



KAIRONG
SHIP 凯荣船用机械
MACHINERY

LNG船超低温不锈钢产品 STAINLESS STEEL PRODUCTS OF LNG CARRIER

- Gas Dome Section
- Venting Mast
- Pump Tower Base Support with Guiding Unit
- Hoop and Clamp for Pipe
- Parts for Membrane Containment System
- Bidirectional Filter
- Punch Device
- 气体穹顶
- 透气桅
- 泵塔基座导向机构
- 抱箍及管夹
- 压载舱围护系统小件
- 双向过滤器
- 冲孔装置

薄膜液舱的关键技术就是如何使舱体耐受和保持 LNG 的超低温，且不发生泄漏和渗透，舱体材料不会发生低温脆裂，其切割、成型、焊接和组装等工艺要求十分严格。对场地、人员素质、设备状况、原材料、加工工艺、检测手段以及管理控制等要求非常高。

为此，我们专门成立了一个不锈钢车间，配备了专门的设备和人员来适应这一工作的需要。

目前，我国的沪东 - 中华造船（集团）公司为广东 LNG 船舶投资方研制的 147210 立方米薄膜式液舱式 LNG 船 5 船套已经交付使用，其技术已处于世界领先。我公司作为沪东 - 中华造船（集团）公司的重要配套企业，承接了该系列船上的气体穹顶、透气桅、泵塔基座、抱箍、管夹及大量的预制件、连接件等产品，在国内处于领先地位。

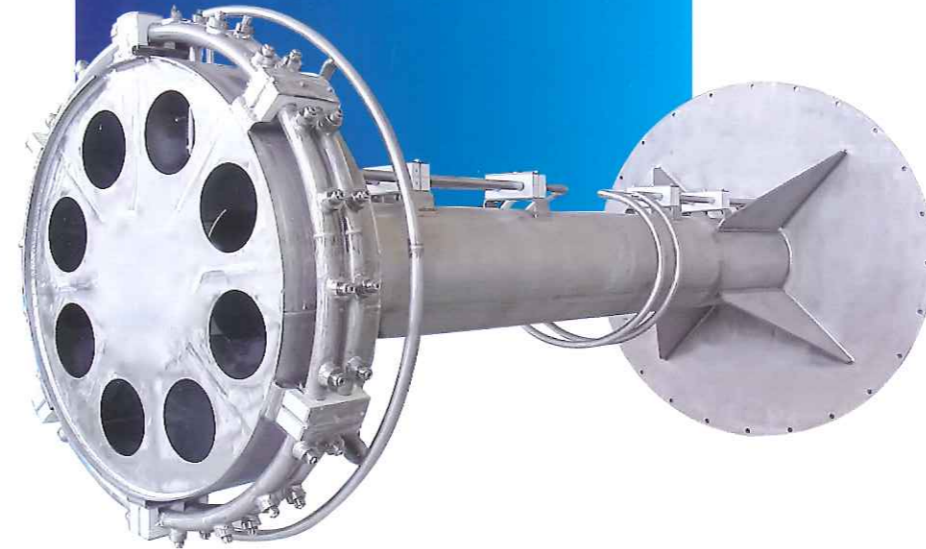
The key technique of the membrane type vessels is how to maintain the ultralow temperature of the cabins and to prevent the LNG from leaking. Also low temperature crack should be prevented. Thus, it highly required for the field status, human diathesis, equipments status, materials, temperature, techniques of machining, examination methods and management control.

Therefore, we have organized a Stainless Steel Workshop specially, and equipped special equipment and engineers and welders to adapt the requirement of this job.

The 147210 cubic meter membrane LNG carrier manufactured by H&Z (Group) for Guangdong LNG Carrier Investor had delivered 5 ships already. KAIRONG, as one of the most important supporting enterprise of H&Z(Group), carry on the manufacture of the Gas Dome, Venting mask, Pump Tower Base, Hoop, Pipe Nip and many Prefabricated, connecting parts.



气体穹顶 Gas Dome Section



外舱室
H&Z 147, 210m³ LNG
Gas Dome Section

透气桅
Venting Mast

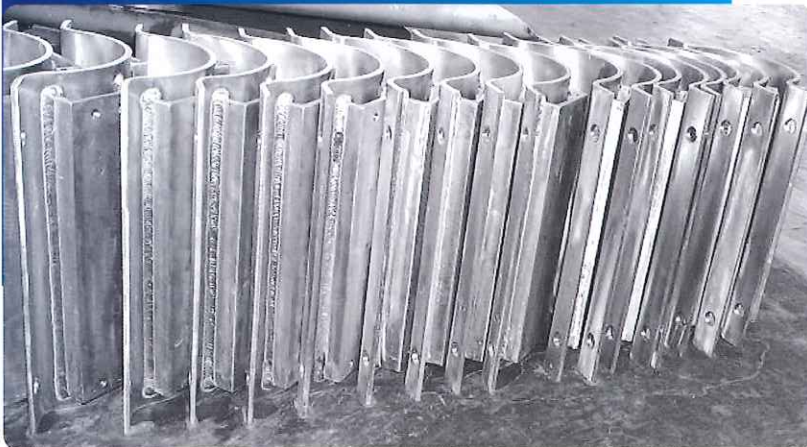


泵塔基座导向机构
Pump Tower Base
Support With
Guiding Unit



泵塔基座
H&Z 147, 210m³ L
NG Pump Tower
Base Support

抱箍及管夹
Hoop and Clamp for Pipe



抱箍及管夹
Hoop and Clamp for Pipe

压载舱围护系统小件 Parts for Membrane Containment System



预制件
Prefabricated Parts



连接件
Coupler Parts

双向过滤器 Bidirectional Filter



冲孔装置 Punch Device



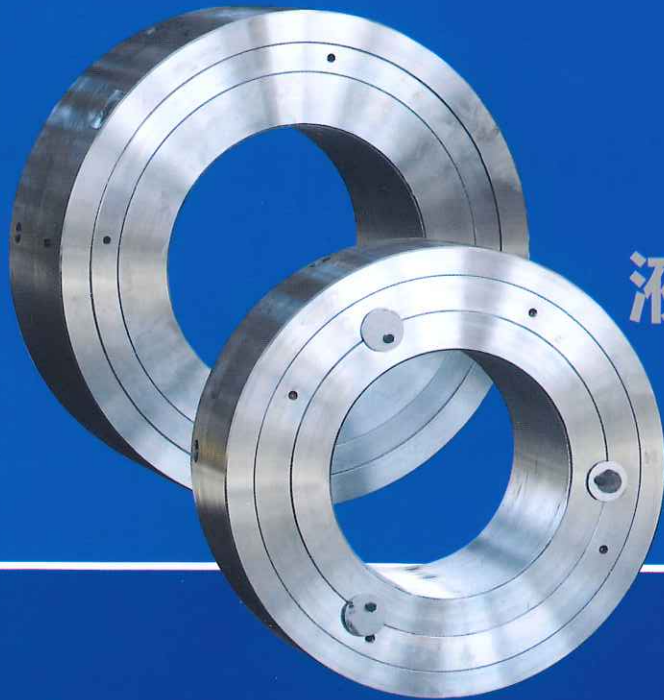
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KAIRONG
SHIP 凯荣船用机械
MACHINERY



液压螺母及工装设备

HYDRAULIC NUTS & TOOLS



- 液压螺母、拉伸器、液压螺栓
- 液压螺母安装、吊运工具
- 轴移动小车/拂配小车
- 舵轴系镗孔工艺装备
- 油压机冲模
- 环形平面铣床(镗平机)
- 绝缘箱靠模平台
- 液压泵组投油箱
- Hydraulic Nuts / Bolts
- Fixing tools, Hoisting tools for Hydraulic Nut
- Shaft Moving Dolly / Assembly Dolly
- Milling Craft Equipments for Rudder & Shaft
- Mould for Oil-pressure Machine
- Annulus Milling Machine
- Insulative Box Assembly Flat Desk
- Pipe Flushing Hydraulic Pump Station

我公司生产的船用工装系列主要包括随船工装和造船工装。随船工装是船上安装、维修使用并随船递交的产品；造船工装则船厂在船舶建造过程中使用到的工装设备，不随船递交，大致可分为以下系列。我公司可根据用户的不同需求进行设计和制造。

The marine and ship-building tools are mainly include accessory tools and fixing tools. The accessory tools are the products that used to install or maintain products on board, and the tools will be delivered with the products. As for the fixing tools, which will NOT be delivered with the products, are used to help to install the products during the fabrication. We provide products on the following, and We can perform customized design and manufacture if necessary.

液压螺母、拉伸器、液压螺栓 Hydraulic Nuts, Hydraulic Stretchers, Hydraulic Bolts

液压螺母是一种在船舶建造过程中，用于舵承、舵叶、螺旋桨锥套与舵杆、螺旋桨轴安装时用作推进工具并兼有螺母的锁紧功能的设备。另有一种只有推进没有螺母作用的我们叫液压拉伸器。我公司已成为国内最大的液压螺母和液压拉伸器生产商，目前产品已广泛应用于沪东中华造船、上海外高桥、大连船舶重工、上船澄西、江南长兴、广州龙穴、渤海船厂、北海船厂、舟山金海湾等全国知名船厂为世界各地建造的成品、原油轮，散货轮，集装箱船，LNG 等船型上。我公司生产的液压螺母其设计和制造均已获得 CCS、ABS、GL、LR、DNV、RINA、BV 等船级社的产品或型式认可证书。

One type of Hydraulic Nut is the equipment that is provided with the functions of both press-in and lock for fixing Rudder and Propeller to the Tiller, Pintle or Propeller shaft during building of ship. Another type only be used as a press-in tool we called it Hydraulic Stretcher. KRSM has been the main manufacturer of Hydraulic nut and Hydraulic stretcher. Now, they have been used on the various Oil tankers, Bulk cargo vessels, Container vessels and LNG vessels that are built by the famous shipyard such as HUDONG-ZHONGHUA, Shanghai WAIGAOQIAO, Dalian NEW SHIP and Shanghai Shipyard for global customers. The products have gotten the Product Certificates or Type Certificates from CCS, ABS, GL, LR, DNV, RINA and BV etc.



液压拉伸器 Hydraulic stretcher



液压螺母
Hydraulic Nut Of DNS
300,000 DWT VLCC

液压螺母主要技术特点 Mainly technical characteristic of the Hydraulic Nut

- 本体和活塞材料均经无损检测合格。
Non-destructive test on the material of the body and piston should be checked out.
- 最大顶伸力
(Max. press-in force at working pressure):
800~25000KN.
- 最大工作油压
(Max. Working Pressure): 120N/mm².

液压螺母订货指南 Hydraulic nut Order manual

您只需提供以下数据：最大外径，螺纹规格，最大螺纹长度，所需最大顶伸力，以及安装锥套接触面尺寸，其它事情均由我们来完成。

当然您也可以按船厂标准进行选购。

You can just offer the data of max outside diameter, screw thread size, height, max press-in force and the size of conical touch area, then we can manufacture wonderful products for you.

Add of course, you can choose our standard products.

液压螺栓主要技术特点 Mainly technical characteristic of the Hydraulic Nut

液压螺栓是一种在船舶建造过程中，用于螺旋桨轴与中间轴，艮轴与中间轴法兰无隙定位的专用设备，主要由具有高强度和高塑性材料做成的锥套和高强度锥形螺柱组成，安装和拆卸均非常方便。但是，由于它的加工工艺非常复杂，特别是对锥形面既能导油扩涨锥套，又能建立有效的封油区以方便拆卸的要求，所以它又属于高技术含量类产品。我公司产品通过在沪东中华建造的 110,000DWT 油轮、147,210m³LNG 船、74500T 散货船及 8530TEU 上的应用，效果很好。

Hydraulic Bolt is equipment that be used for non-clearance fitting of propeller shaft with middle shaft, tiller with middle shaft during building of ship. Mostly makeup are Cone Cover the material have high strength and high toughness and Cone Bolt has high strength. Assemble and unassembled is all very expediently. But, because with his very complicated techniques for machining, specially for the requirement of the cone area not only can lead oil to expand the cone cover, but also make a effective area to envelop oil for unassembled, so it also a product of high technique. The product we researched and developed under the guidance of famous expert inland had been used on H&Z 110,000DWT oil tanker and 147,210m³LNG, the effect is salience.



液压螺栓 Hydraulic Bolt



液压螺栓 Hydraulic Bolt



液压螺栓 Hydraulic Bolt

液压螺母安装、吊运工具 Fixing, Hoisting Tools For Hydraulic Nut

本产品是协助液压螺母装配的专用工具，可以根据现场使用情况调节高度距离。使用方便、快捷。

This product is a special tool for helping assemble the hydraulic nut. She can adjust to the height by the condition of site. And it is convenient and quickly for using.



安装工具 Fixing Tool



吊装工具 Lifting Tool

轴移动小车 / 拂配小车 Shaft Moving Dolly / Assembly Dolly

轴移动小车是车间内运输螺旋桨轴或舵轴用的一种专用设备，拂配小车是螺旋桨与螺旋桨轴，舵杆与舵叶安装过程中模配用的一种专用设备。此小车设计有调节螺栓，可以根据实际要求来调整高度；设计合理、方便、简洁。我公司还可代为设计、生产小车轨道。

The shaft moving dolly is special equipment for moving prop shaft and sternpost shaft in workshop. The assembly dolly is special equipment for mould match during fixing rudder stock and rudder. There are adjust-bolts that can adjust to the height by the site requirements. And it is convenient for using. We can also design and manufacture the railway of dolly for customers.



舵轴系镗孔工艺装备 Milling Craft Equipments for Rudder & Shaft

舵轴系镗孔工艺装备主要是用于镗制舵杆、舵销孔，轴管孔等圆柱或圆锥孔及端面的一种精密专用设备。由于目前船厂在舵、螺旋桨的安装上多采用无键连接，油压扩张式安装方法，为了达到既扩张了舵和桨，减小压入力，又要求建立有效的油封区的使用要求，所以对孔的加工工艺要求很高。我公司开发设计的舵轴系镗孔工艺装备主要有电动型和液压型。其中液压镗机在吸收了国内外优秀经验的基础上，大力开发，经过反复验证，以精度高、加工质量好、自动化程度高等特点为用户所青睐。



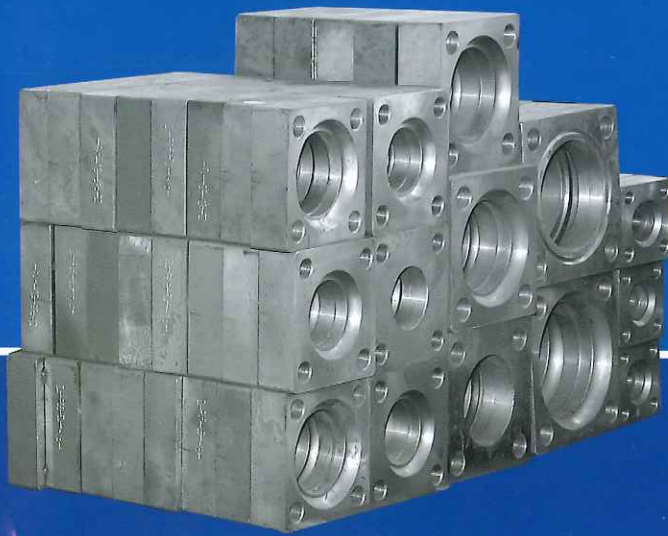
KRX600 移动式液压镗排

Rudderpost Milling Equipments are precision machines to mill column or taper shaped objects such as tiller, rudder pin etc. As Keyless joints are widely used in rudders or propellers installation, it require upper level craft of milling the holes, because oil-extended installation is used to extend the rudders and the propellers to lower the pressure. We design two types of rudderpost milling equipments, electric and hydraulic.

The hydraulic milling equipments are popular for the high precision, quality and automatization based on years experience in both domestic and global market with strivingly develop and carefully validate.



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MACHINERY



管阀附件 PIPE & VALVE ACCESSORIES

- High Pressure Square Flange
- Sleeve Expansion Joint
- Constant Temperature Drain Water Valve Group
- Deck Condensation Water Valve Group Control Unit
- Wing Slice Radiator
- Level Gauge
- Hose Pipe
- 高压法兰
- 伸缩接头
- 恒温疏水阀组
- 甲板蒸汽凝水阀组控制单元
- 翅片式散热器
- 液位计
- 橡胶软管

我公司目前生产的管阀附件大致有以下几种类型。已广泛应用于散货轮、油轮、VLCC、集装箱船、LNG 及游轮等各类船舶。设计合理、使用性能良好，其设计和制造均已获得 CCS、ABS、GL、LR、DNV、RINA、BV 等船级社的产品或型式认可证书和 EC 证书，并获得船厂和船东的一致好评。我公司可随时根据用户的各种要求进行设计和制造。

Our company now manufacture the following pipe & valve accessories, which widely used in Bulk vessels, Oil tanker, VLCC, Contrainer Vessels, LNG Carriers and yachts etc. Our products have been reasonable designed with high quality.

All the products have been certificated by "CCS", "ABS", "GL", "BV", "LR", "DNV" and "RINA" etc, and gets good comments from shipyards, shipowners and classification societies. We can perform afresh design and manufacture at anytime when the clients needed.

高压方法兰 High Pressure Square Flange

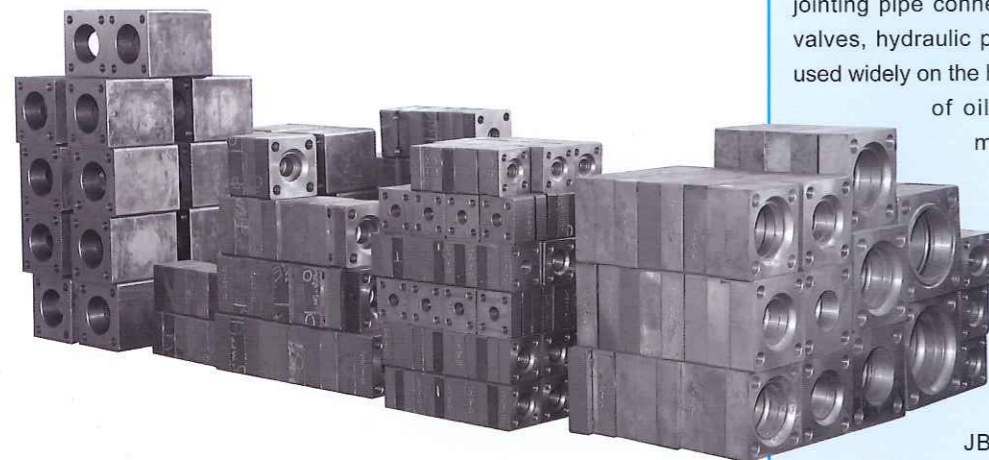


方法兰接头、卡套式管接头和焊接式管接头是阀门与液气动行业中不可缺少的重要配件，它广泛应用炼油、化工、船舶、冶金、医疗以及纺织机械设备的液气动系统中，随着我国现代工业的发展，越来越被人们所推广应用。

我公司生产的高压方法兰设计和制造参照国标直通法兰 JB/ZQ4486-1986，直角法兰 JB/ZQ4487-1986，中间法兰 JB/ZQ4488-1986，法兰盖 JB/ZQ4489-1986，及日本 JIS 标准 JIS B 2291-1976，JIS F 7806-1996，共分为法兰、直通体、直角体、盲法兰和三通体五种，通径从 10 到 250。

产品已获得 CCS、ABS、LR、BV 等船级社的产品证书或型式认可证书。

Square flanges connector, wedging pipe connector and jointing pipe connector are indispensable fittings used on valves, hydraulic pressure and pneumatic industry. She is used widely on the hydraulic pressure and pneumatic systems of oil refining, chemical, ship, metallurgy, medical treatment and weaving machinery.



There are five types of flange, includes through flange, right-angle flange, blind flange and three-way flange their size from dia.10 to 250 made in our company. The design and manufacture is according to Chinese standard JB/ZQ4486-1986, JB/ZQ4487-1986, JB/ZQ4488-1986, JB/ZQ4489-1986 and Japanese standard JIS B 2291-1976.

The products have got the Product Certificates or Type Certificates of CCS, ABS, LR and BV etc.

伸缩接头 Sleeve Expansion Joint

此产品结构合理，密封性能可靠，勿需焊接，装卸方便，能补偿管道一定范围内的位移、错位和挠曲等优点。其工作原理是安装在管道上后，拧紧螺母，弹性密封圈在螺母、压盖的作用下，依靠相互间的斜度，紧压在管子外围起密封和连接作用。主要用于输送水、油气和颗粒粉状介质管道的连接。

Sleeve Expansion joint we produce with following characteristic:

- Reasonable structure design
- Reliable sealing effect
- No welding required
- Easy to install
- Displacement and deflection of piping system can be self-compensated

Working principle of Sleeve Expansion joint is following:

The principle is screw down the nut after the Sleeve Expansion joint being installed on the pipe, by the action of nuts with cover plate and the taper between them, the sealing rings are impacted around the pipe, thus build up the sealing effect.

Sleeve Expansion joint can be applied on the piping connection for transporting water, oil, gas and grain powder etc.



安装简要说明

SSJA 型螺母式伸缩接头与 SSJB 型压盖式伸缩接头适用于两边与管子连接；VSSJA 型法兰式伸缩接头适用于一边与法兰连接，一边与管子连接。

公称通径大于 1200mm 的松套伸缩接头，建议增订长度为 500mm 的短管或短管法兰。

Summary of Installation

SSJA Nut-type and SSJB Cover plate-type Sleeve Expansion Joint is applied to connect to two pipe ends

VSSJA Flange-Type Sleeve Expansion Joint is applied to connect one pipe and one flanged pipe.

We recommend an additional short pipe or a flanged pipe with length of 500mm to be ordered when the diameter of Sleeve Expansion Joint exceeds 1200mm.

规格 / 参数 Specifcaation/ Parameter

压盖式伸缩接头

Cover Plate Expansion Joint:

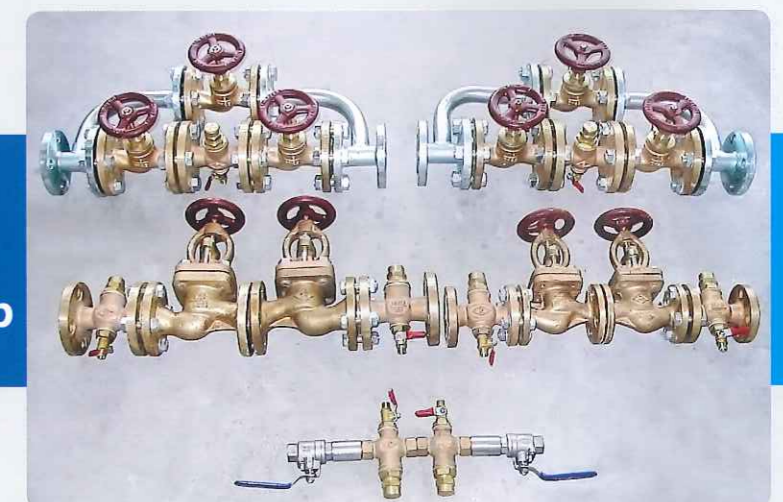
法兰式伸缩接头

Flange-Type Sleeve Expansion Joint

填料函伸缩接头

Packed-type Expansion Joint

恒温疏水阀组 Constant Temperature Drain Water Valve Group



船用电动 / 液压货物起重机 Marine Electrical / Hydraulic Cargo Cranes



本类吊机包括船舶伙食吊, 软管吊等各类用途, 控制方式主要为电动 / 液压, 结构主要为箱式。以下为本厂生产的各种类型的电液吊机, 也可以按照用户的不同需求进行设计、生产。

额定荷载: 1-50 吨, 臂长 4-30 米

This kind of crane including cargo crane, food crane, hose crane and etc.. Controlled mainly by electrical or hydraulic. The structures of the cranes are mainly box boom and joist. The following shows various kinds of electrical/hydraulic cranes. We can perform customized design and manufacture if necessary.

SWL: 1-50ton, length of jib: 4-30m

船用折臂 / 伸缩液压吊机 Hydraulic Knuckle / Telescope Cranes



本吊机兼具起升、变幅、折臂、伸缩、回转等功能, 适合于存放空间有限的船舶使用。

最大工作半径 20 米, 最大额定荷载 25 吨。

These cranes can hoist, change working span, fold, extend and slew. These are fit for the room-limited ships.

max.working radius 20m, and max.SWL 25 ton.

甲板吊 Deck Cranes



用于甲板或货舱的货物装卸, 安全荷载 25-60 吨, 是大工作半径 18-30 米。

It's used to load or unload the goods on the deck or in the cabin. SWL 25-60 ton, and max.working radius 18-30m.

液压伸缩吊 Hydraulic Telescope Cranes



该型起重机适用于布置空间狭小的船舶, 尤其是海工领域和小型船舶; 吊机起升、回转、变幅均为液压驱动, 其运行动作灵活、安全、可靠, 调节范围大。

额定荷载: 1-25 吨, 臂长: 10-25 米

This type of crane is fit to be installed on the ship with the small space, such as the off-shore engineering/service ship and the small cargo ship. The crane's hoisting, slewing, luffing and telescoping are driven by hydraulic power. It is safe, reliable and wide range adjustable.

SWL: 1-25ton, Length of jib: 10-25m

救生艇降落装置 Launching Appliance for Lifeboat



| 型号 Type | C5 | C14 | C21 | C30 |
|--------------------------|--|------|------|------|
| 最大工作负载 (SWL-Down) | 5KN | 14KN | 21KN | 30KN |
| 最大起升负载 (SWL-UP) | 4KN | 10KN | 14KN | 20KN |
| 起升速度 Hoisting Speed | ~10m/min | | | |
| 下降速度 Drop Speed | 36~72m/min | | | |
| 起升高度 Hoisting Height | 25m | | | |
| 最大工作半径 Working Extent | 4.5m 可按用户要求修改 By user | | | |
| 电制 Power Supply | 440V / 60Hz / 3PH 380V / 50Hz / 3PH | | | |

单臂回转救生艇吊架
Single Arm Accident Boat Davit

本公司提供的救生艇降落装置符合公约、相关船级社规范及 EC 规范。根据实船布置情况，本降落装置分自由降落、重力倒臂式及单臂回转三种型式供用户选择。

Accident Boat launching gear made by Kairong is fulfills requirements of International Convention, and relative classification society rules and EC rules. The launching gears consist of Free fall Accident boat launching gear and Fall Down Accident Boat Crane and Single arm Accident Boat Cranes types, and clients can choose them basis collocation in fact.

自由降落救生艇降落装置 Launching Appliance for Free Fall Lifeboat



| 型号 Type | A40 | A70 | A100 |
|----------------------------|--|------|-------|
| 最大工作负载 (SWL) | 40KN | 70KN | 100KN |
| 最大起升负载 (MRL) | 30KN | 50KN | 70KN |
| 起升速度 Hoisting Speed | ~3m/min | | |
| 起升高度 Hoisting Height | 25m | | |
| 变幅时间 Extent Change Time | 125s | | |
| 电制 Power Supply | 380V / 50Hz / 3PH 440V / 60Hz / 3PH | | |