



# Offshore

use



COLUMBUS McKINNON Engineered Products GmbH

The Pfaff-silberblau and Alltec Antriebstechnik brands are positioned under the strong umbrella of the Columbus McKinnon Corporation. This unique set-up gives our customers access to outstanding technologies and components. According to your requirement we join them to provide individual solutions perfectly suited to your application.

## Columbus McKinnon Engineered Products GmbH

### **Worldwide solutions provider**

We offer far more than the delivery of single components. For the complex demands of our customers we supply high-end components with innovative engineering supported by the services of our experts. The result is a perfectly tailored solution for each and every case.

You configure your system individually, we advise, design and assemble – worldwide with a highly qualified engineering team. Individual parts are manufactured and assembled in our plant to create reliable, well-functioning units. Before delivery, all our products are subjected to rigorous tests on our in-house test rigs.

As world market leader, we not only sell products, but also provide comprehensive services to our customers:

- Installation and commissioning
- Preventive and curative maintenance
- Upgrades or reconditioning of equipment
- Dismantling once lifetime has expired

Thanks to our worldwide sales and services network, we are quick to respond whenever you need us.

On the following pages, we give you an overview of the approved equipment and components that all meet the strict requirements for offshore use.





Extreme **reliability**  
for extreme locations

### **Top quality on the open sea**

There's virtually no location more challenging for technical equipment than out at sea: extreme weather conditions combined with the destructive force of the salt water sees to that. The technology used in this environment must offer reliable and safe functionality.

The screw jacks, chain hoists, platform cranes, wire rope winches and lifting tables from Pfaff-silberblau are designed for offshore conditions right down to the smallest detail. High-quality materials, encapsulated design and special protective coating make our products seaworthy.

Our quality inspections are just as relentless as the rough seas. Solutions from Pfaff-silberblau are also available in ATEX format and are already being used successfully under offshore conditions.



Our **maxims**  
function without a trace



## Engineering which defies the elements

Offshore wind farm facilities are subject to a high sustained load due to the extreme conditions. Technicians, equipment and replacement parts all need to be brought to the facilities in order to maintain them. Work cranes make the connection between supply vessels and operation platforms. They are the crucial key that everything depends on.

Wind farms located 100 km from the coast are designed to last for up to 20 years. Facility access is of the utmost importance during maintenance checks, which occur once or twice a year. We achieve this through specific protective measures against corrosion and contamination. The highest quality measures are applied during design and processing. All bearings and pivotal joints are designed in such a way as to achieve the best possible corrosion protection. In addition, the steel construction is coated with a high-quality surface preservation.



### Technical details:

- Lifting capacity up to 5.0 t
- Lifting speed up to 40 m/min
- Paintwork in accordance with corrosion category C5-M
- Salt water-resistant materials
- Accepted by all certification bodies such as Germanischer Lloyd, TÜV, Det Norske Veritas and Lloyd's Register

The crane is available in various configuration levels. From the purely mechanical variant, whereby the lifting process as well as the boom adjustment and rotary actuator are designed for manual operation, to an electrification of only certain directions of motion, to the fully electrical variant whereby all motions are motor-powered by frequency converter.

## Crane technology offshore jib crane

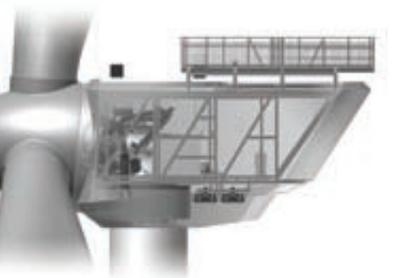
### Highest reliability thanks to electromechanics

Electromechanical systems have two essential advantages:

1. No danger of seawater contamination in the event of damage or maintenance work due to leaked hydraulic fluids. The wind farm produces “clean” electricity, and this complements the fact that the components can also be powered by “green energy” – a coherent concept.
2. Electromechanical systems are characterised by having maintenance costs of up to 40% less than those of hydraulic systems.

Evolution means  
applying **power** intelligently





### Screw jacks for offshore use

Using weather-resistant materials and a special surface coating, our electro-mechanical motion technology components are particularly suited to maritime use.

# Motion technology

## Screw jacks

### Standard designs

The wind farm nacelle is fitted with a service hatch, which must be opened without damage even in the strongest of winds. The locking plate of the service hatch is raised electromechanically, and completely laterally, using 6 standard screw jacks. To ensure that the locking plate can also be opened by hand in strong winds, the screw jacks have a small gear ratio. All screw jacks, as well as the drive components, have a corrosion-proof coating to withstand the influence of aggressive, saline air.

### Special designs

Pfaff-silberblau screw jacks are also used to lay gas and oil pipelines at sea. The lowering of pipelines to the seabed at a defined angle from an installation vessel requires so-called tensioners. These tensioners essentially consist of two tracks which guide and axially shift the pipe in order to adjust the tractive force. For the defined compressive force on the pipe as well as the band gap adjustment across the different pipe diameters, 4 mechanically synchronised screw jacks are deployed which are able to shift the upper track.

### Stainless designs

A special series of screw jacks was developed for use outdoors and in corrosive media, fulfilling the high demands with regard to corrosion protection. Where standard paints and coatings are no longer sufficient, the new SSP series is used. This design uses stainless steel for the housing, spindle, protective tube and worm shaft, bronze for the guide rings and stainless material for all the screws and DIN parts.

### Electrical wire rope winches for offshore application

Electrical wire rope winches of varying configurations are required for the maintenance of wind farms and oil and gas rigs. In order to ensure that they work reliably every time, it is fundamental that they are weather resistant. The security features for offshore use are topped off by a special surface coating, providing optimal protection in a marine environment. Our customer-specific winch solutions are characterized by a high level of effectiveness as well as a long service life.

#### Electrical wire rope winch – technical details:

- Grooved rope drums for long wire rope service life
- Design also with manual emergency drive
- Defined emergency lowering in case of power failure
- Variable lifting speeds
- Mechanism group 2 m, customer-specific adjustments up to 5 m

#### Manual wire rope winch – technical details:

- Fully encapsulated drive and brake with oil bath lubrication
- Compact design
- Individual drum length and drum diameters for all possible kinds of use

#### Endless cable winch – technical details:

- Unlimited stroke respectively train lengths
- Rope speed and tractive force remain constant
- Low net weight combined with high rigidity
- Drive group 1 Bm/M3 (1 cm/M2 for 18 m/min)
- Low wear on components (drive and traction sheave made from hardened steel)



## Lifting technology

### Lifting tables

The Pfaff-silberblau lifting table brands not only prove themselves in industry and plant construction, but are also successfully installed in relatively difficult environments, such as offshore. There are saline air and sea water which presents particular challenges, as well as the potentially explosive atmospheres found on oil and gas platforms. The well-proven technology of Pfaff-silberblau enables the safe and efficient offshore use of lifting tables.

#### Advantages:

- Transport of loads and persons
- Guided lifting movement
- Steadiness through appropriate design of the frame
- Safe emergency lowering of loads and persons even in case of power failure
- High strokes in combination with small platforms due to multi-scissor systems
- Increased corrosion protection thanks to special paint and use of sea water-resistant materials





The waves are rolling,  
the wind is blowing, the **winch** is working



### Take advantage of flexibility and safety

Whether it's a potentially explosive atmosphere due to gases, vapours or dusts, the protection against explosions in electrical and mechanical engineering is an important precautionary measure for the safety of people and of all forms of equipment concerned with production, storage and distribution. COLUMBUS McKINNON Engineered Products GmbH provides solutions with the ability to utilise lifting equipment in sensitive working environments. We have many years of experience in designing technical systems, going beyond the requirements of ATEX to fulfil the special requirements for use in fields such as nuclear and offshore installations.

... so that the  
**spark** will (not) leap



## Expanding our products

Complete your maintenance systems with products from our extensive range of accessories. We provide solutions that have been tried and tested a thousand times in tough day-to-day life: Conduit fitting systems, chain hoists, personal safety systems and textile lifting tools.



## Sites

Are you looking for the branch of our company nearest to you?

Simply paste the following link into the address line of your browser and select the country and industry you require. You will then be shown the corresponding branch along with all the contact details.

**[www.pfaff-silberblau.com/cmco-international/](http://www.pfaff-silberblau.com/cmco-international/)**



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# ATEX information & General information



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Partner of the Engineering Industry  
Sustainability Initiative

Qualitätsmanagement  
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COLUMBUS McKINNON

**COLUMBUS McKINNON Engineered Products GmbH**  
Am Silberpark 2 - 8  
86438 Kissing/Germany  
Phone +49 8233 2121 8100  
Fax +49 8233 2121 5055  
solution@cmco.eu  
www.pfaff-silberblau.com

