

SERVICE INSTRUCTIONS

DISC BRAKE PARKING ACTUATOR
SPECIFICATION, INSTALLATION AND WIND OFF PROCEDURE

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



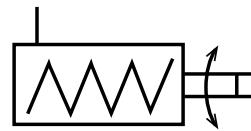
This symbol on the product, packaging or in user instructions, indicates that this product must not be disposed of with other general waste. Instead, it is your responsibility to dispose of the waste electrical and electronic parts of this product by handing them over to a company or organisation authorised 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.

Specification, installation and wind off procedure

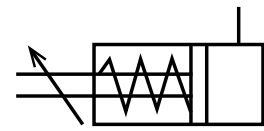
These actuators are used to provide the secondary and parking brake functions on hydraulic disc braked commercial vehicles. The power spring force may be released by means of the wind-off screw incorporated in the yoke end fittings.

Technical specification

Maximum operating pressure:	10 bar
Pull rod stroke:	40 mm
Operating temperature range:	-40°C to +80°C
Weight:	5 kg approx.
Port thread:	See chart



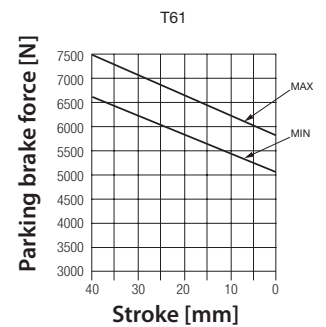
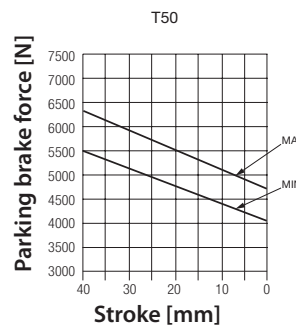
DIN74253



ISO1219

Part No. *	Type No.	DPA Type	Hold-off pressure [bar]	Port thread
K026831	DPA6100	T61	6,4	N10164 - NG12
K026832	DPA5000	T50	5,5	N10164 - NG12
K028253	DPA5001	T50	5,5	M16 x 1,5
K028254	DPA6101	T61	6,4	M16 x 1,5
K028266	DPA6102	T61	6,4	M16 x 1,5
K028300	DPA6103	T61	6,4	M16 x 1,5

Performance Charts



Installation

- Before removal of old actuator from the vehicle, ensure the power spring force has been removed from the pull rod by means of the wind-off screw incorporated in the yoke end fitting.
- The rubber elbow for the piped breathing connection on the new actuator should always be uppermost.
- Connect the yoke to the brake lever and make sure that the air supply pipe is properly connected and secured. Connect the piped breathing tube to the rubber elbow.
- Referring to the vehicle maker’s handbook, check and adjust the vehicle brakes. Ensure that the retraction stroke meets the handbook requirements. Do not allow the maximum permitted pull rod articulation of 3° from the actuator centreline to be exceeded.
- Restore the power spring force on the pull rod by means of the wind-off screw. Finally, check the correct operation of the vehicle brakes and ensure there are no leaks from the actuator or pipe connections.

Note:

These actuators must always be replaced as instructed.

Only use genuine Service Kits and parts.

These actuators contain powerful springs which can cause serious injury if the wrong parts, tools or methods are used.

* The part number should carry suffix "N##" which defines the packaging requirements of different market sectors, e.g. N00, N50. Example "N00" which defines that it is supplied without packaging.

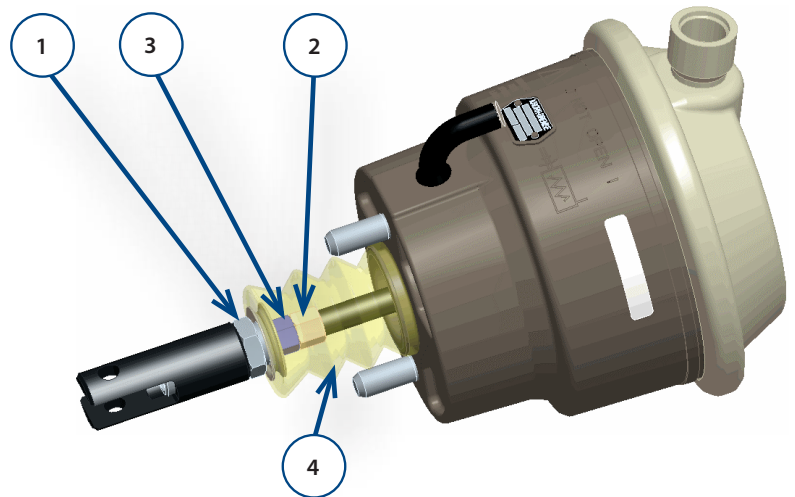
Wind-off procedure

1. Yoke clevis pin must be installed when winding off the actuator.
2. Boot must be removed from retainers to allow access to locknuts "B" & "C".
3. Winding off must be carried out by turning nut "A" (left hand thread) and holding nut "B" stationary.
4. To wind on, follow the reverse of the wind off procedure and torque as follow:

- Yoke to nut A 12-15Nm
- Nut A to nut B 12-15Nm
- Nut B to nut C 22-25Nm

Attention:
Use only the correct sized open-ended spanner!
The parking brake portion of the Spring Brake contains a very high spring load and it is strongly recommended that you do not attempt any disassembly of this portion. This should also be taken into consideration when disposing of spring brakes of any type.

1	Nut A 24 A/F
2	Nut B 19 A/F
3	Nut C 19 A/F
4	Boot



Revision Details

Rev. 001	February 2019	New Layout
Rev. 002	October 2019	New nuts 2 and 3

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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