



## MANNOL Marine 1230 2404

Highly effective mid-alkaline mineral motor oil for marine throttle and crosshead, main and auxiliary diesel engines operating on distillate fuel with a sulfur content of less than 1.5%.

Product properties:

- They have excellent anti-friction, anti-wear and extreme pressure properties, which significantly prolongs the life of the equipment in all, even the most extreme, operating modes and provide significant fuel economy;
- A special additive package in combination with natural antioxidants gives the oils increased thermal oxidative stability, which, combined with excellent detergent-dispersant properties (TBN > 12), effectively reduces carbon and varnish formation, prevents the formation of deposits of all kinds and maintains engine parts with excellent cleanliness throughout the entire interval between replacements. They retain their antioxidant properties for a long period of time;
- Perfectly neutralize strong acids generated during the combustion of fuel in the crankcase;
- The unique highly refined mineral base provides the oil with oxidation resistance to aging even in moderately severe operating conditions, and due to its reduced evaporation and high flash point, it reduces oil consumption "on waste", which allows to significantly increase the oil change interval, which reduces operating costs;
- Effectively protect engine parts from all types of metals and alloys from all types of corrosion during ship operation and during downtime;
- Have excellent filterability;
- Have reduced foaming;
- Effectively combat the increase in shear stress during operation caused by an increase in viscosity due to soot dispersion;
- They have excellent water separation properties and prevent the formation of an emulsion with water. When contaminated with sea water from the air and the ingress of fuel retains high performance properties;
- Special inhibitors prevent corrosion caused by sea water and salt fog, as well as aggressive environmental influences in the hold.

Designed for use in general and separate lubrication systems for low-, medium- and high-speed diesel engines of ships in the marine transport, fishing and river fleets and in industry. Suitable for lubricating cylinders and bearings of the cylinder-piston group of some types of crosshead diesels.

**Specifications**

CATERPILLAR  
DAIHATSU  
HIMSEN  
SKL MOTOR  
MAN DIESEL  
Wartsila

**Recommendation**

API CF

**PACKAGING**

|     |           |         |  |
|-----|-----------|---------|--|
| 10L | MN2404-10 | Plastic |  |
|-----|-----------|---------|--|