

CERTIFICATE
FOR CRANE, KNUCKLE BOOM

Certificate No:
N141BD76

This is to certify

that the product: **G9816 Utility Handling Tool**
Type designation: **UHT-1200**
Application/context: **Utility Handling Tool**
Serial/tag no: **G9816**

Has been found to comply with relevant requirements in:
OS :DNV GL Offshore Standards, OS-E101 :Drilling Plant (2009-10)

The product is intended for
Yard: **Samsung Heavy Industries Co. Ltd., Koje Shipyard**
Yard No: **7117**
Name of vessel: **ASKELOADDEN**
DNV GL Id No: **33750**

The product / material has been marked: N1416XJM on: manufacturers name plate

Particulars of Vendor and Purchaser

Vendor: **National Oilwell Varco Norway A/S**
Vendor reference: _____
Purchaser: _____
Purchaser reference: _____

Issued at **Kristiansand S** on **2016-11-03**



for **DNV GL**

This document has been digitally signed and will therefore not have handwritten signatures

Stene, Mari
Surveyor

Linked Plan Approvals:

MOANO376/BRUNO/D33750-J-5761, National Oilwell Varco Norway A/S, issued 2016-08-17

Product parameters:**Design limitations**

The design of the Utility Handling Tool has been approved for the following particulars. Reference is made to Design Verification Report DVR-D33750-J-5761 Rev.0.

Design Parameter	Value
Safe working load, SWL: Hook Gripper head	1200kg 500kg
Minimum design temperature	-20°C
Maximum design temperature	+45°C
Area classification	Zone 1
FEM appliance classification	A2 (Q2+U2)
Design lifetime	20 years
Horizontal outreach	746 to 7406mm
Slew angle: Boom Head	±180° ±180°
Tilt angle: inner arm outer arm head (up) head (down)	64° 123° +93° -105°
Gripper head tubular capacity	2 5/8" to 10"
Guide head tubular size	2 7/8" to 30"
Max slew speed	0.6 rpm
Max telescope speed	0.1 m/s
Max tilt speed	3°/sec
Max telescope push/pull force	40kN
Slew torque, drive / break	50 / 70 kNm
Dynamic factor	1.15
Hydraulic pressure	207 bar
Hydraulic flow	180 l/min
Power consumption	100W

Environmental loads at elevation DF + 2900 mm:

Condition	Accelerations		Wind [m/s]
	Horizontal a_H [m/s ²]	Vertical a_V [m/s ²]	
Still water	0.00	0.00	0
Operation of the Utility Handling Tool	1.96	1.96	20.0
Survival	7.35	3.94	70.5
Accidental heel	4.45	-1.07	0.0

Component certificates


Component	Manufacturer	Type	Serial	Certificate
2 Off Inner boom cylinder	Fjero A/S	F1-C-D-125/80x736-C-1-R-SP	233744-001 233744-002	N1401AX9
Telescope cylinder	Hydratech Industries Fluid Power A/S	CM 250 TFT 80/50 x (925x2)		N1401AHX
2 Off Telescope boom cylinder	Fjero A/S	F1-C-D-125/80x397-C-1-R-SP	233745-001 233745-002	N1401AX8
Gripper head claw cylinder	HYDRA Tech A/S	CM 250 FT 110/56 x 78		ABG 14-03625
Tilt rotator	HKS Dreh-Antriebe GmbH	TR-K 85	S6093.15.09.004 / S6100.15.09.001	N1419UZ4 / D-6079

Remarks

This product certificate covers the Utility Handling Tool as a stand-alone component only. Final testing is assumed carried out after installation onboard.

Manufacturing survey of UHT including witnessing of Factory Acceptance Test performed by DNV GL Prague. Reference is made to Survey Reprt N1416XJM.

Manufacturing survey of Gripper Head upgrade performed by DNV GL Vung Tau, Vietnam. Reference is made to Survey Report N14189M3.



Certificate No: **N141BD76**

Remarks:

- G9816 - Utility Handling Tool - Overload test - Overload testing at 1.25 x SWL (hook load) shall be carried out after installation in accordance to DNV-OS-E101 Ch.2 Sec.7 D300. Considerations shall be made to requirements as specified in D304.
- G9816 - Utility Handling Tool - Commissioning Integration - Functional testing after installation shall be carried out in accordance to DNV-OS-E101 Ch.2 Sec.7 D400. Gripper head functionality with SWL shall be properly addressed in testing. All safety functions shall be included.
- G9816 - Utility Handling Tool - Ex 2 - EX documentation for this system is assumed to be submitted in a common complete package to the yard. EX documentation is also to be provided and presented to the DNV GL surveyor at site. It is assumed that the electrical equipment installed is certified for the relevant/correct zone.