DNV·GL

Certificate No:
**TAS00001BM**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Lift Component**

with type designation(s)
**Hydraulic Cylinder, Series No. 1108**

Issued to
**Hawboldt Industries (1989) Ltd.**
**Chester NS, Canada**
**& Timberland Equipment Ltd.**
**Woodstock Ontario, Canada**

is found to comply with
**DNV GL class guideline DNVGL-CG-0194 – Hydraulic cylinders**

## Application :

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

**THIS CERTIFICATE IS A RENEWAL OF S-7267 ISSUED NOV. 27TH 2012.**

Issued at **Houston** on **2018-02-02**
This Certificate is valid until **2023-02-01**.
DNV GL local station: **Halifax**

Approval Engineer: **Xiangwen Maggie Wang**

for **DNV GL**

**Meindert van Mierlo**
**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.



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## Product description

1. LARS Boom Extension Cylinders, Dwg No.: 340019044
2. LARS Main Boom Cylinder, Dwg No.: 340019045
3. LARS Swing Cylinder, Dwg No.: 340007131
4. LARS Tilt Cylinder, Dwg No.: 340007154

## Application/Limitation

- Maximum Working Pressure : 2,000 psi (Boom Extension Cylinder)
- Maximum Working Pressure : 2,700 psi (Main Boom Cylinder)
- Maximum Working Pressure : 3,000 psi (Swing/Tilt Cylinder)
- Minimum Design Temperature : -4 °F (-20 °C)
- Maximum Design Temperature : 86 °F (30 °C)
- Corrosion Allowance : 0.0118 in (0.3 mm)
- Service : Hydraulic Fluid

## Type Approval documentation

Drawings:

| Drawing No. | Rev. | Description |
|---|---|---|

## Tests carried out

FAT: referenced DNV Survey Report No. HAL-PP044549 dated Aug. 14 2012

## Marking of product

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

1. Serial No.
2. Manufacturer's name or trademark.
3. Marking shall be in accordance with DNVGL-CG-0194.

## Periodical assessment

For retention of the Type Approval, DNV GL's surveyor shall perform periodical assessment after 2 years and after 3.5 years in accordance with DNV GL's Class Programme DNVGL-CP-0338, Section 4.

## Other conditions/comments

- Procedures related to testing, welding, NDT, and other quality control requirements are to be reviewed/approved by DNV GL's local surveyor.
- DNV GL ref.: A0471041.

END OF CERTIFICATE