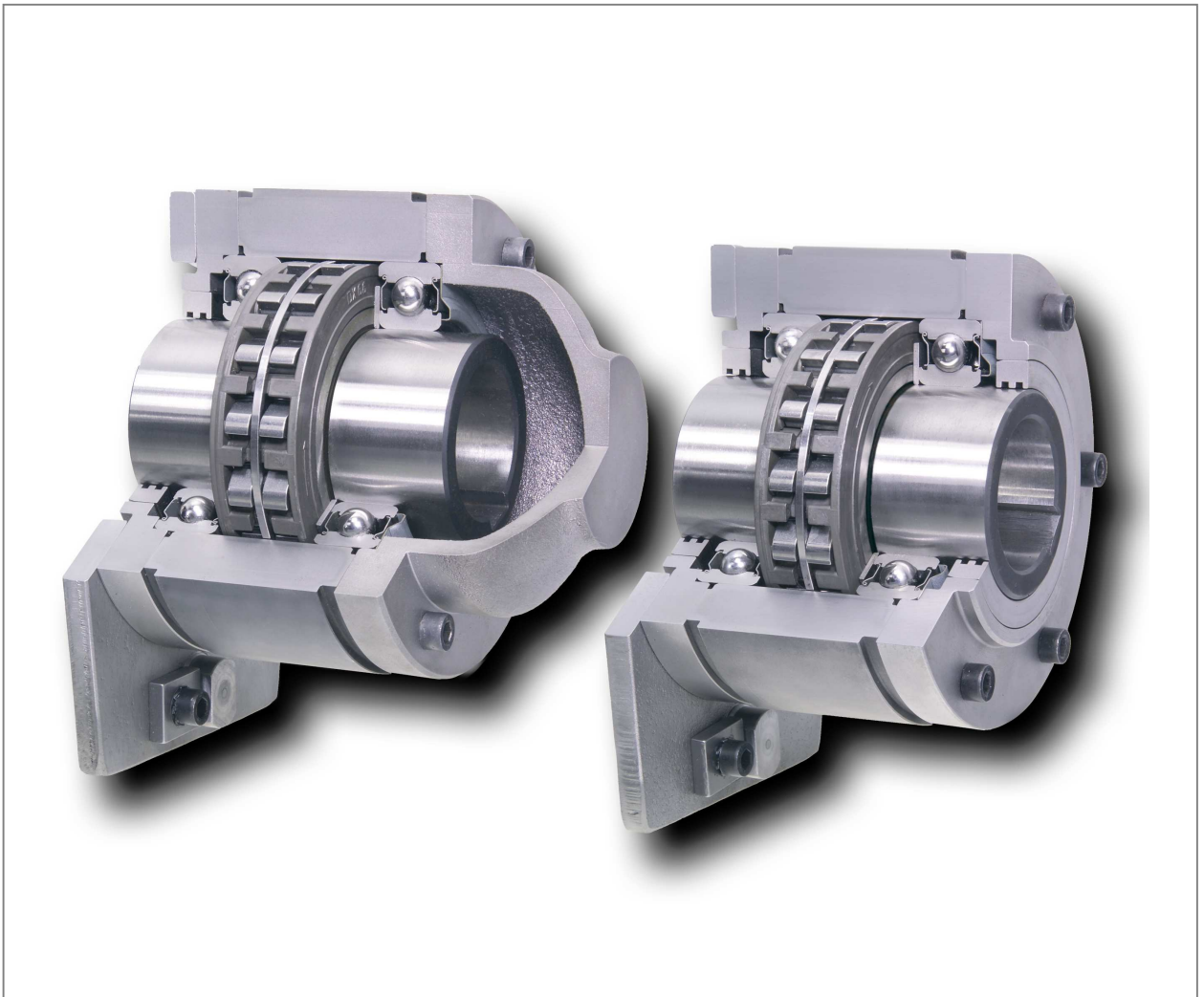


**Installation and Operating Instruction for
Complete Freewheels BC / BA ... XG**

E 08.646 e



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Important

Please read these instructions carefully before installing and operating the product. Your particular attention is drawn to the notes on safety.

These installation and operating instructions are valid on condition that the product meets the selection criteria for its proper use. Selection and design of the product is not the subject of these installation and operating instructions.

Disregarding or misinterpreting these installation and operating instructions invalidates any product liability or warranty by RINGSPANN; the same applies if the product is taken apart or changed.

These installation and operating instructions should be kept in a safe place and should accompany the product if it is passed on to others – either on its own or as part of a machine – to make it accessible to the user.

Safety Notice

- Installation and operation of this product should only be carried out by skilled personnel.
- Repairs may only be carried out by the manufacturer or accredited RINGSPANN agents.
- If a malfunction is indicated, the product or the machine into which it is installed, should be stopped immediately and either RINGSPANN or an accredited RINGSPANN agent should be informed.
- Switch off the power supply before commencing work on electrical components.
- Rotating machine elements must be protected by the purchaser to prevent accidental contact.
- Supplies abroad are subject to the safety laws prevailing in those countries.

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1. General introduction

Complete Freewheels BA ... XG and. BC ... XG are machine elements with particular characteristics:

- In one direction of rotation there is no contact between the inner and outer ring; the freewheel is in freewheeling operation.
- In the other direction of rotation there is contact between the inner and outer ring; in this direction it is possible to transmit high torque.

Complete Freewheels BA ... XG and. BC ... XG are used as:

- Backstops



Caution!

As Freewheels can be used as safety components, it is important to observe these installation and operating instructions carefully.

2. Applications of Freewheels

Application as Backstop

Freewheels are used as backstops if reverse rotation of the operating direction is to be prevented. In many machines and installations, for technical safety or functional reasons, it is necessary to ensure that you are working in just one specified direction of rotation. This is why there are legal stipulations requiring a mechanical safety device for the operation of, e.g. conveyor systems.

The normal operating mode of a backstop is freewheeling operation; the locking (torque transmission) is performed at zero speed. The immediate engagement of the clamping elements ensures the required high operating safety.

3. Design

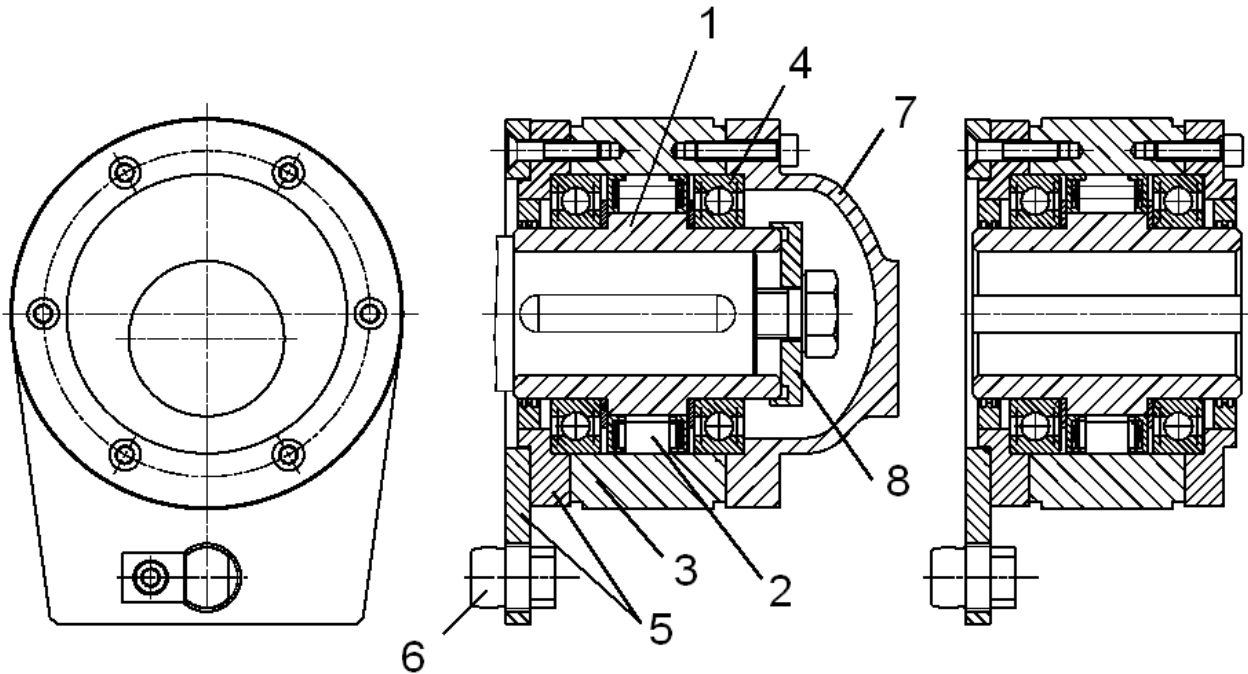


Fig. [1]

The Complete Freewheels BA ... XG bzw. BC ... XG are configured as shown in Fig. [1]. The essential functional components are the inner ring (1), the sprags (2), the outer ring (3), the grease lubricated bearings (4), the lever arm with cover (5), the holding pin (6) and the end cover (7).

Optional is the retaining washer (8) included.

4. Types

Complete Freewheels BA / BC ... XG are available in this type:

Type with sprag lift-off X

This type is designed for extended service life using sprag lift-off at high speed rotating inner ring.

It is identified by the suffix "X" at the end of the product designation.

Example: BA 55 .X



Please note!

Further information especially on design, function and selection, permissible torques or permissible speeds of these freewheels is provided in RINGSPANN Catalog 84 "Freewheels". Please contact RINGSPANN GmbH if you need assistance.

5. General instructions



Caution!

The maximum permissible freewheel torque must not be exceeded due to torque peaks in specific applications.

The maximum freewheel torque should be calculated according to RINGSPANN catalog 84. Please consult with RINGSPANN if you need assistance.

Freewheel damage resulting by excessive torque peaks impair component function and can result in excessive overheating of the freewheel!



Caution!

If the machine or system is exposed to axial and/or radial loads, the roller bearings in the freewheel should be checked with reference to the rules for calculation provided by the bearing manufacturer. It is essential to ensure that bearings are not damaged.

Bearing damage can result in overheating and the impairment of freewheel function!



Caution!

Torsion vibrations (amplitudes and frequencies which result in engagement and release of the freewheel in rapid succession) must be avoided.

Torsion vibrations can result in overheating and the impairment of freewheel function!



Caution!

Operation of freewheels with centrifugal sprag lifting below the lifting speed results in sprag wear. Occasional start and stop operations during operation below lifting speed for periods of less than 20 second are permitted.

Excessive sprag wear can result in overheating and the impairment of freewheel function!

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6. Condition at delivery

The freewheels are delivered ready to install. They are packed in anti-corrosion paper.

7. Technical requirements for safe operation

The bore in the inner ring normally has a tolerance of ISO H7. The tolerance of the shaft must be in this case ISO h6 or j6.

The key must have back play and may have only minimal width oversize, as otherwise the inner ring may be deformed.

8. Installation

The direction of machine or system rotation must be determined prior to freewheel installation. On the freewheel is a directional arrow indicating the freewheeling direction of the inner ring. Mark this direction with an arrow on the shaft to which the inner ring of the freewheel is to be mounted.

Ensure that the freewheeling direction of the freewheel matches the direction marked on the shaft..



Caution!

The drive must not be started in the direction opposite the freewheeling direction of the freewheel, as otherwise the freewheel may be destroyed!

The freewheeling direction can be reversed by exchanging the lever arm with cover (5) and the end cover (7).

From the version BA, you must first removed the end cover (7).

Apply only uniformly distributed pressure (without heating) to the front face of the inner ring when mounting the freewheel to the shaft.



Caution!

The freewheel may not be driven onto the shaft by applying hammer blows, as the built-in roller bearings may be damaged in the process!

The backstop is affixed along the axial plane of the shaft with a retaining washer.

In version BA, the end cover (7) must then be again mounted.

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9. Inspection prior to commissioning

Prior to initial operation, the safety screw on the holding pin must be loosened and the holding pin removed.

Turn the freewheel-outer ring against to the freewheel-inner ring by hand in the freewheeling direction (freewheeling mode). If the freewheel turns roughly, apply a light hammer blow to the outer ring while turning the freewheel by hand in the freewheeling direction.

Replace the holding pin and fix in place by tightening the safety screw.

The holding pin must have 0.5 to 2 mm play in the axial and radial directions.



Danger to life and limb!

The loosening of the locking bolt may take place only with load-free and standing plant.

Release of the freewheel under load conditions results in uncontrolled reverse movement of the system.

10. Maintenance

The ball bearings in series BC/BA...XG are grease-lubricated. Ordinarily, the grease filling outlasts the expected service life of the ball bearing, and thus maintenance is required only in exceptional cases. This must be determined when selecting a complete freewheel.

In the interest of safety, we recommend having the freewheel inspected by the manufacturer once the grease filling has reached the end of its normal service life L_{10} (see RINGSPANN Catalog 84), or after 30,000 operating hours, whichever comes first.