Certificate No:
TAD00000SS

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)
FORCE 5I AIR WINCH MODEL FA2.5I & FA2.5I-MR

Issued to
Ingersoll Rand Industrial Technologies
Seattle WA, United States

is found to comply with
DNVGL-OS-E101 – Drilling plant, Edition July 2015

Application :

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

Issued at **Houston** on **2017-08-16**
This Certificate is valid until **2022-08-15**.
DNV GL local station: **Seattle**

for **DNV GL**

Approval Engineer: **Kairy Otero**

Nick Prokopuk
Team Lead

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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Job Id: **262.1-026661-1**
Certificate No: **TAD00000SS**

Product description
Force 5i Air Winch, model FA2.5i/ FA2.5i-MR

Application/Limitation*

	FA2.5i	FA2.5i-MR*
Minimum Design Temperature	: -4 °F (-20 °C)	: -4 °F (-20 °C)
Maximum Operating Pressure	: 90 psig (6.2 bar)	: 90 psig (6.2 bar)
Maximum Single Line Pull, Top-Layer	: 5000 lbs. (2268 kg.)	: 3180 lbs. (1442.5 kg.)
Service	: Standard Marine Environment	

* Ref: DNVGL-OS-E101 Ch.2 Sec. 5 10.4.2.4. The man-rider winch is not to be used in a single man, riding belt application.

Type Approval documentation

Fabrication Procedures
Procedures related to testing, welding, NDT, etc are to be reviewed/approved by DNVGL's local surveyor.

Charpy V-Notch impact testing temperature and acceptance criteria shall be in accordance with DNVGL-OS-E101 Chapter 2, Section 2, "Materials and Welding".

Tests carried out

Marking of product
For traceability to this Type Approval Certificate the products are as a minimum to be marked as follows:
1. Type Approval Number: TAD00000SS
2. Serial Number
3. Manufacturer's name and trademark
4. Safe Operating Loads

Other conditions/comments
1. Man riding winches shall be fitted with 2 separate, independently operated braking systems and each brake shall automatically engage upon emergency stop, power loss, or other related energy failure. For utility winches not used for man riding purposes 1 automatic brake is required.
2. The winch shall be fitted with provision for emergency lowering.
3. The winch shall be fitted with an emergency stop according to DNVGL-OS-E101, Ch.2, Sec.5 1.6.
4. Wire ropes for man riding winches shall have a minimum breaking strength of 10 x SWL
5. This is a renewal of Type Approval Certificate D-4357.

Certificate Retention Survey
For retention of the Type Approval, DNVGL's surveyor shall perform a survey every second year in accordance with DNVGL-CP-0338 Sec. 4.

END OF CERTIFICATE