

Our medium-speed engine types are successfully used in ships and power plants worldwide. Given this commitment, we are continuously monitoring the performance of our products in the field. As a manufacturer of premium quality products, it is always our intention to inform you about our technical improvements and developments.

During the new pump's developmental phase, MAN PrimeServ set its focus on new technological innovations to replace the conventional injection system.

MAN has redesigned the 32/40 (CD) injection pump and established a new state-of-the-art standard. It is setting a new benchmark in reliability, which is unique in the market. The new MAN Mark 3 (Mk3) injection pump significantly reduces lacquering and all associated side effects.

Five reasons for a design update:

- Sticking fuel pumps/lacquering
- Fuel oil diluting the lube oil
- Reuse of fuel oil leakage
- Optimized assembly
- New fuel range (available from 2020)

Design features

Sealing ring

The sealing ring provides an effective separation of the fuel oil and lube oil areas in the fuel pump. With every stroke, the plunger is stripped and the collected clean fuel oil is dissipated.

Flushing groove

The Mk3 fuel pump has an additional groove in the lower part of the cylinder connected to the fuel inlet of the pump casing. This provides a permanent flushing effect, which cleans and cools the cylinder and plunger.

Coated plunger

The plunger is coated with a diamond-like carbon layer. This results in decreased friction and good running properties of the pump element.

Action Code: When convenient

Mk3 injection pump

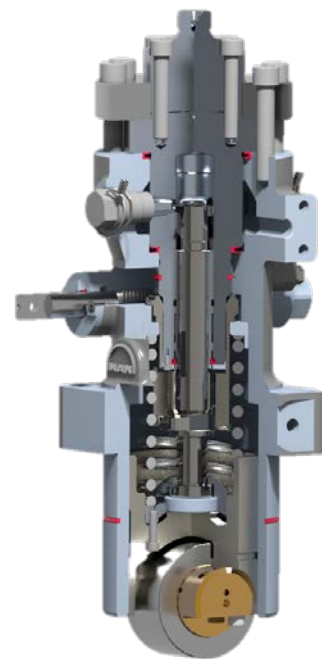
MAN Energy Solutions

PrimeServ Customer Information

PCI No. 416 / February 2020

Concerns

Four-stroke engines
L+V32/40, L+V32/40CD
(480/500 kW/cyl)



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Regulating mechanism

The Mk3 fuel pump features a partly toothed regulating mechanism. One big tooth in the center position avoids a wrong assembly of the regulating parts.

Roller bolt

The roller bolt is made of aluminum-bronze material, which provides excellent running ability with lower friction and higher resistance to wear.

Figure 1 and Figure 2 show all new design features of the Mk3 injection pump.

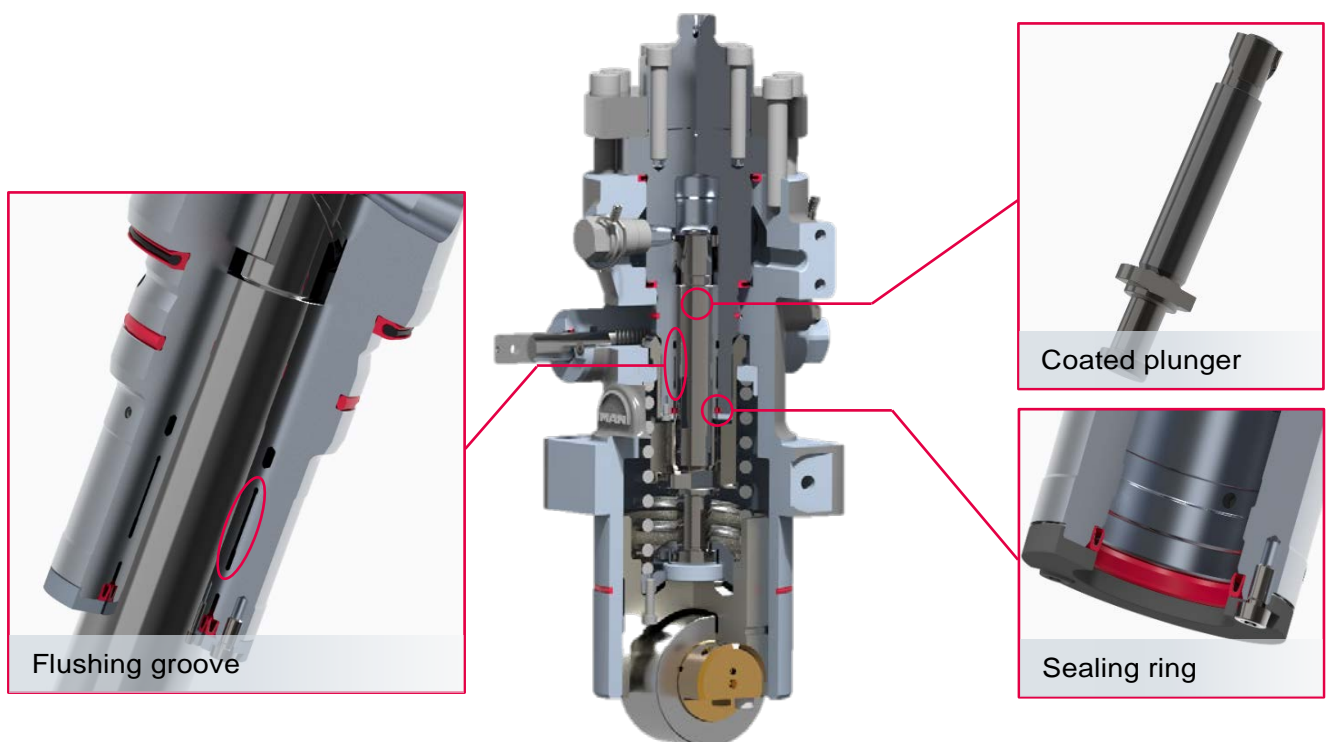


Figure 1: Design features of Mk3 injection pump – Flushing groove, coated plunger, sealing ring



Figure 2: Design features of Mk3 injection pump – Regulating mechanism, roller bolt (marked in orange)

Resulting benefits

With these new design features, current of future requirements on a fuel injection pump can be fulfilled:

- The buildup effect of deposits and lacquering is decreased which ensures a significant higher reliability and thus a lower failure rate of the fuel pump.
- By keeping the fuel oil leakages clean, the drained fuel oil can be reused. However, for reusing clean fuel oil, an additional piping as well as a leakage oil collecting tank is required (retrofit).
- Dilution of fuel oil into the lube oil is reduced.
- Sealing oil and its connections is no longer required.

Upgrade possibilities

The Mk3 injection pump can be used for engines with 480 and 500 kW/cylinder, in marine (IMO-1228) and power applications. Based on the installed injection pump model on your engine, there are different retrofit possibilities (see also Figure 3):

Mk1 (standard pump) to Mk3

Upgrade package (cat. no. SPK.0055): Upgrading the preceding Mk1 injection pump to the new Mk3 model. In case nose-type baffle screws (-0250) are installed, these have to be exchanged by flat baffle screws (-0252) – for more information see Cus293. Further advantage: The upgrade to Mk3 can be done on pump housings manufactured by different makers/licenseses.

Pump exchange (cat. no. 200.11.K/1): Installing the new Mk3 injection pump. The old Mk1 model can be sent to MAN Energy Solutions for a discount on the price.

Mk2 (SP pump) to Mk3

Pump exchange (cat. no. 200.11.K/1): Installing the new Mk3 injection pump. The old Mk2 model can also be sent to MAN Energy Solutions for a discount on the price for a new purchased pump.

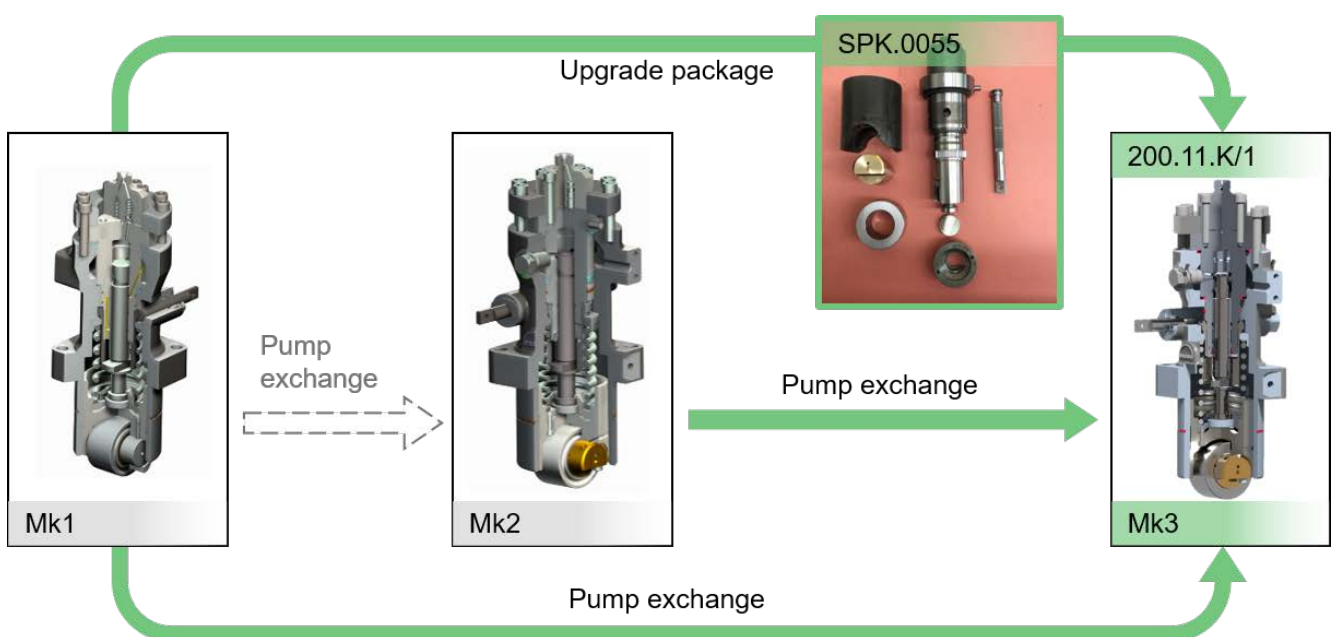


Figure 3: Upgrade possibilities based on injection pump model

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Furthermore, for upgrading the Mk1 to Mk3 injection pump on board, there are working cards and tools (for sale or for rental) available.

- Working cards: 6629 200.09-01 (Fuel injection pump – conversion)
6629 200.04-07 (Fuel injection pump – dismantling and assembling)
- Tools: 200.139; 200.142; 200.143; 200.145; 200.146; 200.147; 200.148; 200.149

Recommendation

We recommend replacing the standard Mk1 injection pump at a suitable opportunity or immediately in case of operational problems (e.g. deposits/lacquering). The Mk3 fuel pump can be installed without any restrictions on existing L+V32/40 (CD) engines with 480/500 kW/cyl.

If you want to order such new Mk3 fuel pump or require any support by MAN Energy Solutions, please contact our Technical Service in Augsburg or one of our worldwide MAN PrimeServ Service Centers.

Contact

Should you have any queries, our Technical Service will be pleased to be of assistance:

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Please forward this information to your technical operating personnel and remember to inform us of the current operating hours of your MAN Energy Solutions engines.