

# 精密机械公司

## 事业介绍

## Precision Machinery Company Company Profile

川崎重工业株式会社

精密机械公司

Kawasaki Heavy Industries, Ltd.

Precision Machinery Company

<http://www.khi.co.jp/kpm/>

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# 不断以最新的技术实现“力”与“控制”。

我们最初从事“液压”事业早在1916年(大正5年)。自那以来,在经过90多年悠久历程中,我们边对应“力”与“控制”的市场需求边扎扎实实地培育了我们的技术和产品,产品从液压元件、船舶用液压装置,到精密机械、控制系统并在广泛的领域内得到应用。

今天,川崎重工的技术和产品以其丰富的经验和不断研发为基础及精益求精的精神,达到了世界最高水平。譬如,在追求压力、效率的同时还不断改进噪声、振动并取得了卓越的成果,“川崎的静音液压”在各方面获得了极高的评价。

在日本和英国(Kawasaki Precision Machinery (UK) Ltd. )、中国(Kawasaki Precision Machinery (Suzhou) Ltd. )、(Kawasaki Chunhui Precision Machinery (Zhejiang) Ltd. )、韩国(Flutek Ltd. )、印度(Wipro Kawasaki Precision Machinery Private Ltd. )设有生产基地,在日本、英国、美国、中国、韩国、印度设有销售和售后服务点,使“KPM”品牌的液压元件、系统遍布全球。

## Power Management and Control

We began to produce hydraulic machinery in 1916. Since then as a business center of Kawasaki Heavy Industries, Ltd. we have satisfied customers demands for power and control and have successfully extended our product range to include hydraulic components, marine machinery, precision machinery and associated control systems.

Making the most use of our accumulated and advanced technology, we build a competitive advantage in the field of noise and vibration reduction as well as high pressure and efficiencies. We are now recognized as a market leader in the hydraulic industry.

With production sites in Japan, United Kingdom, China, Korea and India and sales and service networks in Japan, United Kingdom, United States, China, Korea and India, Kawasaki hydraulic components are now playing vital roles in the world.

## 沿革

- 1916年 ● 在原川崎造船所造机工厂(现神户工厂)、开始制作回转式径向柱塞泵
- 1924年 ● 完成电动液压舵机
- 1936年 ● 开始螺杆泵的制作、销售
- 1950年 ● 开始齿轮泵的制作、销售
- 1962年 ● 开始斜轴式轴向柱塞泵、马达的制作、销售
- 1963年 ● 开始低速大扭矩径向柱塞马达的制作、销售  
● 开始液压甲板机械、渔船用捕捞机械的制作、销售
- 1964年 ● 开始液压控制阀的制作、销售
- 1968年 ● 新建和搬至西神户工厂。液压元件事业部起步
- 1984年 ● 被认定作为运输省的制造事业工厂
- 1989年 ● 开始TDM活动
- 1992年 ● 开始面向一般产业用斜盘泵(K3VG系列)的销售
- 1993年 ● 与美国Sun Hydraulics公司合作销售筒形插入阀  
● 获PM优秀工厂奖  
● 在英国设立径向柱塞马达的制造、销售公司 Kawasaki Precision Machinery (UK) Ltd.
- 1994年 ● 在美国设立液压元件销售据点  
● 获得荷兰的认证机构DNV (DET NORSKE VERITAS) ISO 9001的认证
- 1996年 ● 开发HST用泵(K4V系列)、马达(DNB系列),并开始销售
- 1997年 ● 与中国上海液压泵厂签订液压元件的售后服务协议
- 1998年 ● 获得荷兰的认证机构DNV ISO 14001的认证  
● 获TDM特别奖
- 1999年 ● 电液混合系统一号机交货
- 2002年 ● 从川崎重工业株式会社独立出来,设立株式会社川崎精密机械
- 2005年 ● 设立川崎精密机械(苏州)有限公司
- 2007年 ● 在总公司工厂内建成核心件工厂
- 2008年 ● 建成第四元件工厂
- 2009年 ● 设立川崎春晖精密机械(浙江)有限公司
- 2010年 ● 设立川崎精密机械商贸(上海)有限公司  
● 与川崎重工业株式会社合并,改为精密机械公司
- 2011年 ● 在印度设立Wipro Kawasaki Precision Machinery Private Ltd.

## A Brief History

- 1916 ● Began work on Hele-shaw type radial piston pumps at Marine Machinery Works (now Kobe Works), formerly Kawasaki Dockyard
- 1924 ● Completion of an electro-hydraulic steering gear
- 1936 ● Started producing and selling screw pumps
- 1950 ● Production and sales of gear pumps
- 1962 ● Production and sales of bent-axis type axial piston pumps/motors
- 1963 ● Started producing and selling low-speed, high-torque, radial piston motors
- 1964 ● Started producing and selling hydraulic control valves
- 1968 ● Established and relocated Nishi-Kobe Works and started Hydraulic Machinery Division
- 1989 ● Started TPM activity
- 1992 ● Commenced sales of swash-plate type axial piston pumps for general industrial machinery (K3VG Series)
- 1993 ● Distributorship agreement of cartridge valve with Sun Hydraulics Corporation in USA  
● Won the prize of PM Excellent Plant Awards  
● Established Kawasaki Precision Machinery (UK) Ltd. and commenced production of staffa motors in UK
- 1994 ● Established Precision Machinery Division in Kawasaki Motors Corp., U.S.A.  
● Certified by DNV (DET NORSKE VERITAS) to conform to the ISO 9001
- 1996 ● Developed and commenced sales of pumps (K4V) and motors (DNB) for HST
- 1997 ● Developed and commenced sales of 130t twin type hydraulic deck cranes
- 1998 ● Certified by DNV to conform to the ISO 14001  
● Won the prize of Special Award for TPM Achievement
- 1999 ● Commenced sales of electro-hydraulic hybrid systems
- 2002 ● Established Kawasaki Precision Machinery Ltd. separating from Kawasaki Heavy Industries, Ltd.
- 2005 ● Established Kawasaki Precision Machinery (Suzhou) Ltd.
- 2007 ● Built Core Parts Shop in main plant
- 2009 ● Established Kawasaki Chunhui Precision Machinery (Zhejiang) Ltd.
- 2010 ● Established Kawasaki Precision Machinery Trading (Shanghai) Co.,Ltd.  
● Remerged with Kawasaki Heavy Industries, Ltd.
- 2011 ● Established Wipro Kawasaki Precision Machinery Private Ltd. (India)

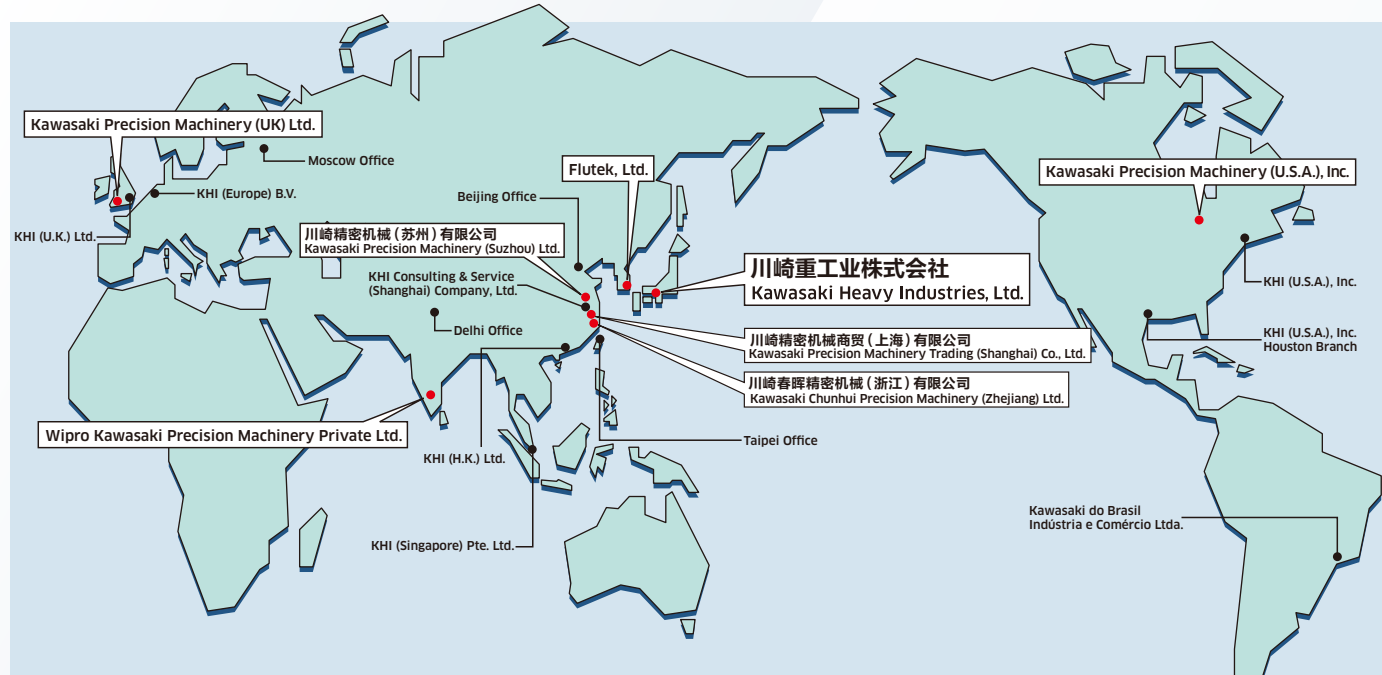




## Global Network

从拥有最新设备和高度生产方式的中心工厂向世界提供丰富多彩的技术和产品。

Factories equipped with latest facilities and incorporating advanced manufacturing systems produce high technology products to all over the world.



### 川崎重工西神户工厂 Nishi-kobe Works

川崎重工西神户工厂拥有业界屈指可数的规模和设备,以独自的生产方式KPS (Kawasaki Production system)为基础,建立了能在较短的准备时间内的高效率生产体制。

于1994年通过国际质量管理体系“ISO 9001”的认证,并于1998年通过环境管理体系标准“ISO 14001”的认证。并最初与英国的生产基地Kawasaki Precision Machinery (UK) Ltd.、美国的销售、售后服务点Kawasaki Precision Machinery (U.S.A) .inc.以及中国的Kawasaki Precision Machinery ( Suzhou )Ltd.和Kawasaki Chunhui Precision Machinery ( Zhjiang )Ltd.、韩国的Flutek Ltd.等一起,作为中心工厂向世界各地供应核心零部件,展开全球化的活动。

Nishi-kobe Works is located west of Kobe city and five kilometers north of Akashi City which is well known for its location on the meridian of Japan Standard Time. With the largest facilities in Japan, the Works has established production systems providing short lead times and efficient manufacturing techniques under the Kawasaki's unique production system, KPS (Kawasaki Production System). Being certified by DNV (DET NORSKE VERITAS) to conform to the ISO9001 in 1994 and ISO14001 in 1998, we are supplying products and parts in Japan and abroad as center of global business activities.



### Kawasaki Precision Machinery (UK) Ltd.

1993年作为欧洲地区的低速大扭矩马达的生产、销售、售后服务的网点设立了KPM( UK )。自那以来,生产、销售扩展到其它产品的同时,构筑了独特的销售网络,在20多个国家扩充建立了超过40家指定代理店。

Kawasaki Precision Machinery (UK) Ltd. (KPM (UK)) was established in 1993 as the Manufacturing, Sales, Marketing and Service base for Europe, India, the Middle-East, Africa and Australia. Since then, KPM (UK) has manufactured and sold a wide variety of products as well as Staffa motors, and set up a sales network of more than 40 distributors in over 20 countries.



### Kawasaki Precision Machinery (U.S.A.), Inc.

随着KPM( UK )的起步,在北美设立了以销售低速大扭矩马达为目的的网点。作为南北美的销售窗口,以塑料注塑成形机和森林机械等各种机械为主的直接面向顾客的销售工作,并且通过用途广泛的销售代理商进行销售。

Kawasaki Precision Machinery (U.S.A.), Inc. (KPM (U.S.A.)) was organized in conjunction with the establishment of KPM (UK) aiming mainly at promoting sales of Staffa motors in North America. Now KPM (U.S.A.) deals with the sales of hydraulic components for various machinery as well as plastics molding machines and forestry machines directly or through distributors in North and South America.



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

于2005年12月设立,从第二年开始生产工程机械用液压泵,于2008年开始生产液压马达和减速机,并于2009年开始生产甲板机械用液压装置,扩展了产品门类。

Kawasaki Precision Machinery (Suzhou) Ltd.(KPM(Suzhou)) was established in 2005 and has been engaged in manufacture of hydraulic pumps for construction machinery. In 2008, KPM(Suzhou) started to manufacture hydraulic motors and reduction gears. In 2009, KPM (Suzhou) started to manufacture hydraulic units for deck machinery.



### 川崎春晖精密机械(浙江)有限公司 Kawasaki Chunhui Precision Machinery (Zhejiang) Ltd.

通过与中国浙江春晖集团有限公司共同出资,设立了生产面向中国国内的工程机械用液压元件。

Kawasaki Chunhui Precision Machinery (Zhejiang) Ltd. was established in 2009 by a joint contribution with Zhejiang Chunhui Group Co., Ltd. to manufacture hydraulic components for construction machinery in China.



### Flutek, Ltd.

Flutek的业务以在韩国销售液压元件为主,并于2005年新设船舶用机械工厂,生产舵机和甲板机械。

Flutek, Ltd. has been engaged in manufacture and sales of hydraulic components in Korea and built a new factory in 2005 for the manufacture of hydraulic marine machinery including steering gears and deck machinery.



### Wipro Kawasaki Precision Machinery Private Ltd.

通过与Wipro Ltd.共同出资,设立了生产面向印度国内的工程机械用液压元件。

Wipro Kawasaki Precision Machinery Private Ltd. was established in 2011 by a joint contribution with Wipro Ltd. to manufacture hydraulic components for construction machinery in India.





# 泵 Pumps

高压化、低噪声化、省空间化。

准确把握时代需求的川崎 (Kawasaki) 泵, 活跃于全球。

High Pressure, Low Noise and Compact.

Responding to the latest requirements, Kawasaki's pumps play vital roles in the global market.

## 轴向柱塞泵 Axial Piston Pumps

具有超群的性能和维护保养性、并在世界上众所周知的Kawasaki泵的可靠性有K3V系列, 并诞生了诸如K3VG、K3VL、K5V系列等丰富多彩派生机种。另外, 还充实了被称之为进化版的K7V、K7VG系列门类。

The K3V series has become very popular in the global market as reliable power source with their excellent integral control functions and easy maintenance. The K3VG, K3VL and K5V series of pumps are derived from this K3V series. Further more K7V and K7VG series are added.

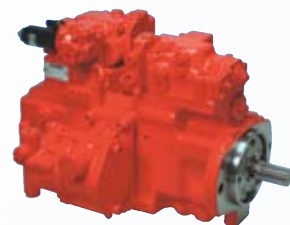


■斜盘式轴向柱塞泵  
Swash plate type axial piston pumps  
**K3V/K5V series**

以高可靠性和丰富的业绩, 获得了国际上的高度评价, 是工程机械用柱塞泵。

Highly valued pumps in the world-wide construction machinery markets, offering high reliability and a consistent production record.

排量/displacement: 63×2~280×2 cm<sup>3</sup>  
额定压力/rated pressure: 34.3 MPa  
峰值压力/peak pressure: 39.2 MPa

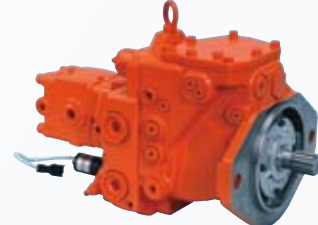


■斜盘式轴向柱塞泵  
Swash plate type axial piston pumps  
**K7V series**

是一种继承了K3V/K5V系列的可靠性, 实现了高效率化、低噪声化、长寿化、总长缩短化的工程机械用的新型泵。

New pumps for construction machines offering high efficiency, low noise and long life which have been developed on the basis of the K3V/K5V series pumps.

排量/displacement: 63×2 cm<sup>3</sup>  
额定压力/rated pressure: 35 MPa  
峰值压力/peak pressure: 40 MPa

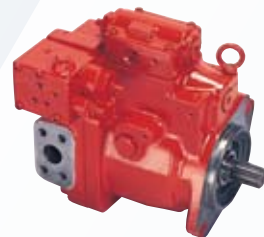


■斜盘式轴向柱塞泵  
Swash plate type axial piston pumps  
**K7SP series**

适用于小型工程机械用的紧凑型双联泵。

Compact double pump for mini-excavators and other industrial vehicles.

排量/displacement: 36×2 cm<sup>3</sup>  
额定压力/rated pressure: 30 MPa  
峰值压力/peak pressure: 32 MPa



■斜盘式轴向柱塞泵  
Swash plate type axial piston pumps  
**K3VL series**

以K3V系列为基型开发的对应负载敏感、恒压的液压力回路泵。

Pumps for construction and industrial machinery with load-sensing and pressure compensation as the basic control functions.

排量/displacement: 28~200 cm<sup>3</sup>  
额定压力/rated pressure: 32 MPa  
峰值压力/peak pressure: 35 MPa

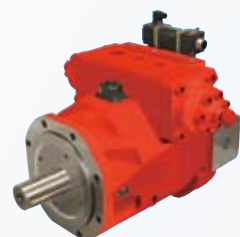


■斜盘式轴向柱塞泵  
Swash plate type axial piston pumps  
**K3VG series**

以K3V系列为基础开发, 是适于一般产业机械用的开式回路用泵。

Pumps for industrial machinery with open circuits.

排量/displacement: 63~280×2 cm<sup>3</sup>  
额定压力/rated pressure: 34.3 MPa  
峰值压力/peak pressure: 39.2 MPa

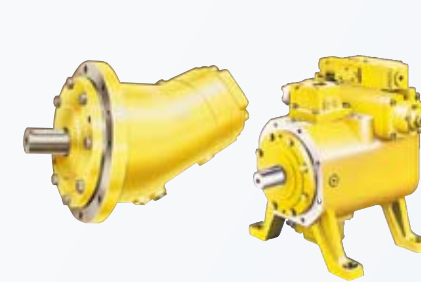


■斜盘式轴向柱塞泵  
Swash plate type axial piston pumps  
**K7VG series**

为炼铁、锻压机械等重负载机械用而开发的开式回路用泵。

Pump for industrial machinery, especially for heavy duty applications such as steel plant or press machine.

排量/displacement: 500 cm<sup>3</sup>  
额定压力/rated pressure: 45 MPa  
峰值压力/peak pressure: 50 MPa



■斜轴式轴向柱塞泵  
Bent axis type axial piston pumps  
**LX(V)/LZ(V) series**

具有丰富种类的重机械用液压源。LXV/LZV系列为长寿型。

Pumps for heavy-duty industrial machines with many variations. LXV/LZV series are specialized for long life under continuous severe conditions.

排量/displacement: 32.4~507 cm<sup>3</sup>  
额定压力/rated pressure: 34.3 MPa  
峰值压力/peak pressure: 39.2 MPa



■斜轴式轴向柱塞泵  
Bent axis type axial piston pumps  
**LVP 017**

是最适于高压起重器等的手动变量型泵。

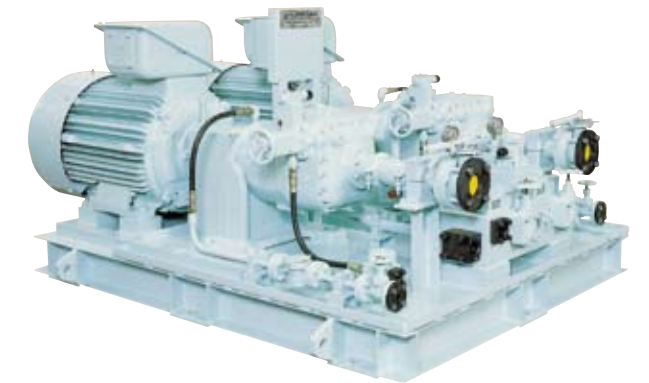
Manual variable displacement pump suitable for high-pressure jacks.

排量/displacement: 17.4 cm<sup>3</sup>  
额定压力/rated pressure: 34.3 MPa  
峰值压力/peak pressure: 49.0 MPa

## 泵组 Pump unit

将LZ系列轴向柱塞泵、电动机与带卸载功能的溢流阀装入高刚性的底座上。

LZ series axial piston pump, an electric motor and unloading relief valves are mounted on a highly rigid base.



## 带电动机的泵组 K3PU系列 Pump unit K3PU series

### 通过独自の机构实现低噪声化

由于液压泵的弹性支撑和高刚性外罩设计, 抑制了来自液压泵的振动传播, 为降低系统的噪声作出了贡献。

### 使用川崎K3VG泵

本泵组采用了作为高压、大排量具有丰富实绩的斜盘式轴向柱塞泵K3VG系列。

### 无需调整中心的工作

通过进行泵与电动机的装配部分公差管理, 因此无需繁琐的调整中心的工作。

### 自立式的一体型结构

采用液压泵与电动机的一体型结构, 因此无需繁琐的泵架设计。

### Unique mechanism helps achieve lower noise

Use of a resilient support and high-rigidity bell-housing of the pump dampens transmission of vibration from the pump and contributes lower noise of the system.

### K3VG pump is used.

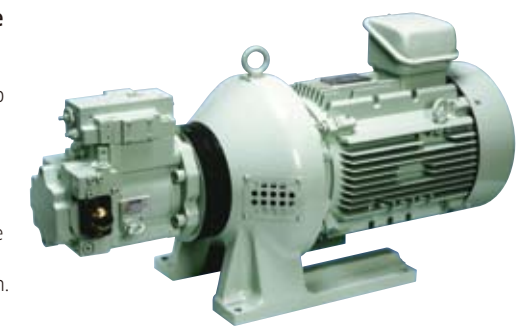
With long experience as high pressure and high capacity pumps, a K3VG hydraulic pump is used for the system.

### You are spared a centering work.

Strict control of the setting tolerance between the electric motor and hydraulic pump spares you from doing a centering work.

### The electric motor and hydraulic pump are united.

You are spared a design work of the pump stand owing to the united construction of the electric motor and hydraulic pump.





## 螺杆泵 Screw Pumps

自1936年开始生产起,在2~23,000L/min大流量范围中,实现了系列化。除液用以外,还作为润滑油用、燃料油用、高粘度液体用和切削油用等,被广泛使用。

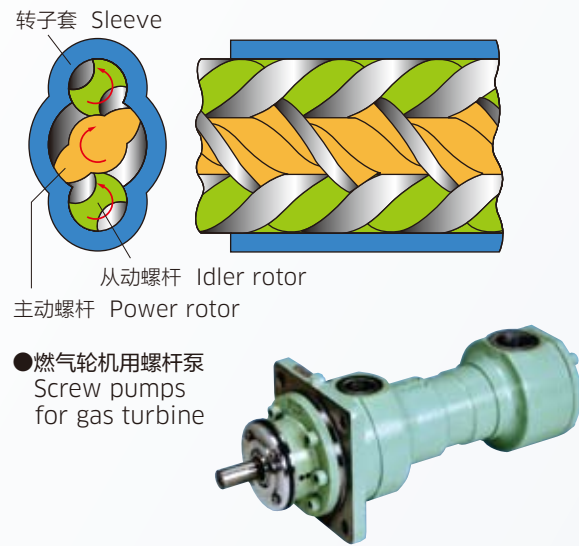
Since the start of the production in 1936, a wide variety of screw pumps have been developed ranging from displacements of 2 L/min to 23,000 L/min. These screw pumps are suitable for lubrication fluids, fuel oil, high viscosity liquid or mechanical oil system as well as for hydraulic systems.

### 特长 Feature

- 低噪声** …… 液体流畅地沿着轴向流动,由于没有剧烈的压力变化,因此非常安静。
- 低脉动** …… 排出的液体量一定,与轴的旋转位置无关,几乎无脉动。
- 长寿命** …… 从动螺杆通过排出的液体而自传,故螺杆之间啮合力极小,所以磨损小寿命长。

- The hydraulic fluid flows in a smooth axial direction and extremely quiet as there is no sharp pressure fluctuation.
- Since the quantity of discharged hydraulic fluid is constant irrespective of the revolution position, there is virtually no pressure pulsation.
- Since the idler rotor auto-rotates, due to the flow of the delivered hydraulic fluid, the friction force between the rotors is small, resulting in very little wear and a long service life.

### 结构 Construction



## 精密齿轮泵 Precision Gear Pumps

自1948年开始,在人造丝用的制造上开始了KPM的齿轮泵。从那时起,通过生产以纤维制造用为主的各种齿轮泵,其完善程度不断提高。最近这些年,积极应对各领域的省资源化、设备的小型化和高速化的需求,并为液体输送工程的改善作出了很大贡献。

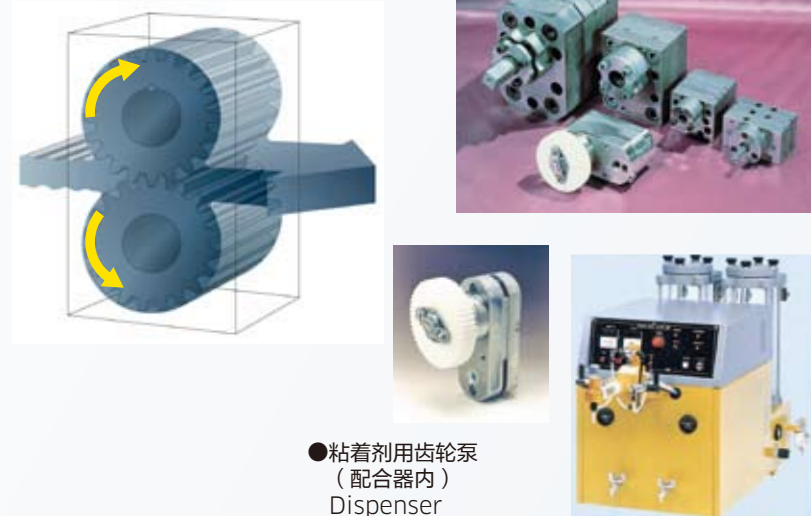
Kawasaki developed its original precision gear pumps for viscose rayon back in 1948, and since then, has accumulated much expertise through manufacturing them for a variety of fields as well as the man-made fiber industry. Now these precision gear pumps contribute to improving liquid metering and transfer processing by meeting customers demands for energy saving, high speed and compact designs.

### 特长 Feature

- 高精度** …… 以高容积效率,在压力和粘度变动时,也可得到稳定的输出流量。
- 长寿命** …… 通过严选的材料和最佳的热处理,使长寿命得以实现。
- 多用途** …… 丰富的机种构成,可对应广泛的使用需求。

- High volumetric efficiency enables a stable output flow despite fluctuations in pressure and/or viscosity.
- Long durability is ensured with careful selection of pump materials and best-fit heat treatments.
- Abundance of type to cover variety of applications.

### 结构 Construction



## 控制系统 Hydraulic Control Systems

与液压极强的“力”技术一道,培育出另一种技术—高度的“控制”技术。

1967年,电-液伺服泵“ROTAS”得以开发。这是划时代的产品—以前的模拟式和液压式被取代,进入了电气信号控制的新时期。从那时起,作为“电-液控制技术”的开拓者,我们使技术不断进化、发展,构筑了许多革新的控制系统。

In addition to “Power” expertise in hydraulics, Kawasaki has developed advanced “Control” technology. “ROTAS” was developed in 1967 to control the tilting angle by electro-hydraulic control technology instead of analog or hydraulic control mechanisms.

Since then Kawasaki has been improving the technology as a pioneer in electro-hydraulic control and coming up with one radical control system after another.

## 电液混合系统 Electro-Hydraulic Hybrid System

### 川崎环境友好型伺服系统 KAWASAKI ECO SERVO

本公司的泵组,作为高压、大排量型具有丰富的实绩,通过对其进行电动机转速控制,实现了高精度的输出流量控制。通过此,不仅可对执行机构进行高精度控制,而且实现了节能和低噪音化。

Highly accurate flow control of high pressure, high capacity pumps can be provided by controlling the speed of rotation. This solution is also energy efficient and can be adapted to reduce noise emissions from the actuator.



排量/displacement: 22~200 cm<sup>3</sup>  
额定压力/rated pressure: 32 MPa  
峰值压力/peak pressure: 35 MPa

## 电-液控制系统 Electro-Hydraulic Control Systems

### 电-液伺服调节器“ROTAS-L” Electro-hydraulic servo regulator ROTAS-L

是以微小的电信号,为进行L系列斜轴式轴向柱塞泵的倾角控制(输出流量控制)用的电-液伺服调节器。

ROTAS-L is an electro-hydraulic servo regulator that controls the tilting angle (flow rate control) of the “L-series” hydraulic pumps using a low voltage electrical input signal.

### 电-液伺服调节器“K3VG-ILIS” Electro-hydraulic servo regulator K3VG-ILIS

使用比例阀,继承了防污能力较强的老型号调节器“ROTAS”的传统。另通过采用斜盘角传感器的反馈控制,进一步使高精度、高响应的控制特性得到了提高。

The pump's regulator “ILIS” utilizes a proportional valve, and consequently retains the advantage of our conventional regulator “ROTAS” with increased contamination tolerance. Adoption of feedback control by sensing the swash plate tilting angle has further improved accurate and highly responsive controllability.

\*关于控制器,请参看第14页。  
Please refer to page 14 for the controllers.



## 马达 Motors

功能的充实和可靠性的提高，不断的进化。  
“马达革命”总是从川崎 (Kawasaki) 开始。

Continually improving the function and enhancing reliability, Kawasaki provides a new generation of motors.  
Revolutions in hydraulic motors always begin in Kawasaki.

### 轴向柱塞马达 Axial Piston Motors

在工程机械、产业机械领域被长期使用的斜盘式马达MX/MB系列，已经转型为低速、高速均可扩展速度范围的3X/M3B系列。另外，作为工程机械回转用马达将功能特化的紧凑型马达M2X系列的一部分，也进化为可靠性更高的M5X系列。这些马达，包括附减速机的马达，都广泛使用于工程机械、产业车辆的回转用、行走用等各个领域。

The MX/MB series have long been acclaimed as excellent motors in the field of construction and industrial machinery. Stemming from the MX/MB series, the M3X/M3B series have been developed extending the speed ranges of both minimum and maximum speeds. Improving reliability further, the M5X series are also newly developed compact motors based on the M2X series and used in construction machinery. These motors and those with reduction gears are widely used for swing or travel motors in construction machines and industrial vehicles.

### 径向柱塞马达 Radial Piston Motors

本公司的液压马达历史，是从英国引进径向柱塞马达的技术开始。是一种将缸体呈放射状分布的“SX·SB/HMKB·HMKC系列”被称为“星形马达”现已成径向柱塞马达的代名词。即使在诞生之地的英国也有我们的工厂，即Kawasaki Precision Machinery (UK) LTD.。

Kawasaki's hydraulic motor production began with the introduction of radial piston motors from the United Kingdom. The SX/SB/HMKB/HMKC series commonly known as Staffa Motors have obtained an excellent reputation as very reliable and low-maintenance, low-speed, and high-torque motors. Kawasaki Precision Machinery (UK) LTD. produces the Staffa motors in their birthplace in the United Kingdom.



■斜盘式轴向柱塞马达  
Swash plate type axial piston motors

#### M5X series

是工程机械用的回转马达，内置机械制动器、溢流阀、补油阀。

Motors with a built-in mechanical brake, relief valves and make-up valves for application to swing operation of construction machines.

排量/displacement: 64~250 cm<sup>3</sup>  
额定压力/rated pressure: 29.4~33.0 MPa  
最高转速/max. speed: 1,400~2,200 min<sup>-1</sup>



■斜盘式轴向柱塞马达  
Swash plate type axial piston motors

#### M3X series

自吸能力、起动效率极高，是实绩丰富的定量型轴向柱塞马达。

M3X series are fixed displacement type motors with a good self-priming capability and high starting efficiency.

排量/displacement: 195~800 cm<sup>3</sup>  
额定压力/rated pressure: 29.4 MPa  
最高转速/max. speed: 1,200~1,900 min<sup>-1</sup>



■斜盘式轴向柱塞马达  
Swash plate type axial piston motors

#### M3B series

将旋转部与M3系列共通化，实现了优异的低速性能和高速化的变量型马达。

M3B series are variable displacement type motors with excellent low speed characteristics and high speed function having common rotary components with M3X.

排量/displacement: max.195~800 cm<sup>3</sup>  
min. 93~267 cm<sup>3</sup>  
额定压力/rated pressure: 29.4 MPa  
最高转速/max. speed: min.1,200~1,900 min<sup>-1</sup>  
max.1,500~2,900 min<sup>-1</sup>



■定量型低速大扭矩径向柱塞马达  
Fixed displacement type  
Low speed, high torque radial piston motors

#### HMKB series

排量/displacement: 745~11,600 cm<sup>3</sup>  
额定压力/rated pressure: 20.6 MPa  
最高转速/max. speed: 130~400 min<sup>-1</sup>

■变量型低速大扭矩径向柱塞马达  
Dual-displacement type  
Low speed, high torque radial piston motors

#### HMKC series

排量/displacement: 745~5,326 cm<sup>3</sup>  
额定压力/rated pressure: 20.6 MPa  
峰值压力/max. speed: 260~1,000 min<sup>-1</sup>



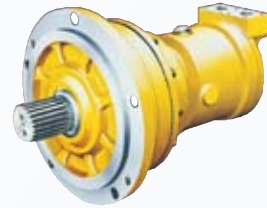
■附减速机斜盘式轴向柱塞马达  
Swash plate type axial piston motors  
with reduction gears

#### M5X-RG series

M5X马达与2级行星减速机组合，最适合用于挖掘机及起重机的回转用。

M5X motors with 2 stage reduction gears are suitable for excavator and crane swing application.

排量/displacement: 1,230~6,300 cm<sup>3</sup>  
输出扭矩/output torque: 5,400~27,000 N·m  
最高转速/max. speed: 56~115 min<sup>-1</sup>



■附减速机斜盘式轴向柱塞马达  
Swash plate type axial piston motors  
with reduction gears

#### M3X/M3B-RG series

因M3X/M3B带减速机，所以可产生大输出扭矩，适用于起重机提升用。

M3X/M3B motors with reduction gears generate large output torque and can be installed for crane winch application.

排量/displacement: 842~5,120 cm<sup>3</sup>  
输出扭矩/output torque: 2,930~16,000 N·m  
最高转速/max. speed: 130~270 min<sup>-1</sup>



■起重机回转用  
附减速机斜盘式轴向柱塞马达  
Swash plate type axial piston motors  
with reduction gears  
for swinging operation of crane

#### M2X/M5X-RG series

最适合用于起重机回转马达、减速机用。  
M2X/M5X-RG series are suitable for crane swing application.

排量/displacement: 3,530~7,120 cm<sup>3</sup>  
输出扭矩/output torque: 17,000~22,400 N·m  
最高转速/max. speed: 41~68 min<sup>-1</sup>

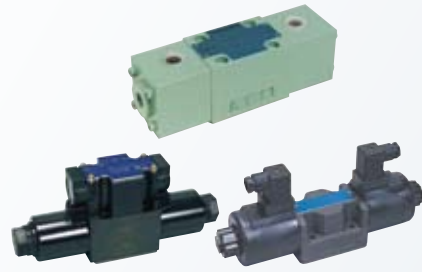


## 阀 Valves

吸收世界上的尖端技术，提供独特的产品。  
丰富多彩的产品阵容，支持着机电时代的“控制”。

Incorporating up-to-date technology, Kawasaki has been developing many original products. We are proud of playing an active role in the field of “Control” in Mechatronics era with an abundance of products.

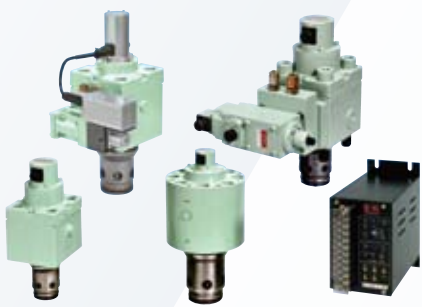
### 通用阀 Hydraulic Valves



#### 方向控制阀 Directional control valves

生产有电磁换向阀、液动换向阀、单向阀等多种阀。

Solenoid operated valves, pilot operated valves, check valves, etc.



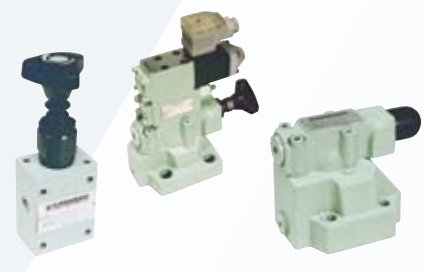
#### 伺服逻辑阀 Servo-logic valves

### SLV series

为紧凑型的插入方式，最适合于高压、高速和大流量的用途。

Compact slip-in cartridge valves suitable for high-pressure, high-speed and large-flow applications.

最高使用压力 / max. pressure: 41.2 MPa  
最大流量 / max. flow: 2,200~14,000 L/min



#### 压力控制阀 Pressure control valves

有溢流阀、减压阀、顺序阀、平衡阀等各种阀。

Relief valves, sequence valves, counterbalance valves, etc.



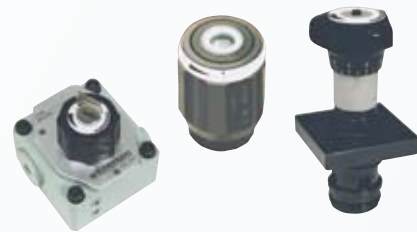
#### 平衡阀 Counterbalance valves

### KDZ series

用于防止液压机的加压压头的自重掉落和压头速度放慢控制等。

Valves to prevent pressure-ram weight drop and control ram speed in hydraulic presses.

最高使用压力 / max. pressure: 24.5 MPa  
最大流量 / max. flow: 120~500 L/min



#### 流量控制阀 Flow control valves

有节流阀、单向节流阀、调速阀等多彩的控制阀。

Throttle valves, throttle and check valves, pressure-temperature compensated flow control valves, etc.



#### 电磁比例控制阀 Solenoid operated proportional control valves

利用控制系统的电信号，进行高度的方向、压力、流量的控制。

Proportional control valves, which precisely control direction, pressure, and flow by electric signals from the control system.

### SUN插装式阀 SUN Cartridge Valves

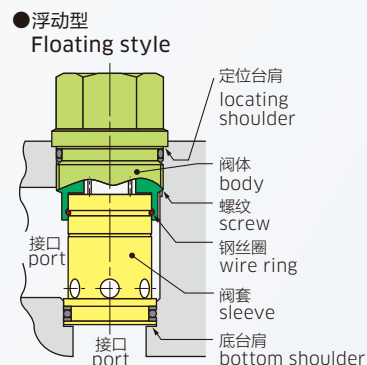
以“浮动型”的独特结构，实现了稳定的动作。作为有利于液压装置紧凑化、低成本化的阀产品，其适用范围在快速扩大。

SUN cartridge valves with the mechanism of unique “Floating Style” realize reliable operation. SUN cartridge valves are enlarging the applications as essential valves with its compactness and low cost.



●SUN插装式阀 SUN Cartridge valves

●阀块 Valve block



## 工程机械、产业车辆用阀 Valves for construction machinery and industrial vehicles



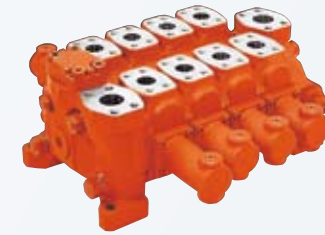
#### 多路控制阀 Multiple control valves

### KMX series

最适合控制液压挖掘机各种动作的整体型多路控制阀。

Monoblock type multiple control valves which optimally all control actuators of excavators.

最高压力 / max. pressure: 34.3 MPa  
额定流量 / rated flow: 120~360 L/min



#### 多路控制阀 Multiple control valves

### MW series

将复数个换向阀汇集在一个上的组合式多路控制阀。

Sectional type multiple valves with several directional valves in one unit.

最高压力 / max. pressure: 34.3 MPa  
额定流量 / rated flow: 240~350 L/min

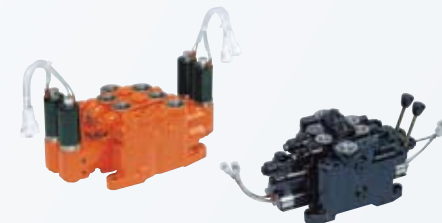


#### 负载敏感控制阀 Load sensing control valves

### KLSV series

KLSV系列是为综合控制各种工程机械，产业机械等的执行元件动作而开发的对应负载敏感系统的阀。

The KLSV series is a multiple section load sensing type control valve.



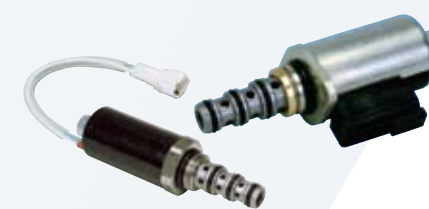
#### 电液比例多路控制阀 Proportional multiple control valves

### KMC, KMP series

是对应广泛用途的排列组合形的电控阀。并备有带压力补偿功能的阀。(KMP系列)

Sectional type proportional multiple valves operated by electric signals applicable to various machinery. There is also a pressure compensator type of our product. (KMP series)

最高压力 / max. pressure: 24.5 MPa  
最大流量 / max. flow: 70 L/min



#### 插装式电液比例减压阀 Proportional pressure-reducing valve

### KDRDE5K series

最适合室外产业车辆的先导操作使用。

Valves mostly suitable to control pilot circuits in mobile equipment operated outdoors.

1次侧压力(最高) / inlet pressure (max.): 8.8 MPa  
2次侧控制压力 / output pressure: 0~3.9 MPa  
额定流量 / rated flow: 10 L/min



#### 农业机械用电液比例控制阀 Proportional control valves for farm machinery

### KTEM series

与执行机构的动作压力无关，用控制输入电流流入电磁线圈，自由自在地控制进/退的流量。

Valves to control the flow rate into and from actuators by controlling the input currents to the solenoids irrespective of the working pressure.

最高使用压力 / max. pressure: 20.6 MPa  
额定流量 / rated flow: 15~60 L/min



#### 先导阀 Pilot valves

### PV series

可同时进行多路阀的阀芯控制和变量泵的倾斜控制的减压阀方式的阀。

Pressure-reducing type pilot valves to control spools of multiple control valves, and simultaneously, the tilting angle of variable displacement pumps and auxiliaries.

1次侧压力(最高) / inlet pressure (max.): 6.9 MPa  
2次侧制压力 / output pressure: 0~2.9 MPa  
额定流量 / rated flow: 10~20 L/min



#### 先导阀 Pilot valves

### TH40P series

能根据需要进行增减的组合式。能安装定位装置，最适合起重机和轮式装载机等的产业机械。

Bank type pilot valves able to increase or decrease the number of valves as required and suitable for mobile vehicles such as cranes or wheel loaders with detent attachable.

1次侧压力(最高) / inlet pressure (max.): 9.8 MPa  
2次侧制压力 / output pressure: 0~2.9 MPa  
额定流量 / rated flow: 20 L/min



#### 电气控制单元 Electric Remote Controller

### ERU series

ERU系列最适合作为工程机械和产业车辆用电控系统的电气控制元件。

ERU series is Kawasaki designed electric control unit perfectly suit to the electric control system especially for mobile applications.

入力电压 / input voltage: 5V/12V/24V  
出力タイプ / type of output: Analog/PWM/CAN/Solenoid driver



## 液压系统、装置 Hydraulic Systems

发挥液压和控制的丰富技术，开发和提供大大小小各种各样的系统、装置。  
Integrating accumulated technology in hydraulics and controls, Kawasaki is providing various systems and equipment.

### 逻辑系统 Logic system

通过与使用机械的特性相匹配地构成液压回路，将具有复合功能的逻辑元件，复数装入单一油路阀板或阀块上构成阀系统。

The logic system is formed by the logic elements on the manifold, which have compound functions according to the hydraulic circuit formations of the host machine.



### 伺服逻辑系统 Servo logic system

通过伺服控制插装式比例的开口，以小冲击、高精度地控制高压、大流量。

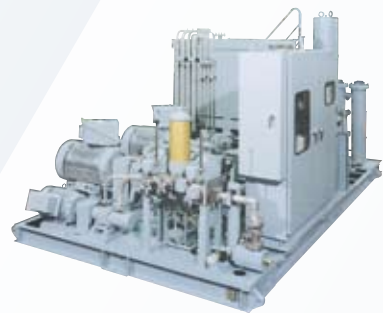
The servo logic valve system controls high pressure and large volume accurately with less shock by controlling the openness of cartridge proportional valves.



### EHC装置 Electro hydraulic controller

在火力、核动力发电设备和燃气轮机发电设备上，控制向汽轮机输送蒸汽和气体的阀用液压装置，已积累了交货200基以上的实绩。

EHC unit is specialized hydraulic system to be used at nuclear, thermal or gas-turbine power plant to provide stable hydraulic power driving many kinds of valves to regulate the flow of steam or gas to be sent to turbine. We have been supplying over 200 units.



### 隧道掘进机扇形片自动装配系统 Automatic segment erection system for shield machine

在推进盾构施工法的自动化、合理化的过程中，利用液压控制技术解决了唯一剩下的扇形片自动装配自动化问题。

Our hydraulic control technology has enabled a fully automated process for segment erection of the shield tunnel method.



### NC缓冲器 NC die cushion hydraulic equipment for mechanical press

利用高速液压伺服技术，自由控制机械式冲压的缓冲器能力。

The high-speed hydraulic servo technology applied to press machinery freely controls the cushion capability.

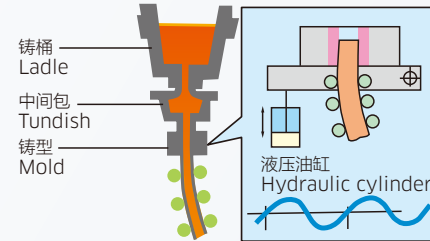


### 连续铸造设备用液压式铸型振动装置 Hydraulic mold oscillation equipment for continuous casting process

使铸型上下振动，防止熔钢和铸型面的粘砂。

This equipment gives vertical oscillation to the mold and prevents the melted steel from being printed on the mold surface.

#### 最适当的振动类型 Optimum oscillation



用液压控制能获得任意铸造条件下的振幅、频率、波形。  
An optimum oscillation wave pattern is realized by hydraulic servo cylinders.

## 控制器 Controller

设计、制作的丰富多彩机械集积了川崎重工集团的技术和诀窍。是只有对机械充分了如指掌的Kawasaki才有的控制器。

Kawasaki has a wide variety of know-how and technology accumulated as a comprehensive machine manufacturer engaged in the design and production of various industrial machinery. All the expertise is utilized in the design of our controllers.

### 工程机械用控制器 Controller for construction machinery

是为驱动电磁比例控制阀等的工程机械用控制器。适用于工程机械用的超强设计。

This controller is designed for driving proportional valves for construction machinery. Robust design is suitable for construction machinery.



### 伺服逻辑阀用控制器 Controller for servo logic valve

是为了驱动伺服逻辑阀的专用控制器。

This controller is specifically designed for the SLV series servo logic valve.



### 川崎环境友好型伺服用控制器 Controller for KAWASAKI ECO SERVO

为川崎电液混合系统“川崎环境友好型伺服”专用，由于带有反馈控制功能，因此能容易地进行位置控制和压力控制。

This controller is specifically designed for the KAWASAKI ECO SERVO and has the advantage of easy control of position or pressure because of incorporating feedback control function.



### ILIS用伺服控制器 Servo controller for ILIS

采用微处理器的高速数字控制方式，机构紧凑的对高精度泵的输出流量进行控制的K3VG/K7VG ILIS控制器。

Adoption of high-speed control system by a microprocessor enables high precision regulation of outlet flow of K3VG/K7VG pumps in a compact shape.



### 电液比例控制阀用控制器 KC/KWC series

是电液比例控制阀驱动专用的控制器。有单电磁线圈用(KC系列)和双电磁线圈用(KWC系列)两种。

KC/KWC series controllers are specifically designed for proportional valves with KC series for single solenoid valves and KWC series for double solenoid valves.





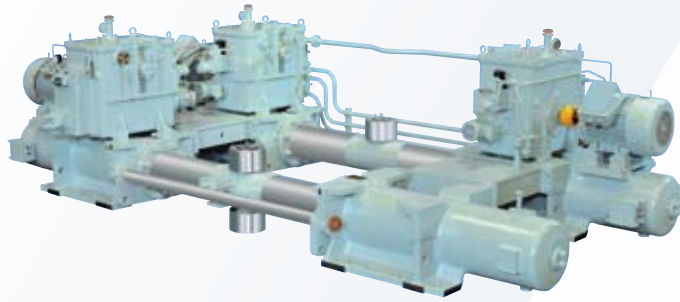
## 船舶用装置 Marine Machinery

从舵机开始的Kawasaki的船舶用装置历史。对应着船舶的高度化、自动化、高速化的各种需求。

Kawasaki's hydraulic expertise began with the development of hydraulic systems for steering gear.

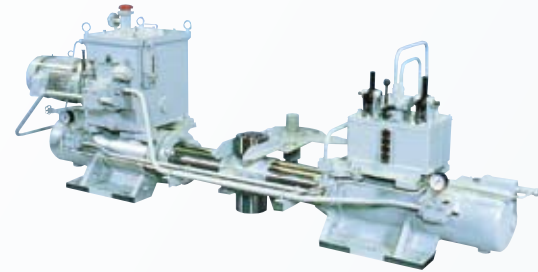
We can assure you that we respond to a wide variety of needs that may arise in line with more sophisticated, automated and higher speed ships.

### 电动液压操舵机 Electro-hydraulic steering gear



●大型舵机 Large size steering gear

扭矩/torque: 314~9,810 kN·m



●小型舵机 Small size steering gear

扭矩/torque: 30~270 kN·m

### 甲板机械 Deck machinery



●起锚机 Windlass

额定负荷/rated load: 68~766 kN



●系泊绞车 Mooring winch

额定负荷/rated load: 50~315 kN



●货物绞车 Cargo winch

额定负荷/rated load: 30~75 kN

### 其他船用装置 Other systems for marine machinery



●电动绞车  
Electric deck machinery



●电动绞车  
Electric deck machinery



●Ro/Ro装置 Ro/Ro device

## 新精机产品 Mechatronics

聚集了本公司的加工技术和控制技术, 进行新领域开发的产品。

We are looking to the future. Gathering machining and control technologies, we are proceeding to develop in new products and markets.

### 船用摄像稳定器 (5轴控制) Camera stabilizer for vessels (5 axis control)

是搭载在监视艇等的船舶上的超高倍率摄像机静止稳定装置, 可提供清晰而鲜明的图像。门类有KSTM-400/700/800的3机种, 可识别2~4km远的船名。

This system stabilizes super high magnification camera set on a guardship or vessel and maintains a crisp, clear and blur free image. When the KSTM-400/700/800 is installed in a marine application it can typically identify the name of ship some 2-4 km away.



### 燃气轮机用液体燃料控制装置 Fuel control device for gas turbine

在燃气轮机运转中, 通过外部的信号能进行燃料的送出、停止、流量控制的装置。通过本公司所蓄积的液压技术及控制技术成功地将原来复杂的系统变为单个整体化。

This device enables gas turbine to deliver, stop and control the fuel by a outside signal. We have successfully developed this monoblock device through our advanced hydraulic and control technology.



### 新干线用换气装置 Ventilation equipment for Shinkansen trains

新干线换气装置, 作为消除通过隧道时的“耳鸣”现象的高性能机从2000年开始被采用, 此实绩获得了极好评价, 在台湾新干线的700T型车辆的全部360台上均已采用。

To prevent passenger aural discomfort by trains traveling through the tunnels, we developed Ventilation Equipment System for Shinkansen in 2000. Based on this experience, we have delivered system for Taiwan High Speed 700T Trains.



●台湾新干线用换气装置



从设计、制造到售后服务的一条龙系统为背景，对“液压”提供解决服务。

We provide the complete service solution for Oil Hydraulics, Our specialists are ready to respond with the latest and advanced technologies.

### 现场服务 Field Services



液压元件与装置的安装、配管施工、试运转调整，这些在交货后的售后服务那是理所当然，并且为了使故障防患于未然还进行巡回服务，细致地进行检查。

Our field services cover products and systems provided by all manufacturers. We also install, adjust and test machinery, equipment and pipe work, on site.



除定期检查和修理的现场施工外，也可将元件取回工厂进行修理。在工厂内有专用修理线和经验丰富的专门人员进行拆卸、检查、装配、试运转。而巡回服务，则是为了对客户的液压设备发生故障防患于未然的服务。另外为解决难题，本公司有派经验丰富的专门人员上门诊断的服务，就具体的改善对策提出建议（提供解决方案）。

We provide periodic inspections and repairs on site. We also repair hydraulic components at our plant. In our service center, our specialists disassemble, inspect, reassemble and test your hydraulic components.

During the inspections, our specialists check your equipment and propose solutions to increase reliability and reduce machinery downtime.

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