



ALERT Service Bulletin

ASB2011/12/09

Alert SB-Nr.: ASB2011/12/09

Subject **Product safety warning for TCR14, TCR16, TCR18, TCR20 and TCR22 turbochargers**
Important operational instruction relating to safety and the safe operation of the above turbochargers

Serial Numbers concerned All

Reason In December 2009 MAN Diesel & Turbo by ASB2009/12/23 initiated a product recall of the TCR turbochargers produced until then. With that bulletin we informed all customers that due to a failure of the flange connection, in case of a damage to the compressor wheel there is a risk that fragments of the compressor wheel could be released. This risk poses a substantial subsequent risk to the health and safety of the operating personnel. In consequence, we conducted a recall and update action with an updated flange connection, which we have also introduced in our subsequent serial production of TCR turbochargers.

We take safety issues relating to our products very seriously and have therefore subsequently extended our efforts regarding safety related research through the further development of critical testing procedures and processes. As a responsible manufacturer of premium quality products, we are committed to keeping you informed of any significant changes in the perceptions of risk caused by such research where those changes in perception relate to the safe operation of our products.

Consequently, we need to inform you today that, while there have been no field incidents with TCR turbochargers updated or produced since 2009, recent tests and investigations have shown that the recall and update action of December 2009, and the corresponding design change of our TCR turbochargers, reduced but did not fully eliminate the risk. Even with the updated flange connection, it is still possible that fragments with high kinetic energy can be released from the turbocharger if the compressor wheel breaks.

According to our investigations, a breakage of the compressor wheel will occur only if there is a pre-damaged compressor wheel or turbine wheel, both resulting in a spontaneous major unbalance of the rotor at high turbocharger speed. Such a pre-damage of the mentioned components can in particular be caused by the impact of foreign particles, poor fuel quality or improper handling.

If the compressor wheel breaks and parts are released from the turbocharger, personnel in the vicinity of the turbocharger may be seriously or even fatally injured as a result, and there is also a risk of damage to adjacent machines or property, including the risk of fires.

Compliance

Mandatory / immediate action required

Description

So far, the few observed containment failures of TCR turbochargers occurred exclusively at or above 66% engine load. We do not know any case where a compressor wheel broke below that engine load, and have no evidence that in such a case, fragments of the wheel would be released from the turbocharger. Therefore, based on the information currently available to us, **we recommend that no personnel should stay in the vicinity of the turbocharger during operating times in which the engine load exceeds 60%**. As already mentioned in your turbocharger operating manual, we further recommend not to dwell or idle in the vicinity of the turbocharger at all during engine operation, regardless of the engine load.

The risk of a critical compressor wheel damage can be minimized by actively avoiding foreign object impact (e.g. by ensuring a clean air supply and keeping the exhaust valves in good condition), and by regular maintenance work carried out by authorized personnel. Therefore, please ensure that the recommended inspection and maintenance schedule as described in your turbocharger operating manual is strictly adhered to. Until further notice we recommend to conduct the following inspections and maintenance measures only during times when the engine load does not exceed 60%:

- compressor cleaning (maintenance 915);
- turbine dry cleaning (maintenance 911);
- daily checks (inspection 901 and 903).

Please instruct your operating personnel accordingly.

To assess and reduce the potential risk of a critical compressor wheel damage we further recommend inspecting the compressor wheel for pre-damage. You can conduct the inspection with your own personnel at your own convenience. Our Service Department (contact details: see below) can provide the necessary information.

Furthermore we explicitly request of you to forward this ASB to all your clients or charterers using the affected TCR turbochargers.

Please accept this ASB as an initial information. It is being issued so that you are in a position to take the proper precautionary measures quickly. Further information on technical remedies will follow. Please be assured that we regret the inconvenience caused and that we are working with the highest priority on an update solution.

Contact

Our Service Department is always at your disposal:

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Please forward this information to your technical operating personnel and/or your clients!