



Marine Power International

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The team at **Marine Power International FZC (MPI)** has been associated with Shipping since 1978 and is specialized in the field of spares and services for Diesel/Gas engines, Turbochargers and Separators. Being conveniently located within an International Airport Free Zone in the UAE, **MPI** has the advantage of ensuring quick & on time deliveries to customers worldwide.

An extensive inventory of spares for Diesel and Gas engines is held in a 5500 m³ warehouse with temperature controlled darkrooms for o-rings and gaskets. The stock is controlled by a bespoke ERP system that ensures ready availability of OE quality spares. Distinct article numbers ensure that similar components with different material specifications or oversizes are kept segregated.

MPI represents various original component manufacturers who supply the Engine makers. Sourcing from these Manufacturers, each an acknowledged leader in their own field, **MPI** builds packages for various engines.

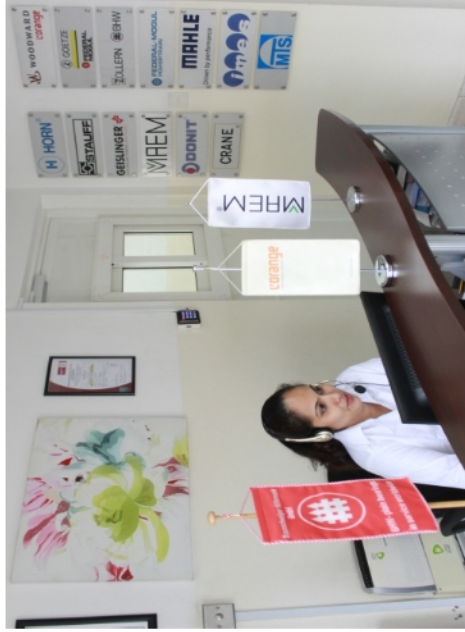
Since the component is of the same make as supplied to the engine maker, the client is assured of an identical quality and guarantee, but at a very competitive price. Our guarantee is backed by that of the component manufacturer and sometimes exceeds that provided by the engine maker.

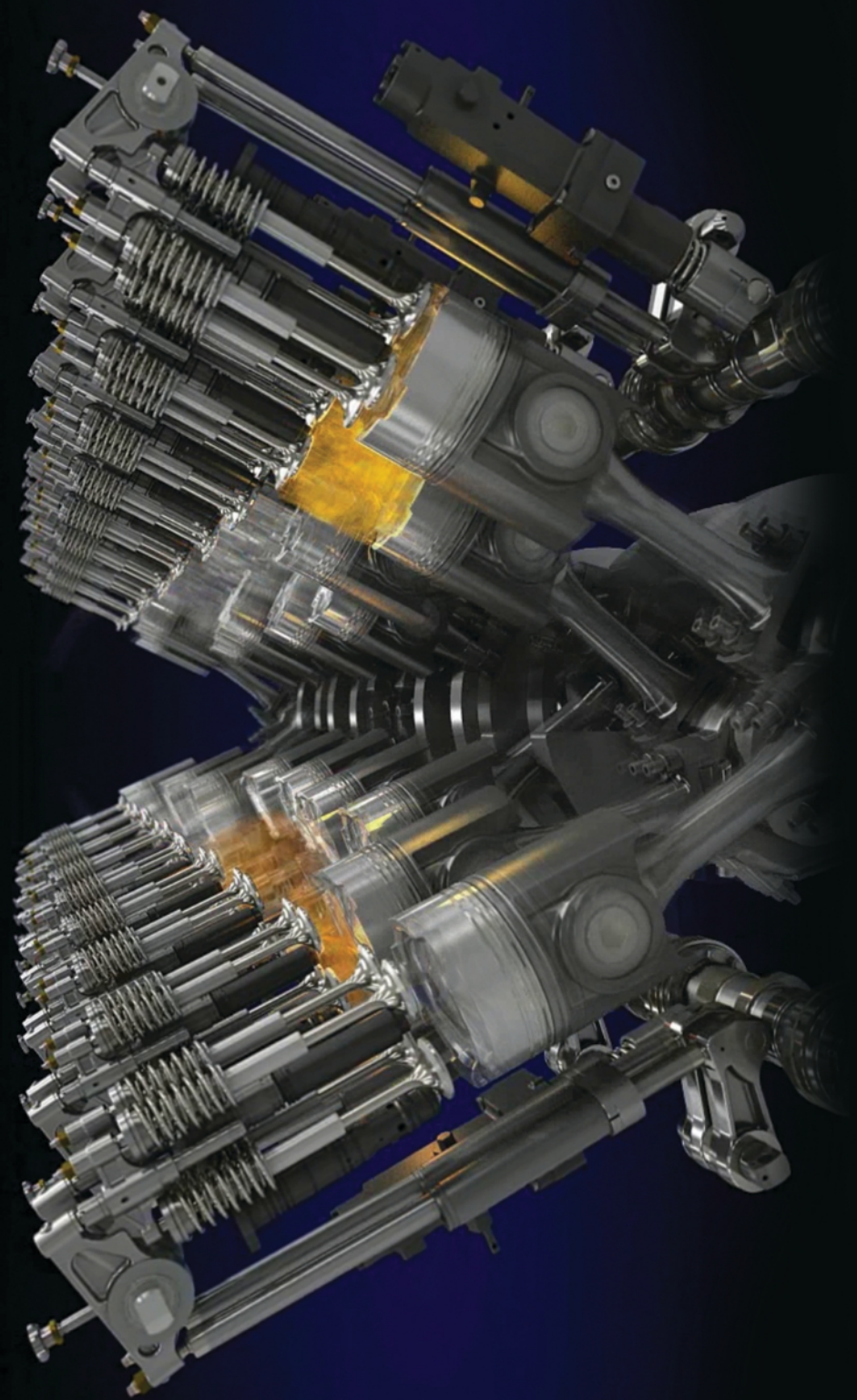
At **MPI**, the highest quality standards are maintained. Acceptance criteria for each part is detailed and followed rigorously. Our quality department includes a 3-D CMM machine that scans incoming components in a controlled atmosphere.

Should we not carry ready stock in the UAE for your particular brand of engine, we would be happy to expand our inventory to suit your needs.

MPI also provides Technical advice, Service support and Engine Performance analysis. Competent Service teams comprising Team leaders from various Engine makers are available round the clock. The knowledge of our technical staff, who attend regular training courses, is buttressed by our Principals who design these components for the engine makers.

The fact that various top companies have entrusted us with operation and maintenance contracts of their power plants, is a tribute to our technical competence.





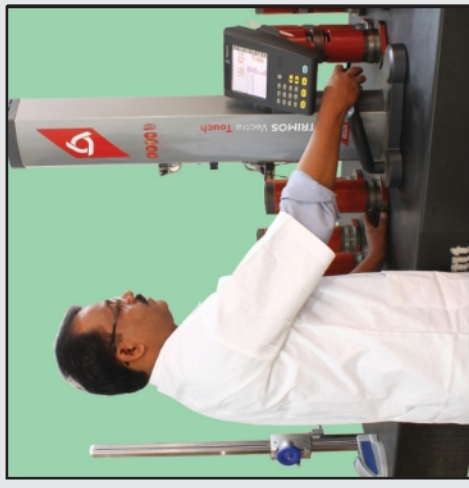
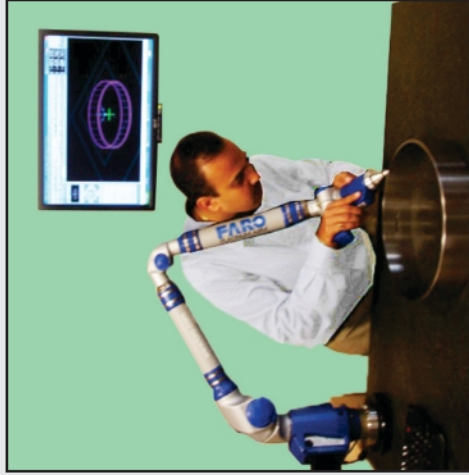
INFRASTRUCTURE

- A 5500 m³ warehouse & ERP controlled inventory
- Temperature controlled room exclusively for o-rings & gaskets



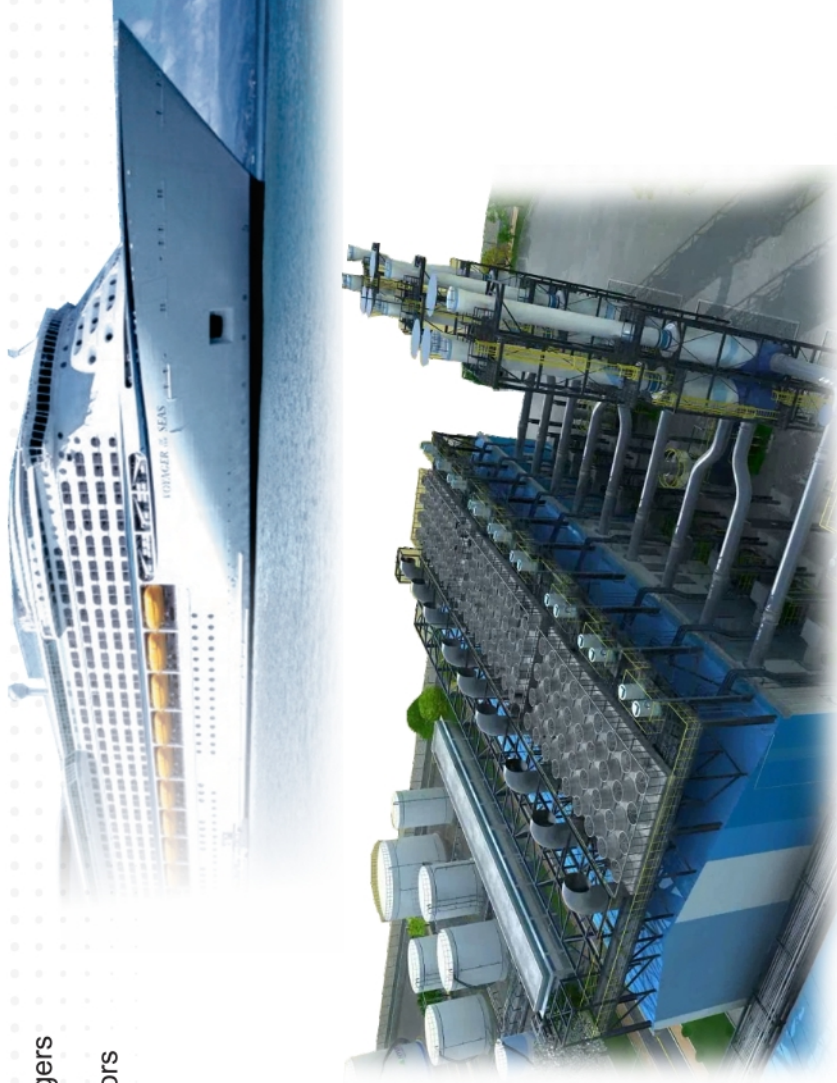
QUALITY

- 3D CMM for precise measurement & profile comparison
- Digital Equipment including Trimos for accurate measurements and 100% quality assurance



OUR ACTIVITIES INCLUDE

- OE Spares and Service for 2- and 4-stroke engines (Diesel, DF and Gas)
- Erection, Operation & Maintenance and AMC of Power plants
- Spares and Service for Separators and PHE's
- Spares and Service for Turbochargers
- Spares and Service for Compressors
- Emission reducing Technologies
- Ship performance monitoring
- Instrumentation and Control
- Bearing monitoring systems
- Consultancy and Audits
- Dual Fuel conversions
- Performance analysis
- Oil Mist detectors
- Training



Bellows / Expansion Pieces & Hoses

MPI delivers :

- Axial / Universal Expansion joints for Exhaust gas system with Inconel sleeves
- Stainless steel bellows
- Rubber expansion joints of NBR, EPDM & Viton, for various temperature and pressure ratings
- Various types and sizes of hoses & pipe couplings

These are sourced from reputed European suppliers.



Control & Monitoring

MPI stocks control & monitoring equipment sourced from Europe that include :

- Pressure gauges with bronze or stainless steel internals
- Thermometers - Bimetal and V - Line, Liquid in Glass type
- Combined Pressure gauge and Dial type thermometers
- Exhaust gas pyrometers - Vibration resistant silicone filled
- Exhaust gas thermometers - Simplex and Duplex type (including Thermowells) and PT 100's
- Pressure & temperature transducers and switches
- Differential pressure switches
- Speed sensors, Proximity switches, Tachometers & Hour counters
- Limit Switches and Position Sensors



C-M-R
GROUP

Danfoss

Brannan

REXOTHERM

Valve Train Components & Fuel Tappets

MPI delivers various assemblies and components like:

- Lifter housings
- Valve tappet housings
- Profiled rollers
- Pins & tappets
- Bushes
- Springs
- Push rods & protecting pipes



*Makes / models stated are for reference purpose only

Cylinder Heads

MPI delivers complete cylinder head assemblies, suitable for Medium Speed diesel and gas engines. These Cylinder heads have been in operation since 2012.

Cylinder heads are manufactured with GGG40/50 castings, as per OEM specifications using latest CAD/CAM modeling methods. Castings are produced with prior simulation. Besides bare cylinder heads, various assembly stages can be supplied.

All the cylinder heads & components are supplied with a complete replacement warranty. Each cylinder head undergoes thorough conventional inspection by experts and detailed checks on a CMM.

All the cylinder heads are pressure tested and class certification is available as an option.

Current scope of supply of Wartsila heads :

Vasa 32/32DF/V34SG

W20

W26

W32/W34SG

W46/46GD



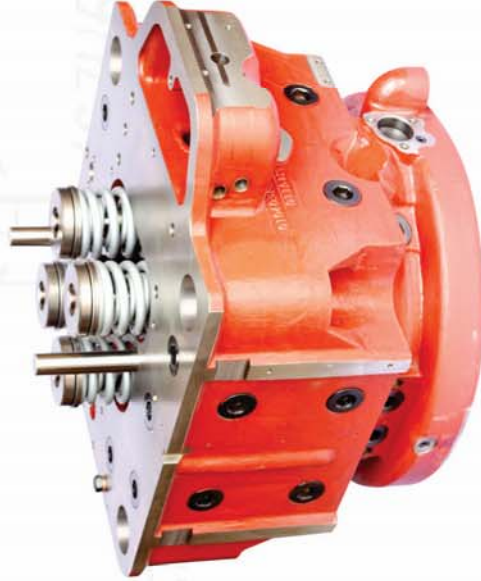
W32



W20



34SG



W46



V32

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IMES

Engine Condition Monitoring & Performance Analysis Systems



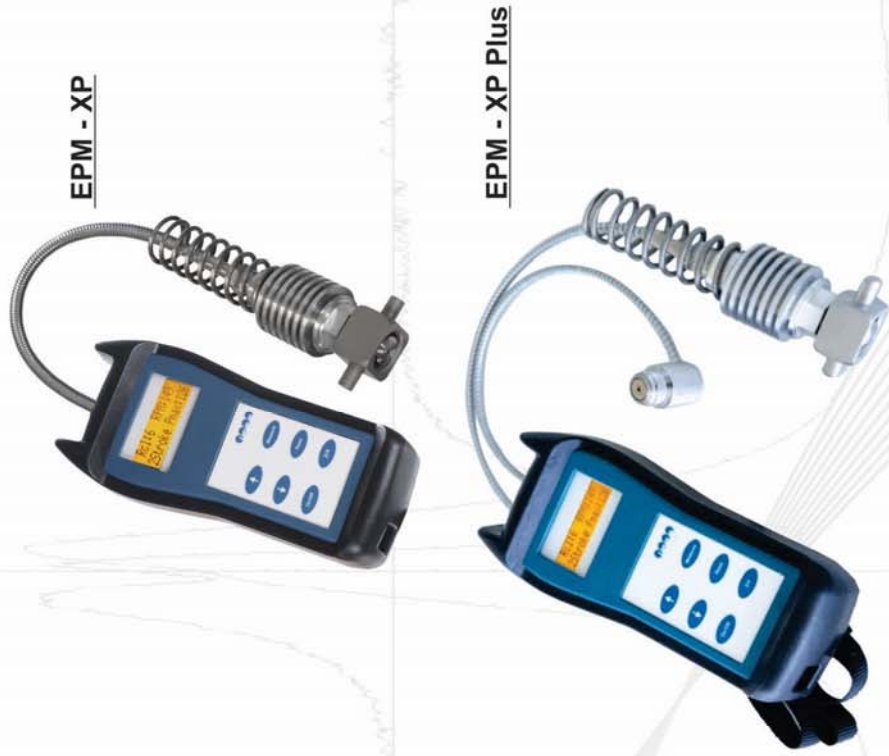
IMES pressure indicators are available for measurement of cylinder pressure on 2 - stroke and 4 - stroke engines and for Gas Engine balancing. These can record cylinder pressure values on a maximum of 20 cylinders on 2 stroke diesel engines operating at speeds of 40 to 300 rpm and on 4 -stroke medium and high speed diesel or gas engines with speeds from 200 to 1500 rpm.

No TDC sensor is required and data can be downloaded in the computer for generating reports.

Following information is available :

- Pmax & Pcomp diagram
- IPOWER - and IMEP calculation
- Beginning of Ignition
- Pressure - Volume diagram
- IMEP & IMEP balance diagram
- Trending

With **EPM - XP Plus**, leakage past exhaust valves can also be detected.



- **IMES offers on-line measurement of Cylinder pressure on Diesel or Gas engines up to 20 Cylinders**

- Combustion pressure sensors are very accurate and designed for 16,000 operating hours
- These systems enable diagnosis of malfunctions and assist in setting and optimizing of engine parameters and balancing the engine
- **Replacement Combustion sensors are available for known makes for both 2 and 4 stroke engines**



Cylinder Head Components

MPI delivers OE Cylinder head components for 2 and 4 stroke engines.

These include :

Inlet and Exhaust Valves : in valve steel with Stellite hardfacing and in Nimonic 80A or Nimonic 81 with Colmonoy (P6) hardfacing

Valve seats : Open and Closed type in Valve steel and Superalloy. Over - sizes are available in steps of 0.50mm, from stock

Valve guides : Standard and Hardened. Oversized valve guides are also available



Rotocaps and Turnomats

Valve Cages : Including re - manufacturing

Valve Springs : Helical compression springs. Hot and Cold formed



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Fuel Injection Equipment

Leading in injection technology. Yesterday, Today and Tomorrow.

L'Orange, as a pioneer in state-of-the-art injection technology, has stood for innovative strength, knowledge and experience for more than 80 years. The company, with its long tradition, develops, produces and sells advanced injection systems for large engines from 1,000 to 40,000 kW. L'Orange presently employs over 1,000 people at its locations in Stuttgart, Glatten, Wolfratshausen, Rellingen, Suzhou and Ningbo (China). Its service spectrum encompasses the entire product range in injection technology, including state-of-the-art common-rail technology for all off-highway diesel and heavy fuel oil applications.

Successful engine manufacturers worldwide rely on L'Orange products. These international customers specialize in commercial freight vessels, yachts, power plants, railways and heavy vehicles. One of L'Orange's key strengths is the realization of highly customized system solutions targeted to its customers' specific requirements. With a worldwide dealer and supplier network, L'Orange is always close to its end-customers.



MPI is an authorised distributor for L'Orange fuel injection equipment

Camshafts

MPI delivers 'Case hardened' camshafts for a variety of high and medium speed applications.

Our principals in Europe have been producing camshafts since 1932 and supply all leading engine manufacturers. All machining and heat treatment processes are carried out in-house, ensuring strict quality control and hence, prolonged lifetimes.

Smallest to the largest cams can be produced in any batch size.



Bushes and Shims

MPI delivers a wide range of bushes, sleeve bearings, slide and thrust bearings for Camshafts, Intermediate gears, Regulating shafts, Tappet rollers and Rocker arms in copper, bronze and aluminum alloys. These include slit and shrink fit type bearing bushes.

MPI also delivers shims of various designs for Marine head type Connecting rods.

Critical fasteners

MPI delivers critical fasteners of Material numbers 1.6582 , 1.7225 and 2.4952 (Nim80A) . These are manufactured by a market leader based in Europe. All bolts/studs are certified by an IACS Classification society.

These include :

- Connecting rod bolts, studs and nuts
- Cylinder head studs and nuts
- Piston securing screws, studs and nuts
- Main bearing studs and nuts
- Lateral screws and nuts etc.



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Liners & Anti Polishing Rings

MPI delivers cylinder liners for 4-stroke heavy duty applications ranging from 150 to 500 mm.

For 140+ years, our principals in Europe have been producing centrifugally cast cylinder liners with different chemical structure, microstructure and mechanical properties. The centrifugal casting process is a foundation for a flawless and absolutely pressure-tight material microstructure. Most of the liners are machined as finished parts including surface treatment (honing).

Material used for cylinder liner production has a significant effect on its properties, mainly oil consumption, engine life & emissions. Different surface treatments are used for the optimization of wear and stress resistance.

MPI also delivers Anti Polishing Rings (APR) for these cylinder liners.



Pistons

MPI delivers Pistons ranging from 150 to 580 mm diameter for heavy duty 4-stroke applications.

Our Principals are market leaders for development and supply of large-bore pistons for gas, diesel, heavy oil and dual-fuel engines which withstand peak pressures beyond 250 bar.

For all areas of application, we offer a broad range of product and material choices: cast or electron beam-welded aluminum pistons, as well as composite pistons with aluminum, nodular cast iron, and steel skirts. Composite pistons are bolted with piston crowns made of forged steel. Steel pistons are delivered not only as bolted models, but are also available as friction-welded or high-temperature brazed versions.



Gudgeon Pins

MPI delivers Gudgeon pins in 18CrMo material from dia. 90 mm to dia. 220 mm for medium speed 4-stroke diesel engines with peak pressures in excess of 250 bar.

Each Gudgeon pin is ultrasonically tested for material imperfections or cracks, & stamped accordingly. Gudgeon pins for various engine models are available ex stock at all times.



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Plain Bearings

More than 80 years of experience in the development and manufacture of metal slide bearings and highly developed production processes for slide bearing composite materials make our principals a global leader in the field.

Used in diesel and gas engines, slide bearings are also integrated in turbines, generators, gears and many more machine types worldwide. A wide range of designs of special slide bearing and multilayer composite cast parts respond to the specific demands of each type of application.

A tailor made product range is available for :

- Engine bearings for 2-stroke and 4-stroke large engines in ships, locomotives and stationary plants
- Industrial bearings including thick-walled radial and axial slide bearings
- Radial and axial tilting pad slide bearings for a wide range of industrial applications
- Slide bearings for hydroelectric power stations
- Housing-type slide bearings standardized over various size categories for broad industrial use

Apart from conventional slide bearing technology, **MPI** also supplies

- Hydrostatic bearing systems
- Aerostatic bearing systems
- Hydraulic components

They are used especially in precision engineering.

MPI stocks bearings for most 4 stroke applications



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Cooling Water and Lube Oil Pumps

MPI delivers HT & LT cooling water and Lube oil pumps for the following engines:

- Wartsila • MAN
- RR Bergen • MaK

Individual components such as impellers in various diameters, pump shafts, screws, gears, clamps, mechanical seals, bearings, bushes, sealing kits and sub-assemblies are also available.

The gears are precision machines and heat treated.

High quality GGG40 castings are used for housings and covers.

Aluminum moulds ensure better casting quality, minimal defects and superior surface finish.



Rocker Arms & Yokes

MPI delivers Rocker arm assemblies made from FCD700 castings and Yokes / bridge pieces for Wartsila and MAN 4-stroke engine models.



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Dr. E. Horn GmbH & Co. KG

Oil Mist Detector (OMD)

MPI stocks and provides service for Dr. Horn Oil Mist Detectors in the Middle East.

MPI offers

- Installation & Commissioning
- Repair and Reconditioning
- Trouble Shooting

MPI Advantage

- Test Bench for testing OMD
- Trained Engineers
- Ready availability of spare parts

The compact **OMD** for engine room monitoring for diesel and gas engines is a reliable and cost - effective **Engine Protection System**. It does not require complicated piping on the engine.



Bearing Distance Monitoring System (BDMS / BTMS)

For large 2 - stroke marine engines, BDMS warns about the critical / unexpected temperature rise and wear of the bearings.

By installing BDMS, open-up inspection periods of bearings can be doubled.



Crankcase Protection System (CPS)

For 4 - stroke marine engines, CPS helps in monitoring of bearings by measuring potential difference between the crankshaft and the engine block.



Other Products

Water in Oil Sensors



Multifunctional Indicators



360° Encoders



Indicators (Analogue / Digital)



Speed Sensors



Flexible Mounting Indicators



CAN Encoders



Double Channel Safety System



Piston rings

MPI supplies OE piston rings for 4-stroke diesel and gas engines.

These piston rings are developed for heavy-duty high and medium speed applications and provide:

- Maximum durability
- Optimal fit
- High wear and corrosion resistance
- Excellent heat-conducting capacity

These piston rings are manufactured in Germany and have anti-scuffing properties that promote smooth engine operation, reduced oil consumption and long engine life.

Our principal's commitment to research is unmatched, with 200+ scientists, engineers and technicians dedicated to product testing and development. Our supplied piston rings are subjected to rigorous design and development processes to perfectly match them to the applications.

MPI also supplies OE Piston rings for all 2-stroke engines. Our principals have been designing and manufacturing Piston rings for all 2-stroke engines for over a century. They work in close co-operation with leading engine manufacturers and their rings are guaranteed to meet the standards of today's high-performance engines. These piston rings can resist high temperatures, a very corrosive environment and heavy wear, and are capable of creating an optimum oil film between ring and liner

There is a range of standard rings available for various different operating conditions such as:

- Standard ring pack
- Quick running-in ring pack
- Heavy-duty ring pack
- Groove wear resistant ring pack

In more severe conditions our principals can also tailor make a solution to address the required performance. They have the technology in 4 key areas which determine a ring's unique properties, enabling them to develop optimized and reliable ring packs for the most advanced large bore engines :

- Base materials
- Coatings
- Geometry
- Tribology

Tribological test rigs and simulations using advanced computational methods are applied in the development of new ring packages.

Ring packs for MAN, Wärtsilä and Mitsubishi 2-stroke engines are available for immediate delivery.



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Filtration equipment

MPI delivers pressure filters, duplex filters, bypass filters, suction filters, return-line filters, breather filters, auto-clean filters and highly efficient filter elements in standard versions (Industrial norm DIN 24550).

MPI also delivers accessories, filter equipment, and service equipment for the care of hydraulic fluids and lubricants.

Our principals have been active since the early 1960s in the filtration of hydraulic fluids and lubricants. Their superior technical expertise and excellent product quality have made them one of the world's leading manufacturers of filter systems, equipment, and accessories for fluid technology.



Gaskets, o-rings, sealing rings and Sealing kits

MPI delivers:

- Gaskets for Air coolers and flanges
- Metal gaskets in Stainless steel, Cu, Fe and Al
- Spiral Wound gaskets
- Double jacketed gaskets
- O-rings in NBR, HNBR, EPDM, Viton and Kalrez
- Oil seals and Gamma rings
- Mechanical seals
- Kits for various IMO pumps
- Sealing sets



Tools

MPI delivers various tools for popular engine types:

- Crankshaft deflection gauges
- Pressure and Temperature calibrators
- Hydraulic jacks for Cylinder heads, Main bearing and Connecting rod screws
- Fuel pump calibration tools
- Piston support surface measurement tools
- Injector testing equipment
- Hand and Air operated Hydraulic pumps and hoses.



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