

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Marine Riser Equipment**with type designation(s)
Split Telescopic Joint Packers

Issued to

Lord Corporation
Cary, NC, USAis found to comply with
DNVGL-OS-E101 – Drilling facilities, Edition January 2018
API Spec 16F, Marine Drilling Riser Equipment, 2nd Edition
DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2018**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Houston** on **2019-04-17**for **DNV GL**This Certificate is valid until **2024-01-14**.DNV GL local station: **Certification & Inspection Services**Approval Engineer: **Marco Romero**

Christian Nilsen
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-026743-2**
 Certificate No: **TAD000011B**
 Revision No: **2**

Product description

The telescopic joint packer provides a seal in the annular space between the inner and outer barrels of the telescopic joint.

The equipment is manufactured at the following locations:
 - LORD Corporation, Cambridge Springs, PA, USA

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>
Rated Working Pressure	: 500 psi
Minimum Design Temperature	: 32°F to 180°F
Designation of Systems; Equipment	: Marine drilling riser; Telescopic Joint; Packer
Service	: Standard

Type Approval documentation

<u>Drwg. No.</u>	<u>Rev.</u>	<u>Title</u>
J-28688-1	C	KIT, SPLIT INNER PACKER
J-28703-1	C	TJ ENERGIZING PACKER WITH SEAL KIT, 21" BARREL
J-28579-1	C	KIT, TJ SPLIT PACKER, INNER, 21" BARREL
J-28689-1	D	TJ ENERGIZING PACKER WITH SEAL KIT, 21" BARREL
J-28576-1	G	KIT, PACKER ELEMENT

Material Specifications

<u>Components</u>	<u>Material Spec</u>	<u>Part No.</u>	<u>Minimum Yield Strength</u>	<u>Avg. Charpy Impact</u>
Split Ring	ASTM A-29	J-28688-1, J-28579-1, & J-28576-1	60,000 psi	31 ft-lbs @ 32°F
Packer	Nitrile Elastomer	J-28703-1, & J-28689-1	N/A	N/A

Calculations

<u>Doc. No.</u>	<u>Rev.</u>	<u>Title</u>
IPA17-0004	B	Certification Plan For LORD Split, Telescopic Joint Packer (P/N J-28579-1) With Energizing Packer (P/N: J-28689-1)
IPA-160863-004	-	Certification Plan For LORD Split Telescopic Joint Packer (P/N: J-28688-1) With Energizing Packer (P/N: J-28703-1)
IPA-150661-001	-	Certification Plan for LORD Split Telescopic Joint Packer (P/N: J-28576-1)

Tests carried out

<u>Doc. No.</u>	<u>Rev.</u>	<u>Title</u>
IPA-160863-004	3	API 16F 2 nd EDITION TEST RESULTS FOR LORD SPLIT TELESCOPIC JOINT PACKER (P/N J-28688-1) WITH ENERGIZING PACKER (P/N J-28703-1)
IPA-150662-001	-	API 16F 2 nd EDITION TEST RESULTS FOR LORD SPLIT TELESCOPIC JOINT PACKER (P/N J-28579-1) WITH ENERGIZING PACKER (P/N J-28689-1)
IPA-150661-002	-	API 16F 2 nd EDITION TEST RESULTS FOR LORD SPLIT TELESCOPIC JOINT PACKER (P/N: J-28576-1)

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Marking of product

Marking shall:

1. Be reviewed and approved by the DNV GL local surveyor
2. Identify and differentiate each production unit <i.e. serial number>
3. Establish traceability to product design and fabrication documentation
5. Be in accordance with API 16F

Periodical assessment

For retention of the Type Approval, DNV GL's surveyor shall perform a survey every second year in accordance with DNV GL Type Approval Scheme DNVGL-CP-0338, September 2018 Edition.

Revision History

<u>Rev.</u>	<u>Date</u>	<u>Description of Change</u>
0	2019-01-14	N/A
1	2019-01-15	Removed unnecessary drawings, Added DNVGL-SI-0166 to scope. Expiration date was not extended.
2	2019-05-01	Added third split joint packer (P/N J-28576-1). Associated drawings, materials specifications, calculations and tests were added. Expiration date was not extended.