



Setting a Global Standard



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DQ-VCTM Vertical Connector

EXPERIENCE DRIL-QUIP INNOVATION WITH THE DQ-VC™ VERTICAL CONNECTOR



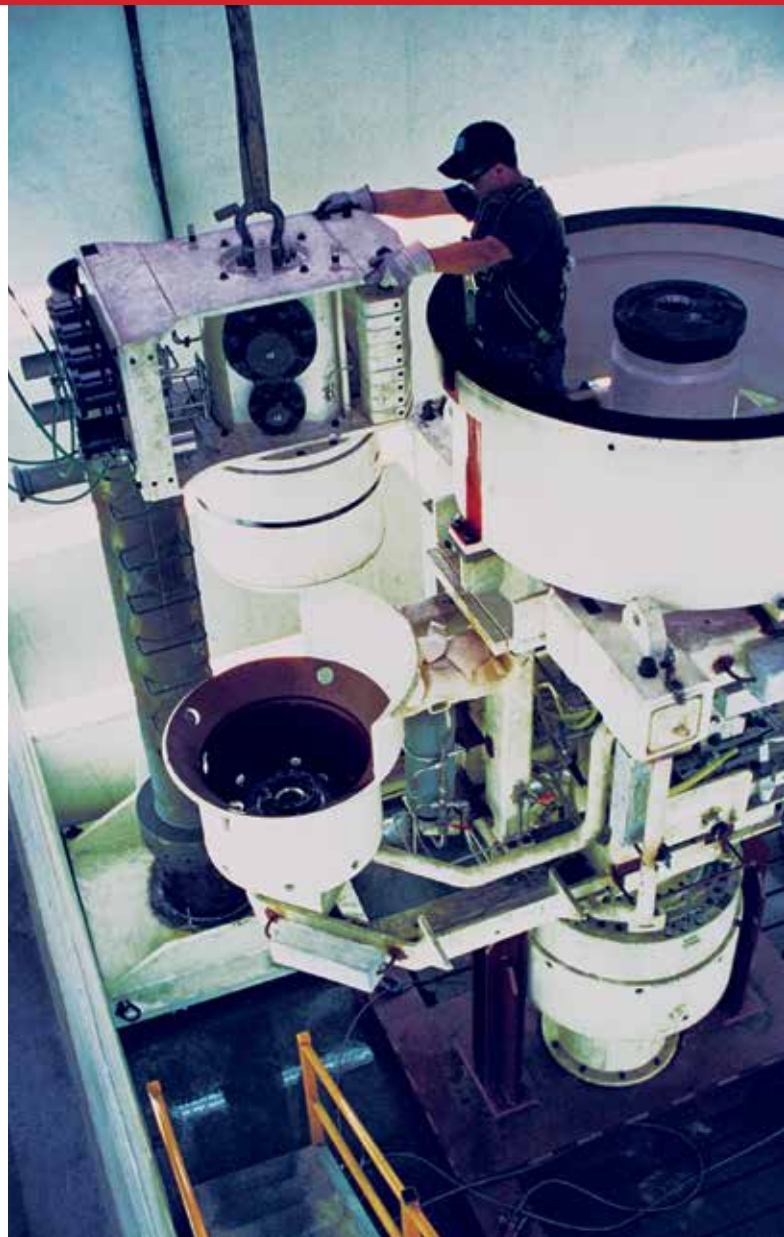
The DQ-VC is a field-proven vertical flowline connector designed to exacting standards for reliable, cost-effective performance.

The DQ-VC is available with integral or non-integral hydraulic functioning and with a rigid or flexible pipe configuration for maximum adaptability to customer requirements.

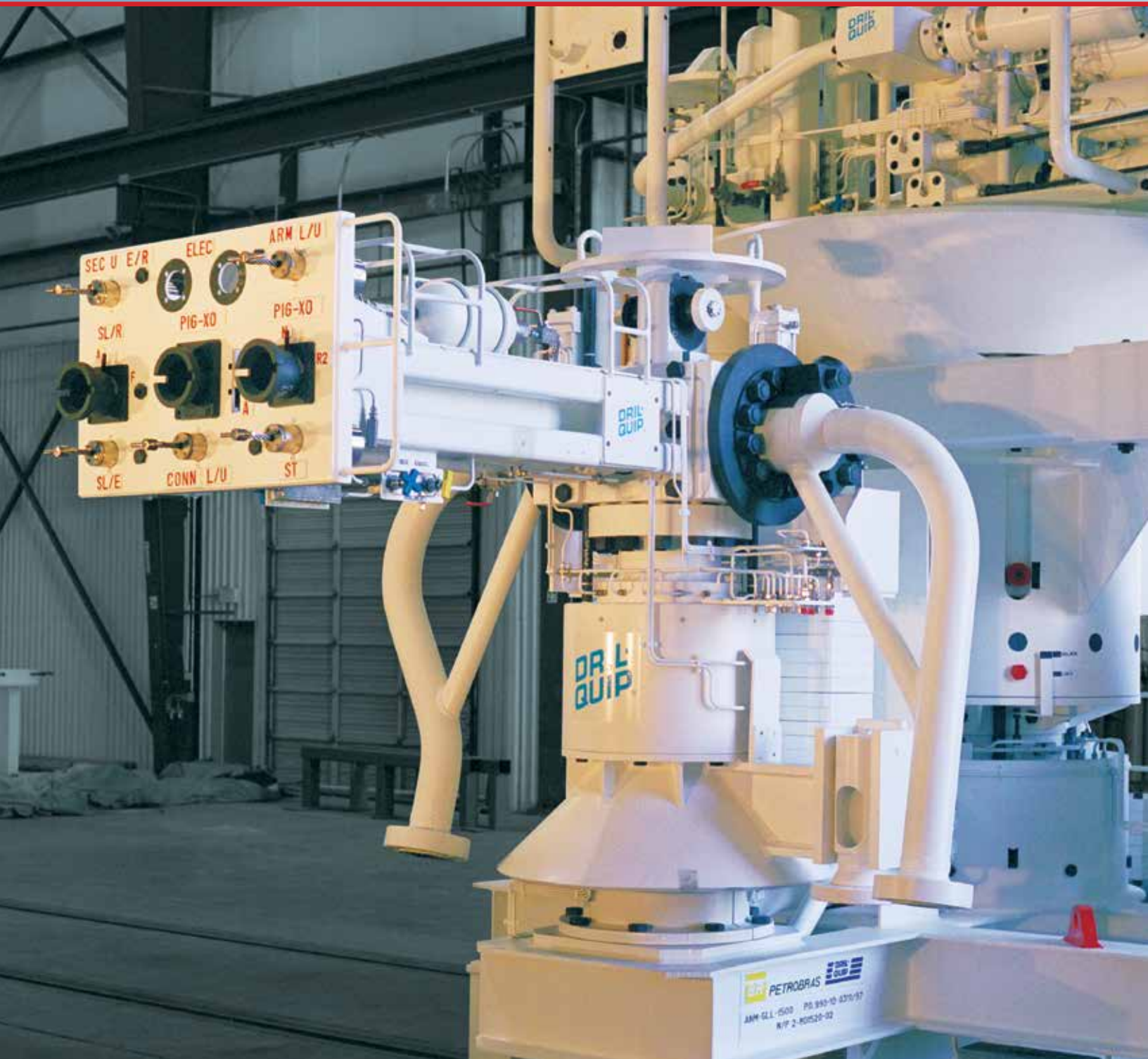
DQ-VC WITH INTEGRAL HYDRAULICS

- 5,000 psi pressure rating
- Metal-to-metal sealing
- Hydraulic unlock, lock, seal release and seal test functions
- Secondary mechanical unlock provided

The DQ-VC is available as a piggable connector with up to 12 hydraulic couplers, a piggable loop with metal-sealing swivel arms and a provided pigging isolation valve.



Assembly and testing of an integral hydraulic DQ-VC utilized with a DRIL-QUIP Guidelineless Dual Bore Tree. Fourteen production systems utilizing DQ-VC Connectors were installed offshore Brazil in the Bijupira-Salema field development.



DQ-VC with piggable integral hydraulics installed on DRIL-QUIP's Guidelineless Dual Bore Tree. Nine production systems with piggable connectors were installed in the Roncador field development, offshore Brazil.

THE DQ-VC WITH NON-INTEGRAL HYDRAULICS

To minimize connector costs, the DQ-VC is configured with all hydraulic functions actuated through the DQ-VC Running Tool so that no hydraulics are left subsea. With this design, multiple pipe sizes are provided using the same connector and running tool. The DQ-VC with non-integral hydraulics is rated to 10,000 feet of water depth.

NON-INTEGRAL HYDRAULIC DQ-VC WITH RUNNING TOOL RETRIEVED

SYSTEM OVERVIEW

Major System Components

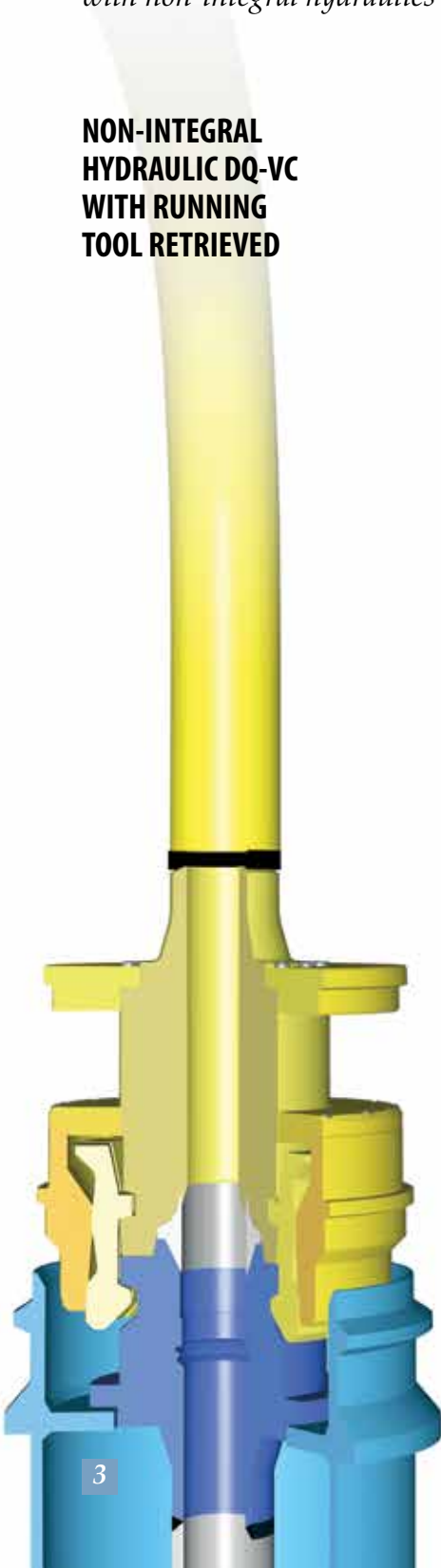
- Vertical Flowline Running Tool (two required)
- Jumper and Collet Connectors
- Receiver Structure (male hubs located at tree, manifold, PLEM and PLET)
- Spreader Bar and Rigging

Features of the Vertical Flowline Running Tool

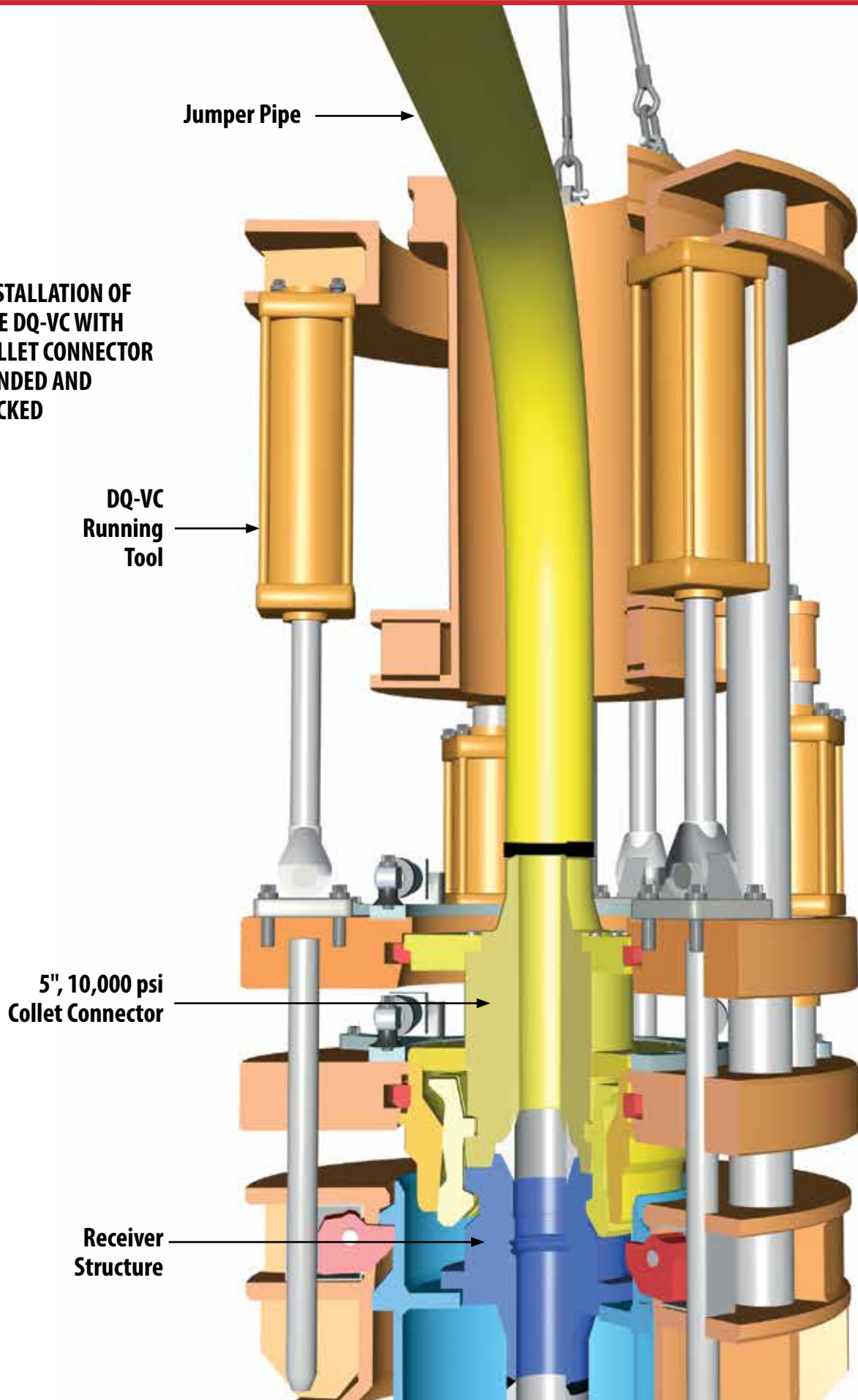
- Hydraulic functions actuated through Running Tool
- ROV operated, no umbilical required
- Mechanical override of all locking functions
- Running Tool is retrieved after connectors are locked and gasket is tested
- Control land cylinders draw hub faces together after Running Tool has initially landed out on receiver
- Lock cylinders provide force required to lock and preload connection

Features of the Jumper and Collet Connectors

- No hydraulics on connectors
- Jumper ends include two downward-facing Collet Connectors
- Jumper can be run from construction vessel or drill rig
- Bore sizes range from 3" to 11"



**INSTALLATION OF
THE DQ-VC WITH
COLLET CONNECTOR
LANDED AND
LOCKED**



Jumper Pipe →

**DQ-VC
Running
Tool** →

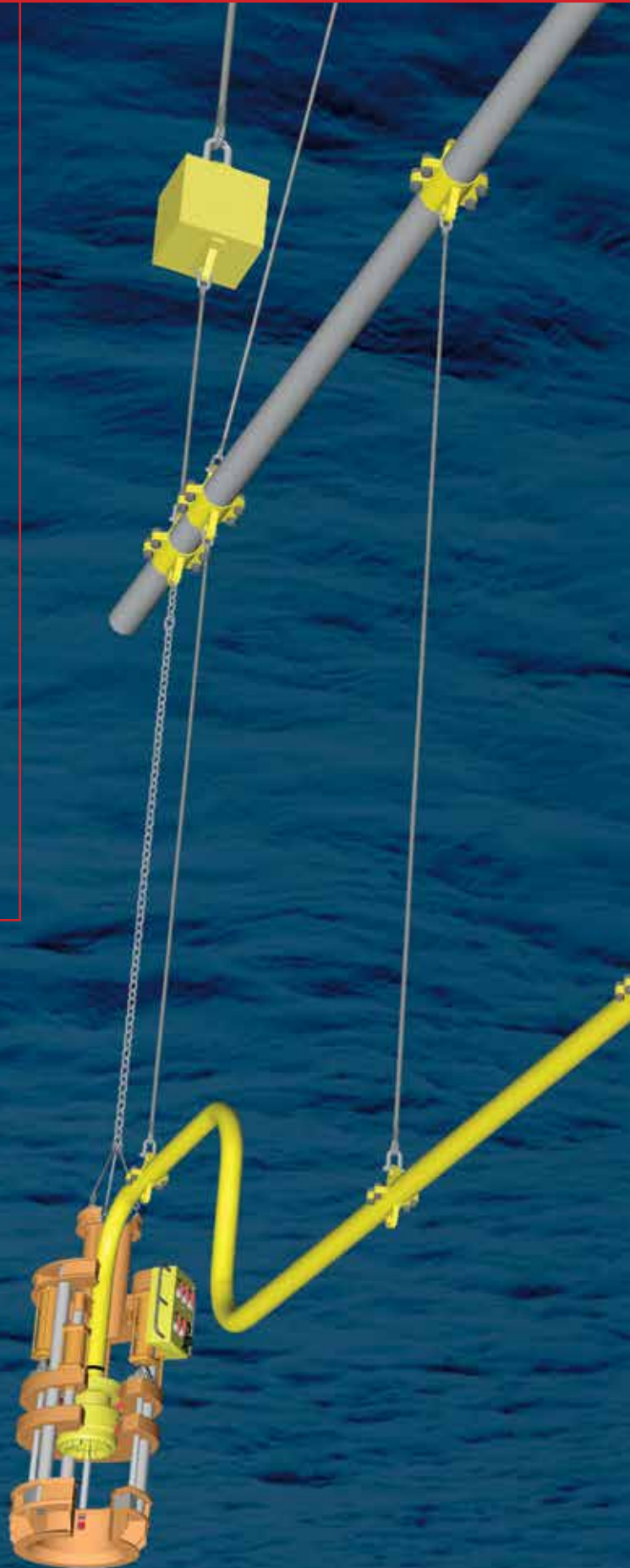
**5", 10,000 psi
Collet Connector** →

**Receiver
Structure** →

SIZE AND PRESSURE RATINGS

TWO DQ-VC RUNNING TOOL SIZES AVAILABLE:

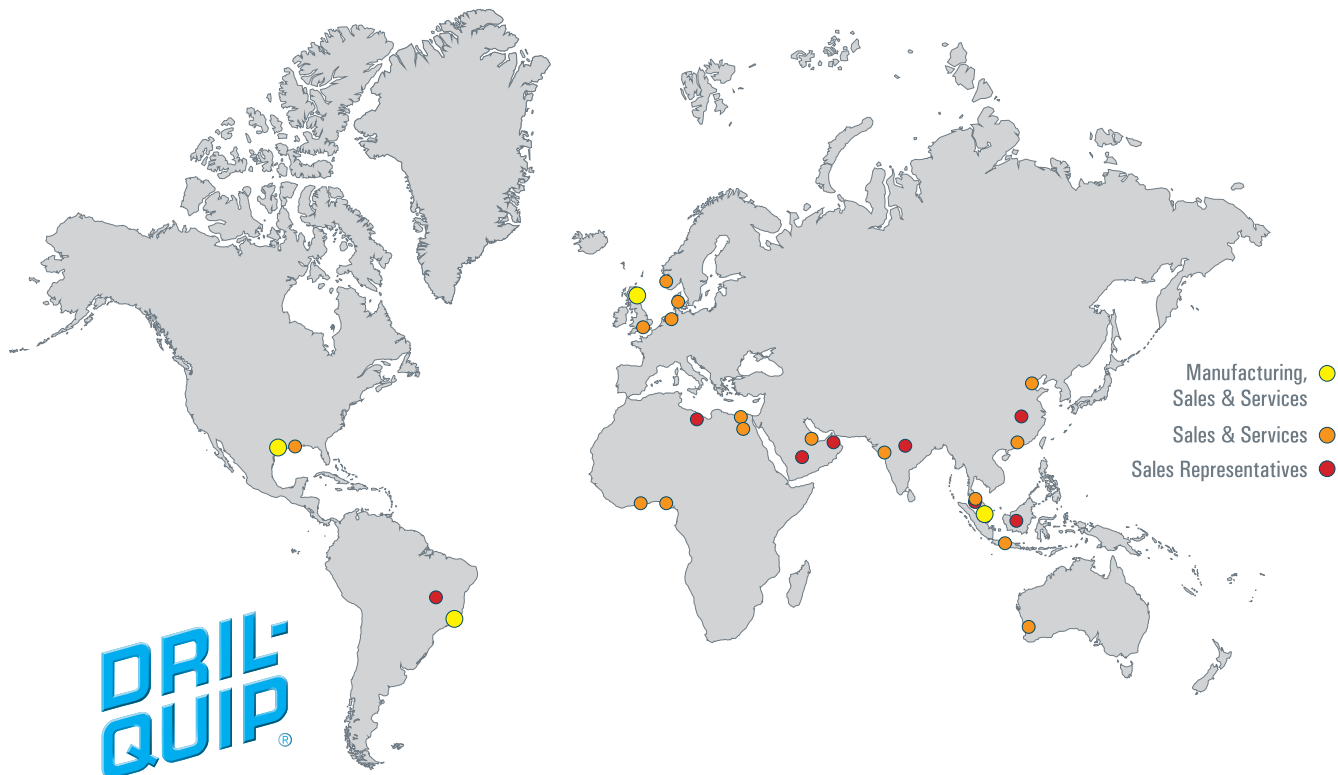
- Smaller Running Tool interfaces with 13.25"-diameter Connector Hub
 - Typically well-to-manifold or PLET/PLEM jumpers
 - Ideal for smaller field developments
- Larger Running Tool interfaces with 16.25"-diameter Connector Hub
 - Typically manifold-to-PLET flowlines
 - Ideal for larger field developments where one tool could be used for all flowline connections





AVAILABLE PRESSURE SIZES:

NOMINAL BORE SIZE	PRESSURE RATING (PSI)		
	5,000	10,000	15,000
3"			
4"		Tool A or B	
5"			
6"			
7"			
8"		Tool B	
9"			
10"			
11"			



WORLDWIDE SALES & SERVICE

DRIL-QUIP WESTERN HEMISPHERE

DRIL-QUIP, Inc. World Headquarters
6401 North Eldridge Pkwy.
Houston, Texas 77041
Tel (713) 939 7711
Fax (713) 939 8063

DRIL-QUIP do Brasil, LTDA.
Macaé, Brazil
Tel (55) 22 2791 8950
Fax (55) 22 2791 8989

DRIL-QUIP New Orleans
New Orleans, Louisiana
Tel (504) 522 5566
Fax (504) 522 4426

DRIL-QUIP EASTERN HEMISPHERE

DRIL-QUIP (Europe), Ltd.
Stoneywood Park, Dyce
Aberdeen, Scotland, UK AB21 7DZ
Tel (44) 1224 727000
Fax (44) 1224 727070

DRIL-QUIP London
High Wycombe,
Bucks, England
Tel (44) 1494 601086
Fax (44) 1494 601094

DRIL-QUIP Norway
Stavanger, Norway
Tel (47) 51 443700
Fax (47) 51 443701

DRIL-QUIP The Netherlands
Beverwijk, The Netherlands
Tel (31) 251 22 9250
Fax (31) 251 22 0044

DRIL-QUIP Denmark
Esbjerg, Denmark
Tel (45) 7518 0944
Fax (45) 7518 0640

DRIL-QUIP Egypt
Zahraa El-Maadi, Cairo, Egypt
Tel (20) 22 753 8809
Fax (20) 22 753 8907

Alexandria, Egypt
Tel (20) 3 450 0507
Fax (20) 3 450 0508

DRIL-QUIP Nigeria, Ltd.
Port Harcourt, Nigeria
Tel (234) 84 463866
Fax (234) 84 463649

DRIL-QUIP (Ghana) Ltd.
Takoradi, Ghana
Tel: (233) 312 5384

DRIL-QUIP ASIA PACIFIC

DRIL-QUIP Asia Pacific Pte. Ltd.
No. 80 Tuas West Drive
Singapore, 638417
Tel (65) 6861 0600
Fax (65) 6861 5700

DRIL-QUIP China
Shekou, P. R. China
Tel (86) 75 5268 97137
Fax (86) 75 5268 97134

DRIL-QUIP Oilfield Services (Tianjin) Co., Ltd.
Tanggu, Tianjin, P. R. China
Tel (86) 22 2580 7466
Fax (86) 22 2580 7130

DRIL-QUIP Malaysia
Kuala Lumpur, Malaysia
Tel (60) 3 2168 4308
Fax (60) 3 2168 4201

D.Q. Holdings Pty., Ltd.
Perth, Australia
Tel (61) 8 9322 8600
Fax (61) 8 9322 8500

DRIL-QUIP Qatar
Doha, Qatar
Tel (974) 44389715
Fax (974) 44417041

DRIL-QUIP Indonesia
Jakarta, Indonesia
Tel (62) 21 720 0612
Fax (62) 21 720 1513