

FLANGED JACKET LIFTING TOOL (FJ-LT)

Lifting jacket foundations from the internal flange



Application

- + Construction of Offshore Wind Farms (OWFs) – Installation of Jacket Foundations

The tool, which can be operated remotely, engages with the underside of a jacket flange, negates the need for human intervention, thus increasing safety and speed of jacket installation.

BENEFITS

- The tool design and operation should not require modification to the jacket design
- Capable of lifting a 1000t jacket
- The design also aims to minimise the height and weight of the tool to maximise operational flexibility with regards to hook height
- The Houlder design concept for this equipment allows for the remote engagement and disengagement of the tool, thus removing the requirement for personnel working at height to install the tool prior to lifting

RELEVANT CODES, STANDARDS & LEGISLATION

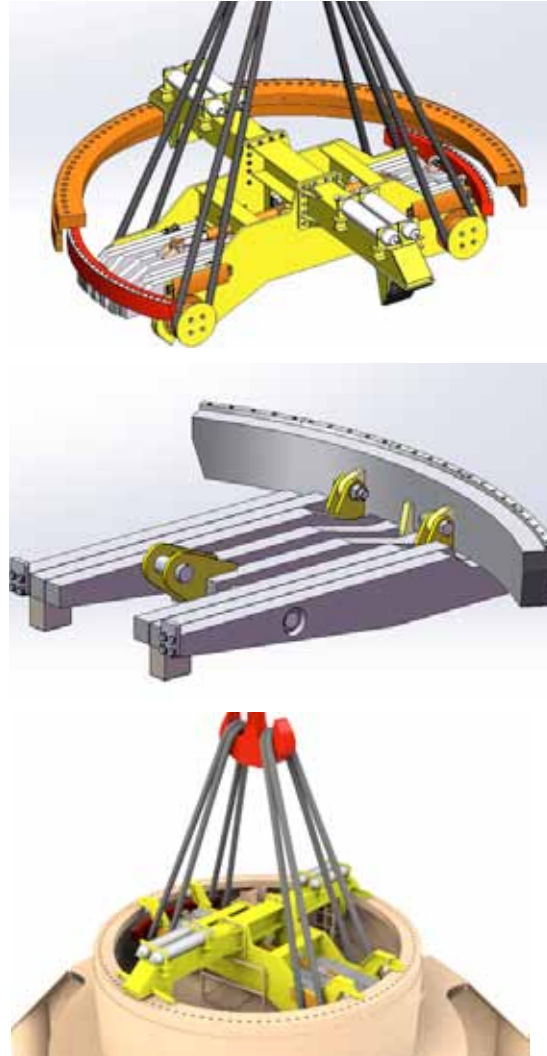
The JLT will comply with the following codes & standards:

- DNVGL-SE-0080 ed. 2015-12, Noble Denton marine services – marine warranty survey
- DNVGL-CG-0127 ed. 2015-10, Finite Element Analysis
- 0001/ND rev.1 2015, General Guidelines for Marine Projects
- 0027/ND rev.6 2015, Guidelines for Marine Lifting and Lowering Operations
- 0030/ND rev.6 2015, Guidelines for Marine Transportations

SYSTEM SPECIFICATION

- Tool engages/interfaces with the underside of the jacket flange
- Weight of tool is approximately 20t, not including rigging. The total weight of the entire lifting assembly is estimated at 25t
- Ensure that the jacket is not overstressed for any temporary load cases throughout its operation (i.e. engagement, lifting etc.) – this is to be confirmed via FEA modelling of the lifting process
- Provides the remote operator with confirmation that the tool is engaged and that the lifting operation is safe to commence
- Tool will use 2 mounted cameras to enable the operator to position the lifting tool into the jacket flange
- Tool will include 2 pad eyes to allow tugger lines to be attached for positioning/steering
- Designed such that it is inherently safe inasmuch that it would not lose the load should power be terminated from the tool or whilst there is any load born by the tool
- Has an integrated power supply and contains a secondary means of operation should the primary controls and or power system fail
- Provides sufficient protection on areas that physically interface with the jacket such that the tool will not cause any form of damage which may affect the performance of the jacket

SYSTEM COMPONENTS



The lifting tools include Houlder's patent pending latch design which uses a 'piano finger' like configuration to distribute the loads into the flange with greater space and weight efficiency. A close-up of the arrangement can be seen below. Rather than with a single beam, where the load will concentrate at the end of its stiffest axis, a piano finger like latch transfers the load evenly across multiple beams, resulting in better load distribution into the flange.



Houlder is an independent, innovative offshore engineering company. We build on 30 years' offshore expertise and work closely with clients to design solutions for their technical challenges. We provide complete EPCI services with special equipment, consultancy, project management and engineering solutions for the offshore wind and wider energy sector.

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