WÄRTSILÄ

WÄRTSILÄ SERVICES IN KOREA

COMPONENT SERVICE



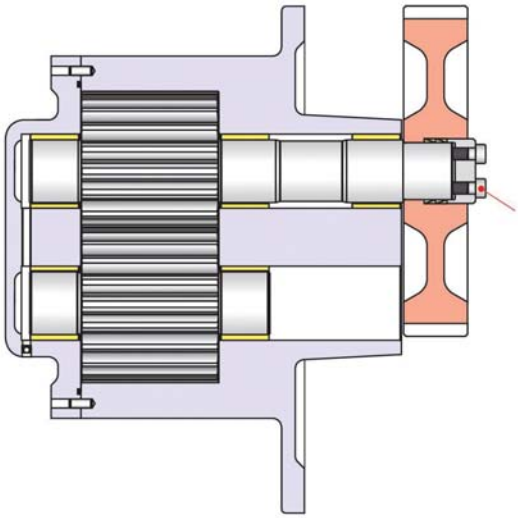


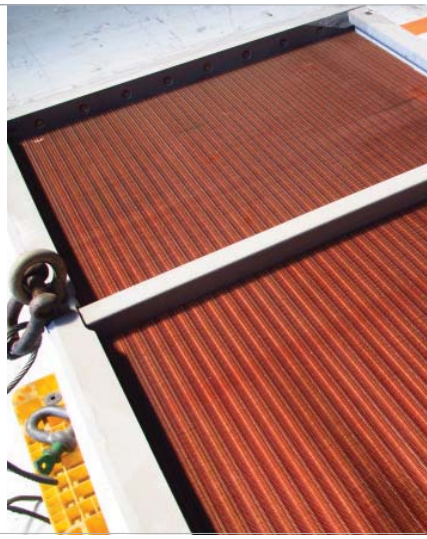
'Component Services'

Wärtsilä Component Services provide a solution to the required periodical maintenance of all engines and engine room equipment. In addition to our standard packages, we offer customized service solutions to fit your needs.

WÄRTSILÄ **Component Service**

- Engine Driven Oil and Water Pumps
- Fuel Feed & Booster Pump
- Charge Air Cooler Cleaning
- Cylinder Liner Honing
- Cylinder Head Overhaul
- Fuel Injection Services
- Governor Services
- Electrical Motors Services
- Automation Component Services
- Crank Angle Encoder System Maintenance
- Cylinder Lubrication System Maintenance





OUR SERVICES

Wärtsilä Services lead the industry in the development of components service such as all engine driven pumps overhaul, charge air cooler cleaning including pressurized testing.

AUXILIARY PUMPS







YOUR BENEFITS

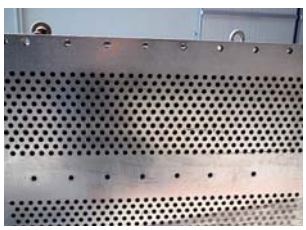
Trouble-free and hassle-free operation guarantees efficiency and no equipment down time by following the maintenance manual schedule for various makes and types of equipment.

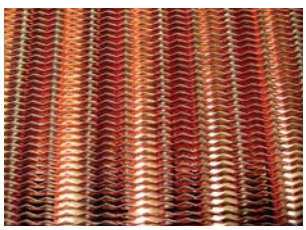
OUR CAPABILITIES

We provide on-site removing, transport to our workshop, dismantling, component cleaning, inspection and/or replacement, gasket renewal, function and pressure tests.
Upon request, we will also return the equipment to your site and reinstall it.

AIR COOLER







YOUR BENEFITS

Increase engine efficiency and lower the exhaust temperatures with clean charge air coolers.

OUR CAPABILITIES

- On-site dismantling and removal
- Transport to our workshop facility
- Ultrasonic or chemical cleaning of air coolers
- Gasket renewal
- Blinding of damaged tubes
- Pressure tests
- Return of components to your site
- On-site reinstallation

WÄRTSILÄ **Component Service**

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OUR SERVICES

Cylinder Liner Honing
- Deep honing for 2-stroke and 4-stroke cylinder liner
- Wave cutting of MAN B&W cylinder liner

Cylinder Head Overhaul
- Standard manual-based overhaul
- Modification and reconditioning

Fuel Injection Services
- Fuel injection valves (2-S, 4-S, DF)
- Fuel pumps (2-S, 4-S)
- Relief valves
- 2-stroke fuel pump blocks
- Fuel nozzles

CYLINDER LINER HONING





- Regular honing of 4-stroke liners will reduce system oil consumption.
- 2-stroke liner honing is recommended to correct for uneven or sudden wear.
- Some engine makers recommend restoring the wave cut shape.

CYLINDER HEAD OVERHAUL





We overhaul cylinder heads in accordance with makers manual recommendation. We are following approved procedures and control the quality during the whole overhaul process. We offer the storage of customer property in our warehouse for faster exchange service.

FUEL INJECTION SERVICES





Well-maintained fuel injection equipment has a great, positive impact on the engine performance and operating costs.

WÄRTSILÄ **Component Service**

Engine Driven Oil and Water Pumps
Fuel Feed & Booster Pump
Charge Air Cooler Cleaning
Cylinder Liner Honing
Cylinder Head Overhaul
Fuel Injection Services
Governor Services
Electrical Motors Services
Automation Component Services
Crank Angle Encoder System Maintenance
Cylinder Lubrication System Maintenance



OUR SERVICES

Woodward Governor
- SG, PSG
- UG-8/10/15/25/40
- PG-16/29/58/200/300/500
- 3161
- PG_EG Actuator
- EGB-3P/10P/29/58

Electrical Actuators
- Woodward ProAct™
- Heinzmann

Europa/Russia (PH-30/50)

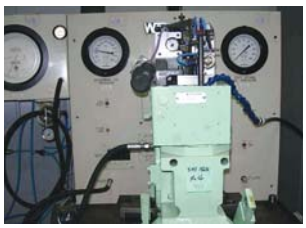
Diesel Kiki(RHD 6/10)

General Electric Works
- Complete electric system recovery from fire or sunken salvages
- Power analysis service
- Insulation test and thermographic measure-ments
- Control console and cabinet upgrades
- Pneumatic system repair and maintenance

Wärtsilä Automation System Upgrade
- SBC-7 M/E remote control system
- Wärtsilä Engine Control system

Non-Wärtsilä Product Commissioning
- Engine / Electrical driven fire pumps
- Free mass vibration compensators
- Water-In-Oil (WIO) monitoring systems
- Gas combustion units

GOVERNOR





YOUR BENEFITS
- Authorized Woodward business partner
- Optimmized governor tuning based on engine characteristics
- Exchange service available for most commonly used types of governor

OUR CAPABILITIES
Governor and actuator overhaul and calibration service with test bench.

AUTOMATION



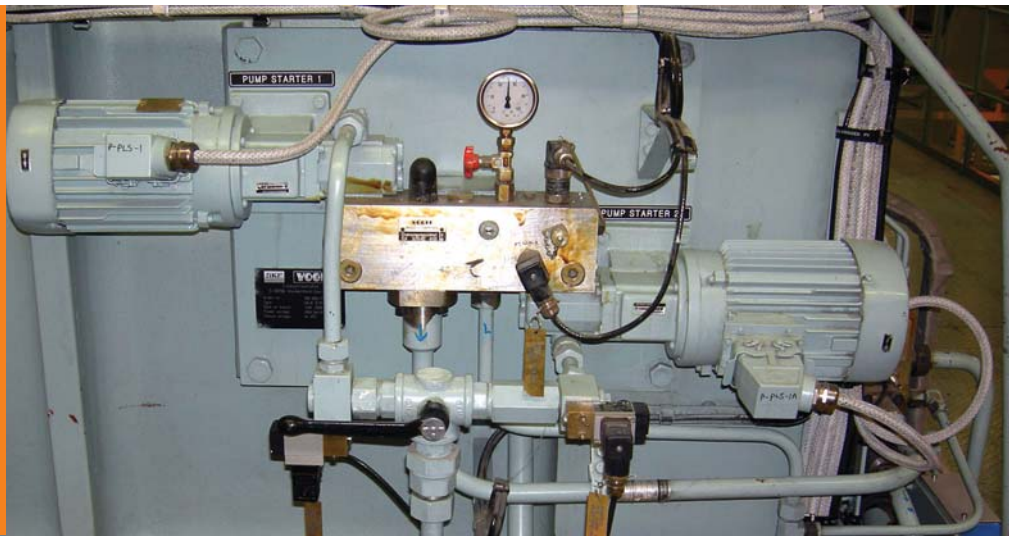


YOUR BENEFITS
With a single point-of-service contact, you can cover your entire work scope including electrical and pneumatic equipment, automation, repair, maintenance, troubleshooting and upgrades.

OUR CAPABILITIES
Our experienced engineers provide electrical and automation services, including installations, retrofitting, and commissioning.

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OUR SERVICES

Crank Angle Sensor (CAS)

- Exchange of sensors and belts
- Bearing replacement for shafts
- Commissioning and adjustment
- Training for operation and after- service maintenance (troubleshooting)
- Owner's manuals recommend an overhaul is recommended after 36,000 hours of operation.

Cylinder Lubrication Pump Service

- Installation of additional fan for CLU 3 pumps
- Overhaul of accumulators for CLU 3 pumps
- Flushing of CLU 3 pump units
- Accumulator pressure check and, when necessary, recharging pressure of accumulator for RPLS & CLU 4 units (can be done during port stay).
- RPLS installation and commissioning.
- Troubleshooting.

CRANK ANGLE SENSOR (CAS) SERVICE





YOUR BENEFITS

Keeping a crank angle sensor and its parts in good function is essential for the safe operation of electronically controlled engines. Wärtsilä Korea Services can complete a full overhaul during one port stay.

OUR CAPABILITIES

- CAS Installation, commissioning, and sea-trial
- Belt tension checks
- FlexView offset value adjustment

CYLINDER LUBRICATION PUMP SERVICE






YOUR BENEFITS

- Save costs on lubrication oil due to optimized cylinder oil injection.
- Trouble-free operations help eliminate piston running problems and guarantee correct feed rates and timing.

OUR CAPABILITIES

- Optimize CLU 3 and RPLS lubrication oil parameters.
- RPLS accumulator pressure charging and oil leakage tests.
- Technical information and support, via e-mail.

WÄRTSILÄ

Wärtsilä enhances the business of its customers by providing them with complete lifecycle power solutions. When creating better and environmentally compatible technologies, Wärtsilä focuses on the marine and energy markets with products and solutions as well as services. Through innovative products and services, Wärtsilä sets out to be the most valued business partner of all its customers. This is achieved by the dedication of over 18,000 professionals manning 160 locations in 70 countries around the world. Wärtsilä is listed on the Nordic Exchange in Helsinki, Finland.

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WARTSILA.COM



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