

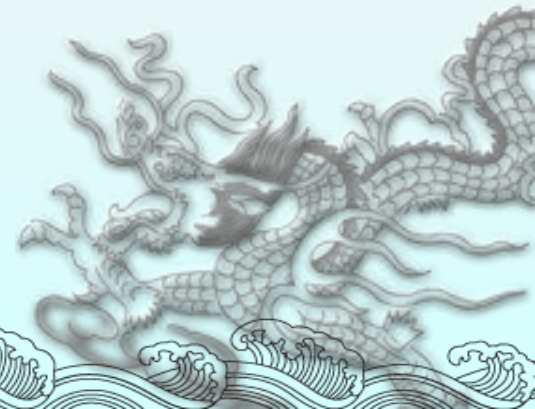


# 菱川船舶机械有限公司

Ling Chuan Marine Equipment Limited

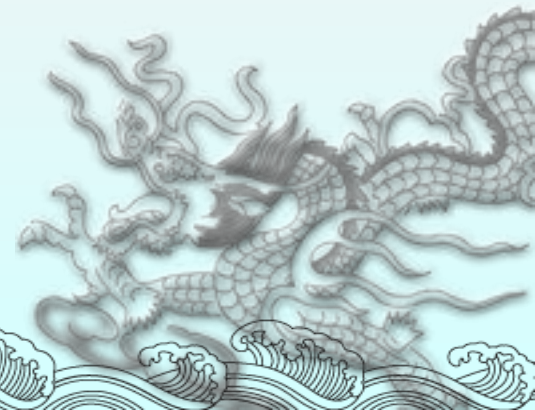
# --- INDEX ---

- Company Profile
- Product



# Company Profile

- Basic introduction
- Development history
- Organizational structure
- Enterprise qualification
- Production capacity
- Sales value
- Sales network
- Service network
- Enterprise Purpose



# 基本介绍

## General Information

- Company Headquarters      Ling Chuan Marine Equipment Limited
- Established time              1996
- Website                        <http://www.qdlcme.com>
- Staffs Number                More than 60 persons
- Company Address              Unit A (Rm 9),3/F,Cheong Sun Tower,116-118 Wing Lok Street ,Sheung Wan,HK
- Branch Office                 Qingdao Ling Chuan Marine Equipment Co.,Ltd
- Branch office Address        Room 2305-2306 , No.193 Jiangshan Middle Road ,Qingdao Economic & Technological Zone ,Qingdao, China

# History

1996~2000

- Ling Chuan Marine Equipment Limited was established
- Main business ,marine spare parts
- We were committed to the transformation and technical services for Marine fuel supply system.
- The first set F.O. supply unit had been produced independent R&D by us and been rapidly applied to domestic large and medium-sized shipyards.
  - Homogeneous filter independent R&D by us achieves the great success and had been applied to energy conservation and environmental protection field for low consumption, environmental protection and energy saving etc .
- passed ISO 9001:2000 quality Certification system and obtain a certificate.

## 2001~2005

- Ling Chuan became the first-level agent for Mitsubishi Kakoki Kaisha Ltd and achieve the sole “three power agent” ( equipment sales and after-service ,spare parts supply.)
- Independent reach &development Purifier module by us with convenient maintenance, high efficiency, had been applied to ship construction projects.
- We were committed to sea-transportation , Business , Import & Export service& products promotion & sales to oversea markets etc .
- We further expanded the scale of production, owning the factory area of 3000 square meters, matching perfect mechanical processing equipments, crane equipments and all kinds of professional testing equipments.
- passed China classification society (CCS) , the royal approval committee (UKAS) approval , ISO 9001 : 2008 Quality Management System ( QMS )



2006~2010年：

- we were committed to developing land use market and developing many kinds of equipments and modules for supporting power plant, which have been widely used in ship building, ocean engineering, land use power plant etc.

- Land use supporting modular product Type

Oil Purifier Modules, Pumps modules, Oil/Water tanks modules, other units modules

- Independent reach & development high efficiency ,energy-saving environment-friendly Automatic Back-flushing Filter .It was used for matching with own equipment s and sales

- Devoted to European market ,for the newest demands of Europe and America waters, had begun to develop low sulfur fuel cooling equipments.

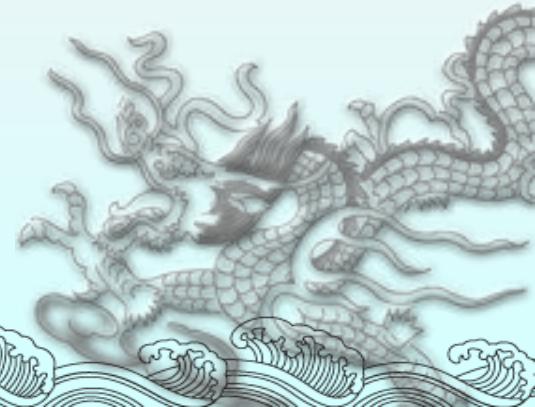
Obtained the authorized agent of Grundfos pump in Chinese market and were committed to the promotion of conveying equipment .

Meanwhile ,we became the MAHLE NFV ballast water treatment system ,oil-water separator ,marine lube oil filter(AKO) ,fuel oil filter & heavy fuel oil filter(AKO)

- Became the DHP fresh water generator .

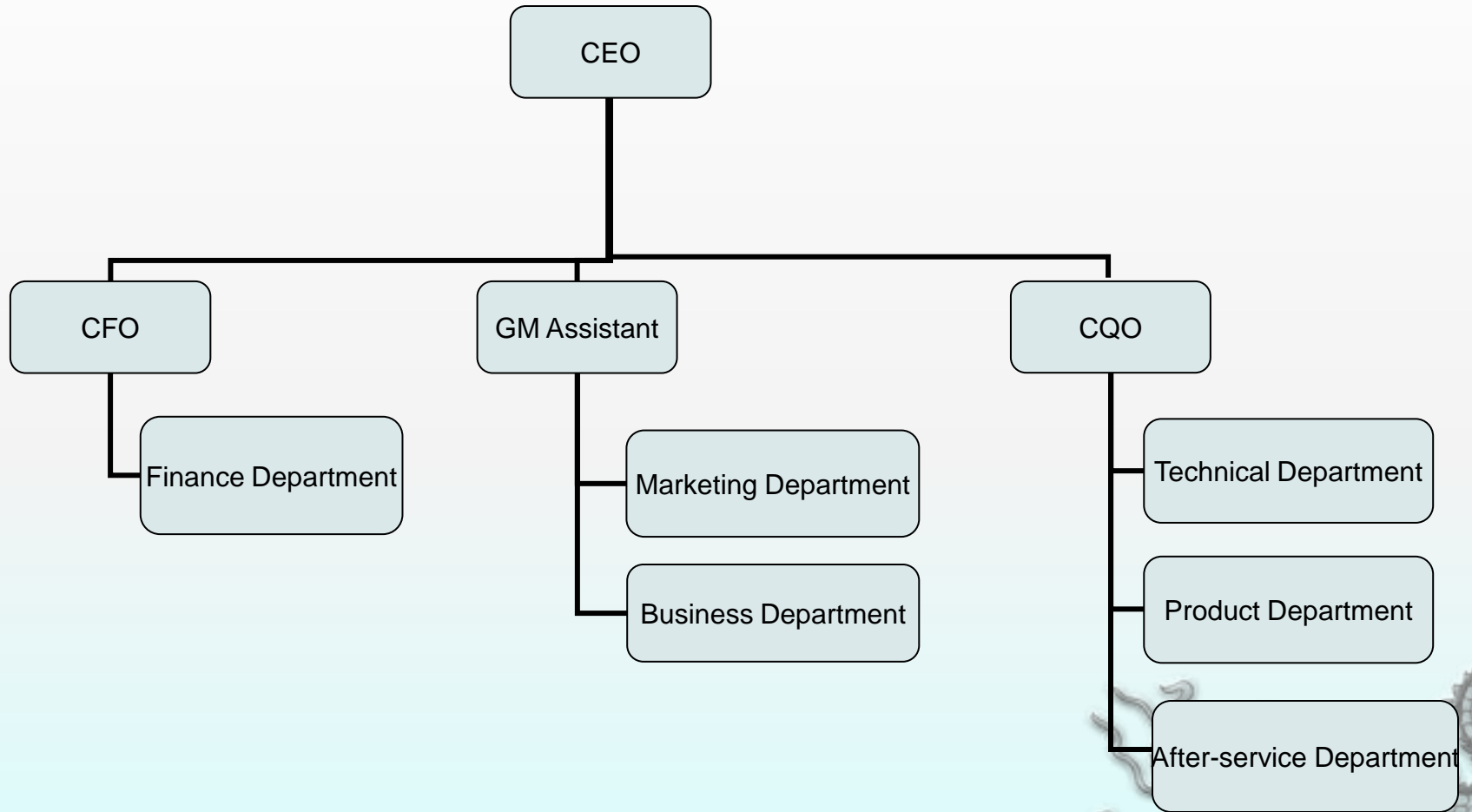
## 2011~2015

- Became Mitsubishi Heavy Industries Ltd Marine Machinery & diesel engine (UE main engine) authorized agent
- Became MERUS authorized agent
- Became the Settima Meccanica S.r.l. pump authorized agent
- We were committed to Industrial field liquid-liquid ,solid-liquid separation and filtration equipment sales , production & technical service
- So far , we have been committed to perfect management & costs control all the time for adopting to current market new situation .

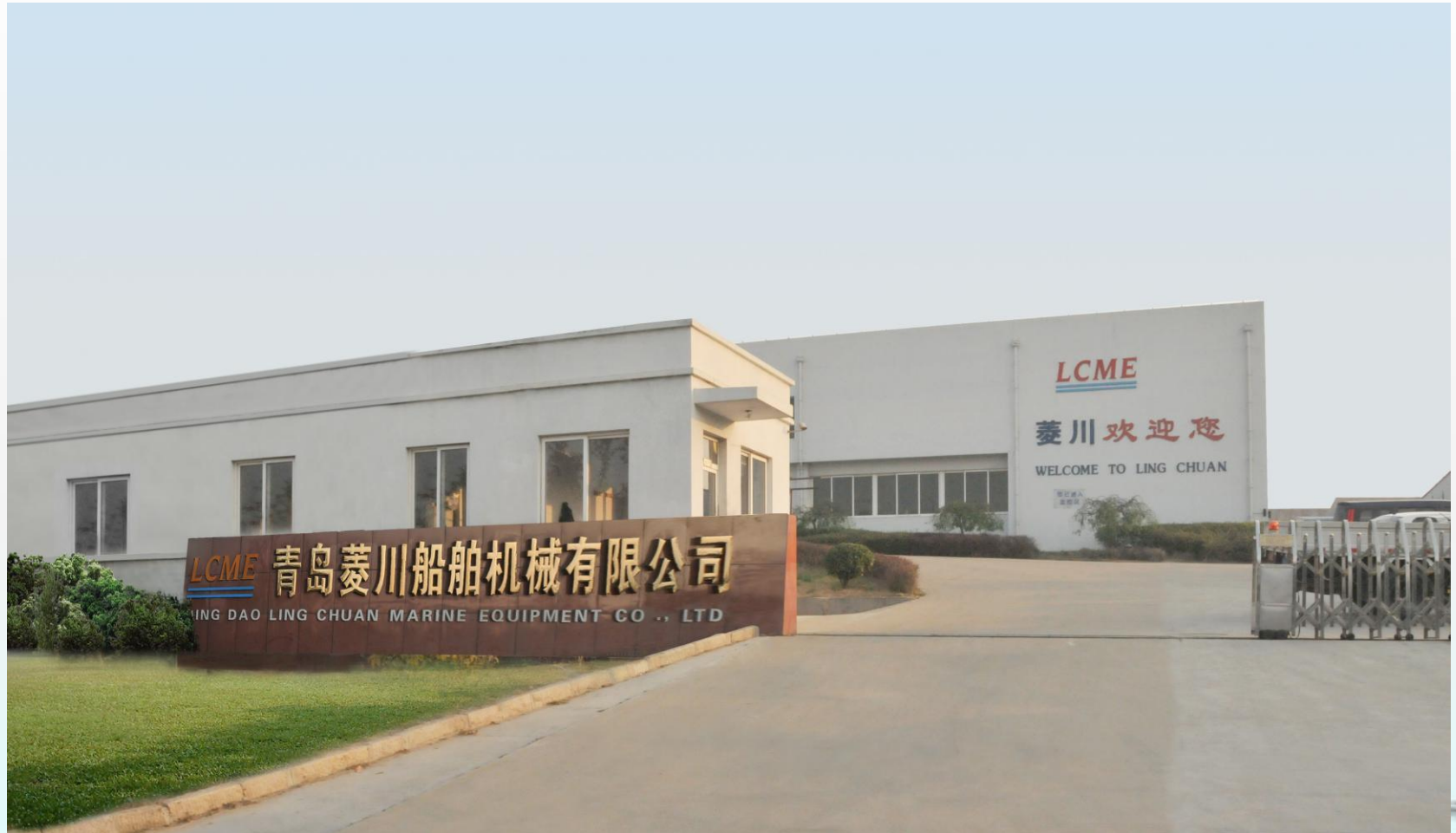




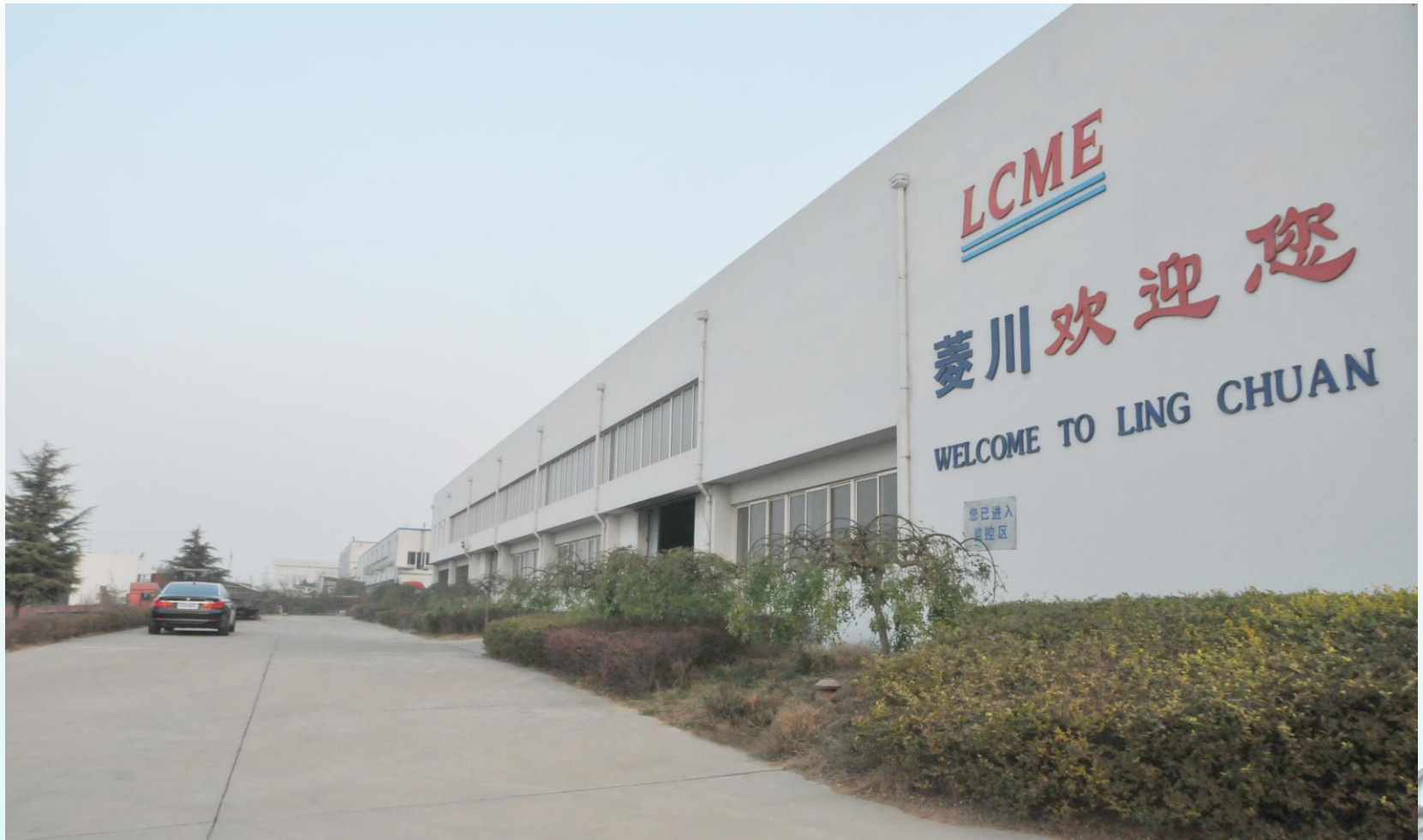
# 组织机构 Organization



# Ling Chuan Marine

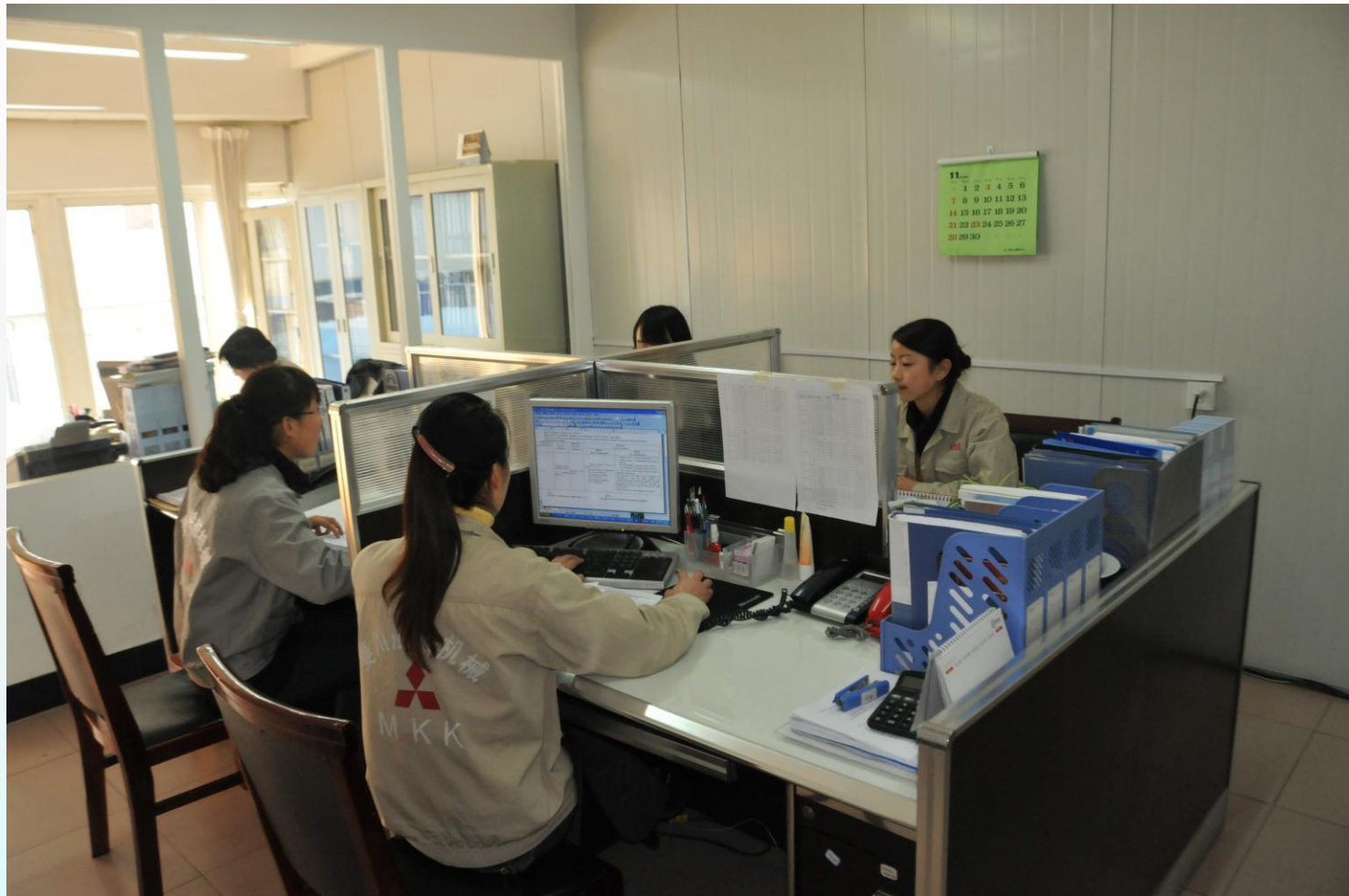


# Ling Chuan Marine





# Ling Chuan Marine- Business Department



# Ling Chuan Marine- Technical Department





# Ling Chuan Marine-Production Department





Ling Chuan Marine-Cover an area of 3000 m<sup>2</sup>



# Ling Chuan –workshop corner





# Certification System

[illegible][illegible]

表格 Form	NAR1	公司编号 Company Number 933669
---------	------	-------------------------------

**12 董事 Directors**

A. 董事 (自然人) Director (**Natural Person**)  
(如提供一名或多名董事的人，请勾选是否适用。Use Checkmark if it more than 1 director is a natural person)

请在以下选项中选择( ) ✓ 或 \* 并填写 tick the relevant box(es)

Capacity	<input checked="" type="checkbox"/> 董事 Director	<input type="checkbox"/> 联席董事 Alternate Director	代官 Alternate In
中文姓名 Name in Chinese			
英文姓名 Name in English	姓氏 Surname	彭化新 Peng	
其他名称 Other Name	Hua Xin	Hua Xin	
曾用名 Previous Name	中文 Chinese	-	-
	英文 English	-	-
别名 Alias	中文 Chinese	-	-
	英文 English	-	-

**1 住址 Residential Address**

Rn701, No.1 Hailong Juyuan,  
Jiangnan South Rd., Economic and Technological Development Zone,  
Qingdao City, Shandong,

国家 / 地区 Country / Region China

**1 电话电报 Email Address**

**1 身份证明 Identification**  
(a) 香港身份证号码 Hong Kong Identity Card Number

(b) 护照 Passport

中国 I.D. No.: 301102195211091234

香港身份證號碼 - - - - - X

護照號碼 - - - - -

電話號碼 - - - - -



# 营业执照

## (副本)

1-1

统一社会信用代码 913702117669231281

名	称 青岛爱厘船舶机械有限公司
类	型 有限责任公司(自然人投资或控股)
住	所 山东省青岛市黄岛区江山中路193号2306室
法	定 代 表 人 彭化新
注	册 资 本 贰佰万元整
成	立 日 期 2004年01月07日
营	业 期 限 2004年01月07日至 年 月 日
经	营 范 围 一般经营项目:船舶设备、机械设备的生产、货物进出口、 技术进出口(依法须经批准的项目经相关部门批准后方可开展经营 活动)。以上范围限 许可经营的,凭许可证经营。



### 登记机关



2015 年 08 月 07 日

<http://sdjy.gov.cn/>

企业信用信息公示系统网址:

中华人民共和国国家工商行政管理总局监制

# 企业资质 Certification System

- In 1998 , Pass ISO 9001 : 2008 Quality Management System ( QMS )
- In 2005 , Pass China classification society (CCS) and the royal approval committee (UKAS) approval



# 授权书 Letter of Authority

**MITSUBISHI KAKOKI KAISHA, LTD.**  
3-1, Minami-cho, Kawasaki-ku, Kawasaki, Japan 210-8501  
Tel: +81-44-233-7300 Fax: +81-44-234-4148

**Power of Attorney**  
Date: October 28, 2010

Address: Room 701, East Unit, No.10ba Feng Tai Yuan No.636 Jiang Shou Road,  
Development Zone, Qing Dao, China  
Name: LING CHUAN MARINE EQUIPMENT LIMITED

We hereby appoint the Company mentioned above as our sales attorney-in-fact and authorize the Company to perform the following duties on behalf of MITSUBISHI KAKOKI KAISHA, LTD.

1. Deal Product: Mitsubishi Oil purifier.
2. Territory: Generally, to sell the purifier in the north area from Shandong of China.  
In other area, it is possible to sell purifier as long as it is without interfering with other agents on same project.
3. To act for bidding.
4. To engage in transmission of communication on technical and commercial matter.
5. To receive firm order, if awarded.
6. To deliver the products.

Faithfully yours  
Mitsubishi Kakoki Kaisha Ltd.  
Sales Manager / General Manager  
Machinery System Sales Department 2

**Mitsubishi Kakoki Kaisha Ltd.**  
3-1, Minami-cho, Kawasaki-ku, Kawasaki, Japan 210-8501  
Tel: +81-44-233-7300 Fax: +81-44-234-4148

**Power of Attorney**  
Date: April 28, 2010

Name: LING CHUAN MARINE EQUIPMENT LIMITED  
Address: Room 250-259, Shouyi Plaza No.191, Jingshan Maide Road,  
Development Zone, Qingdao City/Shandong Province, China

We hereby appoint the Company mentioned above as our sales attorney-in-fact and authorize the Company to perform the following duties on behalf of MITSUBISHI KAKOKI KAISHA, LTD. (Hansen after called the "MOK")

1. Deal Product: Mitsubishi oil purifier and spare parts of oil purifier.
2. Territory: The area of China.
3. To act for bidding.
4. To engage in transmission of communication on technical and commercial matter.
5. To receive firm order, if awarded.
6. To deliver the products.
7. To do service after-sales for Mitsubishi oil purifier.

(This Power of attorney is valid, until MOK to change it)

Faithfully yours  
Mitsubishi Kakoki Kaisha Ltd.  
Sales Manager / General Manager  
Machinery System Sales Department

**MITSUBISHI DIESEL ENGINE UE**  
This is to certify  
**LING CHUAN MARINE EQUIPMENT LIMITED**  
is appointed as Authorized Sales Agent of UEG Diesel Engines designed, manufactured and/or licensed by MHI in the People's Republic of China only, excluding Taiwan, Hong Kong and Macau.

MHI assigns the below matters according to AGENCY AGREEMENT. The Agent shall provide MHI with the following assistance and/or support (hereinafter referred to as "Term") for the sale of the PRODUCTS in the TERRITORY:

- (1) Sales promotion (including advertisement)
- (2) Sales promotion (including exhibition)
- (3) Submission of written report to MHI for the Service as frequently as MHI reasonably request. The report shall include Monthly Sales Activity Report in the form requested by MHI.
- (4) Arrangement of meetings with customers in Territory and/or assistance in negotiation of the contract for the sale of Product.
- (5) Obtaining any and all appropriate approvals and/or license of regulatory agencies in the Territory which may be required by laws and/or regulations for the Service in the Territory (if any).

This certificate is valid: February 15, 2016

Yoshihisa Yamada, Director  
Business Operation and Alliance Department  
Business Development

**MITSUBISHI HEAVY INDUSTRIES MARINE MACHINERY & ENGINE CO., LTD.**

**VOGELSANG**  
福格申机械工程(上海)有限公司  
经销商证书

兹授权青岛莱川船舶机械有限公司作为福格申机械工程(上海)有限公司在山东省地区的经销商,负责本公司产品的投标、销售工作,并负责售后服务联络工作。

本代理有效期: 2010年1月1日至2010年12月31日

福格申机械工程(上海)有限公司  
总经理: David H...  
日期: 2010年02月20日

**ANTECH**  
Date: 12<sup>th</sup> November 2015

**LETTER OF AUTHORIZATION**

To: QINGDAO LINGCHUAN MARINE EQUIPMENT CO., LTD.  
Subject: Staffa Hydraulic Motors - Sales Agent for 28 pcs Staffa Motors

Dear Sirs,

We, Antech Hydraulics Limited, now formally inform that we would like to appoint QINGDAO LINGCHUAN MARINE EQUIPMENT CO. LTD as our Authorized Sales Agent in regards to all QTY: 28 pcs genuine Staffa Hydraulic Motors.

We, Antech Hydraulics Limited, will take the responsibility of all guarantee claims (including service and parts) for the Staffa Motors during the warranty period, subject to the Standard Warranty Terms of Antech Hydraulics Ltd and Staffa Hydraulic Motors. Your kind understanding and acceptance of the above would be highly appreciated.

Yours sincerely  
Andrew C Newell  
Managing Director

**MAHLE Industrial Filtration**

**授权书**

兹授权 青岛莱川船舶机械有限公司

代表马勒工业过滤器(上海)有限公司, 在中国运营马勒工业、推广马勒公司的下列产品:

- 马勒NPT 压滤水处理系统
- 马勒NPT 油水分离器
- 马勒船用燃油过滤器(AKO)
- 马勒燃油过滤器、重质燃油过滤器(AKO)

本授权有效期至我司收回本授权书。  
马勒工业过滤器(上海)有限公司具有撤销本授权书的权利。

马勒工业过滤器(上海)有限公司  
MAHLE Industrial Filter System (Shanghai) Co., Ltd.  
日期: 2010年04月20日

**dP DHP Engineering Co., Ltd.**  
Tel: 81-11-756-0200 Fax: 81-11-756-0201 E-mail: info@dhpeng.com

**授权书**

本公司和中国莱川船舶机械有限公司经过友好协商进一步加强合作达到强强联合的目的, 为了能够更好服务于客户,

授权如下:

中国青岛莱川船舶机械有限公司为我公司在中国

华泰重工(南通)有限公司  
Huatai Heavy Industry (Nantong) Co., Ltd.  
Project: 37300 DWT BULK CARRIER (4+2 Ships)  
Hull No.: H0003 / H0004 / H0005 / H0006 / H0007 / H0008

相关项目技术、商务、售后服务的代理商, 并全权负责处理相关项目的招标活动及售后服务等和项目有关的活动。

大元热板株式会社  
2008年09月19日

DHP Engineering Co., Ltd.

**dP DHP Engineering Co., Ltd.**  
Tel: 81-11-756-0200 Fax: 81-11-756-0201 E-mail: info@dhpeng.com

**授权书**

本公司和中国莱川船舶机械有限公司经过友好协商进一步加强合作达到强强联合的目的, 为了能够更好服务于客户,

授权如下:

中国青岛莱川船舶机械有限公司为我公司在中国

台州枫叶船舶有限公司  
TAIZHOU MAPLE LEAF SHIPBUILDING CO., LTD

相关项目技术、商务、售后服务的代理商, 并全权负责处理相关项目的招标活动及售后服务等和项目有关的活动。

大元热板株式会社  
2008年09月18日

DHP Engineering Co., Ltd.

**授权书**

兹授权青岛莱川船舶机械有限公司为德国梅鲁斯公司的中国特约代理, 负责为终端客户提供梅鲁斯水处理全系列产品的技术支持、销售、租赁、安装和售后服务。授权范围: 全国非独家。授权有效期至2012年12月31日。



Form No.: SA 1411a Issue 1



	CERTIFICATE NUMBER	DATE
	14 W01292447 PDA	17/10/2014
	ABIS TECHNICAL OFFICE Nishikata Engineering Service	

# CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of  
**SHOWA RASEN-KAN SEISAKUSHO CO.LTD - KITA-KU**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABIS Rules for products to be installed in ABIS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

**Product** Flexible Metal Hose With Fittings

**MODEL: SR Series**

This Product Design Assessment (PDA) Certificate 14 W01292447 PDA, dated 27/10/2014 remains valid until 27/10/2019 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABIS classed vessel, MODEX or facility which is in existence or under contract for construction on the date of the ABIS Rules or specifications used to evaluate the Product.

Use of the Product on an ABIS classed vessel, MODEX or facility which is commenced after the validity date of the ABIS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABIS classed vessels, MODEX or facilities is up to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING



Engineer

NOTES: This certificate contains complete and true a copy of the Rules, Notices, conditions or other documents in force at the time of issuance, including a copy of the Rules as amended and the Rules as amended and the Rules as amended. It is issued under the terms and conditions of the Rules, Notices, conditions or other documents in force at the time of issuance. Any significant changes to the documents described herein shall be notified to the client by the Bureau. The Bureau is not responsible for the accuracy of the information provided by the client. The Bureau is not responsible for the accuracy of the information provided by the client.

Page 1/3

MARINE DIVISION

Certificate number: 0523-CD-BV

File number: A-CE 135-19-0002

Product code: 21039

This certificate is valid upon entering into the  
first scheduled schedule control of 7 months

www.bureauveritas.com

## TYPE APPROVAL CERTIFICATE

This certificate is granted to:

**SHOWA RASENKAN SEISAKUSHO CO., LTD.**  
Tokyo - JAPAN

for the type of product:

**METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES**

SR Series

### Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units

This certificate is issued to attest that BUREAU VERITAS will undertake the relevant approval procedures for the product identified above which also aims to comply with the relevant requirements mentioned above

This certificate will expire on: 01 Jun 2015

For BUREAU VERITAS,

At-VY HOME, on 11 Jun 2013,

Technical representative

This certificate remains valid until the date stated above, unless cancelled or revoked. Should the conditions indicated in the statement (signature) are complied with and the product remains satisfactory in service, this certificate will only be valid if the approval values are changed or modifications in the approved product justify this. In the event of a modification, the certificate holder must inform the technical representative of the modification and must obtain the approval of the product's service. In the event of a change in the product, the certificate holder must inform the technical representative of the change and must obtain the approval of the product's service. In the event of a change in the product, the certificate holder must inform the technical representative of the change and must obtain the approval of the product's service. In the event of a change in the product, the certificate holder must inform the technical representative of the change and must obtain the approval of the product's service.

BV Mod. A-E 530 May 2008

This certificate contains (2 / 3 pages)

# TYPE APPROVAL CERTIFICATE

## DNV-GL

This is to certify that the undersigned product(s) have been tested in accordance with the relevant requirements of the DNV-GL Type Approval System.

Certificate No.

**24 826 - 09 HH**

Company

Shimo Rinsenken Senaishuoka Co., Ltd.  
Osaka Factory  
5-3-3, Ibaraki, Kita-ku  
Yatsuji 1-15-001, JAPAN

Product Description

**METALLIC HOSES**

Type

**none**

Environmental Category

**none**

Technical Data /

Range of Application

**TECHNICAL DATA**

**Material**

Corrugated hose SUS 304, Braided SUS 304,

**Size (range)**

DN 15 up to DN 50

**P.S.A. MPa**

5 [bar]

**Temperature Range:**

- 55 [°C] to 550 [°C]

**RANGE of APPLICATION**

The suitable hose of this type is approved for the use as follows:

For oil, kerosene, oil vapour, oil and gas, all auxiliary steam, compressed air, kerosene, ballast, sea water and fresh water cooling systems.

**Number 04**

For the use in ballast and sea water cooling systems the corrugated hose is made of stainless steel containing molybdenum. The use at operating temperatures above 300°C, the appropriate pressure reduction factors will be given.

Test Standard

- V-1-2 Rules for Machinery Installations (GL), Section 13
- V-12-8 Requirements for the Performance of Type Tests (GL), Part 6 : 1998
- Test reports (pressure and tightness tests, endurance test, burst test) dated October 2004, June 2004, August-November 2009;
- Test reports (pressure and tightness tests, endurance test, burst test) dated October 2004, June 2004, August-November 2009;
- Working Example No. 00, WSPS-0102 10K;
- Drawings according to page 2.

Remarks

Manufacturing of hose assemblies according to Approved Certificate 24 827 - 09 HH.

Valid until **2018-01-13**

Page **1** of **2**

File No. **13.01.08**

Hamburg, **2014-07-14**

**DNV GL**

Type Approval Symbol

*[Signature]*  
Chief Techn.

*[Signature]*  
Plamen Dikov

 Lloyd's Register  
URQA

**CERTIFICATE OF APPROVAL**

This is to certify that the Environmental Management System of:

**Mitsubishi Kakoki Kaisha, Ltd.  
Head Office: Kawasaki Works  
2-1, Okawa-cho, Kawasaki-ku, Kawasaki-shi,  
Kanagawa-ken, 210-8560  
Japan**

has been approved by Lloyd's Register Quality Assurance  
to the following Environmental Management System Standards:

**ISO 14001:2004, JIS Q 14001:2004**

The Environmental Management system is applicable to:

**Project management, engineering, procurement and  
construction management of gas, petroleum, chemical,  
petrochemical, food and environmental facilities.  
Design, development, manufacture and maintenance of  
industrial equipment.**

This certificate is valid only in association with the certificate schedule bearing the same  
number on which the locations applicable to this approval are listed.

Approval Certificate No: YKA 0772812	Original Approval: 24 March 2000 Current Certificate: 15 October 2015 Certificate Expiry: 31 March 2018
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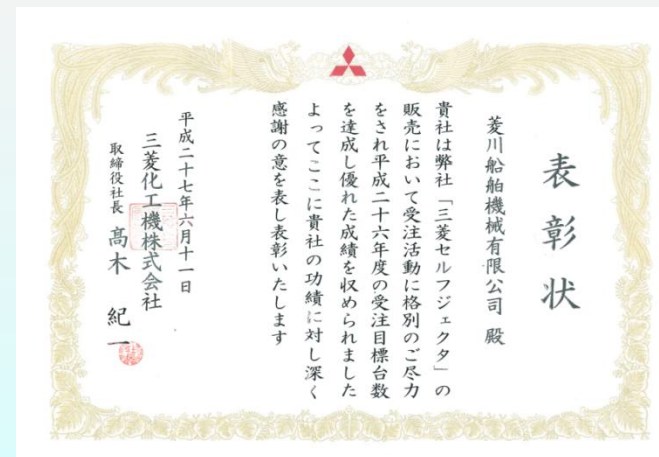
Issued by: Lloyd's Register Quality Assurance Limited

Queen's Tower A, 100 Finsbury Pavement, Birmingham B3 3QJ, United Kingdom  
For and on behalf of: Tomya Park, Akatsuki-cho, Birmingham B37 3YU, United Kingdom

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As Mitsubishi Kakoki Kaisha Ltd the sole three power agent , gain many times awards and honors in reputation and achievements.



# Productivity

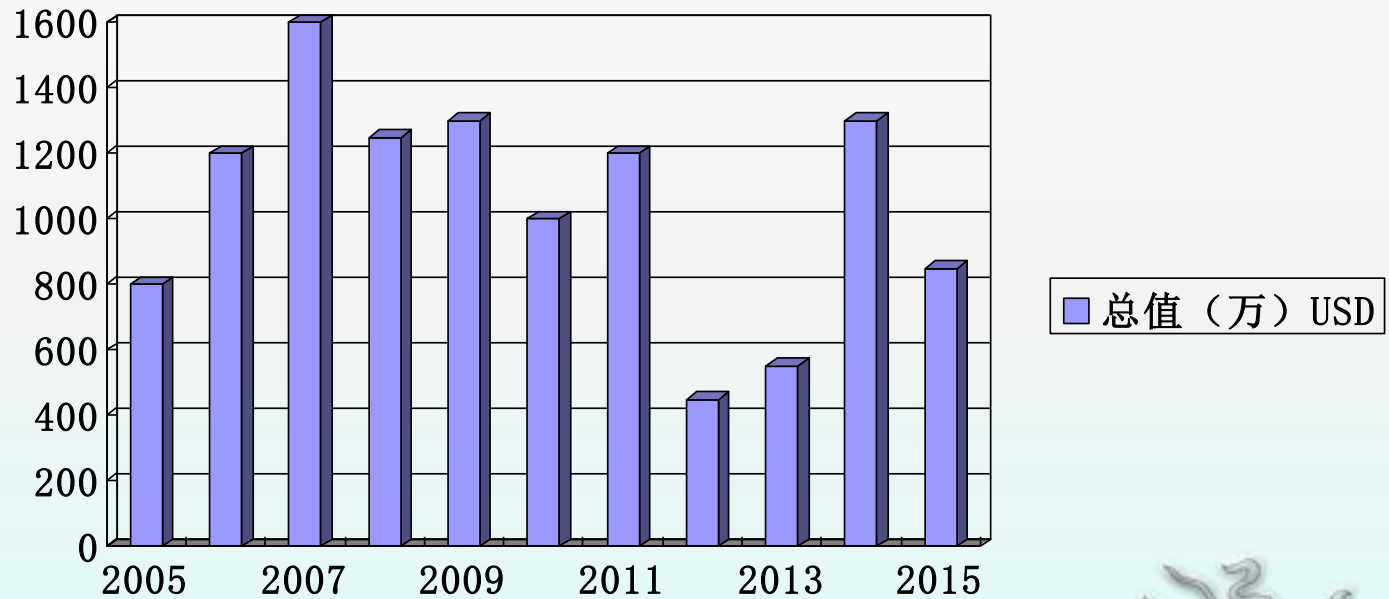
**oil purifier  
module 480  
sets/Year**

**FO Supply Unit  
200sets/Year**

**Filter 200 sets /Year**

**Low sulfur oil  
equipment 100  
sets /Year**

# 销售产值 Revenues



# 销售网络

## Sales Network

So far, the company has formed a perfect sales system. In the marine market, the sales network of company throughout the whole area of China, is divided into the northern regions, central district, east & south China regional. In the land use market ,sales network of the company is all over the northwest north district& east China.

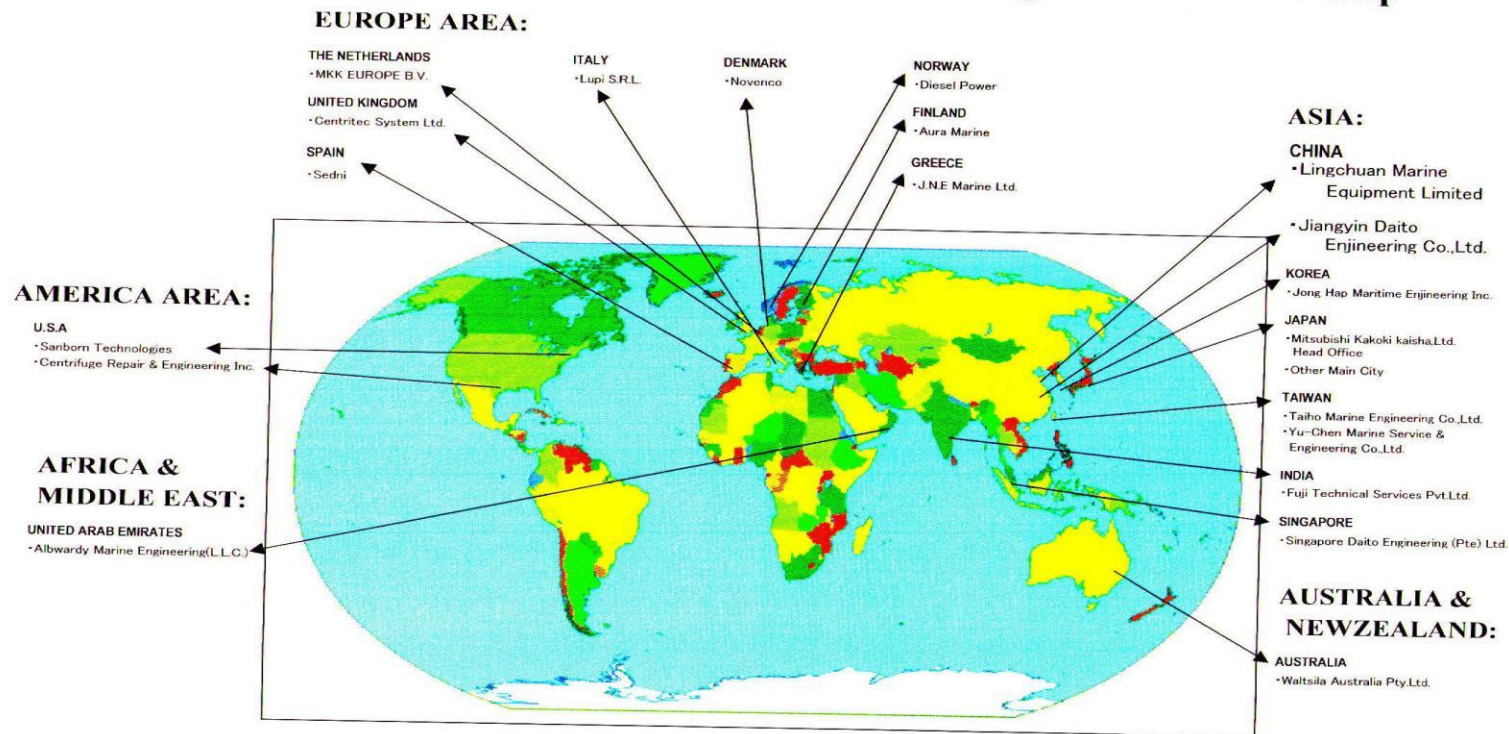


# 服务网络

## Service Network

Through the cooperation with MKK ,formed a global after-sale service network

**Mitsubishi Oil Purifier Oversea Service Agent Engineer Stationed Map**





# 企业宗旨

## Company purpose

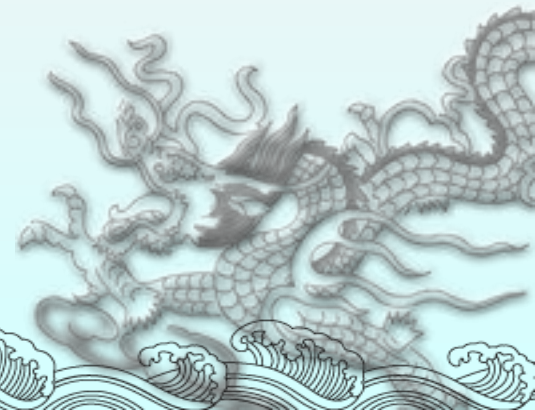
The company insists on the tenet of "sincerity, innovation in business", by the high quality products and timely perfect service, competitive price for the new and old customers to create higher value!

Ling Chuan ,after years of efforts, has now formed a more perfect technical service system, marketing system, business service system and after-sales service system.

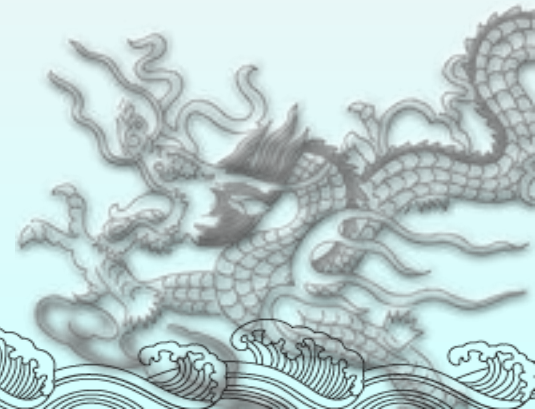
# 产品目录

## Product List

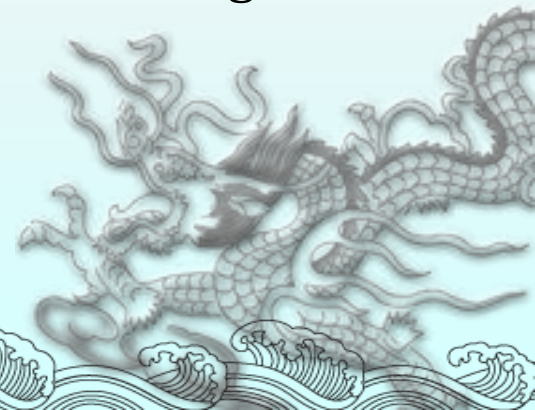
- Mitsubishi SJ-H Series Purifier
- Purifier Module
- Mitsubishi UE Engine
- Mitsubishi Fin Stabilizer
- Mitsubishi Propeller
- Mitsubishi Generator
- Mitsubishi MET Turbochargers
- Mitsubishi Ship Crane
- Mitsubishi Steering Gears
- Mitsubishi Deck Machinery



- Mitsubishi Marine Steam Turbine
- Mitsubishi Boiler & Turbines
- Mitsubishi Waste Heat Recovery System
- Supply System
- Kajiwara Heater
- Low sulphur fuel oil cooling modules
- Sea water pump frequency conversion cooling system
- Automatic Back-flushing filter
- Homogeneous filter
- Chemical Waste material Separator
- Other Modular products & stationery module



- Power plant matching equipments & Modular production
- Fuel supply system reform
- Fuel supply system after-service
- Spare parts ( purifier , diesel engine , FO supply unit , UE Engine , Fin Stabilizer , Propeller , Generator , Turbo Charger , Turbo Charger etc. marine equipments spare parts , Pumps , valves , heater , Air-compressors , Air-conditioner , marine electric & , Instruments etc. )
- Import & Export Customs Brokerage , Bonded warehousing services etc.



# Mitsubishi Selfjector



Mitsubishi Selfjectors (oil purifiers) are the best selling centrifugal disc type separators, which are backed by a history of over seventy years and sales of over 90,000 units to date (Hercules-series)

Mitsubishi Selfjector Hercules (SJ-H) Series, the latest version of its series, is compact and yet offers improved fine particulate removal and higher output, thanks to Mitsubishi's years of expertise.

With its outstanding reliability and purification performance, the Mitsubishi Selfjector Hercules (SJ-H) Series is ideal for purifying not only fuel oils and lubrication oils for vessels, but also mineral oils that are commonly used in a wide range of industrial applications.

## SJ-H Series Features

- The rotating bowl employs well proven and highly reliable pilot-valve method.
- In addition to standard type, H-HIDENS or SUPER HIDENS (optional) systems is available for processing low-grade fuel oils
- Multi-display monitor panel, showing oil flow-through rate, discharge pressure, flow-through temperature and detection of leaks.
- To realize lower environmental load
- A gear pump fitted as standard for processing low-viscosity fuel oils
- Higher discharge pressure centripetal pump (25 m head) for processing light liquid enables the application of purifiers for larger vessels.
- Compact design requires less installation space
- Addition of higher-capacity models in lineups for higher-output engines



# Oil purifier Module



Based on customer 's requirements , we can consider Mitsubishi oil purifier as a center , as system demands and adopt domestic and overseas advanced design idea and function equipment to make the system pipeline ,valve ,function parts as a whole, as oil purifier module matching to the customers.

Meanwhile, heating unit and oil pump units can be provided separately .It not only provide the stability of the fuel handling system greatly ,but also offer convenience for installing ,operating and maintenance .We can design & make single module, double modules and three modules according to customer's demands.

## Advantages

Compact & small footprint

Convenient installation

easy to operate & maintain

high reliable system

# FO supply Unit



We produce fuel oil supply unit mainly used in diesel engine heavy fuel oil quality improvement and supply . It is easier for user management control and operation, which is more convenient for design and installation debugging .In the aspect of the technique and process , we adopts domestic and overseas advanced design idea, by means of advanced instruments and equipment to complete production .This equipment has reached the world advanced level with perfect fault detection and alarming system

The unit is with compact structure ,reliable work ,high automation and easy to maintain . The operating principle is as follows :

The fuel oil from daily light oil tank and daily heavy oil tank of fuel through unit inlet three-way valve, pass the strainer from the supply pump to mix oil cylinder ( collection chamber ) and then by circulation booster pump to achieve boost pressure to enter into heater to heat,. Through viscosity test control system, control the steam regulating valve by installed on the heater steam inlet to achieve control fuel oil viscosity within the set range.

Heating fuel oil is sent to carry out automatic backwash filter , after finishing fine filtration , and is conveyed to fuel oil supply unit. Then the rest of fuel oil will return to mix oil cylinder by return port and mixed with fuel from supplement of supply pump and enter into the next circulation process .

In order to ensure to supply oil to marine diesel engine continuously ,there are two entire system as spare and can be mixed to use each other .

Filter adopts the German BOLL automatic backwash filter. It is the most advanced domestic and foreign markets, most reliable performance fuel fine filter, the filter fineness reaching  $10\ \mu$ . It solves disadvantage that after fine filter work a long time , it need stop to clean & replace filter cartridge from the design aspects , which ensure the continuity of filter work & consistency of filter fineness . The filter Cartridge service life is very long and It never replaces filter .



The fuel oil viscosity control adopts imported EMERSON viscometer. This equipment is with structure compact, high technology level. It is the most competitive price viscometer in the current markets. The menu selection and operating system display is intuitive ,clear and easy to operate . Automatic or manual operation can be arbitrary selection. It can be adjusted according to actual condition and set temperature. Under setting control conditions, when there is a deviation, it can balance deviation in a fast and accurately . It can be arbitrarily set alarm condition. The alarm status can be chosen unlock alarm, automatic lock alarm and manual lock alarm.

Electrical control box , based on the features of fuel oil supply unit and combined with most of the crews operation habit, is designed by ourselves & with strictly supervision to produce . The electric control box can meet the requirements of various vessels with line concise, high automation and meet the requirements of unmanned engine room. This system control box use Schneider components, with two sets of independent system control circuit, two sets of control circuit of the electric power supply separately independent switchboard and emergency switchboard, two sets of power system, which can be mutually standby, and can be used in combination and the isolated between lines for safe maintenance. When the equipment broke down ,they can be automatic conversion with perfect fault detection and alarm system. All functions can be achieved by PLC procedural operation according to the customer's requirements.

# Mitsubishi Heavy Industries over 130 years experience & reputation

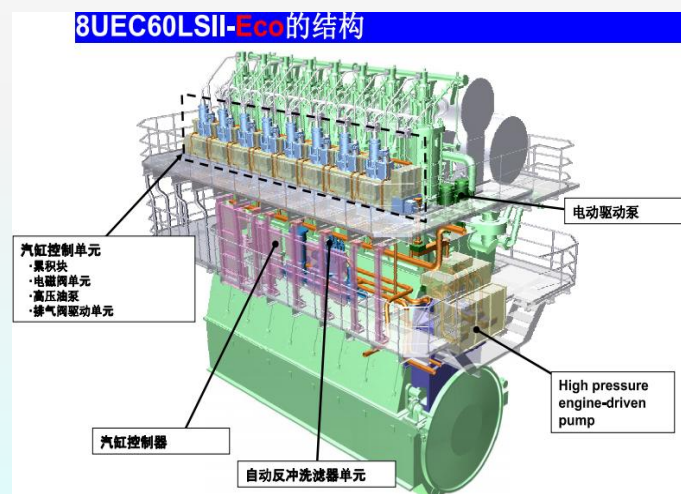
Utilizing exclusive & the latest technologies create rich product line-up.

Started from shipbuilding industry in 1884 , MHI created many brilliant achievements in the field of Shipbuilding and had been widely recognized in the world .UE Diesel engine is MHI 's patent product of independent reach & development & design .

The UE engine MHI-MME's highly popular low-speed diesel engine launched in 1955. It has over 50 years history .

Over the years, UE engine in Economical , Environmentally friendly , Highly reliable aim ,MHI-MME has optimized the design to meet the needs of the times, adding new and innovative products to the UE engine lineup.

Such as the earliest A/B/C/D/E Series and with creative spirit H/HA Series ,which improve UE Type diesel engine L/LA / LS Series popularity and has being widely applied to modern LS II / LS-Eco , LSE / LSE-Eco Series to meet more high performance & better Environmentally friendly demands



## MHI UE ENGINE



## UE Engine Features

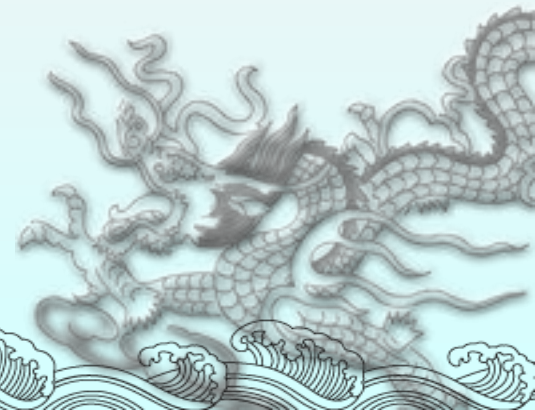
UE Diesel Engine with highly Economical efficiency & reliability , it is the sole domestic low-speed diesel engine

- Economical Low fuel consumptions , Highly reliable, Highly reliable, Environmentally friendly
- The bore size is complete .Main propulsion for a wide range of merchant ships, Tankers, Bulk carriers, Pure car and truck carriers, Container vessels etc. from twenty thousand ton to three hundred thousand ton .
- Easy maintenance & operation .
- There are 3 Chinese Licensees to meet Chinese market requirements

Depending on MHI great support ,made in China & made in Japan is the same quality demands . MHI can replace Licensed factory to provide after-service.

# MHI –UEC main engine ,besides the UE main engine excellent performance , is the following features

- Ecological, Low NOx , Smokeless operation
- Economical, Low fuel consumption, Low maintenance costs
- Excellent condition ,Reliable ,Early failure warning system
- Easy to control, Stable low-load operation, Excellent startup and crush astern



## Other MHI Products



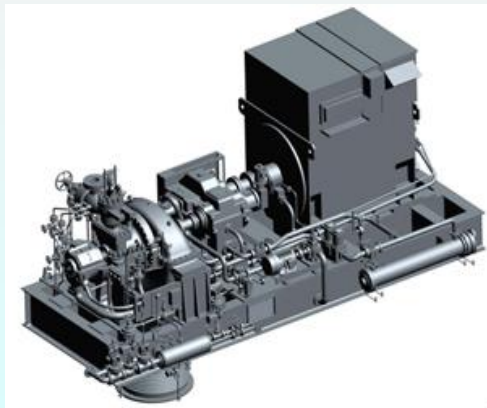
Boilers and Turbines



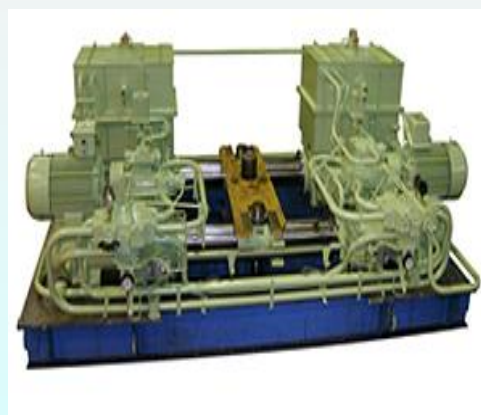
Deck Cranes



MET Turbochargers



Mitsubishi Marine  
Steam Turbine



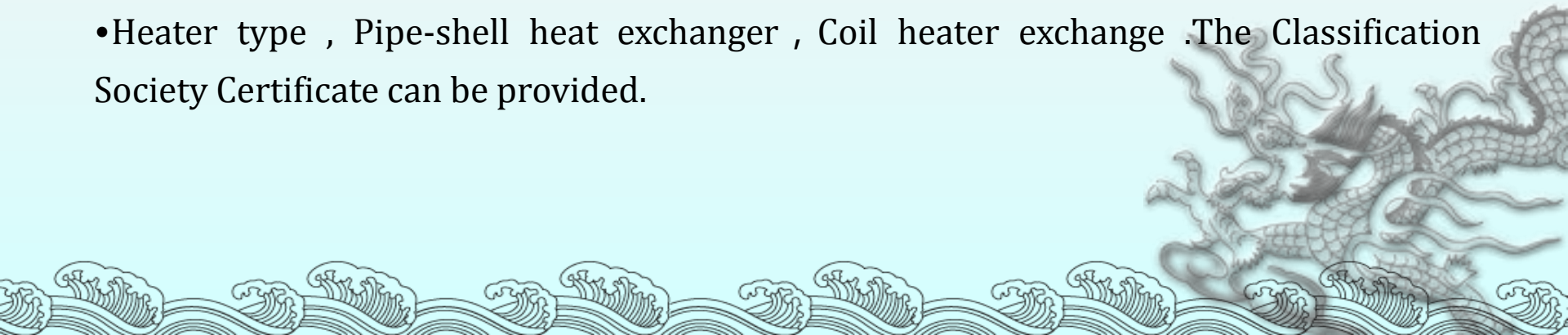
Steering Gears



Deck Machinery

# Kajiwara Heater

- Japan KAJIWARA is with nearly hundreds years history professional manufacturer .The products is applied to heating lubricating oil ,fuel oil ,jacket water ,sea water etc. and more than 90% market share in Japan .The product is high heat-exchange efficiency, small volume ,reliable & durable . With the Sweden SUNROD technology , it has ever established long-term cooperation with Denmark AALBORG in design , production & sales aspects for the shell-and-tube heater.
- In 2015,We registered joint venture with Japan KAJIWARA company .Main product is KAJIWARA heater .Company owns the professional technical personnel & advanced production equipment , reliable quality & high cost-effective.
- Heater type , Pipe-shell heat exchanger , Coil heater exchange .The Classification Society Certificate can be provided.



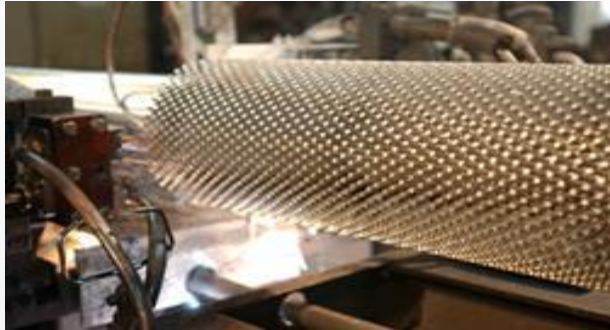
# Kajiwara Features :

- High heat-exchange efficiency
- Small volume , light weight
- Clean itself
- Not affected by heat treatment
- Easy maintenance





# Kajiwara Heater



Shell-and-tube heater



Shell-and-tube heater



The coil of shell and tube type heater



The coil type shell and tube type heater

# Low sulphur fuel oil cooling modules

According to the law issued by European Union in 2005( DIRECTIVE 2005/33/EC), since January 1, 2010, European Union has started implementation of Marine low sulphur fuel regulation.

The ships berthed in the European Union port over two hours, the fuel sulfur content must be controlled within 0.1%.

This laws & decrees is enforced to carry out from the July 1

But low sulfur fuel oil low viscosity (40 °C when the viscosity of 1.5 CST) will cause great damage to related equipments especially main engine

Ling chuan is long-term committed to marine fuel oil processing, supply and ship pollution prevention equipment research and development.

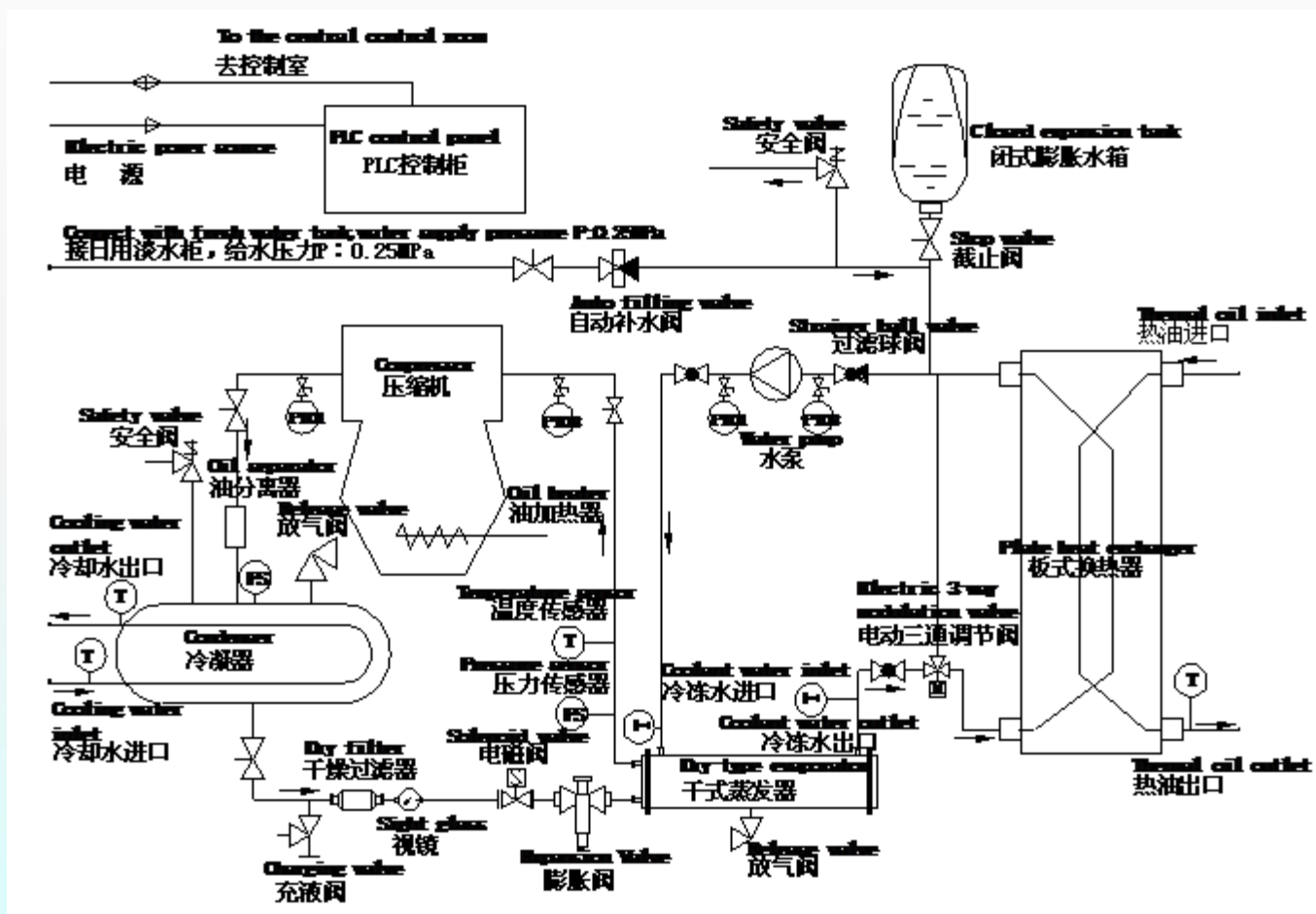
According to the existing Marine diesel engine design requirements, fuel oil viscosity need over 2 CST .

Independent research and development , design and production by us low sulfur fuel oil cooling module, through reducing the temperature of low sulphur fuel to 17 °C or making the oil viscosity guarantee above 2 cst , meet the requirements of Marine diesel engine and fuel supply system demands .

A complete set of module includes the refrigeration system, chilled water system, water and oil heat exchange system and central integrated control system. Most of the modules equipments adopts imported brand & PLC control. So module performance can be guaranteed.

This low sulphur fuel oil cooling module has the advantages of novel design, compact structure, easy operation, high automation, stable, safe and reliable operation and low failure rate, convenient maintenance, energy conservation and environmental friendly etc. features to provide better equipment for ships.

## system principle diagram

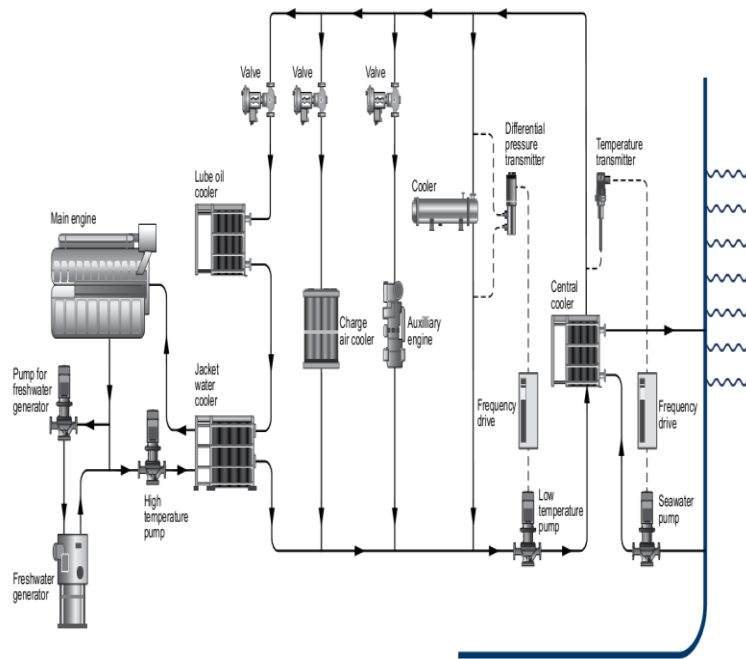


# Sea water pump frequency conversion cooling system

Sea water pump frequency conversion of the cooling system according to the seawater temperature and load situation of main auxiliary engine equipment can reduce the energy consumption by 50% ~ 90% so that it reduces the cost.

The system has been widely recognized and promoted in Europe. Energy-saving effects is very obvious. The domestic ship-owners are also gradually high attention.

Traditional main sea water pump in the cooling system, sea water pump will have been running at full capacity status .This set of frequency cooling system , according to the area of the navigation of ships change of water temperature to automatically adjust the sea water pump speed to achieve the goal of the central cooler water export temperature of 36 °C. Don't need to run at full capacity to reduce energy consumption and to achieve energy-saving and save money.





# PACO VLS Marine easy-disassemble type vertical pipeline centrifugal pump



Material : Cast iron, stainless steel, bronze ,nodular cast iron

volute , pressure range 12-16bar

medium temperature -5-100℃

Flow range 5-818m<sup>3</sup>/h

Hydraulic head / Lift : 5-122m

Inlet & outlet diameter 32mm-250mm

Impeller diameter 127mm-300mm

Pump efficiency ,highest 87%

Power range 0.75-160Kw

Apply to all kinds of Marine facilities, such as cooling pump, ballast pump, bilge pump, water pump, fire pump, deck flushing, auxiliary equipment cooling, desalination device etc.

## Features :

- Compact structure
- Wide application range
- Standard motors
- the same Inlet & outlet diameter
- Vertical installation & saving installation space
- Lengthened coupling, convenient maintenance and replacement the shaft seal not to move the motor
- Diameter >75mm with double spiral case structure, running more smoothly and effectively extending the service life of shaft seals and bearing etc.

# vertical multi-stage centrifugal pump CR/CRN/CRT



- Material

304Stainless Steel

316 Stainless Steel

Titanium alloy

- Application

cleaning system

Refrigeration and air  
conditioning system

water supply system

water processing system

fire protection system

boiler feed water system

# Automatic Back-flushing Filter



This product is a fully automatic backwash fuel oil filter with structure design artfully, reasonable filtering procedure design .It can not only realize automatic backwash filter screen filter cartridge , but also the whole process of filtration and reverse wash is continuous from beginning to run and meet the requirements of unmanned engine room management work. Solve the manual filter can't back flush filter and solve the existing automatic filter is structure complex or expensive price & can't discharge harmful impurities automatically .

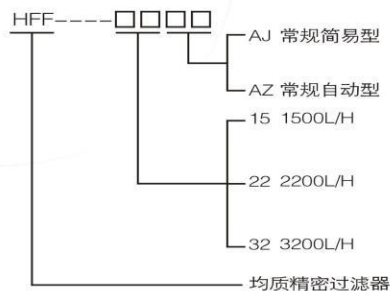
This invention for solving the technical problems adopts cylindrical structure, special disc type filter screen of composite filter body, by rotating fluid flow control system, at the same time in the filtration of fuel oil to fully automatic recoil cleaning filter then through differential pressure controller and automatic drain system, automatic timing or according to differential pressure start discharge the harmful impurities .





## [HFF 系列自动均质滤器]

### HFF series auto homogenizer filter



随着国际燃油价格的持续升高，燃油成本在船舶运营成本中所占得比重越来越高，这使越来越多的船东在新造船项目中都选择使用可燃烧更经济的劣质燃油项目。由于燃油品质的降低，提高了对船用燃油处理设备的要求，尤其是对进主机之前的燃油过滤设备提出了更高的要求。

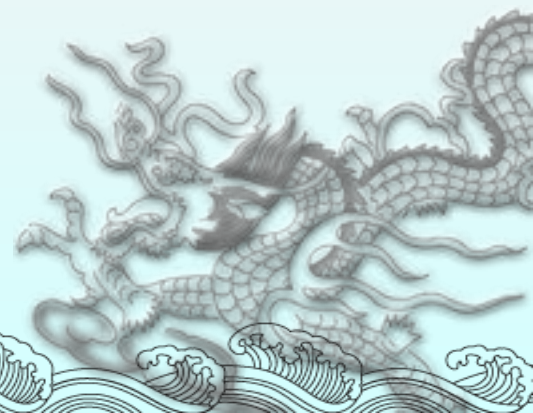
为了适应市场的需要，我公司引进日本技术，研制并生产了 HFF 系列自动均质滤器。该滤器结合了自动反冲洗滤器和均质机的优点，绝对过滤精度达到了  $10\mu$ 。对于所有船用主机，该滤器都能满足其对于燃油的精度要求。并且由于该滤器加入了均质功能，使得燃油中存在的油渣得到了全面的控制，进机燃油的品质得到了更高的提升。

均质过滤一体式的安装形式，降低成本，便于维护管理；降低备件数量，降低了后期的使用成本；成为船用设备市场为数不多的高性价比的产品之一。

本产品主要有以下三大功能和特点：

- 1 过滤功能
  - ★采用精度极高滤芯，绝对过滤精度达到了  $20\mu$ 。
  - ★高速旋转的滤芯产生的离心力，使得滤芯表面不会被污物附着和堵塞。
  - ★全不锈钢材料的滤芯，保证了滤芯的使用寿命更长，即使出现损坏也可以修复。
  - ★采用高速旋转的滤芯，使得相对过滤精度可达  $10\mu$ 。
- 2 均质功能
  - ★特殊结构加高速旋转的滤芯，使得待清介质中残存的微小污垢颗粒和再聚结的油水颗粒得到了充分粉碎和均质。
- 3 独特点
  - ★高速旋转的滤芯筒产生的离心力，再次捕捉住那些已经顺利通过滤网的重量颗粒，使得其不能顺利流出而滞留在滤芯筒内。
  - ★旋转的滤芯使得待清介质在筒体内形成一个同步旋流，重量杂质旋沉至筒底而被定时自动（手动）排出。
  - ★无需逆洗，减少了逆流回流损失，提高了供应效率。
  - ★滤芯清洁周期长。

## Homogeneous filter





## Other modular products and land module

In order to speed up the construction, the construction enterprises are more and more use of modular products to replace the original complex pipe connection. Modular product has the advantage of compact structure, easy installation, operation, maintenance and management.

Our company can be according to customer's requirements, surrounding the diesel engine system design to produce various types of functional module and have been widely used in power station, ship building, drilling platform, fuel oil power plants etc .fields.

- **Land module sales and services**

- Since January 2009, our company have sold over 100 sets oil purifier module and other modules for land power station project and all the equipments are checked & accepted at one time

- **Land oil purifier module**

Oil purifier module --Antigua and Barbuda 6X5MW Heavy oil power station project

Oil purifier module Nigeria IKEJA 7X2000KW power station project

Oil purifier module -Nigeria IKEJA 5X2000KW power station project

Oil purifier module -1700KW Mobile power station

Oil purifier module- Indonesia LDZE41-1800 Box type generator project

Oil purifier module-Philippines 10500KW power station project

Oil purifier module- 4\*1000KW power station project

- **Land use other modules**

Antigua and Barbuda 6X5MW Heavy oil power station project

Light oil transmission module   Light oil unloading module   Light oil emergency supply unit

Dirty oil unloading module   Lubricating oil supply module   Lubricating oil transmission module

Fuel supply module   High temperature water pump module   Low temperature water pump module

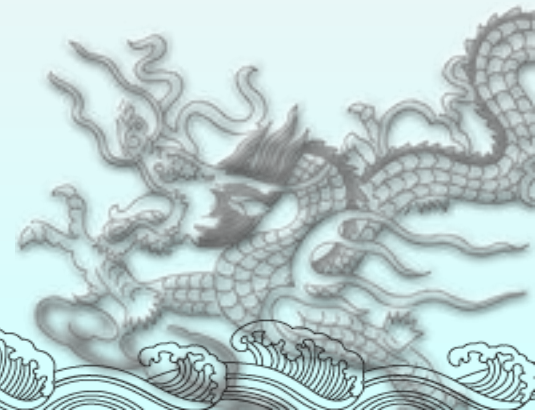
Nozzle cooling modules   Water processing module   Heavy oil transmission module

Heavy oil unloading module

SAUDI power station project Fuel oil Supply Unit

PAKISTAN 9L32/40 power station project Fuel oil Supply Unit , Diesel Unit etc .

- Debug Service : Our products & service can meet overseas demands .



Nozzle cooling modules



Lubricating oil supply module



Lubricating oil  
transmission module



High temperature  
water pump module



# Spare parts

Mitsubishi Purifier spare parts



Diesel Engine spare parts





# Spare parts

## Mitsubishi Purifier spare parts



Main seal ring , O Ring



3-WAY SOLENOID VALVE



三通气动阀



FRICTION BLOCK



Connecting pipe



Disc



# Spare parts

## Mitsubishi Purifier



MULTI MONITOR (MM1)



SOLENOID VALVE



GRAVITY DISC



SAFETY JOINT, Oil seal ,



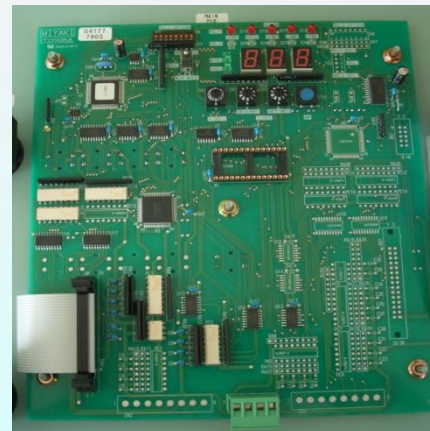
MULTI-MONITOR MM32



automatic control box



Main seal Ring



Board



# Spare parts

## Mitsubishi purifier spare parts



Oil seal



Motor



Mechanical Seal



O Ring

## Diesel engine spare parts



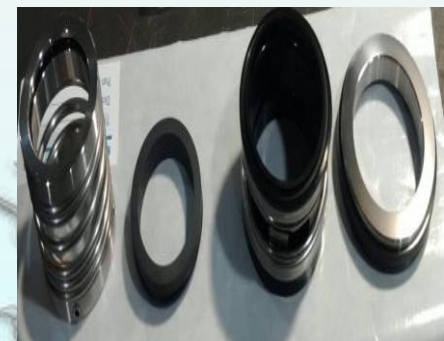
Pressure gage



Cylinder cover



Mechanical seal



# Spare parts

## Diesel engine spare parts



Cylinder head



Cylinder Liner



Air-cooler



The exhaust system assembly



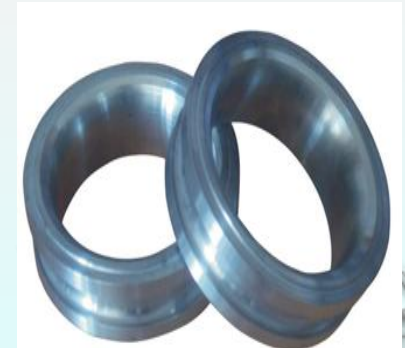
Nozzle



Fuel Injector



Inlet valve ,Outlet valve



Valve seat



# Spare parts

## Diesel engine spare parts



Gasket ,Bolt 石墨垫片



Connecting rod bearing



Filter Cartridge



Stainless Steel Filter



Connecting rod bush



Rockshaft



Exhaust pipe gasket

# Spare parts

## Fuel supply unit



VAF Viscometer



Electronic Flow meter



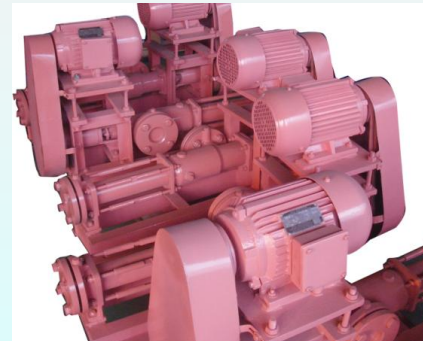
IMO Pump /IMO AB



Temperature Control Valve



Plate Heater



Pump



SETTIMA Pump

# Spare parts

## Other marine spare parts



Marine Lights

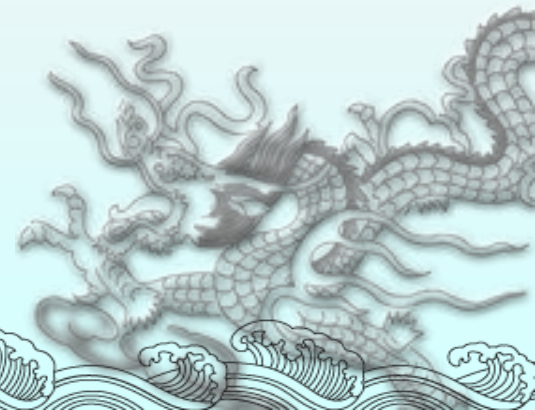


Tools



# Fuel supply unit transformation of technical service

Our company own rich experience senior engineers 4 persons, intermediate engineers 7 persons with many classification society approval such as CCS, LR certifications. Our engineers ,in the marine and land power station aspects have accumulated years of experience in design, production, maintenance. In line with the rigorous, professional, careful and thoughtful service, get the high praise from the majority of customers.





# Fuel Supply Unit & Oil Purifier maintenance, commissioning, after-service

We have a complete service network in the global , timely solving various problems in any place.

We have rich experience ,getting Mitsubishi Kakoki Kaisha Ltd recognition professional after-sales service engineers to provide with a variety of problems of rationalization proposal and maintenance services for customers.

# Thank you for your attention

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