

INDUSTRIAL SOLUTIONS










RESULTS-ORIENTED CUSTOM MADE SOLUTIONS FOR INDUSTRIAL USE

Mastering power

Holmatro products are all about the principle that only controlled power can be deployed effectively. We have expressed this vision in the slogan 'Mastering Power'. Still, for over 50 years after the foundation in 1967, we keep honoring our traditional Dutch roots and represent innovation, quality and support. That is why we design, develop, manufacture, and test our tools in-house. Our experience with high-pressure hydraulics enables us to seek out the boundaries of what is technically possible. This has made our tools lighter, compact, more durable, and easier to use.

holmatro.com

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DEAR READER,

The world of high-pressure hydraulics is constantly in motion. We are therefore proud to present you with a selection of high-pressure hydraulic solutions for industrial use. Results-oriented solutions that are regularly developed on request, and may also be of added value to you. Perfection is the starting point for all industrial solutions at Holmatro. You will see this reflected in quality, ease of use and safety. All our products are developed, manufactured and tested in-house. The result: traditional Dutch quality and reliability. Our products have a life span that extends for years, partly due to our comprehensive service program.

Lifting, pushing, pulling, lowering, weighing, tilting or horizontal movement; whatever direction your project moves in, we move with you. In collaboration with our R&D, Production and Service departments, we place ourselves in your situation and participate fully in the thinking process to achieve the right solution for your usage requirements. Allow us to inspire you and challenge us to come up with a solution for your specific problem. We look forward to hearing from you!

Ben van der Knaap

Director of Holmatro Industrial Equipment BV

INDUSTRIAL SOLUTIONS

Feel the power of cooperation

A number of important pillars converge at Holmatro Industrial Solutions. In addition to the traditional Dutch quality and reliability of our products, it revolves around empathy, expert knowledge of hydraulics and naturally our partnership with you.

Hydraulics specialist

Ship launches, turbine transport, generator installations in narrow spaces: moving, adjusting or levelling heavy loads requires controlled forces and special projects demand customized solutions and systems. Your specific requirements and our in-depth expertise in hydraulics enable us to develop new result-oriented solutions for generating and mastering precision power.

Partnership

No one knows the technical challenges of your company better than you. Every day, you experience project bottlenecks and face technical limitations. Holmatro is pleased to assist you in finding a solution for your problem. Whether it involves greater efficiency in the execution of complex projects, improving safety or excelling in extreme situations: Holmatro provides the right solution.

User friendliness

Controlling extreme forces safely and smartly: that is the goal of Holmatro tools and systems. One of the conditions for achieving this is that our products are easy to use and deploy. User-friendliness is therefore the starting point for all our products and solutions: both in operations and functionality.

Safety

We attach great value to working safely and efficiently and to a long life span for our products. We therefore work in accordance with the Holmatro testing procedures otherwise known as CertiSafe®. This annual service for lifting equipment is more thorough than required by many international regulations and is your guarantee for optimal safety.

Durability

Holmatro tools and systems are manufactured using an advanced production process. They contain highly durable components, superior seals and guides, thereby contributing to a longer life span. As is the case for any product, our tools are not maintenance free. To ensure an optimal and long life span for your hydraulic tools, we support you with a comprehensive service program.



HOLMATRO INDUSTRIAL SOLUTIONS

At work

- Levelling
- Fixation
- Fastening
- Tilting
- Lowering
- Pushing
- Pulling
- Lifting
- Supporting
- Skidding
- Releasing
- Positioning
- Weighing

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SYNCHRONIZED POSITIONING SYSTEMS

Computer-controlled synchronized positioning of heavy loads

The synchronized positioning of heavy loads using multiple hydraulic lifting points is often considered to be a very difficult task. It does not only cost a lot of time and manpower, the work must also be performed by an operator with a high degree of expertise. This task should be easier, Holmatro engineers thought. After extensive research and considerable discussions with customers and IT specialists they developed *SyncPos*. Revolutionary software -specifically designed to operate Holmatro's Synchronized Positioning Systems – that is able to position the most complex loads with extreme precision in a simple and extremely safe manner. Controlled by just one person!

Use *SyncPos* when a deviation of a few millimeters is not acceptable

It is almost impossible to have 100% synchronized and identical control of a pump using a control handle or remote control. Different variables have an effect, such as small deviations in the pump output capacity, actual output yield, and friction loss. Also the different hose lengths within a system cause deviations. For many applications, a deviation of a few millimeters or sometimes centimeters is acceptable. But this is absolutely not the case for loads with a high risk of damage. For these kind of situations Holmatro supplies *SyncPos*. This revolutionary software is specially developed for loads with a high risk of damage and also specifically designed to operate a Holmatro Synchronized Positioning System.

Extremely safe due to intelligent detection and signaling

SyncPos checks the set-up of the hydraulic system before it initiates a positioning action by the Holmatro Synchronized Positioning System. Any system errors or deviations in the specified parameters are detected and signaled.

During the entire process, *SyncPos* continuously monitors the situation. The software uses feedback from multiple sensors, including a linear position sensor, to control the process regardless of the load's weight distribution. Continuous adjustment of the oil supply to each lifting point allows *SyncPos* to accurately control the positioning of

the load down to 1 mm. During this completely automated process, the structural integrity of the load is maintained. And, if the load unexpectedly shifts, something in the area blocks the load, or a sudden malfunction occurs in one of the system components, the system stops automatically and immediately generates an alert.

Less manpower and materials needed

SyncPos was developed with the utmost care to allow a single user to control the entire positioning process. The advanced yet extremely user-friendly software is run by a PLC control unit fitted with a 12-inch touch screen. The interface is designed to be easily understood with its icons, symbols, and color scheme. The result is a relatively simple control device for which the operator does not need intensive training nor a high degree of expertise. As the entire positioning actions are controlled at one central point and the operator can trust the software, significantly less communication and thus manpower and materials are needed during the process. In addition to registration and monitoring, *SyncPos* can also provide reports.

Modular composition has many advantages

It's not just the unique features of *SyncPos* that make the Holmatro Synchronized Positioning System a must have item for every company that positions complex structures. The modular composition of the system also provides many advantages. For example, system components can be used when needed and these are easy to extend or link together. The pumps that are used remain relatively small and compact, which makes them easy to move for a single person. There is no need for heavy transport resources. The use of multiple connectable split-flow pumps makes it possible to place the pumps as close as possible to the lifting points. This reduces the need for a complex web of hoses and cables around the load. The risk of damage to the hoses is reduced and the reaction time of the system is increased.



Construction of the Schuman-Josaphat-rail tunnel in Brussels

During the construction of the new Schuman-Josaphat-rail tunnel in the centre of Brussels, 26 concrete rail casings were immediately placed on site in the tunnel shafts. After hardening, the concrete colossi measuring 90 metres in length and weighing 400 tons needed to be lifted in order to place vibration dampers underneath and to build bridge supports.

Client testimonial

Dirk Davidts, Team Leader CEI - De Meyer: "We developed the modular Synchronized Positioning System for this project in collaboration with Holmatro. The intensive partnership and Holmatro's contribution to the engineering process resulted in combining high-pressure hydraulics and digital control technology for the first time. We were successful! Thanks to the advanced system, the positioning variance was just one millimetre per cylinder. This meant that no inadmissible stresses occurred in the structure during lifting and lowering."

Commissioned by
Location
Application area

CEI – De Meyer
Brussels, Belgium
Infrastructure

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RERAILING SYSTEMS

Faster, safer and a more controllable rerailing solution for all types of railway vehicles

When it comes to rerailing a rail vehicle back on the track it's important to do the job fast, safely and controlled. Reducing delay and costs are main priority, as well as providing workers a safe environment while lifting, moving and lowering the vehicle. By taking these priorities as guidance, Holmatro developed an extremely user-friendly solution that allows users to do the job faster, safer and with better control. No matter the type of railway vehicle.

Maximum performance with minimum weight

Thanks to the lightweight components – up to 50% lighter than those of similar systems available on the market – physical burden is minimized considerably. All components have optimally placed grips and are easy to assemble and disassemble without the use of extra equipment. Comfortable carrying, handling, positioning, assembling and disassembling can be done by one person.

Independent control valves for synchronized lifting and lowering

As they say, a system is only as good as its operator. Therefore, controlling oil flows is often done by experienced workers who have a great feeling for the equipment. Holmatro's powerful Quattro pump makes controlling the vehicle easier. The pump sends 4 equal flows to 4 independent control valves. Operating the control valves simultaneously results in guaranteed uniform cylinder stroke speeds during lifting and lowering, regardless of the load they're carrying. Of course, the valves can also be controlled separately to operate the cylinders individually.

Wireless remote control to operate the electromagnet valves

The pump can be operated remotely. Therefore it does not need to be right next to the railway, but can remain for example in the recovery vehicle. The wireless remote control allows the operator to adopt a safe position. It also

enables him to move around the railway vehicle freely and keep an eye on the situation, without being dependent on the observations of others.

Safely working near the railway vehicle

The lifting cylinders of the Rerailing System are connected to colored hoses, which also match the colors on the pump control panel. Color coding helps to avoid incorrect assembly and thus faulty operations are decreased enormously. Lowering valves with an integrated hose rupture security on each lifting cylinder keep the load steady when the operator stops controlling the pump or in the event of a hose rupture. When a railway vehicle has to hold its position for a longer time period, mechanical securing is provided by special stacking rings that can be easily placed around the plunger of the lifting cylinder.

Controlled lateral movements

Holmatro's Rerailing System consists of lightweight modular converted traverse beams. To enable sideways movement, traverse cylinders with an equal capacity for both pushing and pulling are connected to traverse sleds which are placed on the beams. By using easily replaceable sleeve bearings both under and in the traverse sleds instead of traditional steel wheel rollers, less stress is created on the railway vehicle and the equipment during the movement. To prevent instability of the railway vehicle and the equipment the traverse sleds are also designed with an indicator which will alert the operator timely to traverse limits in lateral direction.



Replacing a derailed train on the rails

If a train is derailed, it must be lifted and moved sideways in order to replace the wheels on the rails. This is done using a Rerailing System.

Client testimonial

Johan Knuijvers, Team leader Incident Response ProRail: "We were looking for an innovative Rerailing System in which our years of experience could be included. It soon became apparent that Holmatro was the most suitable partner for solving our problem. The result of the close collaboration was astounding: a re-railing system completely adapted to our requirements, equipped with the most modern technology. We have tested the system extensively on different types of rolling stock. Also on a freight wagon which was completely filled with water. The total weight of the wagon amounted to 90 tons. Despite this extreme weight, the re-railing system functioned safely and controlled. Because we were able to move the wagon sideways on the cylinders, it was back on the track in no time.

Commissioned by **ProRail**
Location **Dutch Railways**
Application area **Railway Construction**

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SKIDDING SYSTEMS

Horizontal movement of industrial objects and installations with exceptional sizes and weights

Besides the standard vertically oriented applications such as lifting and lowering, Holmatro also focusses on the horizontal movement of heavy loads. Holmatro's Skidding Systems are suitable for moving industrial objects and installations with exceptional sizes and weights to locations where using a crane is not an option.

Modular systems; easy to adapt to different load sizes and projects

The moving and positioning of industrial objects and installations is a complex task where accuracy, stability and safety are essential. Since objects and installations differ in weight and size, every skidding project is different. To respond to this, Holmatro has developed two extremely user-friendly, modular Skidding Systems that are easy to adjust to each load size and project.

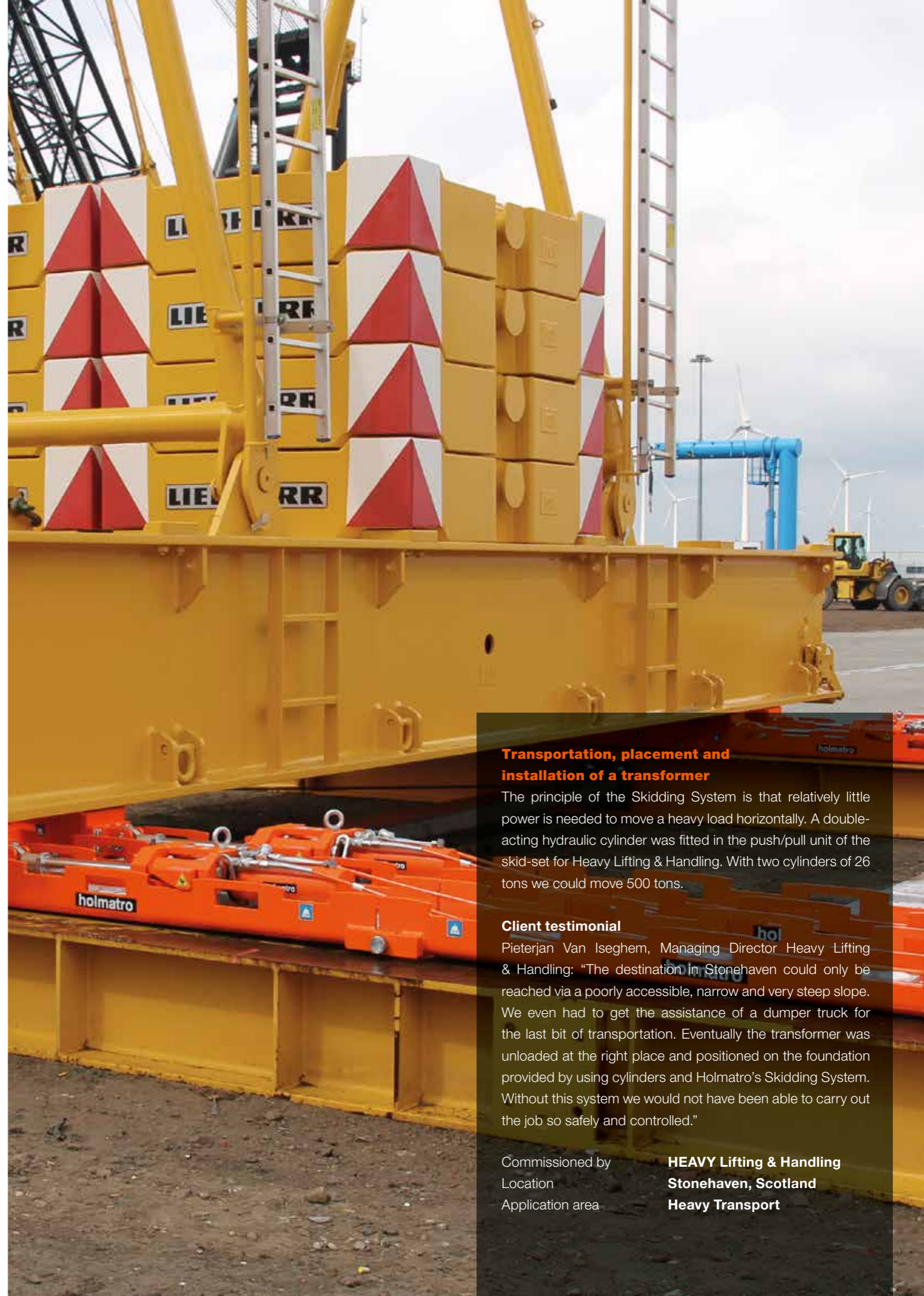
Equal pushing and pulling capacity for controlled positioning

The principle of the Holmatro Skidding Systems is simple; each system consists of a set of tracks, beams and push-pull units with a double-acting cylinder. The load rests on the beams, which move horizontally in the tracks. To optimally guide the beams, the tracks are fitted with extremely low-friction sliding pads. The beams are connected to the push-pull units, which are fitted with a cylinder with equal pushing and pulling capacity. This allows the system to perform both actions safely and in a controlled manner. The double-acting cylinders in the push-pull units are connected to a hydraulic pump by hoses. This powerful Twin pump has two equal oil flows that can be controlled independently or simultaneously.

Which Skidding System suits your application best?

Holmatro offers two modular Skidding Systems. An extremely lightweight system for loads up to 200 tons, and a system for loads up to 400 tons (assuming two skidding units are used). The 200 ton Skidding System has an exceptionally low construction height and consists of lightweight components, which makes it easy to use without the help of lifting tools, such as a forklift. Installing will save you a lot of time! The lightweight system is suitable for moving objects when there is limited insertion space. The 400-ton Skidding System is extremely strong, and suitable for moving very heavy objects.

Do you need more power? The skidding capacity and control can be customized to client specifications.



Transportation, placement and installation of a transformer

The principle of the Skidding System is that relatively little power is needed to move a heavy load horizontally. A double-acting hydraulic cylinder was fitted in the push/pull unit of the skid-set for Heavy Lifting & Handling. With two cylinders of 26 tons we could move 500 tons.

Client testimonial

Pieterjan Van Iseghem, Managing Director Heavy Lifting & Handling: "The destination in Stonehaven could only be reached via a poorly accessible, narrow and very steep slope. We even had to get the assistance of a dumper truck for the last bit of transportation. Eventually the transformer was unloaded at the right place and positioned on the foundation provided by using cylinders and Holmatro's Skidding System. Without this system we would not have been able to carry out the job so safely and controlled."

Commissioned by
Location
Application area

HEAVY Lifting & Handling
Stonehaven, Scotland
Heavy Transport

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OFFSHORE WIND HYDRAULIC SOLUTIONS

Powerful systems for offshore wind

Since the introduction of the TP levelling set in 2009, Holmatro has significantly expanded its product range for offshore (wind) applications. Besides hydraulic solutions to level wind turbine foundations, we have proven ourselves in the field of TP fixation, jacket fixation, cutting applications, seafastening equipment and skidding solutions. Our tools are also used for lifting, weighing and levelling offshore platforms, the calibration of tension-leg platform (TLP) load cells and are integrated on pipe-laying vessels to support heavy lifting and moving applications.

Lifting, weighing and levelling

For offshore wind applications Holmatro cylinders are regularly used to lift, weigh, or level heavy structures like platforms or parts thereof. Our cylinders are known for their supporting, anchoring or positioning purpose. But there's more. Specially designed cylinders with integrated weighting functions or integrated pressure transmitters connected to portable data loggers are also no exception to the options.

TP levelling and fixation

When positioning a transition piece (TP) on a monopile (MP) custom-made cylinders of Holmatro are often used to keep the elements precisely in position, regardless of weather conditions. Another method of installing is by means of flange connection. Holmatro can also help at this point by providing a special solution for pre-tensioning the bolts by using tensioning tools.

Seafastening

Seafastening solutions are used to secure the load of MPs, TPs and related installation equipment overseas to a wind farm. Many years ago, Holmatro designed the first seafastening systems suitable for extreme conditions for Seajacks. We have been improving and co-developing new types of systems ever since. Take our double-acting locknut cylinder for example, which allows the object to be fixed and released in a controlled manner and can even be used for alignment purposes. We also offer fixating systems for Hydrohammers and Noise Mitigation Systems.

Load-cell calibration

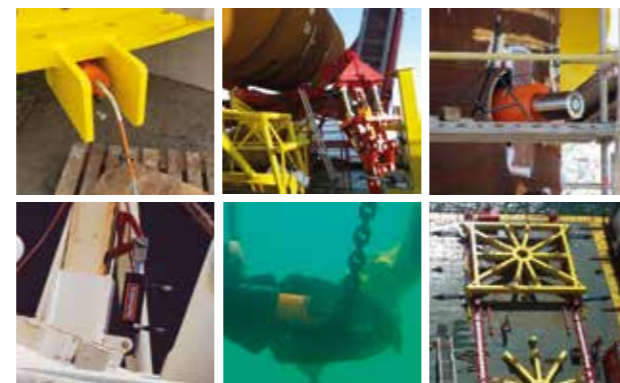
To re-calibrate the load-cells in the leg construction of a platform (TLP) hydraulic cylinders lift the weight of the platform off the load cells. Due to the harsh conditions on the oil platform the hydraulic system meet an enormous package of requirements. Besides supplying the hydraulic system, we can also draw up the required documentation.

Skidding systems

Nowadays available deck space is a high priority amongst the installation companies. This in combination with the desire to take on more load in one go, plus the ever growing dimensions of TPs and MPs, has created a need for proper and innovative solutions. Holmatro has designed a modular skidding system that allows installation companies to execute these operations themselves in a controlled and safe manner. Due to the modular setup of this system and its components the possibilities are endless. Therefore it is "the" must have when it comes to any kind of horizontal displacement of heavy loads offshore.

Offshore wind hydraulic solutions

- TP-levelling & fixation
- Seafastening
- Jacket fixation
- Lifting, levelling & weighing solution
- Cutting tools
- Skidding



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Construction of wind farm

Seajacks are the main installation contractor for the construction of Meerwind, a 288MW wind farm development located in the Exclusive Economic Zone region of the German North Sea. When fully operational, the eighty turbine project will produce enough energy to power 400,000 households every year.

Client testimonial

"In the second phase of installing a wind turbine, each foundation pile is fitted with a ready-made transition piece. Each transition piece weighs 270 tons. A crane lifts the transition piece and slides it over the foundation pile, overlapping it 7 metres. We place the transition piece perfectly vertical, and correct any error in the foundation pile, which may be a maximum of 0.3 degrees out of perpendicular. We do this using special custom-made Holmatro cylinders. In the hollow space formed, we pour almost 10 m³ of grout (concrete), in order to finally anchor the transition piece to the foundation pile. During the hardening process, we keep the elements exactly in the right position, regardless of the weather conditions."

Commissioned by
Location
Application area

SeaJacks
Meerwind
Offshore

STEP CYLINDER SET

Larger vertical movement of heavy loads with accurate control

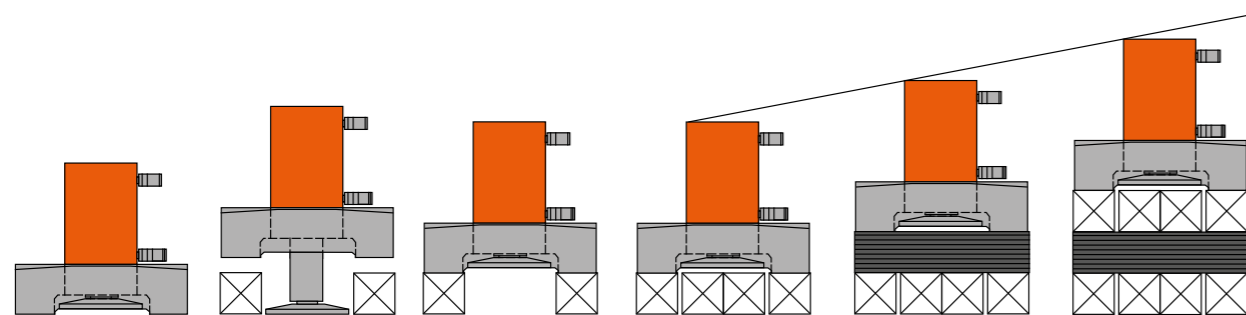
Some industrial lifting applications require a longer cylinder stroke to lift the load to the required height. Because of the direct relationship between the stroke length and the closed height of a cylinder, this requirement is not always possible with a standard cylinder. Those situations need a special solution for safe and correct lifting; the Holmatro Step Cylinder Set.

Step Cylinders, with a capacity of 25 to 150 tons are fitted with a step plate and a plunger with a stroke length varying from 125 to 200 mm. It also has an enlarged saddle in order to protect the plunger. The cylinder moves upwards with the load which increases stability during lifting. Large objects, such as oil tanks and transformers can be lifted with the aid of Step Cylinder Sets. All of this takes place without the use of a crane.

By using Azobé beams the Step Cylinder is able to lift and hold heavy loads to unlimited heights. The step plate is ergonomically designed for easy positioning of the beams, which makes the tool more user-friendly. When using multiple Step Cylinders, the cylinders can be connected with double couplers or T-pieces.

Loads that need larger vertical movement and a larger contact surface can be moved with Holmatro's special Step Cassette. The larger surface of the Step Cassette prevents damage of the load during the job. The Step

Cassette contains a stand-alone cylinder that can also be used for other jobs. Holmatro has many years of experience in engineering and producing client-specific Step Cylinder Sets for several well-established companies worldwide.



Storage tanks maintenance

Holmatro developed 120 pcs 35 tons Step Cylinders for Fabricom.

Client testimonial

"Our core business is the engineering, construction and maintenance of storage tanks. Using the Holmatro Step Cylinder Set, we can lift the storage tanks in a controlled way and, if required, in four segments. The adjustable head makes it easier to position the cylinder under the temporary support. Thanks to this solution, our people can carry out their work more safely and efficiently."

Commissioned by
Application area

Fabricom
Petro-chemicals

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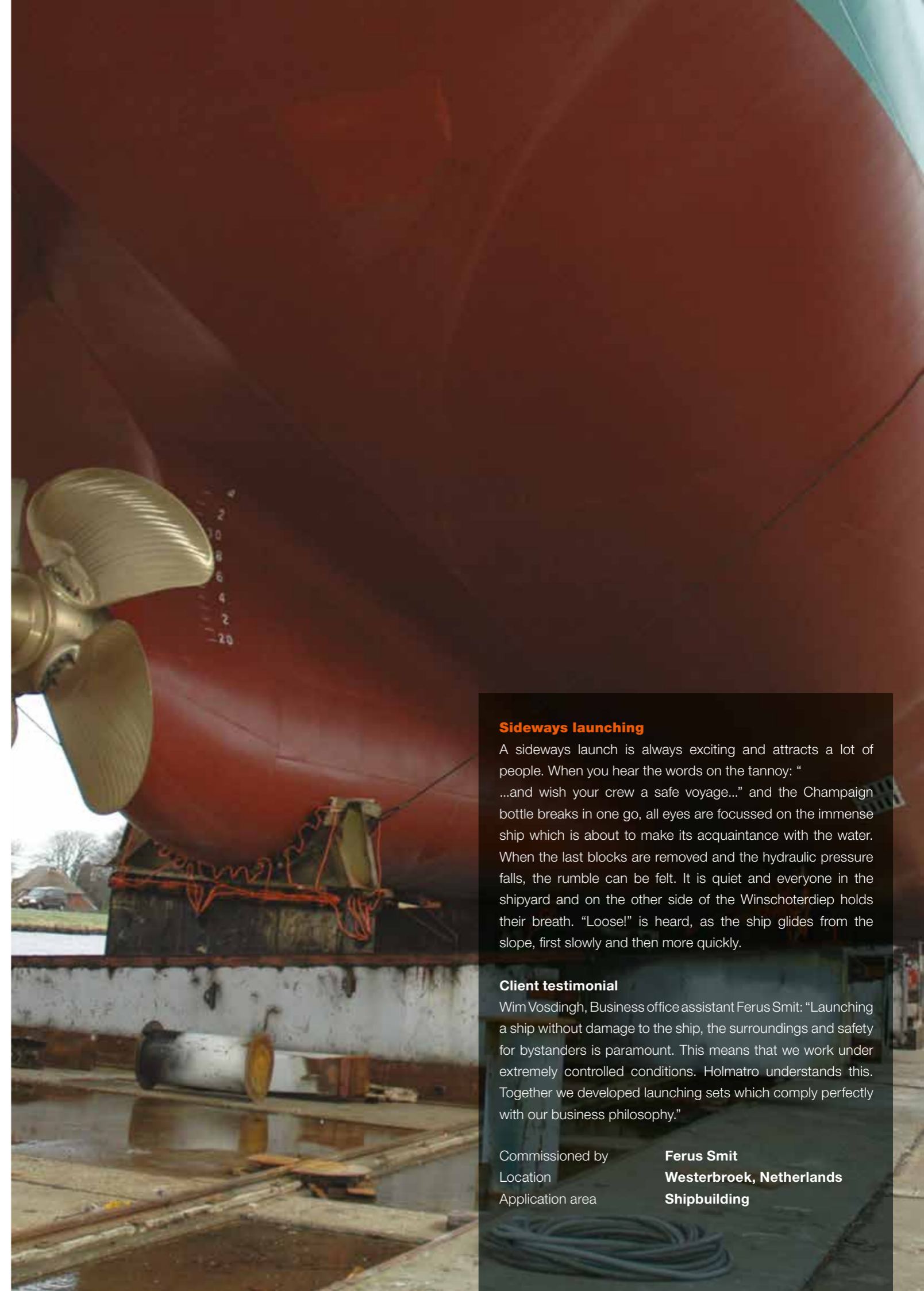
SHIP LAUNCHING SET

Safe and extremely controllable side way ship launches

Launching a ship sideways into the water safely in an extremely controlled manner is possible with the aid of Holmatro's custom-made Ship Launching Sets. One set consists of a cylinder with an electrical quick relief valve, a hand pump with a pressure gauge, a 5 metre hose and a 5-litre tank with a large diameter connection hose. 4, 6, 8 or more of these sets, combined with an electrical control unit are required for launching, depending on the conditions and the dimensions of the ship.

Before a ship is launched all support materials such as ship wedges are removed. The ship then only rests on a number of 'sleds' that are fixed between two support points with the aid of pumped out cylinders. The cylinders are operated from the quay by means of hand pumps and an electrical control unit. Each cylinder plunger is pumped out just until the carrying frame touches the bottom of the ship.

All cylinders are connected to a dump tank by means of a large diameter hose. The system is kept under pressure by keeping the quick relief valves (dump valves) on the cylinders closed. The launch is started by simultaneously opening all of the quick relief valves from a safe distance. The hydraulic oil then flows from the cylinders into the tanks. This is when the ship starts to move. While the cylinder plungers return due to the weight, and overturn within a few seconds, the ship gradually slides safely into the water.



Sideways launching

A sideways launch is always exciting and attracts a lot of people. When you hear the words on the tannoy: "...and wish your crew a safe voyage..." and the Champaign bottle breaks in one go, all eyes are focussed on the immense ship which is about to make its acquaintance with the water. When the last blocks are removed and the hydraulic pressure falls, the rumble can be felt. It is quiet and everyone in the shipyard and on the other side of the Winschoterdiep holds their breath. "Loose!" is heard, as the ship glides from the slope, first slowly and then more quickly.

Client testimonial

Wim Vosdingh, Business office assistant Ferus Smit: "Launching a ship without damage to the ship, the surroundings and safety for bystanders is paramount. This means that we work under extremely controlled conditions. Holmatro understands this. Together we developed launching sets which comply perfectly with our business philosophy."

Commissioned by
Location
Application area

Ferus Smit
Westerbroek, Netherlands
Shipbuilding

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Custom made solutions

THOSE WHO HAVE CHALLENGED US ALREADY



**TRUCK BRAKE
DISK PRESS**

Trucks are increasingly being fitted with brake discs instead of brake linings. As a result, more work is being carried out to replace brake discs. The old workplace press at BAS Group Nijmegen was not strong enough to separate the brake disk from the hub, which subsequently had to be pried apart by two mechanics. The Holmatro brake disc press allows this work to be carried out by one mechanic in half the time. The system is fitted with a rotating disc, which simplifies the hub cleaning process. The adjustable lift table minimizes lifting activities for the mechanic.

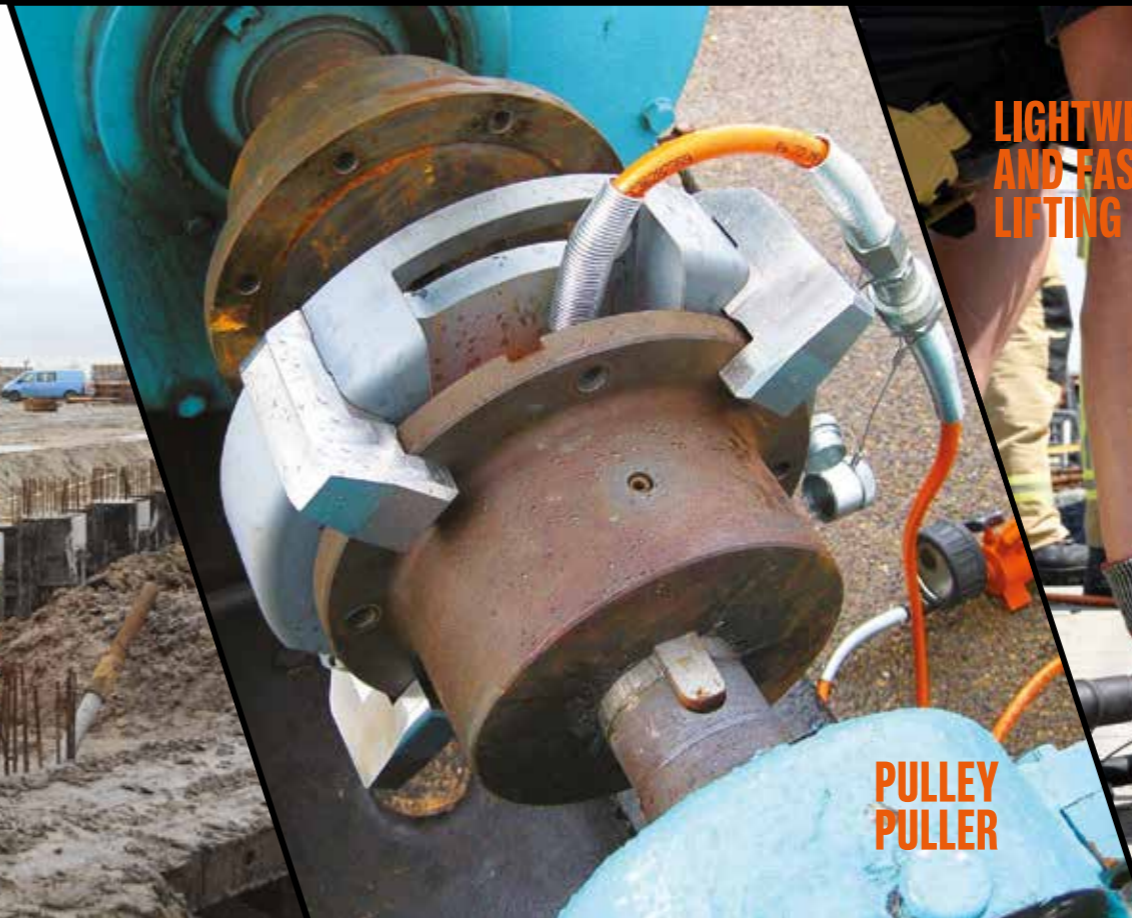
Commissioned by
BAS Group Nijmegen
Project
Truck brake disc press

**400 TONS
HOLLOW PLUNGER
CYLINDER**



In 2013 a 400-metre-long quay wall was built in the Nieuwe Waterweg, suitable for Aframax oil tankers up to 250 metres in length, 45 metres wide and a maximum draught of 15.2 metres. To anchor this quay wall with a retaining height of over 20 metres, Jetmix made use of a 400 tons hollow plunger cylinder. The cylinder, which weighs almost 900 kg, was manoeuvred into position from ground level by a crane hanging over the sheet-pile wall in order to determine the anchor variance. Afterwards, the anchor piles were prestressed, also using the hollow plunger cylinder. The large size of the cylinder took into account future changes in the anchor system and the growth of the sections to be tested and prestressed.

Commissioned by
Jetmix Funderingstechniek
Project
400 tons hollow plunger cylinder



**PULLEY
PULLER**

The BP site in Rotterdam contains around 100 storage tanks. Between the storage tanks, plant and equipment - in the open air - are pumps that are used to load bulk storage finished products into transport vats. After a certain time, the coupling that is wedged tightly between the pump and electric motor needs to be replaced due to wear and tear. The confined working space means that using a regular pulley puller is not an option. In the past, a blind flange was used in combination with wire grips. This was a risky method, which required a minimum of two people. Using the Holmatro ergonomic pulley puller means that work can now be carried out by one person safely and in a controlled manner.

Commissioned by
BP Refinery Rotterdam
Project
Pulley Puller

**LIGHTWEIGHT
AND FAST
LIFTING SYSTEM**



Amsterdam-Amstelland Fire Department, consisting of 1,100 people, effectively acts in fires and accidents, but is also prepared for disaster management and the management of large-scale crisis situations. For lifting subways after incidents they were looking for a lightweight and fast lifting system that could be connected to the existing equipment on the fire truck. In addition, they wanted a reliable supplier who offers the possibility of tool inspection on location, in which all parts of the hydraulic sets are included. Holmatro developed 6 lifting systems, consisting of Vari pumps, 40 ton telescopic cylinders, filler pieces, operating sets and extension hoses. Our comprehensive service program matches their maintenance needs.

Commissioned by
Fire department Amsterdam - Amstelland
Project
Lightweight and fast lifting system

Custom made solutions

THOSE WHO HAVE CHALLENGED US ALREADY



605 TON DOUBLE-ACTING LOCKNUT CYLINDERS



CYLINDERS WITH AN EXTREME HIGH SIDE LOAD



500V HYDRAULIC VARI PUMP



90 TONS HEAVY LIFT CYLINDERS

From 2013 to 2015, Rijkswaterstaat (department of waterways and public works) will be renovating the Galecopperbrug, a section of the A12 near Utrecht. This is because the bridge is showing signs of fatigue in the road surface due to the stronger growth of traffic and the increased weight of trucks. During the renovation the Galecopperbrug will be raised several tens of centimetres in order to make it suitable for vessels carrying four layers of containers. To lift this 240 metre long bridge Holmatro has developed five double-acting lock nut cylinders, each with a capacity of 605 tons. With a stroke length of no less than 1300 mm, the unique technical design of the return plunger means that they have a relatively low closed height of 2070 mm.

Commissioned by
CT de Boer
Project
605 ton double-acting lock nut cylinders

To bend plates and profiles in steel, aluminium and stainless steel, Kersten uses 100 and 200 tons cylinders with a higher side load capacity. The double-acting cylinders are controlled by a special made vari pump, equipped with a remote control that includes a switch for the control of one, two or three cylinders. On request the pumps are also equipped with an adjustable pressure controller, an oil cooler, an adjustable timer to turn of the pump automatically and a bypass switch, so one valve can also control a single-acting cylinder.

Commissioned by
Kersten Europe
Project
Cylinders with an extreme high side load capacity

RWE in Grevenbroich is completely devoted to the mining of lignite. This takes place in a location with a total area of approx. 115 km². The lignite is dug out of gigantic pits (surface area approx. 15 km², deepest point approx. 250 m) in 3 layers. This keeps 8 enormous machines constantly in operation (24/7). These machines are fitted with caterpillar tracks that must be stretched with great regularity in order to maintain the speed and efficiency of the processing. This stretching requires the use of cylinders in combination with a Holmatro vari pump. The vari pump was supplied at the request of RWE in a 500V version and was fitted with a custom-made protective frame that included valves and a filter. The special frame was necessary due to the rough working conditions.

Commissioned by
RWE Power AG
Project
500V hydraulic vari pump

Heerema Zwijndrecht fabricates offshore platforms, jackets and modules with a cumulative weight of over 550,000 tons. During construction the offshore structures are supported by 590 tons cylinders with a stroke length of 100 mm. A specially made vari pump with 100 litres oil capacity controls the cylinders.

Commissioned by
Heerema Fabrication Group (HFG)
Project
590 tons heavy lift cylinders

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