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

Kawasaki Precision Machinery Ltd. (KPM) has accumulated the shipbuilding expertise and know-how for more than a century and also the hydraulic technology for more than 80 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 16,000 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, KPM, 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.

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The newly developed hydraulic power unit and winch 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. Furthermore, Kawasaki-Hydraulic Deck Crane has changed the concept of the Deck Crane with the improvement of reliability and weather resistance. Those equipment have been delivered to worldwide cargo vessel together with the Steering Gear that has the world record of delivery.

The Steering Gear of Kawasaki brand has been adopted to worldwide oil tankers from the world largest level of the Electro Hydraulic Steering Gear (the output 1,650 t•m) that was installed to the oil tanker of 500,000 DW Tclass.

We have also completed the high pressure (29MPa) system that exceeds the total discharge rate of 10,000L/min responding to the hydraulic driven of cargo oil and ballast pump.
The hydraulic system to open, close and fix the ramp way is also our strong field for cargo vessels and car ferries with roll on and roll off where trailer and passenger cars go directly in and out by themselves. To comply with the requirements of high reliability and excellent operability, we are supplying Ro/Ro equipment and Ramp Winch that can be driven by Advanced Series pump unit for Deck Machinery as a common hydraulic source.

Our strong fields also include Ro/Ro Trailer Carrier with Kawasaki hydraulic equipment. In addition to strong power, floating cranes require high accuracy for landing control of a hanging cargo and sand drain ships also require advanced technology for push-in and pull-out control of a pile.

Kawasaki responds to these various needs together with soundproof and vibration absorption technology, remote control technology etc.

Various Work Vessels that are engaged in the ocean and harbor public works have various needs for the hydraulic system in order to accomplish each function. In addition to strong power, floating cranes require high accuracy for landing control of a hanging cargo and sand drain ships also require advanced technology for push-in and pull-out control of a pile.

The hydraulic system of Kawasaki responds to these various needs together with soundproof and vibration absorption technology, remote control technology etc.
The following four characteristics are especially required of the steering gears — They are high reliability, high durability, high accuracy, and torque characteristic in line with actual rudder load. The Electro Hydraulic Steering Gear of Kawasaki with such four characteristics has been delivered to various sized ships all over the world and highly evaluated.

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<td>Large size RM, RE, RV type</td>
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●小型操舵装置 / Small size steering gear (RV型)

The Electro Hydraulic Steering Gear of Kawasaki with such four characteristics has been delivered to various sized ships all over the world and highly evaluated.
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.

### 起锚机 / Windlass

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<tr>
<th>Model</th>
<th>100</th>
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<th>400</th>
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<td>Cargo winch</td>
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### 船用绞盘 / Mooring winch

### 载货绞盘 / Cargo winch

### Pumps / Pump unit

- **Advanced series**
  - Basic system
  - Single main system

### 静声系统 / Silent system
甲板起重机 Deck Crane

The Kawasaki-Hydraulic Deck Crane has contributed to the efficiency improvement of loading and unloading work making the most of the characteristic of hydraulics, that is, extreme easiness of control. Small installation space and expansion of the loading and unloading work area enable you to use the space of deck efficiently.

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<th>型 号</th>
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<tbody>
<tr>
<td>单臂起重机</td>
<td>Single crane</td>
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<td>双臂起重机</td>
<td>Twin crane</td>
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<td>半细长型起重机</td>
<td>Semi-slim crane</td>
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<tr>
<td>软管处理起重机</td>
<td>Hose handling crane</td>
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</table>

●单臂起重机 / Single crane
●半细长型起重机 / Semi-slim crane

●双臂起重机 / Twin crane
●软管处理起重机 (圆筒型) / Hose handling crane (Cylinder type)
The Camera Stabilizer restrains the movement of the optical axis and keeps image clear of the camera on board even during the turbulence and oscillation of the ship.

The stability, with only less than 5cm of the movement in the distance of 1km, is quite excellent.

Hydraulic system is most suitable for remote control of the cargo oil pumps and the ballast pumps. Our Kawasaki Single Main System that is able to drive the various kinds of actuators with 1 pump station is particularly suitable for hydraulic driving large-capacity pumps.

We adopted a directive antenna to catch a clear television image on the ship. The antenna is able to receive the clear and stabilized image, because automatically faces in the direction of the ground television broadcasting station even if the ship changes its direction.

We have been providing Tong Myung Heavy Industries Co., Ltd., Korea with our technology of the Electro Hydraulic Steering Gear since 1976 and supplying the key parts of hydraulic pump (the LV series). We have also been providing with the technology of the Electro Hydraulic Steering Gear CSSC/Wuhan Marine Machinery Plant, China since 1981 and they have started the production since then. Furthermore we have recently, tied each other concerning the Deck Machinery and Deck Crane and have been expanding the range of cooperation in production.