

Date: August 16, 2016  
Subject: Turbocharger KBB R-Series; Containment  
Engine type: M20

Caterpillar confidential: green

## **Containment level of turbocharger type R3-2, R4-2, R4-3 does not reflect current safety standards**

The turbocharger maker KBB informed us about the release of **Service information exhaust gas turbocharger S096 (06/2016)**. This service information informs operators about potential risks and gives safety guidance with regard to low containment level.

The mandatory action that needs to be taken is described by KBB as follows:

- **Strictly avoid turbocharger operation under not permitted load conditions such as compressor surge and over-speed.**
- **Usage of compressor and turbine cleaning strictly according to the manual.**
- **Strictly adhere to the service intervals given in the manual.**
- **Use original KBB spare parts and service by authorized and certified service personnel only.**
- **Make sure that the operation personnel should not unnecessarily stay in the vicinity of the turbocharger. At least do not permit to enter the engine room if the engine is running above 85% MCR.**

**Please distribute this information to operation personnel in your company and to operation personnel on board of your vessels equipped with MaK engine type M20 equipped with turbocharger type R3-2, R4-2, R4-3 series immediately.**

Please confirm the receipt of this service letter and its attachment by returning the signed page 2 by fax or e-mail to Caterpillar Motoren GmbH & Co. KG or to your local MaK Service Dealer.

Fax: +49 (0) 431 3995-3894  
E-mail: [ju\\_tecservice@cat.com](mailto:ju_tecservice@cat.com)

Thank you for your understanding and for your good support.

**1 Attachment: KBB Service information exhaust gas turbocharger S096 (06/2016)**

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## Acknowledgement of receipt KBB Service information exhaust gas turbocharger S096 (06/2016)

To:

Your local MaK service facility

or

Fax: +49 (0) 431 3995-3894

or

E-mail: [ju\\_tecservice@cat.com](mailto:ju_tecservice@cat.com)

**KBB Service information exhaust gas turbocharger S096 (06/2016) received and read:**

Company: \_\_\_\_\_

Name: \_\_\_\_\_

Engine serial number (s): \_\_\_\_\_

Date and place: \_\_\_\_\_

Signature: \_\_\_\_\_

**Subject: Safety Information**

Valid for TC types: R3-2, R4-2, R4-3, R5-3

Valid for engines: M20, M25

This safety information is addressed to Caterpillar Motoren GmbH & Co. KG (Caterpillar Motoren) and aimed to be forwarded to all customers and operators of engines with R3-2, R4-2, R4-3, R5-3 type turbochargers.

As a supplier of high performance turbocharger products for more than 60 years KBB feels highly responsible to ensure customer satisfaction and operational reliability over the whole life cycle of our products. In this regard operator's safety has always been on the top of the focus.

The R-type turbochargers have been developed more than 20 years ago according to the existing classification rules that have been state of the art and accepted in those days. Since that time the awareness and responsibility for containment safety raised and ends up in strict containment rules by legislation and classification.

In this regard we would like to inform you that the R-type turbochargers do not provide the same level of containment safety as current turbocharger types and may not comply with the very latest containment safety rules.

In the very unlikely case of a rotor failure due to not permitted but possible turbocharger operation in extreme load conditions such as surge of compressor or over-speed, the R-type compressor casing is possibly not able to resist a compressor wheel breakage and to avoid the risk of released fragments.

KBB seriously takes the responsibility for the health of the operation staff and recommends following mandatory actions:

- strictly avoid turbocharger operation under not-permitted load conditions such as compressor surge and over-speed
- usage of compressor and turbine cleaning strictly according to the manual
- strictly adhere to the service intervals given in the manual
- use original KBB spare parts and service by authorized and certified service personnel only
- strictly comply with the safety instructions of the manual
- make sure that the operation personnel should not unnecessarily stay in the vicinity of the turbocharger. At least do not permit to enter the engine room if the engine is running above 85% MCR.

Under a mid-term perspective KBB and Caterpillar Motoren jointly will offer several turbocharger upgrade kits to the customer to improve the containment safety.

If you need further detailed information please contact your Caterpillar Motoren - or KBB-representative.

Please be sure that KBB seriously regret the inconvenience and is always at your disposal to ensure your satisfaction and safety.