



Aftersales- Service

Marine Propulsion Systems





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**Not just a vendor –
but your business
partner**

Even with regular preventative maintenance, components wear out over time and need replacement.

ZF Marine Propulsion Systems is dedicated to providing our customers the best possible service, either on-site at your location or at one of our Competence Centers or Service Points.

Our factory trained technicians don't just replace what's broken, they look for the root cause of the problem to fix it right – the first time. ZF Marine Propulsion Systems has the factory trained personnel, technical resources and parts inventory to provide your business with unparalleled support.

With our competence centers and service network ZF Marine Propulsion Systems is equipped to service all ZF Marine products operated worldwide.



You can rely on us!

As a part of the global ZF Group, ZF Marine Propulsion Systems has been a reliable partner for over ninety years within the marine industry. Our experienced staff will assist you in all aspects of Marine Propulsion Systems products.

ZF service starts even before the delivery of a component. Our products are used around the world and our technical staff is available and ready to support our products through the entire lifecycle.

Service Readiness

Reliability is based on readiness for service. It is our goal to ensure service readiness for all our products before they ever reach a customer. ZF implements the preparation of our service teams and service resources early in the development of all our products.



Service readiness includes:

- Fully trained technical service support team
- Service documentation is available in several languages
- Service network is trained
- Spare part kits are defined
- Spare part prices are calculated or can be quoted quickly
- High availability of spare parts
- High availability of special tools

High availability

ZF Marine has established one of the best Aftersales & Service Networks in the maritime sector. Our service teams ensure complete support and we are continuously ready for service when and where our customers need us. Depending on where you are and what kind of service you request, four different levels are at your service:

Level 1: The Product Competence Centers (PCC)

Level 2: The Regional Competence Centers (RCC)

Level 3: The Local Competence Centers (LCC)

Level 4: The Aftersales & Service Points (ASSP)

This four level approach helps us to ensure optimized spare parts supply and service support within the shortest period of time. You will find more information on each level on the following pages.

Partnership instead of business relationship

With a comprehensive package of services, well trained staff, and parts availability we make our promise come true: shortest possible reaction time to service requests. For the entire life cycle of your ship, our service strategy is geared to the highest possible customer satisfaction. Buying a ZF product is an investment in safety and reliability.

ZF is a worldwide leader in marine propulsion systems, supplying a vast range of transmissions, control systems and propellers for all types of ships – from pleasure crafts to commercial and government vessels. Equally comprehensive is the worldwide service offered by the ZF Marine Aftersales organization.



Register your ZF product and enjoy further benefits

If we know the number of ZF products in a certain region we can better prepare for any circumstances by increasing the spare parts availability and highly qualified technical service personnel. Your advantages are faster response times and more flexibility for problem solving. We can offer you maintenance recommendations for your entire fleet and professional help in technical questions. You will be granted access to technical data and history of your unit. In short: better service for you.

In addition, when registering your ZF transmission unit online, we provide you an extended year of warranty at no additional cost!

If your current gearbox is **under standard warranty**, simply register online to enjoy this benefit. This special offer also applies if you have already purchased our extended warranty. In this case, your purchased coverage period will start following the free one year extended warranty.



online product registration:
www.zf.com/marine-service

Entitlement for free one year of extended warranty

- Operators or owners grant ZF permission to contact them for business reasons (e.g. to provide overhaul recommendations and offers).
- Current unit is within regular warranty period and maintained according to instructions in ZF's operation manual.
- Applicable for transmission listed in the current ZF Selection Guide under C, M or L Duty.
- ZF offers an extended 12 months of warranty from the time your warranty ends.

Service Matters – our policy



Regular service is important for all ZF products and should not be forgotten. To facilitate and remind you of oil or filter changes we developed a sticker which tells you exactly when your next service appointment has to be conducted.

Even if your ZF transmission unit is out of warranty, you can still register with us to enjoy the following:

- Create a ticket 24/7
- Get the contact of the nearest service location
- Check the list of lubricants
- Register the product
- Provide past details of particular service or maintenance jobs
- Remind when the next regular maintenance is due

Whenever you need our support, simply scan the QR code sticker.

Contact your ZF service agent/dealer for the sticker.

ZF Marine Global Aftersales & Service Network



- Product Competence Center
- Regional or Sub-Regional Competence Center
- Local Competence Center

Customer satisfaction with the products and services provided by ZF is the topmost objective in all our company's activities. All services integrated into the product cycle, ranging from development and consultancy to aftermarket service are focused on this. Thus, proximity to international customers is of great significance to ZF.



Find your nearest service location and go to www.zf.com/marine-service





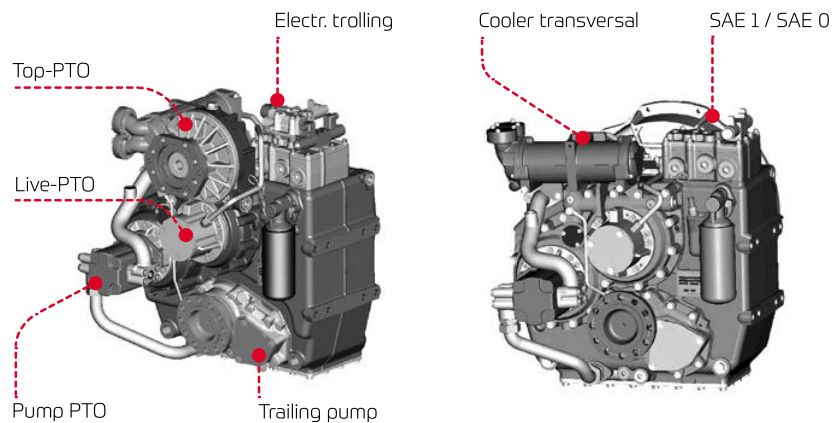
Transmission retrofit & modifications

For current as well as obsolete gear families we can offer modifications, upgrades and retrofits. Whether uprating, retrofitting or changing gear ratio we are your partner.



Possible reasons for gear modifications:

- Transmission ratio no longer works with a new propeller or engine
- Higher engine output results in existing equipment no longer complying with classification society rating
- Missing PTO units on outdated or new transmissions



Example of possible upgrades to ZF 2000 series transmissions. Likewise modifications can be done to the gear ratio or the power rating. For quotations please contact Regional Competence Centers or Product Competence Centers.

Whether on-site or in the workshop, our technicians are well prepared for the job.



Repair & testing

Experience is indispensable

Our experienced service engineers develop economical repair sequences for each assembly group of the transmissions. From input to output as well as all electronic components, this knowledge finds its way into our repair documentation.

Responsive, reliable, highest quality

In addition to functional tests, latest testing technologies allow for load tests at simulated operating conditions.



Testbenches in our PCCs and selected service locations.

Scheduled maintenance

Giving you one less thing to worry about!

Maintenance level	Operating hours limit	Time limit
A 1	every day of operation	3 months
A 2	500	6 months
A 3	2000	2 years
A 4	4000 to 6000	5 years
A 5	during every basic overhaul of engine	operating condition of transmission

(Example values)

A clear maintenance structure

Due to product design just a few spare parts are subject to replacement at service levels A2 – A4. This helps operators to extend product life significantly at moderate cost.

Costly repairs can be avoided through scheduled maintenance. The advantages are obvious: maximize product readiness and maintenance can be planned in advance.



Your benefits:

- Predictable life-cycle
- Minimized life-cycle costs through avoiding unexpected break downs and extensive demand for repair
- Your vessel is ready for operation at any time
- Maximized vessel uptime

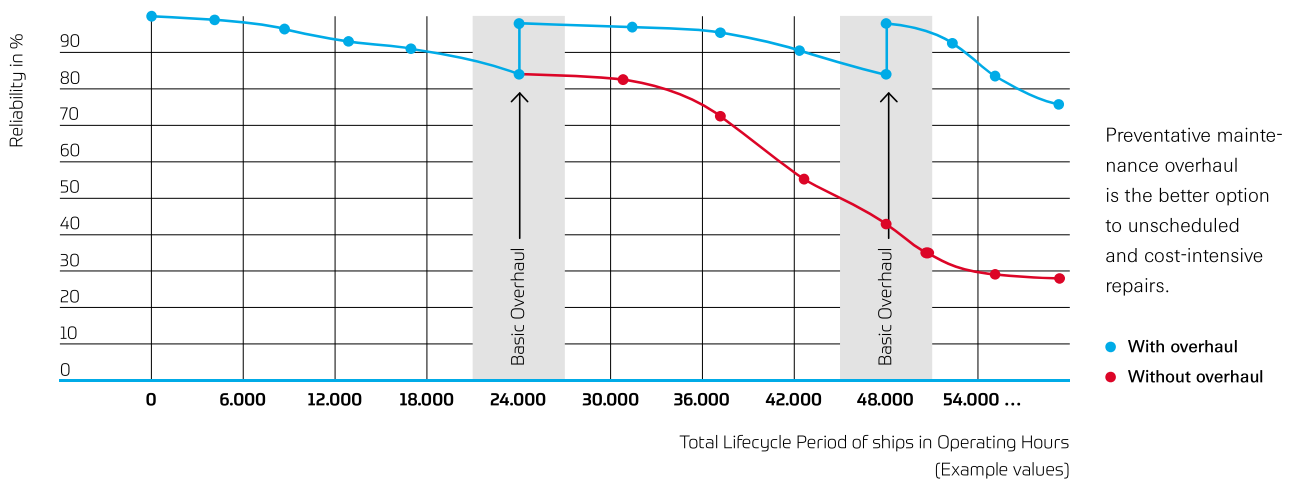


Preventative maintenance & overhauls

Even with regular scheduled maintenance component wear is inevitable. If the transmission is still operational at the time of a major engine repair or replacement, preventative maintenance and overhauls can be a very economical alternative to replacement unit purchase. In maintenance stage A5 all wear parts are replaced, major components are examined and measured for tolerance, technical updates are performed, and the transmission is brought back to an "as new" condition. After the overhaul is complete the transmission is ready for another operating cycle.



Advantages of a major overhaul by the original manufacturer ZF



After a major overhaul, the requirements for a gearbox remain the same as before. Therefore all the overhauled transmissions are tested with the latest testing technology. Both function and load tests are possible, depending on customer requirements.



Advantages of an overhaul by ZF:

- Factory trained personnel
- Latest testing technology
- Original equipment parts
- Technical updates



Spare parts & spare units

Only genuine ZF parts provide the superior quality our customers have come to expect, as they must pass the same stringent quality processes as new production parts.

Complete replacement transmissions

If your vessel operates on a duty cycle that cannot allow for extended downtime for repairs, ZF can provide complete “swing” transmissions to be kept in the vessel’s inventory dockside. Swing transmissions minimize downtime in the event a major component repair is necessary.



Advantages of genuine spare parts & spare units:

- Functional reliability
- Product liability
- Comprehensive warranty
- High availability

Logistics

With a sophisticated order processing system in place, ZF Marine services more than 1,000 customers in 145 countries. Advanced communication systems and effective warehousing processes result in smooth logistics.

Responding quickly and flexibly to customer requests is our strength. This is made possible by the availability of real-time information and the continuous optimization of our supply chain management.

Integrated Logistic Support – ILS

Our customers do not only purchase our products, they request our system support over the entire working life of their ships – thus keeping life cycle cost under control.

The issues in focus are:

Reliability

Availability

Maintainability

Safety



Services and maintenance programs can be specifically tailored to customer requirements, in particular:

- Time between Overhaul
- Maintenance Work Steps
- Parts Demand
- Mean Time Between Failures (MTBF)
- Mean Time To Repair (MTTR)
- Line Replaceable Units
- Shop Replaceable Units
- Logistic Support Analysis





Quality & warranty process

A global network of engineers, technicians and service staff is committed to transferring all field experience into quality improvements. Reliability, durability and the high quality standard of ZF products create high customer value.

Quality assurance

At ZF you buy quality. Only with original parts from ZF you can be sure they continue to meet the intended design requirements. A comprehensive quality system and its full implementation guarantees excellent quality. ZF is certified to an established quality management system.



ZF products are covered by a worldwide warranty:

- Original equipment
- Repair
- On-site support
- Maintenance
- Overhauls
- Spare parts
- ZF Marine optionally offers extended warranty coverage up to 60 month after the initial purchase

Training

ZF Marine Aftersales not only supplies spare parts in OEM quality, but it rather makes its extensive expert knowledge also available to customers and partners in various training sessions.

Each new vessel and product generation brings with it increased requirements at each level. ZF Marine Aftersales supports the market through its extensive engineering and service knowledge. With a wide ranging intensive technical training program ZF Marine Aftersales addresses manufacturers' service facilities (OES), international service partners and, of course, employees in its own service subsidiaries.

Service training is provided by staff who brings a wide range of hands-on experience from our service environment. Content of courses can be adjusted to individual needs of our customers and trainees. Product training can be organized in our factory training centers, at a service subsidiary or on-site at our customers' premises.



Our training programs include:

- Commissioning
- Operation
- Maintenance
- Repair
- Overhaul
- Failure analysis
- Definition of repair parts





B-G-31 MENARA PRIMA,
JALAN PJU 1/39,
DATARAN PRIMA 47301,
PETALING JAYA, SELANGOR,

EMAIL : SALES@MECTRA.COM.MY
TELEPHONE : +60 3 78861732
WWW.MECTRA.COM.MY