



Dear Sirs

We regret to inform you about the issuance of our ALERT Service Bulletin ASB2010/03/01 for installed turbocharger TCR20, TCR22 and NR12/S which you can find enclosed in this letter.

Operation in the field has shown a malfunction/collapse of the shaft sealing in some cases, with the consequence of a severe oil leakage on turbine-side. A new shrink fitted locating ring design on the turbine sided shaft end avoids this damage. This improvement of the NR12/S, TCR20 and TCR22 turbochargers is now specified by MAN Diesel.

The required kits as well as the modification team can be ordered at our Technical Service Department.

We ask you to kindly forward the enclosed ALERT Service Bulletin ASB2010/03/01 to your technical staff on board your vessels and ask you kindly to verify the serial number of the Turbocharger(s) installed in your vessels and revert to us with your findings.

If you have any further questions, please do not hesitate to contact our Technical Service Department:

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Yours faithfully

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PrimeServ Holeby

Action code: **Immediately**

## **ALERT Service Bulletin – Product Recall Action – ASB2010/03/01**

April 2010

SL10-532/BTT

### **Concerns**

Owners and Operators of MAN  
Four-stroke Diesel Engines installed  
with TCR20, TCR22 and NR12/S.

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#### **MAN Diesel & Turbo**

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Amtsgericht Augsburg



## *ALERT Service Bulletin*

ASB2010/03/01

<b>Alert SB-Nr.:</b>	ASB2010/03/01
<b>Subject</b>	<b>Product recall of TCR20, TCR22 and NR12/S turbochargers</b> Improvement of shaft sealing on turbine side
<b>Serial numbers concerned</b>	<b>NR12/S:</b> all <b>TCR20:</b> 7 000 329-678, 7 020 640/641, 7 021 532/533, 7 021 535, 7 020 656-658, 7 020 664-747, 7 022 144-569, 7 023 280-690, 7 024 008-934, 7 025 643- 826, 7 026 113-988, 7 027 765/766, 7 028 066-307, 7 520 934, 7 522 399/400, 7 523 442 <b>TCR22:</b> 7 000 303-664, 7 021 384-485, 7 021 698-953, 7 022 052-632, 7 023 516, 7 023 518-913, 7 024 066-909, 7 025 070-855, 7 026 536-916, 7 027 209- 983, 7 110 075, 7 648 149
<b>Reason</b>	During the development of the TCR and NR/S turbochargers the shaft sealing on the turbine side was thoroughly proven by simulations and tests. Nevertheless operation in field has shown in some cases a malfunction/collapse of the shaft sealing, with the consequence of a severe oil leakage on turbine-side. A new shrink fitted locating ring design on the turbine sided shaft end avoids this damage. This optimization of the NR12/S, TCR20 and TCR22 turbochargers is now specified by MAN Diesel.
<b>Compliance</b>	<b>Mandatory</b>
<b>Description</b>	We identified in certain productions lots (above mentioned) of TCR20, TCR22 and NR12/S, that the piston ring groove is in the wrong position on the shaft. Therefore it can happen at certain operation load conditions that the turbine wheel material melts on the piston ring.

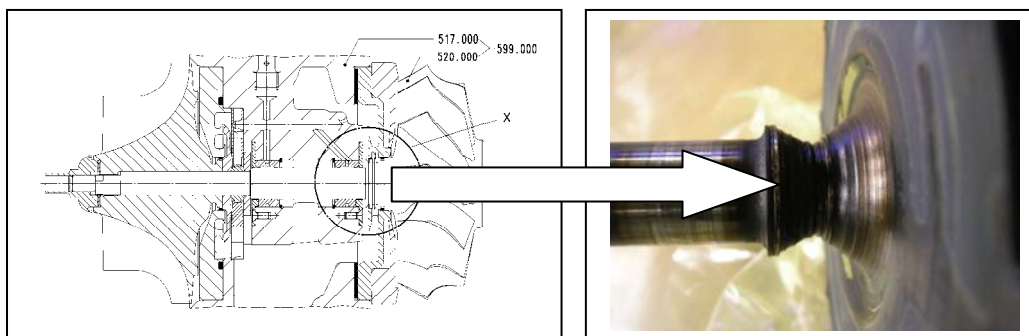


Figure 1: shaft grinding on the turbine shaft on a NR12/S turbocharger

In consequence of the damaged shaft sealing oil can enter the hot turbine inlet casing with the potential risk of a fire in the exhaust pipe or funnel. For this reason a new locating ring repair kit was designed which avoids this failure.

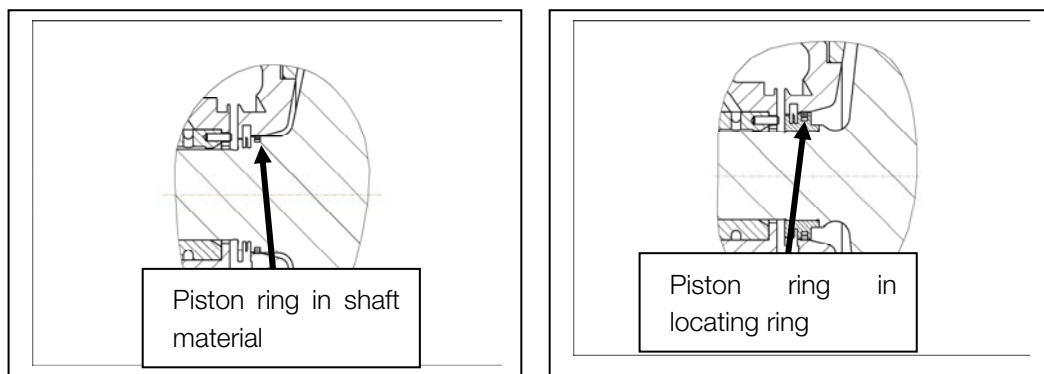


Figure 2: previous design

improved design

The above listed turbochargers must be updated to the improved shaft sealing with shrink fitted locating ring. For a better stiffness of the locating ring the diameter of the piston ring was increased. Therefore also the bearing casing must be updated. It is recommended to exchange the cartridge. This update has to be carried out by qualified personnel.

**Safety instructions**

In order to exclude all eventualities and recognise a malfunction immediately we recommend the exhaust gas temperature after turbocharger shall be observed thoroughly. In case of a rapid rise of this temperature the engine and the lube oil pump shall be stopped immediately and fire extinguishers shall be held in readiness. Furthermore the daily visual checking procedure according to the maintenance schedule (turbocharger manual chapter 6.3.1) must be carried out.

**Spare parts**

The upgrade of the turbocharger can be ordered from MAN Diesel PrimeServ.

**Contact**

We demand you to contact our Technical Service Department which is always at your disposal:

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**Please forward this information to your technical operating personnel!**