

# Piston Service Solution

## Genuine Parts



### Introduction

Many customers are forced to make short term planning for major overhauls; this does not always take into account the previous maintenance history or budget constraints. In recognition of this, Caterpillar now offers service solutions for medium-speed engines (MSE) of the Cat® and MaK™ brands for critical components.

Probably the most important part of a diesel engine is its piston. Transmitting the combustion forces to the crankshaft, the piston not only compresses the original air volume by 20:1. It also travels at up to 14 m/s or 50 km/h, reversing direction ten times every second.

#### What makes an MSE piston service solution?

- One complete service solution including crown, skirt, rings and gaskets as a complete exchange piston all on board and all at the same time.
- One price, one variant, one box all covered by Original Equipment Manufacturer (OEM) guarantee and Caterpillar distributor warranty from one original and genuine source.
- Option to return your used pistons for remanufacturing and reuse.

### Frequently Asked Questions

#### How much longer can a vessel owner operate once a ring breakage occurs?

Independent of the load at which the breakage occurs, the engine should be stopped immediately. However, the risk of piston ring and piston seizure may occur before the engine stops rotating. Therefore, serious consequential damage may still occur.

#### What are the biggest and most common damages that occur when looking at pistons?

Piston seizure by lack of lube oil lubrication, lack of cooling oil, piston ring seizure as well as piston ring breakage and excessive ring groove wear are the most common damages that may occur.

#### How do we prevent excessive ring groove wear?

Fuel ignition quality, lube oil cleanliness, fuel injection maintenance and operational profile all play a role in excessive ring groove wear. Using the original combination of groove and piston ring materials will prevent excessive ring groove wear and reduce carbon formation.

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The MSE piston service solution set consists of: crown, skirt, rings and gaskets.

## Frequently Asked Questions (continued)

### What are the consequences of having carbon formation in the groove?

When the carbon layer blocks the rings from moving optimally, the pressure build up and decrease within the piston rings leads to increased wear at groove and piston ring. Lubricating consumption will increase and piston seizure may occur.

### What would occur if increased wear at groove and piston ring occurred?

If allowed to continue, the piston ring temperature will increase and as a result wear will accelerate. This could lead to blow by, piston seizure and potentially a more serious crank case explosion, with consequential damage to main bearing journal and crankshaft.

### For what type of engines is this kit available?

This kit is available for all MaK current engine models (M20, M25, M32 and M43). In the near future the scope of supply will be expanded to the older engine types.

## Your Benefits

- Availability of all necessary parts
- Lower operating cost (TCO)
- Peace of mind for the operator
- Quality and reliability



*"No one else has the ability, availability or protection of the OEM in the aftermarket."\**

\* MaK customer



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