

液壓缸
用于离岸用途
**Hydraulic Cylinders
for Offshore Applications**



您成套解决方案的伙伴
Your Partner for Complete Solutions

关节臂起重机缸 Knuckle boom crane cylinders



在钻井船和其他离岸钻机上安全地提升和转运货物.采用关节臂起重机这一解决方案,负载摇摆的风险,特别是在恶劣气候下,将会降低到最小.提升的负载一直处于液压控制,特殊的负载控制阀直接装在缸上,保证没有不受控的主臂或者关节臂运动.典型的关节臂起重机由总共4台缸来操作,2台关节臂缸和2台主臂缸.

Safe, lifting and handling of goods on drill ships and other offshore rigs. With this solution of knuckle boom cranes the risk of swinging loads especially under rough weather conditions will become minimized. The lifted loads are under permanent hydraulic control. Special load control valves directly mounted on the cylinders guarantee that there are no uncontrolled movements of main boom or knuckle boom arms. Typical knuckle boom crane is operated with four cylinders in total: two knuckle boom cylinders and two main boom cylinders.

技术数据

Technical data:

主臂缸(示例)

- 内径: 470 mm
- 行程: 5,080 mm
- 杆径: 360 mm
- 负载能力: 每台缸600 t

关节臂缸(示例)

- 内径: 380 mm
- 行程: 3,800 mm
- 杆径: 250 mm
- 负载能力: 每台缸350 t

Main boom cylinder (example)

- Bore diameter: 470 mm
- Stroke: 5,080 mm
- Rod diameter: 360 mm
- Load capacity: 600 t per cylinder

Knuckle boom cylinder (example)

- Bore diameter: 380 mm
- Stroke: 3,800 mm
- Rod diameter: 250 mm
- Load capacity: 350 t per cylinder

洪格尔离岸起重机缸的主要特征是 Main features of the Hunger offshore crane cylinders are:

- 采用不同的耐腐蚀活塞杆镀层,针对使用中
的问题精确调整(镍/铬镀层、热喷硬质合金
和氧化物,或者Ultraplate镀层)
- 对腐蚀极其关注的缸的元件是经过特殊处
理的,防腐性能达到最佳.
- 不锈钢管路和集成块,用于安全和负载控制
功能.
- 装有耐磨的洪格尔密封件和支承件,磨损和
摩擦小,并且起重机运动无爬行.
- 缸设计成用于工作压力高达400 bar以上.

- Different corrosion resistant rod coatings are available, exactly adjusted to the application in question (Ni/Cr layer, thermic sprayed Carbides and Oxides or Ultraplate coating).
- Cylinder components, critical regarding corrosion, are special treated to optimize corrosion resistance.
- Stainless steel piping and manifold block for safety and load control function.
- Equipped with wear resistant Hunger seal and bearing elements for low wear and friction and stick-slip free crane movement.
- Cylinders designed for high working pressure over 400 bar



世界最大的钻井船之一, Stena Carron
One of the world's largest drill ships,
Stena Carron



主臂缸示例
Example for main boom cylinder

认证按照DNV提升用途2008, DNV标准针对认证号2.9液压缸和DNV离岸标准E101/D101, 或者按照ABS规定, 针对建造和分类, 钢容器. 4部分, 劳埃德船级社, GL或Bureau Veritas.

Certification according to DNV lifting appliances 2008, DNV standard for certification No.2.9 hydraulic cylinders and DNV offshore standard E101/D101 or alternatively according to ABS rules for building and classing, steel vessel. Part 4, Lloyds register, GL or Bureau Veritas.

N-直线张紧器缸

N- line tensioner cylinders

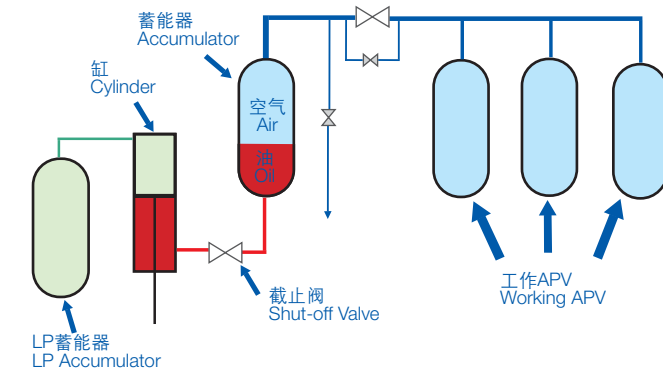
GPS-卫星
GPS-Satellit



N- 直线张紧器缸
N- line tensioner cylinder

现代的N-直线张紧器设计是用于保证预先确定的张力给海事提升器,并且补偿钻机的任何运动,像抬起、滚动或俯仰.系统由加载的蓄能器、长行程液压缸组成,液压缸直接安装在钻机结构一侧和另一侧的张紧圈之间.

The modern N- line tensioner design is used to ensure a pre-defined tension to the marine riser and to compensate any rig motions like heave, roll or pitch. The system consist of accumulator loaded, long stroke hydraulic cylinders, which are directly mounted between the drill rig structure on one side and the tension ring on the other side.



N- 直线提升器张紧器系统的原理图和安装位置
Block diagram and installation situation of a N- line riser tensioner system

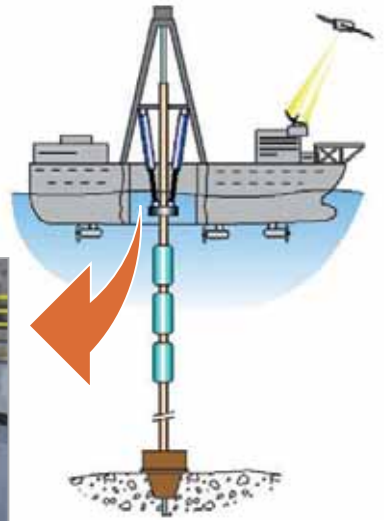
技术数据

Technical date:

- 内径: 560 mm
- 行程: 15,240 mm
- 杆径: 230 mm
- 负载能力: 每台缸350 t
- Bore diameter: 560 mm
- Stroke: 15,240 mm
- Rod diameter: 230 mm
- Load capacity: 350 t per cylinder

认证按照DNV提升用途2008,DNV标准针对认证号2.9液压缸和DNV离岸标准E101/D101.

Certification according to DNV lifting appliances 2008,DNV standard for certification No. 2.9 hydraulic cylinders and DNV offshore standard E101/D101.



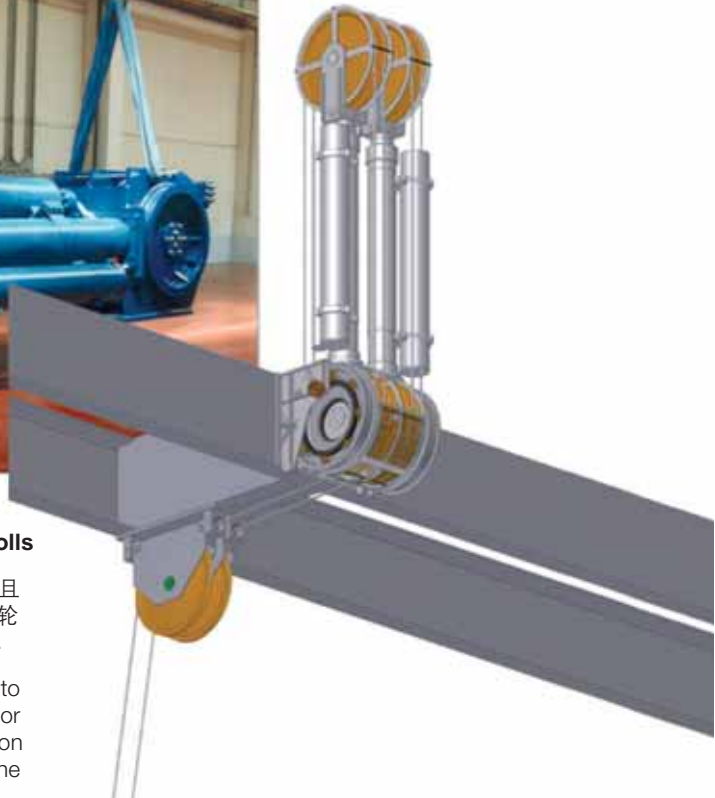
因为N-直线张紧器缸直接安装在飞溅区域,有部分活塞杆浸没,所以必须要有极好的腐蚀防护.Ultraplate镀层用于连续运动的活塞杆,保证优质的腐蚀防护,并且极其耐磨.使用洪格尔的DFE密封和导向件,具有寿命长的特性,其他特殊特征是外部可调整的密封件,它能够改善整个系统的可靠性;绝对位置测量系统;特殊的球接头,允许在任何方向倾斜运动;和带有保险片和温度安全阀的充氮蓄能器.

Because N- line tensioner cylinders are installed directly in the splash zone with partly submerged piston rods an excellent corrosion protection is necessary. The Ultraplate coating guarantees premium corrosion protection as well as high wear resistance for the continuously moving rods. Hunger DFE seal and guiding elements are used to provide long life properties. Other special features are an externally adjustable seal which can improve the reliability of the whole system, an absolute position measuring system, special ball joints allowing a tilt movement in any direction and the Nitrogen loaded accumulators with rupture disc and temperature safety valve.



钢丝绳直线张紧器缸

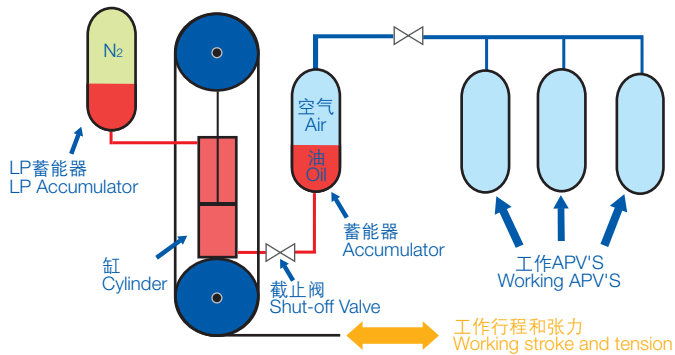
Wire line tensioner cylinders



钢丝绳直线张紧器缸, 装有蓄能器和滚轮
Wire line tensioner cylinder with mounted accumulators and rolls

钢丝绳直线张紧器系统是用于保证预先确定的张力给海事提升器, 并且补偿钻机的任何运动, 像抬起、滚动或俯仰. 蓄能器加载的液压缸在滑轮系统中产生张力, 滑轮系统一侧连接至钻机结构, 并且另一侧至张力圈.

A wire line tensioner system is used to ensure a predefined tension to the marine riser and to compensate any rig motions like heave, roll or pitch. An accumulator loaded hydraulic cylinder generates the tension in a pulley system which is connected to the drill rig structure on one side and to the tension ring on the other side.



钢丝绳直线提升器张紧器系统的原理图和安装位置
Block diagram and installation situation of a wire line riser tensioner system

因为液压缸是安装在平台甲板上, 所以给出用于维护和修理的自由通道. 为了保护活塞杆耐腐蚀, 采用了镍-铬镀层或热喷镀层. 使用洪格尔的DFE密封和导向件, 具有寿命长的特性, 缸在交货时可以装有蓄能器和管路.

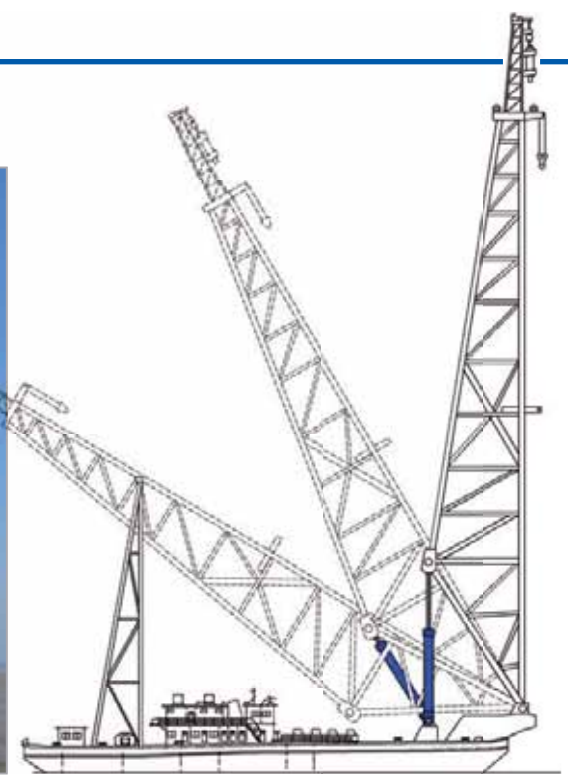
认证按照DNV提升用途2008, DNV标准针对认证号2.9液压缸和DNV离岸标准E101/D101, 或者按照ABS规定, 针对建造和分类, 钢容器. 4部分, 劳埃德船级社, GL 或 Bureau Veritas.

Because the hydraulic cylinders are installed on the platform deck free access for service and maintenance is given. To protect the piston rod against corrosion, Nickel-Chrome layers or thermal sprayed coatings are used. Hunger DFE seal and guiding elements are used to provide long life properties. The cylinders can be delivered with mounted accumulators and piping.

Certification according to DNV lifting appliances 2008, DNV standard for certification No.2.9 hydraulic cylinders and DNV offshore standard E101/D101 or alternatively according to ABS rules for building and classing, steel vessel. Part 4, Lloyds register, GL or Bureau Veritas.



打桩船缸 Piling barge cylinders



打桩船缸用于操作作业船上的冲击起重机.用这些打桩船把长度达100m的钢筋钢支柱夯入海底,用于桥梁结构、岸壁或码头壁.通过双向工作的缸,桅杆能够调整到不同的角度,从稍微交叉的支柱来获得更高的刚度.

Piling barge cylinders are used for operating ram-cranes on working barges. With these barges, concrete-steel pillars with lengths up to 100m get rammed in the sea ground used for construction of bridges, quay walls or hardour walls. By the bi-directional working cylinder the mast can be adjusted to different angles to get higher stiffness from the lightly crossed pillars.

技术数据 Technical data:

- 内径: 800-1,250 mm
- 杆径: 500-800 mm
- 行程: 12,000-16,000 mm
- 负载能力: 高达1,800 t
- 缸重: 重达120 t
- Bore: 800-1,250 mm
- Rod: 500-800 mm
- Stroke: 12,000-16,000 mm
- Load capacity: up to 1,800 t
- Cylinder Weight: up to 120 t



**打桩船缸, 活塞直径900mm
Piling barge cylinder with 900 mm piston diameter**

缸的认证按照CCS标准或者DNV提升用途2008, DNV标准针对认证号2.9-液压缸. 缸的主要特征是陶瓷活塞杆镀层, 不锈钢球轴承, 有杆端用于自动锁定功能的塑料复合物导向套和磨损最小的洪格尔密封及支撑件. 缸上装有集成块, 提供全部安全和加载控制功能.

The cylinders are certificated according to CCS standard or DNV lifting appliances 2008, DNV standard for certification No.2.9 - hydraulic cylinders. Main features of the cylinders are the Ceraplate rod coating, stainless steel spherical bearing, offshore plastic compound bushings at rod end for automatic locking function and friction and wear optimized Hunger seal and bearing elements. The cylinders are equipped with manifold block providing all safety and load control functions.

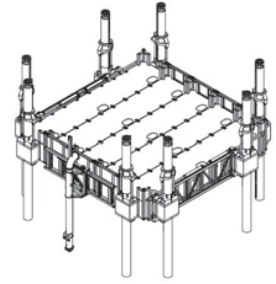


移动平台 Walking Platform



海洋移动者,第一台创新型8腿、独立移动顶升平台,能够在深达30m的水中移动和安全操作.新型多用途移动顶升平台能够在强浪、强流中,或者在海滩和其他潮汐带区域移动和完全独立操作,极大地提高了各类传统顶升平台操作的生产率,包括地质钻探现场调查、挖沟、铺设管路和电缆、钻探、爆破和其他水下作业.

SeaWalker, the first of a new range of innovative 8 legged, self-contained walking jack-up platforms, capable of walking and safely operating in water depths up to 30 metres. The new versatile walking jack-ups can move and operate completely independently in rough seas, strong currents or on beaches and other intertidal locations, considerably boosting the productivity of a variety of traditional jack-up platform operations. Including geotechnical site investigation drilling, trenching, pipeline and cable laying, drilling, blasting and other underwater work.



采用Ultraplate活塞杆镀层的32台液压缸用于移动平台的腿,缸上装有不锈/塑料复合物结构的球轴承,并且采用洪格器的DFE特殊密封件,保证无泄漏保持负载.

32 hydraulic cylinders with Ceraplate rod coating are used to move the legs of the platform. The cylinders are equipped with spherical bearings in stainless steel / plastic compound design and with Hunger DFE special seal elements to guarantee a leakage free hold of the load.

用于绞车/钢丝绳控制的液压缸 Hydraulic cylinder for winch / rope control



为了引导远洋拖船的大型绞车的钢丝绳,使用双活塞杆固定而缸体移动的液压缸,因为活塞杆始终暴露在海洋环境中,就采用Ultraplate镀层来避免任何形式的腐蚀,并且给密封和导向件提供抛光和耐磨的活塞杆表面.

To lead the rope of large winches of ocean-going tug boats hydraulic cylinders with clamped double piston rod and moving cylinder body are used. Because of the permanent exposure of the piston rod to the sea atmosphere the Ultraplate layer is used to avoid and kind of corrosion and to provide a polished and wear resistance rod surface to the seal and guiding elements.



带有同轴活塞的双活塞杆, Ultraplate镀层和通过活塞杆供油
Double piston rod with centred piston, Ultraplate coating and oil feeding through the rod

龙骨升降机缸 Keel lift cylinder

具有75m长和桅杆高90m的Mirabella V是当今世界上最大的单桅帆船. 为了使船能进入较小的港口, 液压缸能够提升150t重、可伸缩的龙骨约6,000 mm.

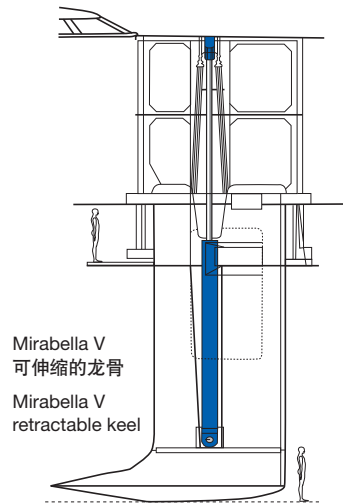
因为液压缸始终是浸在海中的, 或者是处于飞溅区域的, 就选Ultraplate活塞杆镀层来提供长期的腐蚀保护.

为了使重量尽可能低地置于龙骨中, 缸安装成有杆端朝上, 因此通过缸中的活塞杆供给液压油.

The Mirabella V is with a length of 75m and a mast height of 90m the currently biggest single mast sailing ship in the world. To allow the ship to enter in smaller hardours a hydraulic cylinder can lift up the 150t heavy retractable keel by approximately 6,000 mm.

Because the hydraulic cylinder is always sub-merged or in the splash zone the Ultraplate rod coating was selected to provide a long life corrosion protection.

To put the weight as deep as possible in the keel, the cylinder is installed with rod side up. Therefore the hydraulic oil is feeded through the rod in the cylinder.



Mirabella V
可伸缩的龙骨

Mirabella V
retractable keel



技术数据

Technical data:

- 内径: 320 mm
- 杆径: 190 mm
- 行程: 6,000 mm
- Bore diameter: 320 mm
- Rod diameter: 190 mm
- Stroke: 6,000 mm

运动补偿器 Motion compensator



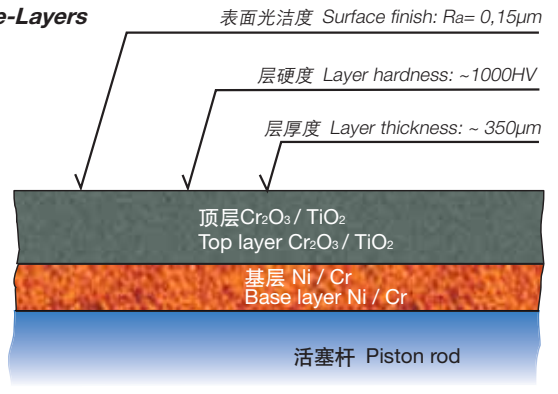
为了从海底开采原料, 要使用输送带或者远程控制的移动装置. 在运动补偿器装置中, 液压缸是用于在操作期间稳定所有的垂直运动, 或者卸下开采装置. 由于缸杆始终暴露在海洋环境中, 因此使用Ultraplate活塞杆镀层.

To produce raw material from the sea ground conveyor belts or remote controlled moveable units are used. In the motion compensator unit a hydraulic cylinder is used to stabilize all vertical movements during operation or set down of the production unit. The cylinder rod is always exposed to the sea atmosphere and therefore the Ultraplate rod coating is used.



陶瓷活塞杆镀层 Creaplate rod coating

陶瓷-层 Ceraplate-Layers

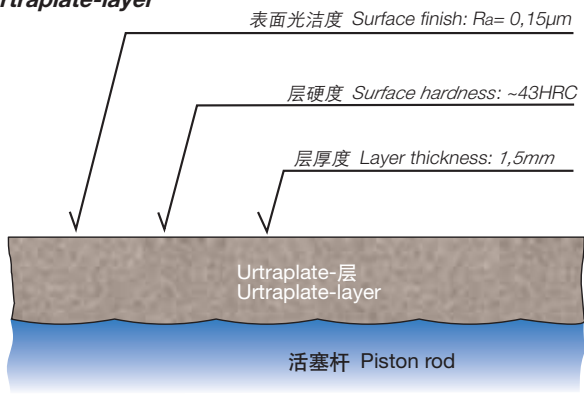


- 热喷的Ni / Cr基层和Cr₂O₃ / TiO₂顶层
- 其他材料(金属或硬质合金)根据要求
- 适合甲板安装, 常规工作循环
- Thermically sprayed Ni/Cr base layer and Cr₂O₃ / TiO₂ top layer
- Other materials (metallic or carbide) on request
- Suitable for on deck installations with normal working cycle



Ultraplate活塞杆镀层 Ultraplate rod coating

Ultraplate-层 Ultraplate-layer



- 等离子焊接技术(P.T.A.)用于不锈钢层
- 各种耐海水材料有货
- 适合海事环境、飞溅区域或者浸没状况
- Plasma welding technology (P.T.A.) for stainless steel layers
- Different sea water resistant materials available
- Suitable for marine atmosphere, splash zone or submerged condition



更详细的资料请看我们的宣传册“表面镀层系统”。
For more details please see our brochure **SURFACE COATING SYSTEMS.**

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