

# 川崎重工业株式会社

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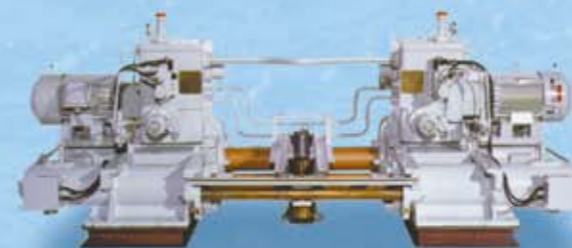
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 Kawasaki

# 船用液压装置

## Hydraulic Marine Machinery



川崎重工业株式会社

# 川崎液压技术能够满足任何船舶用动力和控制的需求。

在长达一个多世纪的岁月中，本公司积累了丰富的“造船”技术和各项专有技术，并且在“液压”技术领域也拥有90多年的悠久历史。我们在这些领域不断取得丰富的实际业绩，并且努力开展各种技术的研发。

这些年来，我们始终针对时代的需求，提供数量众多的船用液压装置，其中电动液压舵机已经被17,000艘以上的船舶采用，并且继续保持着世界第一的领先地位。

此外，我们还运用先进的液压控制技术，实现了起货、系泊作业的省力化。近年来，尤其是液压装置的低噪声化技术赢得了高度评价。

今后，我们将运用丰富的经验和最新的液压技术，满足随着船舶的先进性和自动化发展而提出的各种需求——对此，川崎精机充满信心。

## 川崎船用液压机械的发展进程

- 1924年●电动液压舵机开发成功
- 1956年●在护卫舰上安装了日本首台液压起锚机
- 1963年●开始全面生产甲板液压机械
- 1966年●开始提供工程船舶用甲板液压机械
- 1975年●提供50万吨(DWT)ULCC用超大型舵机(1,650t·m)
- 1980年●提供单一主型甲板机械
- 1981年●开始向中国武汉船用机械有限公司提供技术
- 1982年●开始销售无级变速低噪声液压绞盘
- 1991年●开始销售油轮装卸系统
- 2004年●开始向韩国 / FLUTEK提供技术

# Kawasaki hydraulic technology can respond to any needs of power and control required for ships.

Kawasaki has accumulated the shipbuilding expertise and know-how for more than a century and also the hydraulic technology for more than 90 years, studying hard and piling up those technology and achievement.

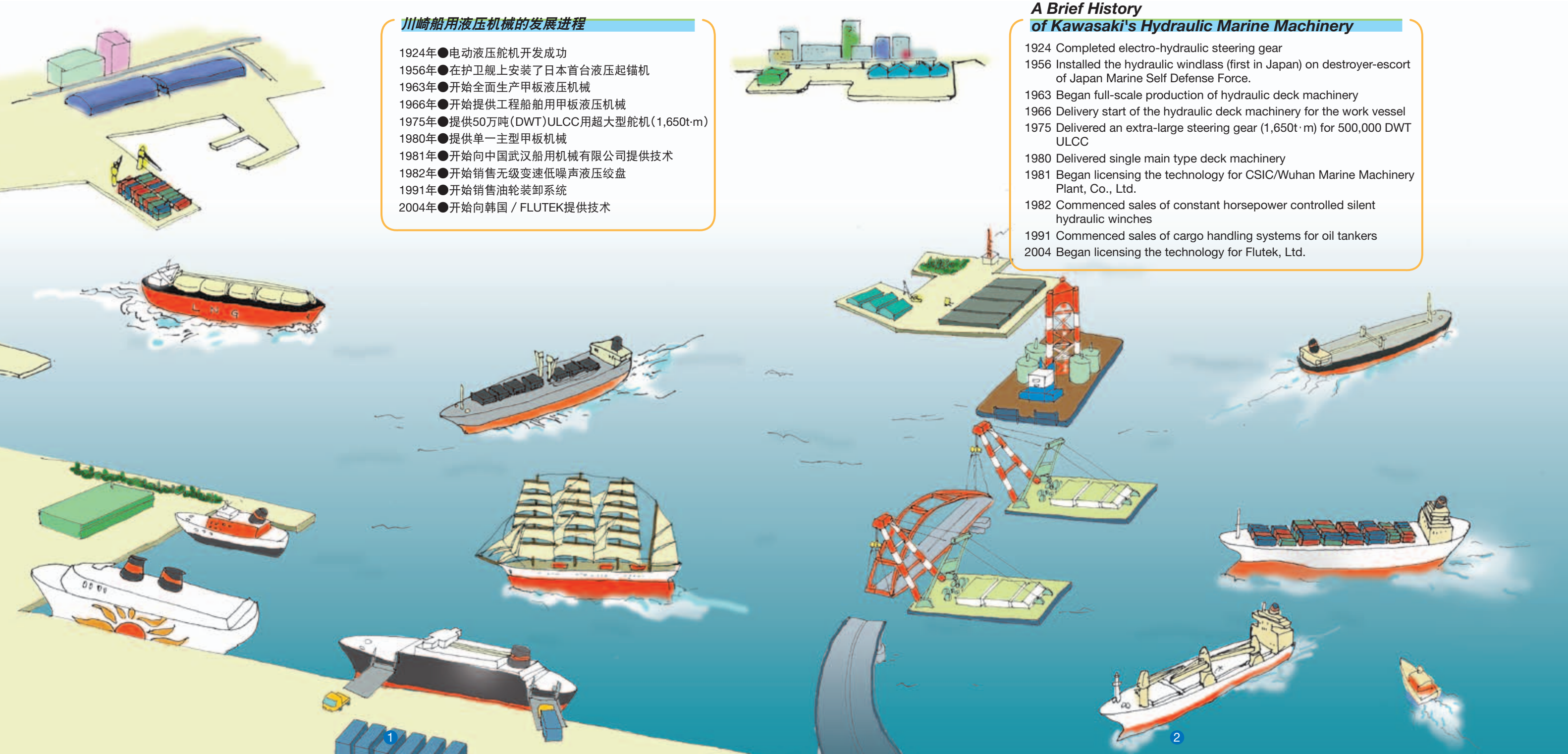
During those years, we have delivered numerous Hydraulic Marine Machinery, and always responded to the needs of each era. Especially the Electro Hydraulic Steering Gear has been adopted to more than 17,000 ships and still remains No.1 in the world.

We also contribute to labor-saving in cargo handling and mooring work with advanced hydraulic control technology. Recently the low noise technology of the hydraulic system has been highly evaluated.

We are confident with our many years of experience and profound knowledge of advanced hydraulic technology that we can easily respond to any needs that may arise in the future with the advance of further automation and sophistication of ships.

## A Brief History of Kawasaki's Hydraulic Marine Machinery

- 1924 Completed electro-hydraulic steering gear
- 1956 Installed the hydraulic windlass (first in Japan) on destroyer-escort of Japan Marine Self Defense Force.
- 1963 Began full-scale production of hydraulic deck machinery
- 1966 Delivery start of the hydraulic deck machinery for the work vessel
- 1975 Delivered an extra-large steering gear (1,650t·m) for 500,000 DWT ULCC
- 1980 Delivered single main type deck machinery
- 1981 Began licensing the technology for CSIC/Wuhan Marine Machinery Plant, Co., Ltd.
- 1982 Commenced sales of constant horsepower controlled silent hydraulic winches
- 1991 Commenced sales of cargo handling systems for oil tankers
- 2004 Began licensing the technology for Flutek, Ltd.



# 丰富的产品系列

## Wide Range of Hydraulic Marine Machinery

耳目一新的低噪声静音系统彻底改变了高压液压甲板机械的“噪声”形象。单一主系统及远程控制系统实现了起货、系泊作业的省力化要求。我们取得了全球首屈一指的舵机供货实际业绩，并且向世界各地的商用船舶提供了大量设备。

The Silent System of the low noise has completely changed the image of "the noise" of high pressure type Hydraulic Deck Machinery. The Single Main System and remote control system have responded to the labor-saving of cargo handling and mooring. Those equipment have been delivered to worldwide vessels together with the Steering Gear that has the world record of delivery.

“川崎 (Kawasaki)” 牌舵机和甲板机械广泛用于各种船舶上，范围包括从数千吨级的小型油轮到VLCC及ULCC等最大级油轮。

此外，我们还对货油 / 压载泵采用了液压驱动，并且实现了总流量超过10,000L/min的高压系统 (29MPa)。

The Steering Gear and Deck Machinery of "Kawasaki brand" has been adopted to oil tankers from small tanker of several thousand tons to largest classes such as VLCC and ULCC.

We have also completed the high pressure (29 MPa) system that exceeds the total discharge rate of 10,000L/min responding to the hydraulic driven of cargo oil and ballast pump.

### ●甲板机械 / Deck Machinery



锚机  
Windlass  
(参照第7页)

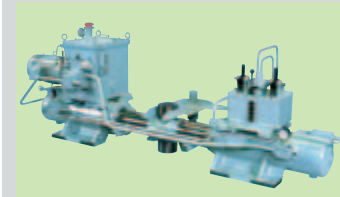


缆机  
Mooring winch  
(参照第7页)

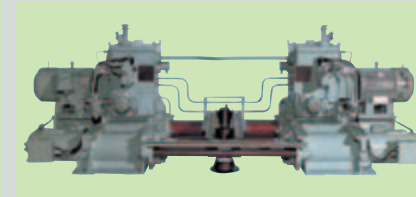


吊杆式起货绞盘  
Cargo winch for Derrick  
(参照第7页)

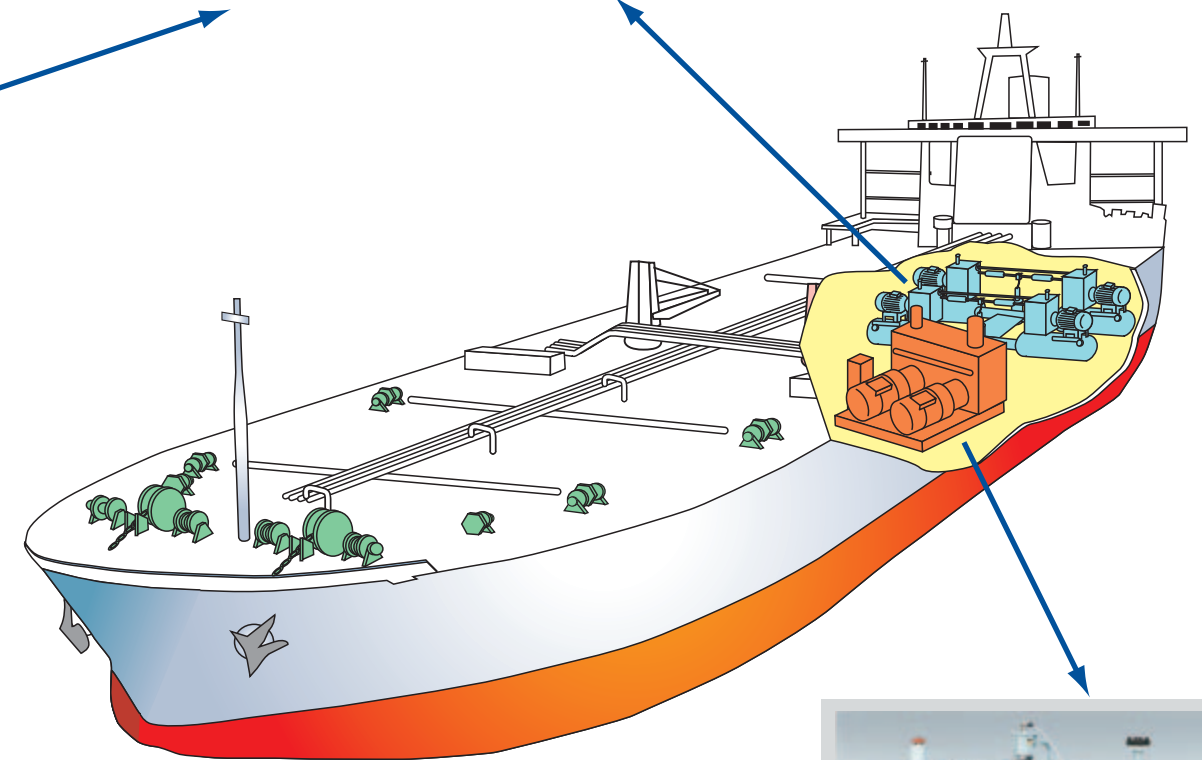
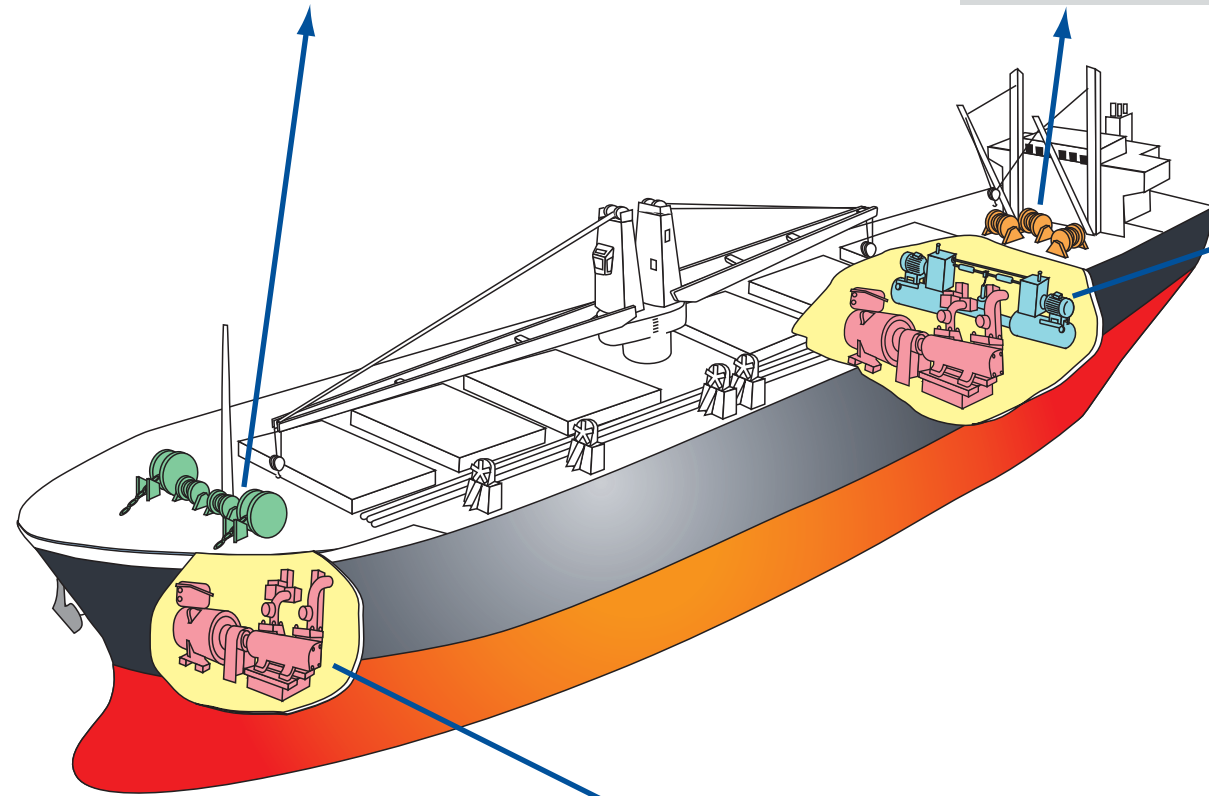
### ●电动液压舵机 / Electro-Hydraulic Gear



小型舵机  
Small size steering gear  
(参照第5页)



大型舵机  
Large size steering gear  
(参照第6页)



泵组“静音系统”  
Pump unit "Silent system"  
(参照第7页)



泵组“高级系列”  
Pump unit "Advanced series"  
(参照第7页)



# 甲板机械 Deck Machinery

KPM采用“川崎静音系统”，提供噪音更低的液压甲板机械。此外，我们还在满足高压化需求的同时，提供具备低噪音性能的“高级系列”和领先于时代的液压甲板机械。

We have offered the Hydraulic Deck Machinery, taking the next era in advance, such as “Kawasaki Silent system” achieving further low noise type Hydraulic Deck Machinery and “Advanced Series” realizing low noise, in addition to responding to the needs of high pressure.

型式 Model	负荷 / Load kN						
	100	200	300	400	500	600	700
锚机 Windlass	[Progressive bar chart showing load capacity from 100 to 700 kN]						
缆机 Mooring winch	[Progressive bar chart showing load capacity from 100 to 300 kN]						
起货绞盘 Cargo winch	[Progressive bar chart showing load capacity from 100 to 300 kN]						

## ● 锚机 / Windlass



## ● 缆机 / Mooring winch



## ● 起货绞盘 / Cargo winch



## ● 泵组 / Pump unit

### ◆ 高级系列 Advanced series

- 基本系统  
Basic system
- 单一主系统  
Single main system

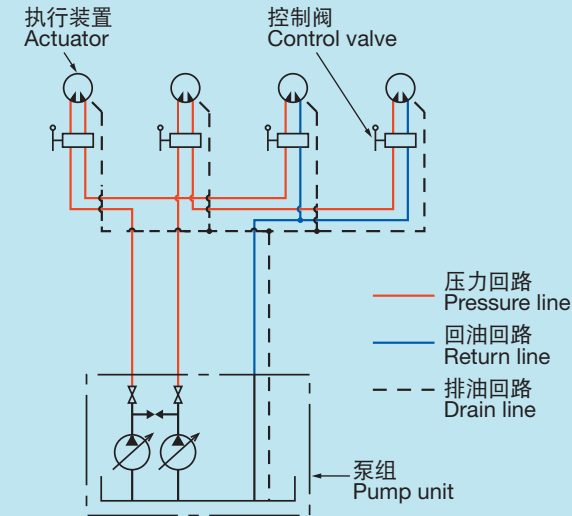


### ◆ 静音系统 Silent system

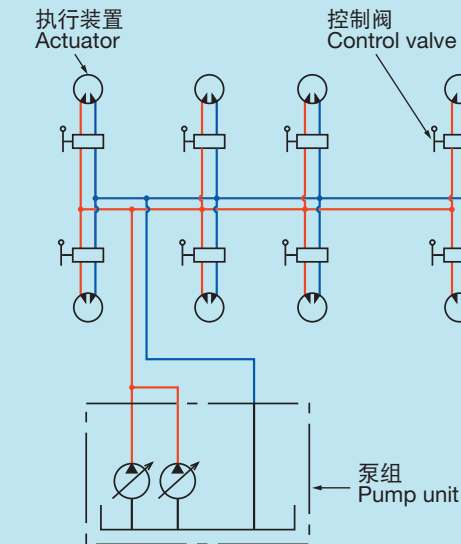


## 高级系列 / Advanced series

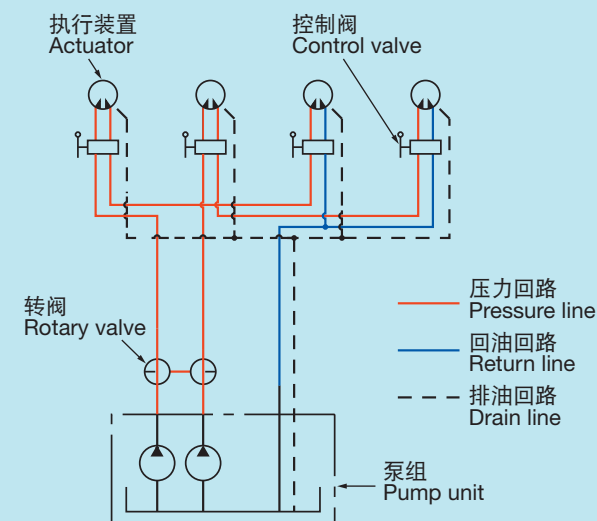
### ◆ 基本系统 / Basic system



### ◆ 单一主系统 / Single main system



## 静音系统 / Silent system



# 渔业捕捞机械 Fishing Machinery



●渔业调查船 / Fisheries research vessel

具备“坚实的可靠性”和“创新的技术”——我们向渔业及政府部门提供的液压捕捞装置合计已超过了4,000套，为了实现渔业作业的省力化以及推动现代化捕捞技术和各种海洋调查技术进步，KPM做出了巨大贡献。

Assured Reliability and Innovative Technology — we have supplied more than 4,000 sets of fishing machinery and equipment associated with oil hydraulics, for fishing boats as well as for government vessels, to contribute in saving labor on fishing boats and modernizing fishing technologies, as well as equipping with marine investigation technologies.



●渔业培训船 / Trawl winch & net soner winch



●渔业培训船(围网渔船) / Training vessel for seiner



●近海海底拖网渔船 / Offshore trawler



●拖网绞盘、网上声纳绞盘  
Training vessel



●外国围网渔船  
American style purse seiner



●日本围网渔船  
Japanese style purse seiner

## “川崎 (Kawasaki)”牌船用液压机械也在韩国和中国生产。

The Hydraulic Systems for Marine Machinery of Kawasaki brand are also born in Korea and China.

### 电动液压舵机:

在韩国, 我们曾经从1976年至2005年向东明重工业有限公司提供技术, 后来从2004年起变成向FLUTEK提供技术。此外, 在中国, 我们从1981年起向中国船舶重工业集团公司 (CSIC) / 武汉船用机械有限责任公司提供技术。

### 液压甲板机械:

在韩国, 我们从2006年起向FLUTEK提供技术。此外, 在中国, 我们从2001年起与中国船舶重工业集团公司 (CSIC) / 武汉船用机械有限责任公司开展合作, 并从2012年开始向川崎精密机械 (苏州) 有限公司提供液压甲板机械用液压装置的技术。

### Electro Hydraulic Steering Gear

In Korea, we had provided Tong Myung Heavy Industries Co., Ltd. with our technology from 1976 until 2005, and then from 2004, we switched to providing Flutek, Ltd. with our technology. In China, we have also been providing with our technology to China Shipbuilding Industry Corporation / Wuhan Marine Machinery Plant Co., Ltd. since 1981.

### Hydraulic Deck Machinery

In Korea, we have been providing with our technology to Flutek, Ltd. from 2006. In China, we have been cooperating with China Shipbuilding Industry Corporation / Wuhan Marine Machinery Plant Co., Ltd. since 2001. From 2012, we started to provide Kawasaki Precision Machinery (Suzhou) Ltd. with our technology of the hydraulic unit for hydraulic deck machinery.

## CHINA

### 武汉船用机械有限责任公司 CSIC/Wuhan Marine Machinery Plant Co., Ltd.

中国的国营公司武汉船用有限责任公司, 是面向船舶与港口设施机械的生产公司, 还生产“Kawasaki 品牌”的舵机与甲板机械。

A subsidiary of CSIC: China Shipbuilding Industry Corp., this preeminent state-owned company manufactures machinery for ships, harbor equipment, large industrial machinery, and more. Kawasaki-brand steering gears and deck machinery are produced here.



### 川崎精密机械苏州有限公司 Kawasaki Precision Machinery (Suzhou) Ltd.

川崎精密机械苏州作为川崎甲板机械之油泵站生产工厂, 做出了具有高信赖度的产品, 为中国的造船业之发展做出了巨大的贡献。为给蓬勃发展的中国的造船业做出更好的贡献, 川崎精密机械苏州将建立快速的供给体系, 多机种及甲板油压马达组之生产也即将展开。

Kawasaki Precision Machinery (Suzhou) Ltd., a subsidiary of Kawasaki Heavy Industries, Ltd. (KHI) has functioned as a manufacturing base of the hydraulic unit for Kawasaki deck machinery in China. Through transfer of technology by KHI, the company is supplying reliable products to the market.



## KOREA

### FLUTEK株式会社 Flutek, Ltd.

川崎精密机械的子公司FLUTEK, 是川崎精密机械的生产与销售网点。在造船大国的韩国, 还生产面向船舶的机械。

A Kawasaki subsidiary, Flutek has functioned as a center for manufacturing and selling hydraulic equipment in Korea. In 2005, moreover, it completed a new factory devoted to manufacturing ship equipment. This factory serves to meet various demands in Korea, one of the major shipbuilding countries.



## JAPAN

### 川崎重工业株式会社 精密机械公司 Kawasaki Heavy Industries, LTD. Precision Machinery Company

在川崎重工业株式会社精密机械公司工厂, 生产电动液压舵机与甲板机械及液压泵、马达、阀门等液压产品。另外, 还作为向世界供给核心零件的中枢工厂发挥功能。

The headquarters factory in Japan manufactures electro-hydraulic steering gears, deck machinery and other hydraulic systems, including their pumps, motors, valves and other hydraulic parts. Moreover, it functions as a hub factory that supplies core parts to locations throughout the world.

