

INSTALLATION INSTRUCTIONS

TURBOCHARGER
TURBOLADER

Safety and Environmental Guidelines:

Note: The safety advice listed below is applicable to general service and diagnostic work on braking systems. Also observe any recommendations from the axle or vehicle manufacturer concerning towing, jacking-up and securing the vehicle.

CAUTION: KNORR-BREMSE IS NOT LIABLE FOR ANY INJURIES OR DAMAGES CAUSED BY IMPROPER USE OF SPECIFIED SERVICE KITS AND/OR SERVICE TOOLS. FURTHERMORE, MISUSE OF TOOLS OR INCORRECT INSTALLATION OR APPLICATION OF SERVICE KITS MAY RESULT IN DAMAGE OR POTENTIALLY UNSAFE VEHICLE OPERATIONS. IN THIS CASE, KNORR-BREMSE DOES NOT HAVE ANY WARRANTY OBLIGATIONS.

Before and during working on or around compressed air systems and devices, the following precautions should be observed:

- 1 Always wear safety glasses when working with air pressure.
- 2 Never exceed the vehicle manufacturer's recommended air pressures.
- 3 Never look into air jets or direct them at anyone.
- 4 Never connect or disconnect a hose or line containing pressure; it may whip as air escapes.
- 5 When removing or servicing a product, ensure all pressure related to the specific system it is contained in has been depleted to 0 bar. Be aware that if the vehicle is equipped with an air dryer system, it can also contain air pressure along with its purge reservoir, if fitted, even after pressure has been drained from the other reservoirs.
- 6 If it is necessary to drain the air pressure from reservoirs, etc., keep away from brake actuator push rods and levers since they may move as system pressure drops. On vehicles fitted with air suspension, it is advised when undertaking such work, to support the chassis from sudden lowering and therefore prevent any possibility of being trapped between the chassis and axle or ground.
- 7 Park the vehicle on a level surface, apply the parking brakes, and always chock the wheels as depleting vehicle air system pressure may cause the vehicle to roll.
- 8 When working under or around the vehicle, and particularly when working in the engine compartment, the engine should be shut off and the ignition key removed. Where circumstances require that the engine be running, EXTREME CAUTION should be taken to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically charged components. Additionally, it is advisable to place a clear sign on or near the steering wheel advising that there is work in progress on the vehicle.
- 9 When working on vehicles equipped with air suspension, to guard against injury due to unexpected downward movement of the chassis caused by sudden pressure loss in the suspension system, ensure that the vehicle chassis is mechanically supported with a 'prop' between the chassis and the axle or between the chassis and the ground.
- 10 Examine all pipework for signs of kinks, dents, abrasion, drying out or overheating. Be aware that kinks in pipework may result in air pressure being trapped in the pipework and associated equipment. Replacement hardware, tubing, hose, fittings, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems. Check the attachment of all pipework; it should be installed so that it cannot abrade or be subjected to excessive heat.
- 11 Components with stripped threads or damaged/corroded parts must be replaced completely. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle or component manufacturer.
- 12 Never attempt to install, remove, disassemble or assemble a device until you have read and thoroughly understood the recommended procedures. Some units contain powerful springs and injury can result if not properly dismantled and reassembled. Use only the correct tools and observe all precautions pertaining to use of those tools.
- 13 Before removing any device note its position and the connections of all pipework so that the replacement/serviced device can be properly installed. Ensure that adequate support or assistance is provided for the removal/installation of heavy items.
- 14 Only use genuine replacement parts, components and kits as supplied by Knorr-Bremse or the vehicle manufacturer. Only use the recommended tools as specified in related Knorr-Bremse instructions.
- 15 The serviced or replaced product must be checked for correct function and effectiveness.
- 16 If products have been dismantled, serviced or replaced, whose performance could affect braking performance or system behaviour, this should be checked on a roller dynamometer. Bear in mind that a lower performance may be experienced during the bedding-in phase if new brake pads/linings and/or brake discs/drums have been fitted.
- 17 The use of impact screwdrivers or impact wrenches in conjunction with Knorr-Bremse service tools for air disc brakes is not permitted. The service tools are not designed for such use. It is likely that the tools or the vehicle will be damaged and there is a serious risk of injury – see Caution on previous page.
- 18 Do not use compressed air to clean the disc brake. Avoid air contamination of brake dust.
- 19 Prior to returning the vehicle to service, make certain that all components and the complete brake systems are leak free and restored to their proper operating condition.

Welding

To avoid damage to electronic components when carrying out electrical welding, the following precautions should be observed:

- 1 In all cases, before starting any electrical welding, remove all connections from any electronic control units or modules, noting their position and the order in which they are removed.
- 2 When re-inserting the electrical connectors (in reverse order) it is essential that they are fitted to their correct assigned position - if necessary this must be checked by PC Diagnostics.



Disposal of Waste Equipment by Business Users in the European Union

This symbol on the product, packaging or in user instructions, indicates that this product must not be disposed of with other general waste. Instead, it is your responsibility to dispose of the waste electrical and electronic parts of this product by handing them over to a company or organisation authorised for the recycling of waste electrical and electronic equipment. For more information about arrangements for waste equipment disposal please contact your Knorr-Bremse distributor or local Knorr-Bremse representative.

General instructions

Safety instructions:

- Risk of burns when touching hot parts or assemblies
- Risk of injury from rotating parts
- Risk of injury from technological fluids
- Risk of injury when using improper tools

Please provide appropriate protective clothing and eye protection

Functional notes:

- Only install devices that comply with the vehicle specification
- Do not install devices with obvious defects
- After installing a new device, connect the electronic interfaces as required. In special cases, an initialization must be carried out. Please follow the instructions of the truck and engine manufacturer

Complaints:

- Returns due to application for liability for material defects must be clearly marked as such
- Applications for liability for material defects will only be considered with complete information available

Installation instructions:

- Caution: Improper installation, use and operation of the device or changes to it can damage the device itself or the vehicle. Please therefore observe the manufacturer's instructions and the following installation and commissioning instructions
- Before installing a new device, determine the cause of the failure of the old device and eliminate any faults found in the vehicle.
- One or more device types are approved for each vehicle type. Incorrect equipment can lead to malfunctions or damage to the vehicle. Make sure that the part number of the purchased device matches the data of the vehicle manufacturer.
- Make sure that all interfaces are functional and free of foreign bodies and liquids. In particular, inlet and outlet pipes must be checked for leaks, soiling and blockages. Electrical cables must be checked for proper functioning.
- Tightening torques must be observed in accordance with the vehicle or engine manufacturer's specifications.
- Flanges and threads must be free of damage and dirt
- Sealing elements must always be replaced. Use only brand-new and suitable seals.
- The vehicle manufacturer's instructions regarding the type and application of lubricants and oils must be observed.

Allgemeine Anweisungen

Sicherheitshinweise:

- Verbrennungsgefahr beim Anfassen von heißen Teilen oder Baugruppen
- Verletzungsgefahr durch drehende Teile
- Verletzungsgefahr durch technologische Flüssigkeiten
- Verletzungsgefahr bei Anwendung vom unsachgemäßen Werkzeug

Bitte für entsprechende Schutzkleidung und Augenschutz sorgen

Funktionshinweise:

- Nur Geräte einbauen, die der Fahrzeugspezifikation entsprechen
- Keine Geräte einbauen, die offensichtliche Mängel aufweisen
- Nach dem Einbau eines neuen Gerätes je nach Bedarf die elektronischen Schnittstellen koppeln. In gesonderten Fällen muss eine Initialisierung durchgeführt werden. Beachten Sie hierzu die Anweisungen des LKW und Motorenherstellers

Reklamationen:

- Rücksendungen wegen Antrag auf Sachmangelhaftung sind eindeutig als solche zu kennzeichnen
- Anträge auf Sachmangelhaftung werden nur mit vollständig vorliegenden Angaben berücksichtigt

Einbauvorschriften:

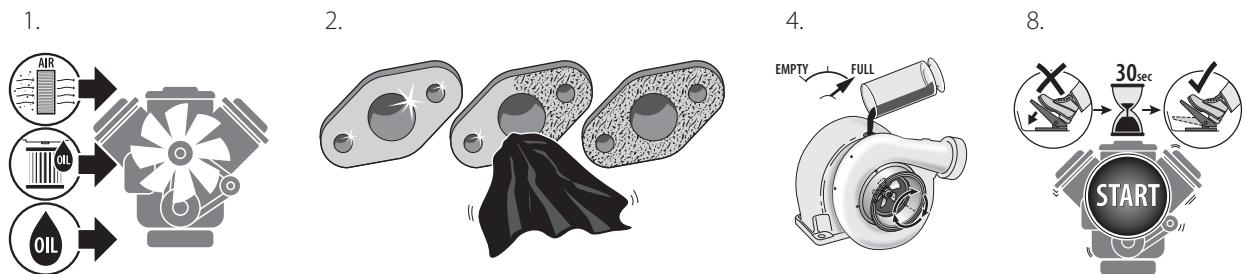
- Achtung: Unsachgemäßer Einbau, Einsatz und Betrieb des Gerätes oder Veränderungen an diesem können zu Schaden am Gerät selber, oder am Fahrzeug führen. Beachten Sie deshalb die Herstellervorschriften und die folgenden Einbau- und Inbetriebnahme Hinweise
- Stellen Sie vor dem Einbau eines neuen Gerätes die Ausfallursache des alten Gerätes fest und beseitigen Sie gegebenenfalls festgestellte Fehler am Fahrzeug.
- Für jeden Fahrzeugtyp sind ein oder mehrere Gerätetypen zugelassen. Falsches Gerät kann zu Funktionsstörungen oder Beschädigung des Fahrzeuges führen. Stellen Sie sicher, dass die Sachnummer des gekauften Gerätes mit den Angaben des Fahrzeugherstellers überein stimmt.
- Stellen Sie sicher, dass sämtliche Schnittstellen funktionsfähig und frei von Fremdkörper und Flüssigkeiten sind. Insbesondere sind Zu- und Ablaufleitungen auf Dichtheit, Verschmutzung, Verstopfung zu prüfen. Elektrische Leitungen sind auf Funktionsfähigkeit zu prüfen.
- Anzugsdrehmomente sind gemäß der Fahrzeug- bzw. Motorherstellervorgaben einzuhalten
- Flansche und Gewinde müssen frei von Beschädigungen und Verschmutzungen sein
- Dichtelemente sind in jedem Fall zu erneuern. Nur Fabrikneue und passende Dichtungen verwenden.
- Die Fahrzeugherstellervorschriften bezüglich Art und Aufbringung von Fetten bzw. Ölen ist zu beachten.

Specific turbochargers installation instructions:

1. Before fitting the turbocharger, check the air and oil filter systems of the engine, change filters and oil.
2. Check and clean the engine intake and exhaust manifolds. Foreign particles in the manifolds can cause damage during start-up.
3. The oil feed and oil drain lines should be checked and cleaned.
4. Fill up the oil feed-hole of the turbocharger with clean engine oil, in order to ensure good lubrication during start-up.
5. Connecting screws for fixing the turbine housing has to be heat-resistant.
6. If required, correct the position of the compressor or turbine housing in accordance to the fitting conditions.
7. Make sure that the installation is carried out without tensions to the turbocharger or the attached pipes.
8. Start the engine and wait approx. 30 seconds before applying load.
9. After start-up, check that all air, fuel and oil line connections are tight.

Spezifisch Turbolader Einbauvorschriften:

1. Überprüfen Sie vor der Montage die Luft und Ölfilteranlage des Motors, nehmen Sie einen filter- und Ölwechsel vor
2. Prüfen und reinigen Sie die Ansaugleitung und das Abgassammelrohr des Motors. Fremdkörper in den Leitungen verursachen mit Sicherheit Schäden bei der Inbetriebnahme.
3. Die Ölzulaufleitung und die Ölablaufleitung sind ebenfalls zu prüfen und zu reinigen.
4. Füllen Sie die Öleinlassbohrung des Turboladers mit sauberem Motoröl, damit eine ein wandfreie Schmierung bei der Inbetriebnahme gesichert ist.
5. In der Regel sind die Verbindungsschrauben der Turbinengehäusebefestigung hitzefest.
6. Gegebenenfalls müssen Sie die Stellung von Verdichter- oder Turbinengehäuse auf die Einbauverhältnisse korrigieren.
7. Achten Sie unbedingt auf einen spannungsfreien Einbau an Turbine, Verdichter sowie Ölzulaufleitungen und Ölablaufleitungen.
8. Starten Sie den Motor und lassen Sie diesen ca. 30 sec. im Leerlauf laufen, bevor Sie ihn belasten.
9. Kontrollieren Sie nach Inbetriebnahme aller Luft-, Gas- und Ölleitungen die Dichtheit der Verbindungen.



Revision Details

Rev. 000	October 2018	New document

EVERY VEHICLE TELLS ITS STORY.
KEEP IT RUNNING.

Up-to-date information on our products can be found on our website www.knorr-bremsecvs.com



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Note

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