Heavy Lift only an Offshore Matter???

Think different and gain profit

Heavy lifting under different and under -often hazardous or unusual- environmental conditions is always a new challenge. Especially if one has to design lifting equipment that could be used everywhere, under all conditions and with different and adjustable geometry. Clients would like just to analyse their lifting task, gather the equipment from what they have already on board and handle the load. In many cases this asks for a “plug and play concept” with a high grade of flexibility.

Tandem hoist operation

Also in other heavy load situation, e.g. on-shore easy handling and transport of the lifting peripherals is required and often makes the difference between profit or loss.

In all situations the main additional requirement is the “easy storage” condition. Nobody wants to offer deck or cargo space only for lifting equipment. Further special attention is given to easy handling; this will decrease the loading time.

Innovative Input searches for the optimal solution taking into account that a client’s only motivation is:

All lifting actions have to lead to profit.

Following some of these typical cases are discussed

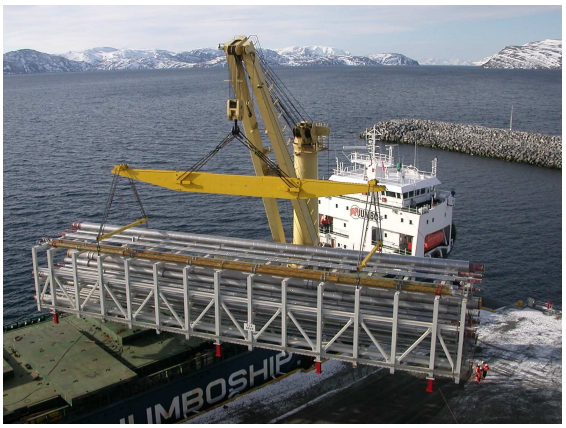
Lifting beams and spreaders

Lifting equipment can be executed with standard S355 material or high grade steel. For example the S690 high grade steel is used to reduce weight of the lifting equipment and to optimize the use of the maximum lifting capacity of the crane. All lifting equipment has to be delivered with DNV, Lloyds or similar certification and has to be tested according these specified rules.
Spreaders with a fixed length and spreaders that can be adjusted to the required length for a specific job are needed.

Lifting spread

The bollards have an optimized diameter/weight factor. For the lifting slings the bollards need to have a large diameter but for the weight of the equipment they need to be as light as possible. The bollards have a round end plate to allow a side angle of the lifting slings without damaging them.
Lifting beams can be executed with removable bollards to reduce the weight of the lifting beams. Special connecting points to transport and store the equipment are integrated in the design.

Innovative Input B.V. wants to add value to its customer activities by delivering tools and work methods with which the targeted goals can be reached in an effective way. To do so creativity and unorthodox solutions are common practice.



Heavy lift operation arctic conditions

Innovative Input has designed and builds lifting beams and spreaders from 10tons SWL with a length of 2m up to 800tons SWL lifting beams with a length of 24m.The specific lifting equipment is mainly used on heavy lift cargo vessels of e.g. Beluga, Jumbo, Spliethoff, Biglift, etc. Furthermore Innovative Input has designed a combined lifting equipment set with a total lifting capacity of 1400ton

A lifting beam set consists of one main part, the actual lifting beam, and can be equipped with:

- Saddles for over slinging of grommets and slings to reduce the lifting height.
- Locking bars which can be mounted between the bollards and prevent the grommets and slings from sliding of the bollard.
- Transport/storage beams which can be used to store the lifting beams on top of a standard 40' container
- Spreaders consisting mainly out of one part with wire locking bars.

Piggyback gantry

Heavy lifting in nuclear power plants is a complete different aspect with different requirements than usually applicable in offshore industry. The requirements are even stricter than in e.g. the "oil business". Lifting loads of 650 tonnes over a height of 55m inside a nuclear dome with a demountable hoisting structure asks for innovative solutions.

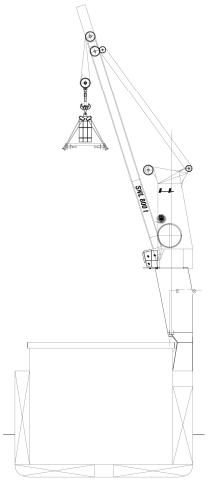
Containerized gantry (red) on main gantry (blue) for retracting heat exchangers in a nuclear power plant

This has resulted in the design of a special gantry crane with as nucleus a containerized block and winch system. Around the container, which is the core of the total hoisting gantry, the gantry is built up complete with boogies and control equipment.

650 tons block and containerized gantry crane

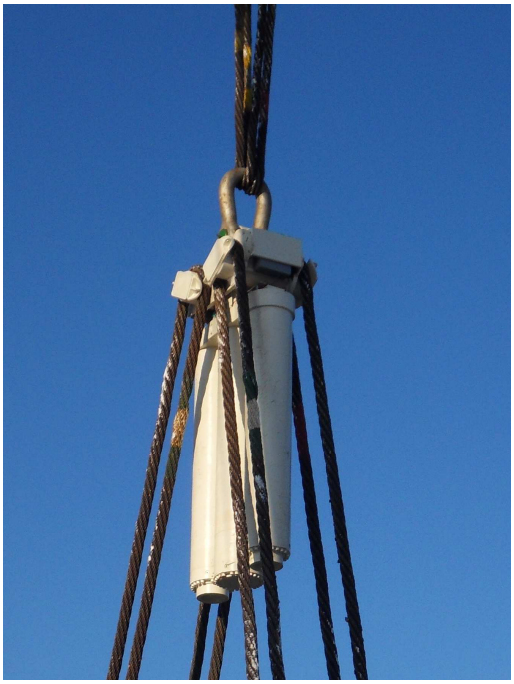
Wave compensation

One of the requirements at placing of e.g. transition pieces for the mounting of offshore windmills is that wave effects must be compensated as much as possible. A 300 tons lifting compensator is designed to compensate movements due to heave during offshore lifting operations.



The damper is considered to be used between the crane hook and the load. The load itself is lifted with four slings. The system is activated via a wireless remote control. The compensation will be effective till sea state 2 (significant wave height of 1.5m). The design ensures that loss of lifting height is reduced to a minimum.

Maximum lifting height ensured



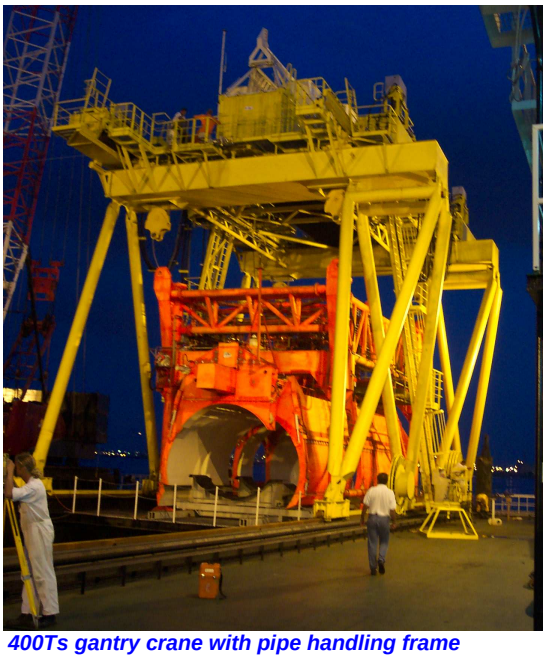
Compensator just before activation

Cranes and dedicated heavy lifting equipment

Heavy lifting equipment was already in our mind before Innovative Input was born. So in the youth of the company we designed and build a 400 tons gantry crane for civil offshore work. Hereafter the moving parts (winches) of a 2000 tons sheerleg, a subsea hammer manipulator and various other heavy lifting equipment and cranes followed.

400 tons Gantry crane

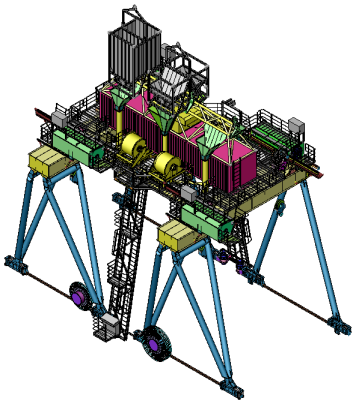
Near shore civil work required a gantry crane handling concrete pipes with a diameter of 4.3m. Pipes had to be laid using a handling frame with back-fill facilities. The total SWL to handle was 400 tons.



400Ts gantry crane with pipe handling frame

The gantry crane itself could move over the pontoon. As this pontoon was rather flexible special attention was given during design phase to cover stability and second order effects introduced into the construction (think on forces and deformations).

At the top of the gantry feeder bunkers are positioned. To hoist the pipe handling frame 4 sliding winches - avoiding spooling devices- are mounted. The total gantry construction is dismountable and designed to transport by means of 40' containers. (GL certified)



Design model 400 Ts Gantry crane

Others

Besides the lifting solutions at sea and shore we design and build solutions for pipe laying installations, dredging and even fishery. See: www.innovativeinput.nl

About innovative Input

Our approach

Innovative Input designs and delivers mechanical constructions for e.g. offshore, onshore and civil applications beyond common solutions. The difference compared to other companies in this industry is already presented in our name. For our customers this brings opportunities since requests that seem impossible at first become possible and will bring results. Even regular products come to new shape, although change is not a goal in itself.

Knowledge, creativity, experience

From the start three key words were important: Knowledge, Creativity and Experience. Knowledge makes clear what technically is possible. Creativity stands for thinking like an innovator, out of the box. Experience is necessary to act innovatively with the end goal in mind. At Innovative Input our developers are not daydreaming but stand with their feed on the ground. Innovative Input started as design agency. Nowadays we deliver the designed products as well.

What we do and how we work

We construct dedicated (lifting) systems winches and accessories like lifting beams. Systems are completed with power and control system and almost produced and delivered with class approval documents.

Your challenge our solutions

An assignment often begins with a (not always easy) question. Then the first brainstorming follows resulting in rough sketches presenting a possible solutions. During the process, our designers are regularly in contact with the client. This way we stay in-line with our clients to achieve an optimal result. Our innovative method often delivers surprising results.

Innovative Input BV

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