



Certificate No:
TAD00001EX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)

MK4 15MT Gripper Head and adapters for Smartracker

Issued to

Cameron Sense AS
KRISTIANSAND S, Norway

is found to comply with

DNV-OS-E101 – Drilling facilities, Edition July 2021

DNV statutory interpretations DNV-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2021

Application :

Hydraulic grippers for pipehandling machines

Issued at **Høvik** on **2021-10-19**

This Certificate is valid until **2026-10-18**.

DNV local station: **Norway CMC, West**

for **DNV**

Approval Engineer: **Jan H. Hansen**

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Per Esvall
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Reference Standards

- DNVGL-ST-0378 Offshore and platform lifting appliances, September 2019
- F.E.M. Rules for the Design of Hoisting Appliances, October 1998
- AISC Manual of Steel Construction, Allowable Stress Design, 9th Edition

Product description

This type approval covers new adapters, one new stabbing unit and one new MK4 15 mT gripper head to be used on the Cameron Sense Smart Racker. The Smart Racker can be fitted with a total of 4 different gripperhead/ adapter/ stabbing unit configurations.

Limitations

Gripper size range	3-1/2" to 16"	
Gripper capacity, SWL, 3.5" to 10"	15 mT	
Gripper capacity, SWL, 10.1" - 16"	10 mT	Casing only
Capacity, SWL, in crane mode	8 mT	
Max allowable dynamics	1.3 g	
Gripper claws friction, μ	1.0	Greased grippers
FEM class, max utilization	A5 (U6+Q1)	
Min. design temperature	- 20 °C	
Max. design temperature	+55 °C	
Max side-wind pressure load	1.0 kNm ²	

Stabbing Unit and Gripper Head Configurations

Configuration 1: New Stabbing unit and new Gripper Head, no adapter

- MK3 New stabbing unit – drawing No. 800055124
- MK4 New gripper head – drawing No. 800029928
- No adapter necessary between new stabbing unit and new gripper head

Configuration 2: New Stabbing unit and old Gripper Head, with adapter

- MK3 New stabbing unit – drawing No. 800055124
- MK3 Old gripper head
- New adapter between new Stabbing unit and old Gripper head – drawing No.800027615

Configuration 3: Old Stabbing unit and new Gripper Head, with adapter

- MK2 Old stabbing unit
- MK4 New gripper head – drawing No. 800029928
- New adapter between old stabbing unit and new Gripper head – drawing No. 800032518

Configuration 4: Old Stabbing unit and old Gripper Head, no adapter

- MK2 Old Stabbing unit
- MK3 Old Gripper head
- No adapter necessary between old stabbing unit and old gripper head

Type Approval documentation

Tests to be carried out

1. Each gripper shall be overload- and function tested in accordance with DNV-OS-E101 "Drilling facilities" Ch.2, Sec.8, §4. Test load for the gripper head when the gripper head is unsupported shall be 1.25 x SWL. Test load to verify the gripper claws friction capacity when the gripper head is supported shall be 2.0 x SWL. Refer also manufacturers test plan for further information.
2. Charpy impact testing shall be carried out in accordance with DNV-OS-E101 "Drilling facilities" Ch.2, Sec.2, §2.6
3. NDE/NDT tests shall be in accordance with DNV-OS-E101 "Drilling facilities" Ch.2, Sec.8, §3.1

4. Qualification of welding procedures and qualification of welders shall be in accordance with DNV-OS-E101 "Drilling facilities" Ch.2, Sec.8, §2.

Other conditions

- Recertification of existing Cameron Sense Smart Racker Cranes, including the gripper head arms and old stabbing unit, is not part of scope for this TA.
- This TA does not cover the necessary risk assessment of the integration with the existing Smart Rackers that the new gripper head and stabbing unit will be attached to. Refer DNV SI-0166 and NORSOK R-002 for risk assessment of lifting appliances.
- The control- and hydraulic system for the grippers are not part of scope for this TA.
- This Type Approval is limited to only cover the 4 different gripper head /adapter/ stabbing unit configurations as described on page 2.

Marking of product

For traceability, the following marking is to be carried out on each product:

- Part no.
- Serial no.
- SWL of gripper and lifting pads eyes
- Manufacturer's name or Trade mark

Periodical assessment

For retention of the Type Approval, DNV Surveyor shall perform a survey – every second year and before the expiry date of this certificate. This is in order to verify that the conditions for the type approval are complied with, ref. DNVGL-CP-0338, DNV's Type approval scheme.

END OF CERTIFICATE