

VIRTUS™ VTC SERIES

Vertical Type Connector

AFGlobal's Virtus™ Vertical Type Connector (VTC) makes effective vertical connections for either rigid or flexible jumpers, across a range of sizes. The VTC provides clients with a compact solution that allows for reduced size and weight of the host structure while still providing large capture and misalignment capabilities during the installation lift and final connection. The VTC is designed

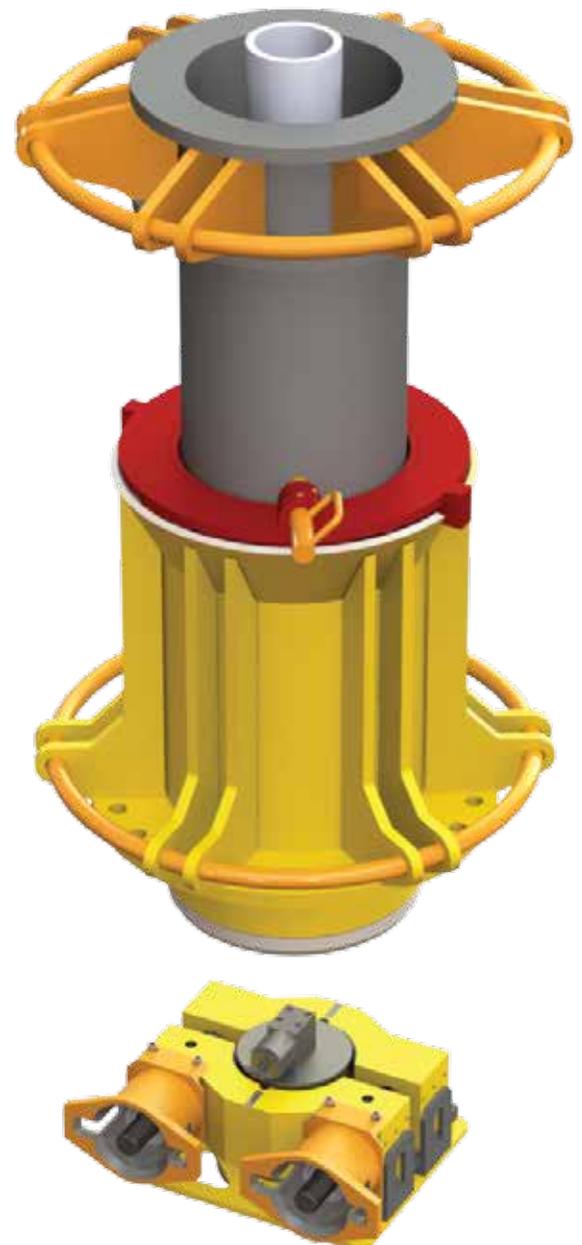
for deep water application, but it offers the same benefits for deployment at any depth. Connection is achieved using simple ROV operated tools, enabling the full installation to be completed with a single ROV dive and with minimal surface intervention. This feature, combined with the ability to wet park the jumper, facilitates efficient and cost effective use of vessel time.

APPLICATIONS

- Flexible jumper connections ranging from NPS 4 and up
- Rigid jumper connections from NPS 4 and up
- Installation scenarios with installation-vessel time constraints
- Ideally suited for deepwater and ultra-deep water

BENEFITS AND DIFFERENTIATORS

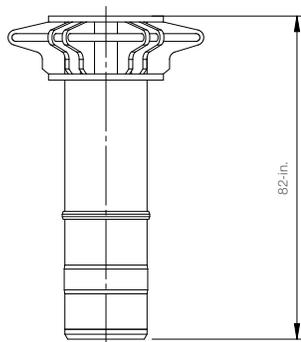
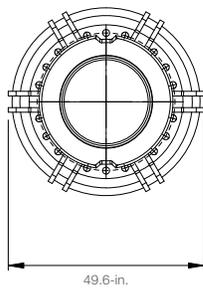
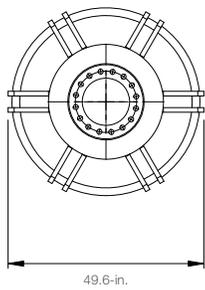
- High bending, tension, and torsion capacities, meeting the most stringent pipeline load capacities
- Designed for large capture and connection ability with large misalignments
- Recessed inboard hub protected by subsea structure, which reduces risks
- First vertical connection system that allows wet parking of jumpers without final connection.
- Final connections can be made on a flexible schedule via a work vessel instead of a crane vessel, which significantly reduces installation costs.
- Compact package translating to reduced size of host structures
- Subsea seal changeout without crane operations
- Interruptible installation sequence
- Light weight full pressure sealing blind
- Time efficient ROV operations
- Available with a fully integrated insulation system
- Single cylinder installation for typical cases, with second cylinder available to overcome high installation loads
- All subsea tools operable by a workclass ROV



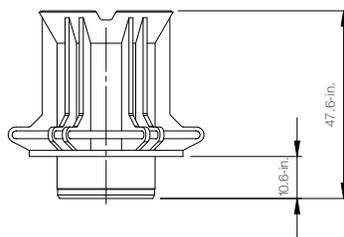
VIRTUS™ VTC 6-IN. AND 8-IN. SYSTEMS

ANGULAR INSTALLATION TOLERANCES	±10° Initial capture
POSITIONAL INSTALLATION TOLERANCES	±6-in. (150 mm)
LINE SIZES	6-in. to 8-in.
PULL IN FORCE	25 Te (single cylinder)
CONNECTION STROKE TOOL	20-in. to 31.5-in. (500 mm to 800 mm)
CONNECTION STROKE TOOL WEIGHT (IN WATER)	110 lbs (50 kg)
PORCH DIMENSIONS	47.6-in. height, 49.6-in. Ø (1210 mm H, 1260 mm Ø)
PORCH WEIGHT (IN AIR)	1,984 lbs (900 kg)
PULLHEAD DIMENSIONS	82-in. height, 49.6-in. Ø (2080 mm H, 1260 mm Ø)
PULLHEAD WEIGHT (IN AIR)	2,866 lbs (1300 kg)
WORKING CLASS ROV INTERFACE SKID	Optional
CONTROL SYSTEM	AFG controls
ROV POWER REQUIREMENT	115v AC 207 bar 10.5gpm (40 lpm) HPU RS 232 or 485 communications
ELEVATION ABOVE SEA FLOOR LIMIT (HORIZONTAL SYSTEMS)	NA
HUB CONFIGURATIONS	6-in./8-in. concentric
PORCH ATTACHMENT TYPES *WELDED / BOLTED	Welded / bolted preferred

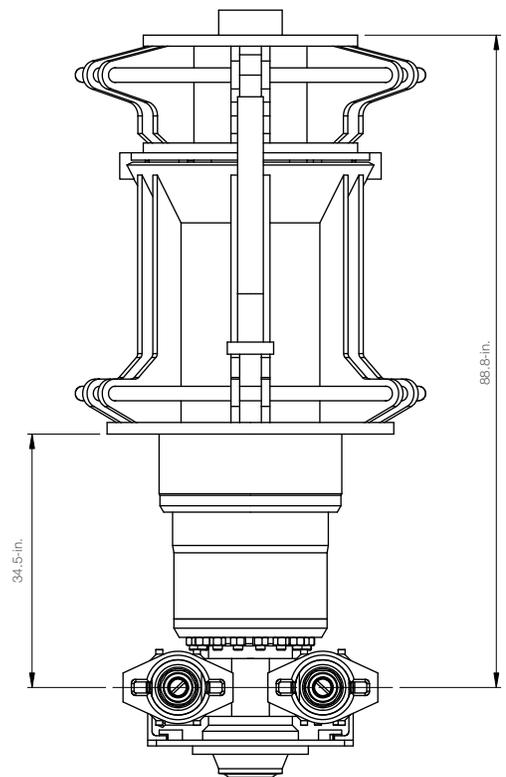
Please see Retlock® clamp brochure for data related to the clamping and sealing technology.



PULLHEAD



PORCH



CONNECTED SYSTEM



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