



“One Company, Many Locations, Servicing Globally”



EC  GLOBAL

LNG Tank Cranes & Hoists

LNG Tank Cranes & Hoists



A liquefied natural gas storage tank or LNG storage tank is a specialized type of storage tank used for the storage of Liquefied Natural Gas.

LNG storage tanks can be found in ground, above ground or in LNG carriers.

The common characteristic of LNG Storage tanks is the ability to store LNG at the very low temperature of $-162\text{ }^{\circ}\text{C}$ ($-260\text{ }^{\circ}\text{F}$). LNG storage tanks have double containers, where the inner contains LNG and the outer container contains insulation materials.

Natural gas is composed primarily of methane (typically, at least 90%). Volume of this liquid takes up about

1/600th the volume of natural gas at a stove burner tip. LNG weighs less than one-half that of water. LNG is odourless, colourless, non-corrosive, and non-toxic. The most common tank type is the full containment tank. Tanks vary greatly in size, depending on usage. World is looking for cleaner fuel for cleaner environment and LNG is the solution and fastest growing source of energy.

The major LNG (liquefied natural gas) exporting countries are Russia, Canada, Norway, Algeria, Qatar, Indonesia, USA, Malaysia, Nigeria, Australia, Egypt and Oman and major importing countries are Japan, South

Korea, USA and a few European countries. Expert's opinion is that world's liquefaction capacity will increase fivefold by 2030.

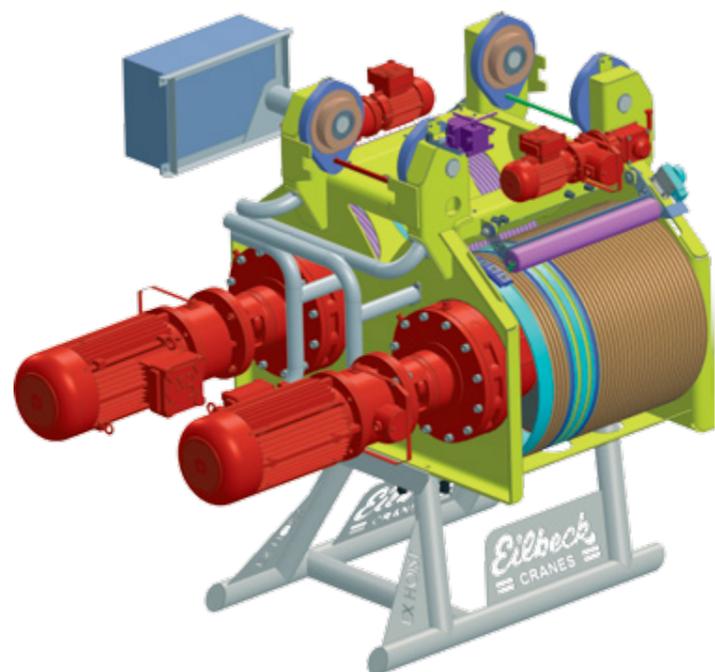
Eilbeck Cranes, an expert in Explosion Protected Cranes and Hoists takes consideration of sensitivity of LNG gas and using its vast experience and capable of designing the suitable hoists and cranes for LNG Tank application. Eilbeck Cranes is being worldwide acceptable by world most prestigious engineering companies like Shell, Total, BP, Statoil, INPEX, PETRONAS, Qatar Petroleum Woodside, Technip, Bechtel, JGC, Chiyoda, Flour, Saipem, Akersolution.



LNG Tank Cranes and Hoists Reference List

- Nigeria LNG Tank Bonny Island LNG Project - SHELL - through Entrepouse France.
- Nigeria LNG Expansion project – SHELL through CB&I.
- Woodside – Australia LNG Tank- through CB&I.
- Skikda LNG Algeria – Algeria - SONATRACH – through Entrepouse France.
- Gorgon LNG – Australia - Chevron through CB&I.
- Wheatstone LNG – Australia – Chevron through Entrepouse France.
- JCS Yamal LNG Projects – Yamal Russia through TMSI (JV of TMSI, Entrepouse Contrcating & VINICI).

Special Features of LNG Tank Hoists and Cranes



- Designed to the proven technology.
- Built for the harsh marine costal environment.
- Wire Rope suitable for high lifting height.
- Cast iron Motor body instead of aluminium.
- Cast iron Gear box body instead of aluminium.
- Special design for drum for the purpose.
- Drum suitable for taking pump wire ropes and ferrule.
- Double drum option for redundancy.
- Double complete system for redundancy.
- Power supply system Stainless steel square track type.
- Manual load lowering in case of power failure.
- Special rope attachment for hoist rope and pump rope.
- Solid Brass non sparking wheels.
- Bronze coated hooks.
- Cover on hoists.
- All electrics with Ex de IIB / IIC T4 IP66 Protection suitable for Zone 1.
- Maintenance walkway / access ladder can be provided for hoist / cranes.
- Temperature range -50 °C to +50 °C.
- Certification ATEX, IECEX, GOST/TR, CE & various other certification option.



Catenary Festoon System

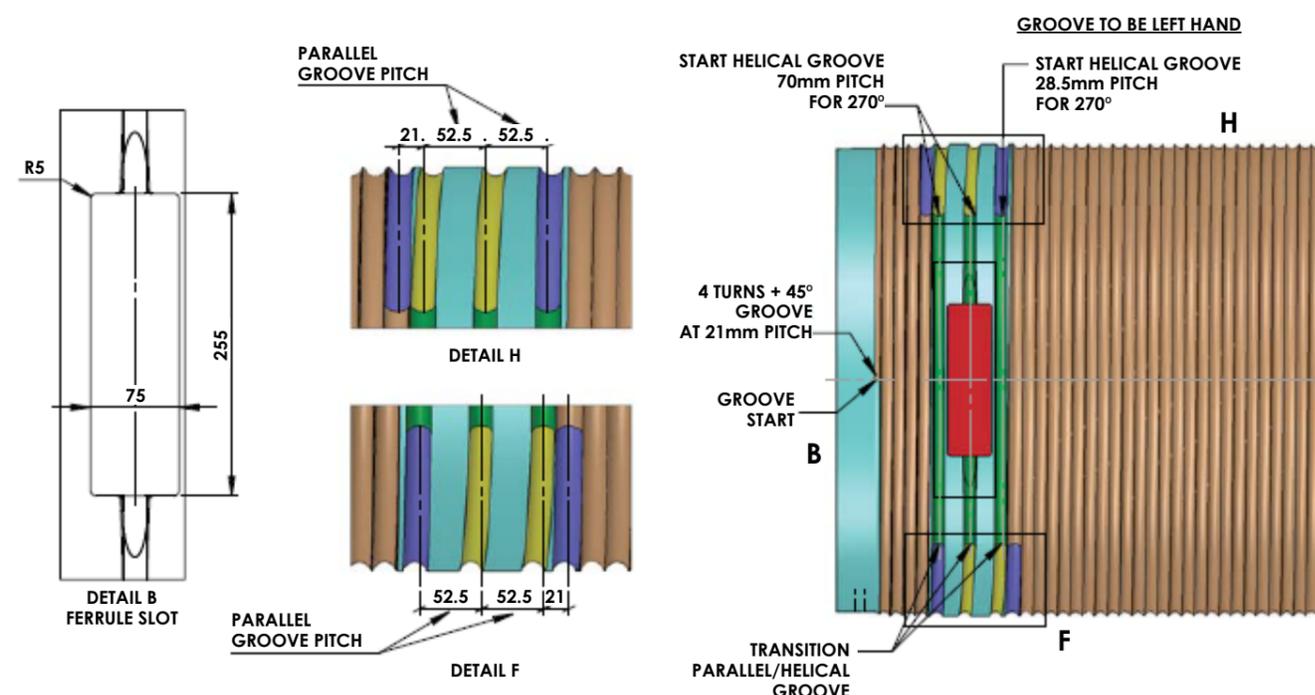
- Designed and manufactured in Australia.
- 304 & 316 grade stainless steel construction.
- Hazardous area Certified.
- Spark resistant.
- Resistant to chemical attack and corrosion.
- Suitable for carrying electrical cables, pneumatic and hydraulic lines.
- Designed for use in heavy and light industrial sites, marine salt laden atmospheres, under ground mines, CHPP's, onshore and offshore LNG and oil sites, chemical plants.
- Inverted square bar track allows for automatic dispersal of dust and particulate matter which would otherwise damage and foul rollers and bearings. Great for dusty environments.
- Strainer cables between trolleys are a standard feature on Ex systems (optional on standard duty systems) to ensure no force is exerted onto cables and hoses.



LNG Tank Cranes and Hoists Technology

Rope drum

Special designed machined on CNC machines high quality drum for LNG tank Hoist application with special ferrule adaptor for connecting pump lifting wire rope.





Control Panel Enclosures

Explosion proof enclosures supplied as standard in marine grade cast aluminium box or stainless steel - Ex de IIB/IIC T4 IP66 with IECEX/ ATEX/ GOST/TR or any applicable certification



Rope Drum

Rope drum with slot to accommodate the rope ferrule adaptor



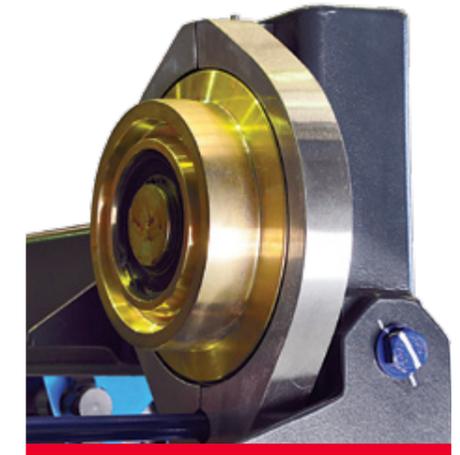
Cable Glands

Double compression Ex d / Ex e nickel plated brass cable glands



Flashing Light / Horn

On operation of all crane motions and on crane overload



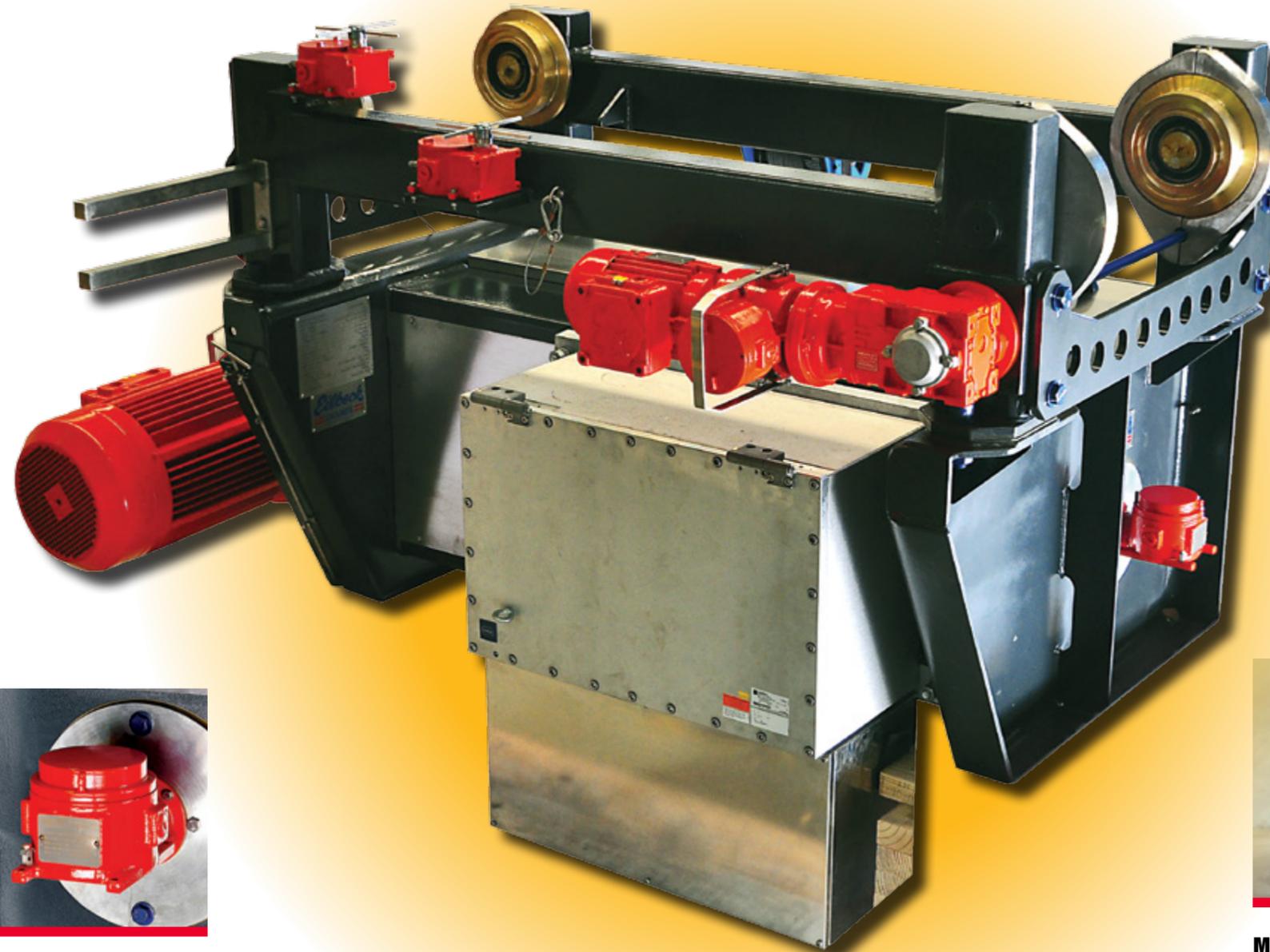
Non-sparking Solid Brass Wheels

Designed for safe operation and easy maintenance specifically for explosion proof requirements



Rope Clamp

Quick release rope clamp allows smooth winding of cable around drum allows special pump rope to be safely connected to the hoist.



Slack Rope Limit Switch & Rope Guide

Wear resistant rope guide is extremely durable and not subject to temperature limitations



Travel Limit Switch

Flameproof cast iron body suitable for marine environment



Rotary Limit Switch

Flameproof cast iron body suitable for marine environment



Motors

Cast iron motor body as an alternative to the standard aluminium body motors for surviving in a corrosive environment. Motors have protection type Ex de IIB /IIC T4 IP66 suitable for -50°C to +60°C

LNG Hoists Technology

JSC Yamal LNG

Cranes for the Arctic region to operate in temperatures dropping to minus 50°C

The Yamal LNG Project is an integrated natural gas liquefaction complex with a capacity of 16.5 million tonnes per year developed on the basis of gas reserves within the South Tambey Field.

The plant site is located north of the Arctic Circle on the Eastern shore of the Yamal Peninsular in Northwest Siberia, Russia.

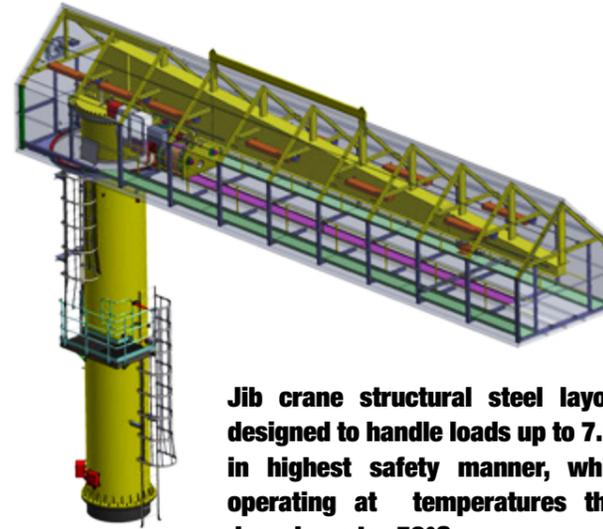
Average temperatures vary from -27°C in winter to +6°C in summer, with the extreme low of -50°C.

- 4 off 7.5t MRC at 17m jib arm radius and 12.5m to underside of jib arm
- LNG tank Jib Cranes located outdoors on top of LNG tanks
- Special Low temperature steel with minimum V-notch impact strength of the steel 27 joules at -50°C
- All selected components including motors, gear boxes, ropes, limit switches, electrics, lights, cables, control panels,

gas detectors, exhaust fan, all suitable for -50°C

- Complete jib arm including all electro-mechanical items such as hoists and controls are enclosed in an insulated heated enclosure
- Constantly connected heaters inside the enclosure maintain the

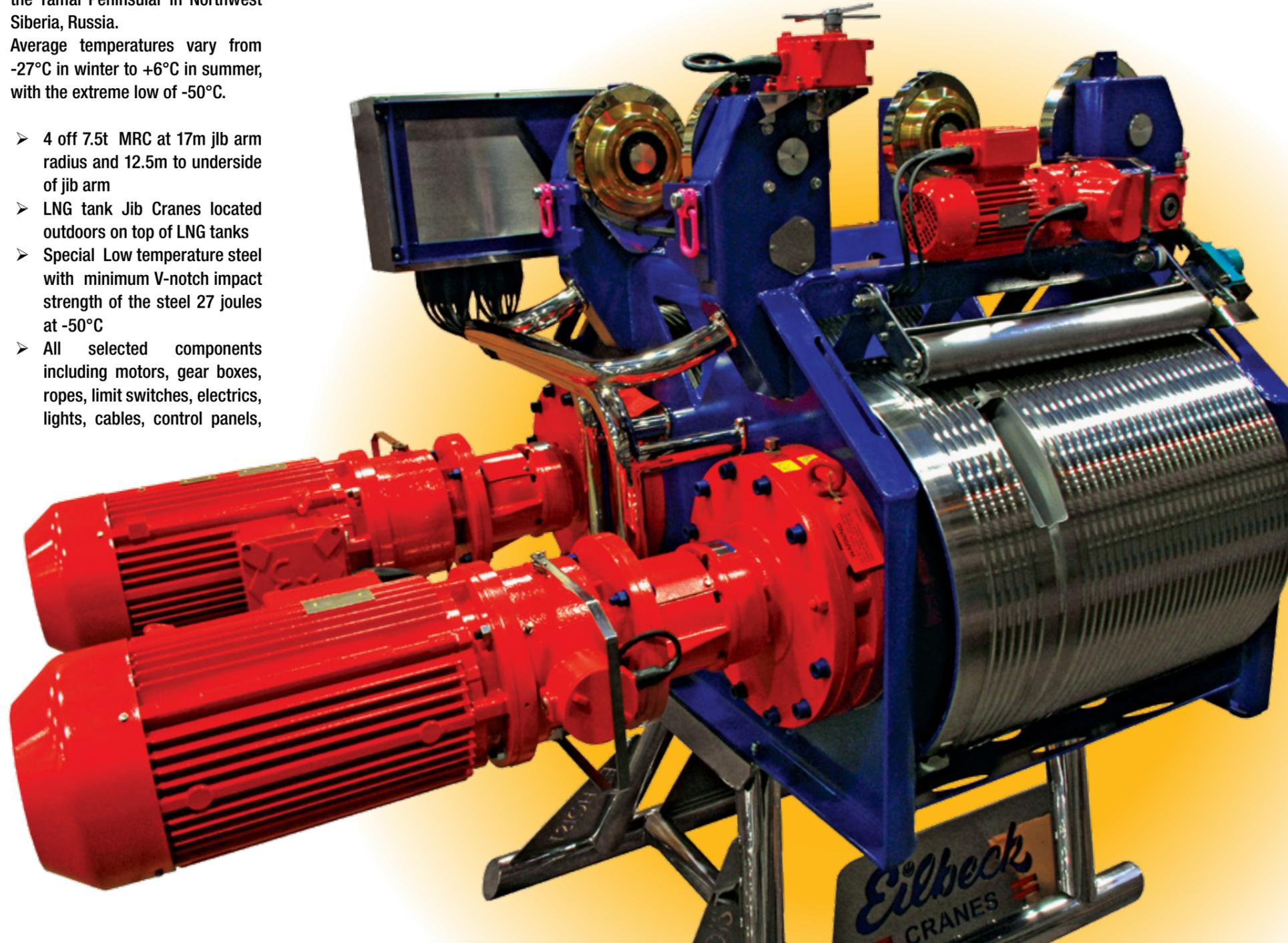
- internal temperature above 0°C
- Zone 2 IIB T3 as per ATEX
- Designed to European Standards
- Russian certification and dual language documentation (English and Russian)
- The complete assembled jib arm including hoist to be transported on specially designed transport stands and mechanically protected by a steel sheet for sea freight, enclosure size 21m (L) x 4.3m (W) x 4.7m (H)



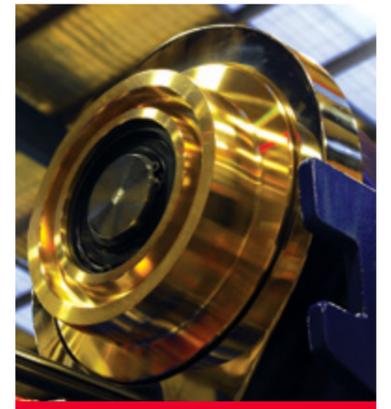
Jib crane structural steel layout designed to handle loads up to 7.5T in highest safety manner, while operating at temperatures that drop down to -50°C



Redundantly designed Ex-proof LNG Wire Rope Hoist



Ferrule Slot



Solid Brass Wheels



Roller Pressure Limit Switch



Project: Wheatstone LNG
Location: Onslow Western Australia
Project Owner: Chevron Australia
Engineering, Procurement and
Construction: Bechtel Houston
Buyer: ETJV (Entrepose France and
Thiess Australia)

Brief description of Cranes:

- 2 off LNG Tank Pump handling Jib Cranes
- Capacity: 7.35t @ 17.125m radius, 5.4t @ 19.125m radius

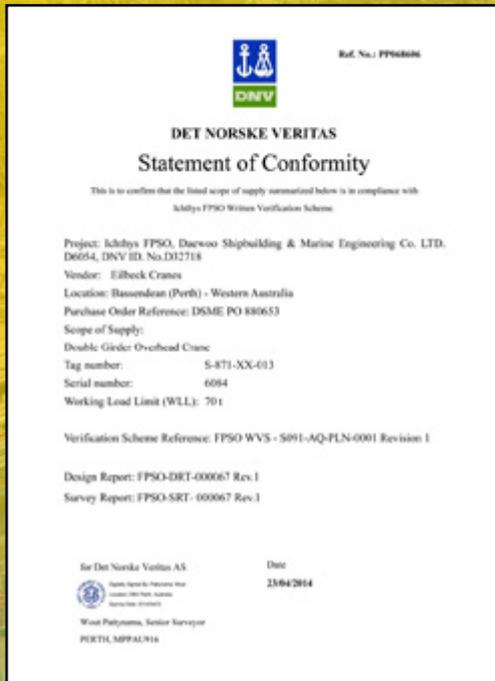
& 0.9t @ 20.125m radius

- Under side of jib arm to base of the jib crane: 11.86m & lifting height 71m
- Zone 2 Ex de IIB T3 IECEx
- Fully designed to project specification
- Full maintenance access ladder and platform
- Non sparking features as solid bronze wheels and bronze coated hooks

- Lightning protection
- Motors and gear box of cast iron body suitable for corrosive environments
- Non-sparking diamond track SS catenary system for power supply system
- Manual lowering in case of power failure
- Designed for cyclonic area complete with manual storm lock

Certification

DNV Certification for Recently Supplied Cranes



ISO 9001 and OHS Certificates



www.eilbeckcranes.com

- | | | | | | |
|--|---|---|---|--|--|
| Perth - Manufacturing 1
28 Jackson Street
Bassendean WA 6054
Phone: 61 (08) 9279 4800
Fax: 61 (08) 9378 3689
perth@eilbeckcranes.com | Perth - Manufacturing 2
11 Yelland Way
Bassendean WA 6054
Phone: 61 (08) 9379 3724
Fax: 61 (08) 9378 3689
perth@eilbeckcranes.com | Perth - Manufacturing 3
14 Yelland Way
Bassendean WA 6054
Phone: 61 (08) 9379 3724
Fax: 61 (08) 9378 3689
perth@eilbeckcranes.com | Sydney - Manufacturing 1
6 Moorlands Road
Ingleburn NSW 2565
Phone: 61 (02) 9829 3700
Fax: 61 (02) 9829 3500
sydney@eilbeckcranes.com | Sydney - Manufacturing 2
53 Lancaster Street
Ingleburn NSW 2565
Phone: 61 (02) 9618 1904
Fax: 61 (02) 9605 5171
sydney@eilbeckcranes.com | Mackay - Manufacturing
32 Diesel Drive
Paget QLD 4740
Phone: 61 (07) 4998 5599
Fax: 61 (07) 4998 5756
mackay@eilbeckcranes.com |
|--|---|---|---|--|--|