellhead Connector Function Lines	3,000 psig
Rated Working Pressure – Isolation Valve Hydraulic Functions	3,000 psig
Control Fluid Cleanliness Level	SAE AS-4059 Class 10B-F
Rated Working Pressure – BOP Function Lines	5,000 psig
Operating Temperature Rating (Structures)	-20°C to 60°C [-4°F to 140°F]
Operating Temperature Rating (Flowline Equipment)	-4°C to 60°C [25°F to 140°F]
Storage Temperature (Equipment and Structures)	-20 °C to 60°C [-4 °F to 140°F]
System Hydraulic Fluid	Pelagic 100
Product Specification Level – Flowline Valves & Vertical Connectors	PSL 3
Material Trim per API 6A	DD minimum
NACE MR0175 Compliant	Yes (inside of isolation barriers)

*1) The RWIS is designed for a minimum of 20 years shelf life. Cathodic protection is designed for a minimum of 1 year installed subsea.
*2) The pumping design life sets the parameters for allowable erosion rates during the pumping life of the RWIS.
*3) The exposure time is the minimum design life of any elastomeric seals exposed to kill mud.

add energy

Well kill flow modelling by:

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