SIBRE

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Siegerland Bremsen

Installation and Operating Instructions for storm brakes RKB

BE 06 20 206 E-EN - 01.2016

Translation of the Original Operating Instructions
Valid only in Connection with Geneal Notes B06 20 206 E
Alterations reserved

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Content

1. General Information

The operating Instructions are an integral part of the scope of delivery of the brake and are valid only in connection with the detailed information SIBRE document BE 06 20 206 E. The operating instructions should be kept as reference in the vicinity of the brake.

CAUTION

Only detailed knowledge of the operating instructions can ensure trouble-free operations of the brake. It is therefore in the interest of the operator to ensure that the operating instructions are read, understood and strictly observed by all persons responsible for transportation, installation, operation, maintenance and repair.

On compiling these operating instructions, the state-of-the-art brake described in these operating instructions conforms to the latest technological development, In the interest of further development, we reserve the right to make changes that are deemed necessary for increasing efficiency and safety while retaining the essential features.

In accordance with the Machinery Directive 2006/42/EG, the manufacturer:

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documents the RKB series brakes with the ĂDeclaration of incorporation for incomplete machines, Annex II 1Bñ

NOTE!

Commissioning (start-up) of the incomplete machine is prohibited until the incomplete machine has been installed in a machine that corresponds to the stipulations of the EC Machinery Directive. We accept no liability for damage and malfunctions that arise from using the brake not for its intended purpose. All risk shall be borne solely by the operating company.

2. Safety

2.2 Identification of Safety Information in the Operating Instructions

Important instructions relating to personal und industrial safety in these operating instructions are emphasized as follows.

WARNING!

This symbol indicates safety measures that must be followed to prevent loss of life or injuries. The following safety notices have to be distinguished:

WARNING!

Warning ï hot surfaces

WARNING!

Warning ï electrical voltage

WARNING!

Warning ï bruise & impact injury

WARNING!

Warning ï hydraulic oil and other fluids

CAUTION!

This symbol indicates safety measures that must be followed to prevent equipment damages.

NOTE!

This symbol indicates general operating instructions which must be followed closely.

2.2 Use for Intended Purpose

The product described in this operating instruction:

- Has been developed for stationary use in general machine and plant applications.
- May be used only for the ordered and confirmed purposes.
- May be used only under the conditions defined in the operating conditions for operation, inspection and maintenance.
- May be used only with the SIBRE supplied and/or approved hydraulic power units / thrusters.

CAUTION!

The operating instructions of the hydraulic power unit / thruster supplier have to be observed completely.
Use above and beyond that specified, such as for higher output ratings and speeds etc., or for non-approved operating conditions shall be deemed as use not for intended purpose.

WARNING!

Inappropriate operation and use other than for the intended purpose can pose the risk of serious or fatal injury to the operator or other persons as well as damage to the system and other equipment.

2.3 Safety Information

- The product described in this operation instruction is based on state-of-the-art design and is delivered in a failsafe condition.
- The product described in this operation instruction may be used only under the conditions defined in the scope of services and delivery.
- The operating company must ensure that the persons entrusted with the installation, operation, care, maintenance and repair have read and understood the operating instructions and strictly observe them in order to:
  - Avoid the risk of serious or fatal injury to the operator or other persons
  - Ensure operational safety and reliability of the brake
  - Avoid downtimes and harm to the environment as the result of incorrect use
- Relevant occupational health and safety as well as environmental protection regulations must be observed during transportation, installation and dismantling, operation as well as care and maintenance.
- Only authorised, qualified and instructed personnel is permitted to operate, maintain or repair the product described in this operating instructions.
- All work must be carried out with the utmost care with ñsafetyò as top priority.
- Work on the product described in this operating instruction must be carried out only with the brake shut down. The drive unit must be secured to prevent it being switched on inadvertently (e.g. by locking the key-operated switch or removing the fuse in the power supply). A warning sign indicating that work is being carried out on the brake must be displayed at the switch-on point.
- The drive unit must be shut down immediately if conspicuous changes occur in the brake system, e.g. grinding noise, during operation.
- The product described in this operating instructions must be secured by corresponding safety devices to prevent inadvertent contact. The safety devices must not impede effective operation of the brake system.
- If the product described in this operating instruction is installed in devices or systems, the manufacturer of the devices or systems must adopt the requirements, information and descriptions contained in the present operating instructions into his operating instructions.
- Spare parts must be procured from SIBRE.

3. Transportation and Storage

3.1 Scope of Delivery

The scope of delivery is listed in the shipping papers. On delivery, the consignment must be checked to verify that it is complete.
Any damage incurred during transportation and/or missing parts are to be reported immediately in writing. The RKB brakes are delivered in assemblies ready for installation.

3.2 Transportation

On delivery, the RKB brake is packaged in such a way as to ensure maximum protection during transportation. The brake should only be lifted at the lifting eyes provided for transportation.

WARNUNG!

Falling parts can cause serious or fatal injuries!

CAUTION!

Adequately secure the brake. Pay attention to the centre of gravity and use suitable sling attachment points!
Slings that are damaged or do not have the required load carrying capacity can break under load.
Make sure that all lifting gear and slings meet the safe working load and check that they are in perfect working order. Only use tested and approved lifting gear.

3.3 Storage

Any damage to the outer preservation or exterior paintwork must be touched up.
The storage room must be dry and free of dust. The ambient temperature should not be lower than +10°C and the relative humidity should not exceed 65 %.

4. Technical Data

4.1 Design and Functional Principle of the Brake

The SIBRE storm brakes type RKB is designed to protect a container crane against travelling by wind forces under storm condition. It is a parking brake being applied after the crane came to a stop by gantry travel drive equipment. The brake is a compact unit securing the crane at any position of the rail track.
By pulling out the safety bolt the brake is manual actuated and by removing power of the thrustor the brake shoe rests on the rail. After crane moves towards the brake shoe and gets in contact with its radius he will stop moving because of friction force generated by the wheel load. The field replaceable brake shoe can be adapted to special wheel diameters and widths of the rail.

Following the main parts of the RKB are listed.
Spare parts are marked with *.

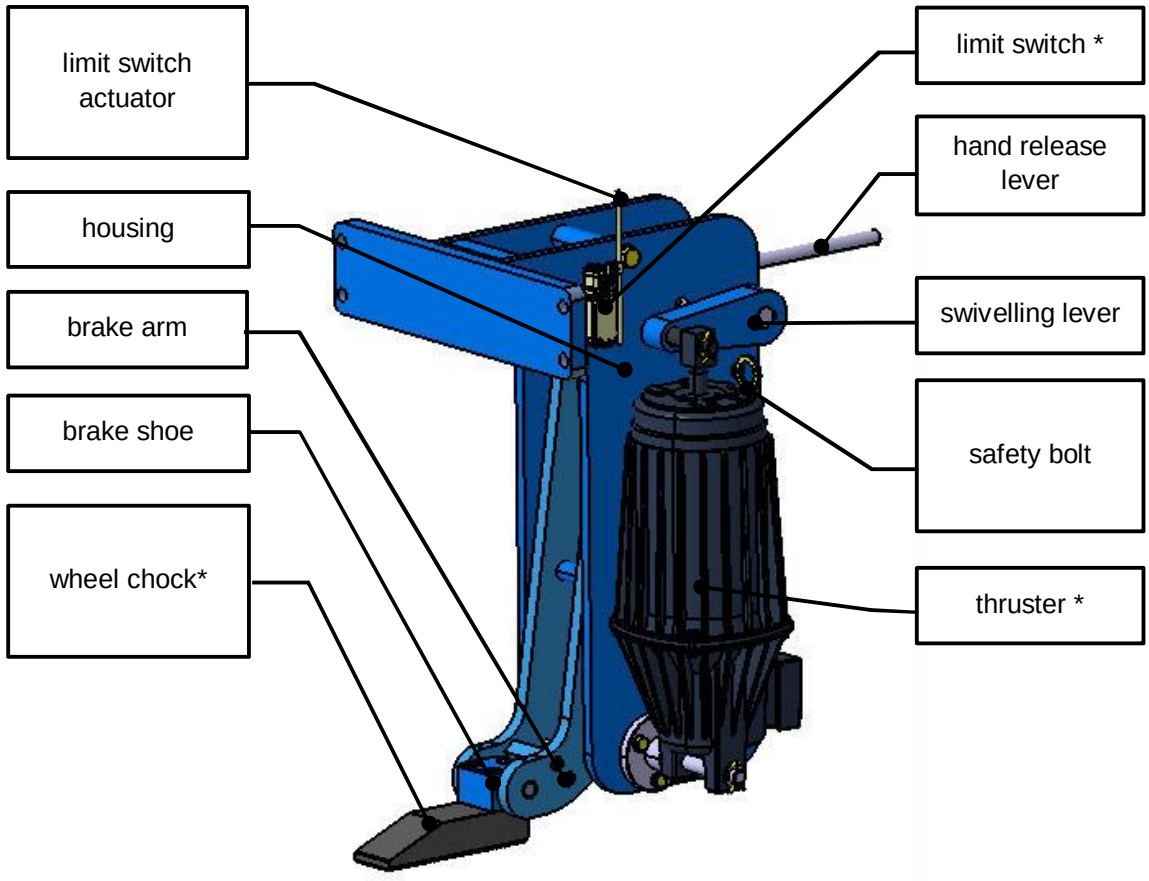


Fig. 1 Technical Data RKB

CAUTION!

Use of the brake for any other purpose is prohibited

4.2 Function

Crane drive

Before the crane moving all wheel chocks must be released. The wheel chocks are opened by an electrohydraulic thruster and usually are fixed with a protection bolt. The protection bolt wich is secured with a clip connector holds the brake, in either case, in opened position, also during power failure. The thruster is designed for continuous operation.

Crane settings

If the crane should be fixed in the parking position with the wheel chocks it is necessary that first all thrusters are energized. Then the protection bolts can be pulled out and be stuck in the keeping hole intended for it. When power to the thruster is removed, the hydraulic pressure inside the thruster goes down and the piston lowering into the thruster´s housing. The lever sets by lowering under gravity force until the shoe rest on the rail. Due to the wind force the crane can drive as long as the wheel contacts the brake shoe in direction of the wheel chock.

Brake Releasing

For commissioning of the crane the wheel chocks must be released electric-hyraulically on the unloaded side of the crane. The brake shoe will be unloaded by a short movement of the crane off brake. Now this wheel chocks can be also released electric-hydraulically. All wheel chocks must be locked with the protection bolt and clip connector. The wheel chocks can be also manual relased by a hand lever.

The operating condition ñwheel chock openñis indicated by a limit switch.

CAUTION!

It is not allowed to use the wheel chock in dynamic condition (during crane travelling).

5. Installation

5.1 Preparation for Installation

CAUTION!

Switch off the drive before working on the brake unit. Secure the drive to prevent it being switched on inadvertently!

- Observe the safety information under chapter 2.2 during installation.
- Installation must be carried out with the utmost care by qualified technicians.
- Approved lifting gear and sling equipment with adequate safe working load must be made available prior to the start of installation.
- All screw/bolt connections must be tightened to the corresponding torque.
- Before installing the brake system, all rustproofing residue and dirt must be removed from the brake disc, bracket mounting surface and substructure.
- Ensure the place of installation is extremely clean.

CAUTION!

Observe manufacturer's information on how to handle solvents and cleaning agents safely!

NOTE!

Refer to the information in the operating instructions provided by the equipment suppliers!

5.1 Mounting

The storm brake is delivered as a complete unit. It can be mounted directly to the flange of the crane drive. The 4 mounting bolts (M16, quality 8.8) need to be tightened with torque 210 Nm. Subsequently the brake, especially the thrustor and the limit switch can be wired with the requested voltage. Finally all thrusters can be energized after mounting of all thruster wheel chocks in the same way. The safety bolt can be put in the mechanism bolt storage. The screw (S1) is to be adjusted like shown in position so that a gap of 1mm exists. Afterwards, the screw is to be fixed by locknut against dissolving. To release the brake you have to follow the as described before.

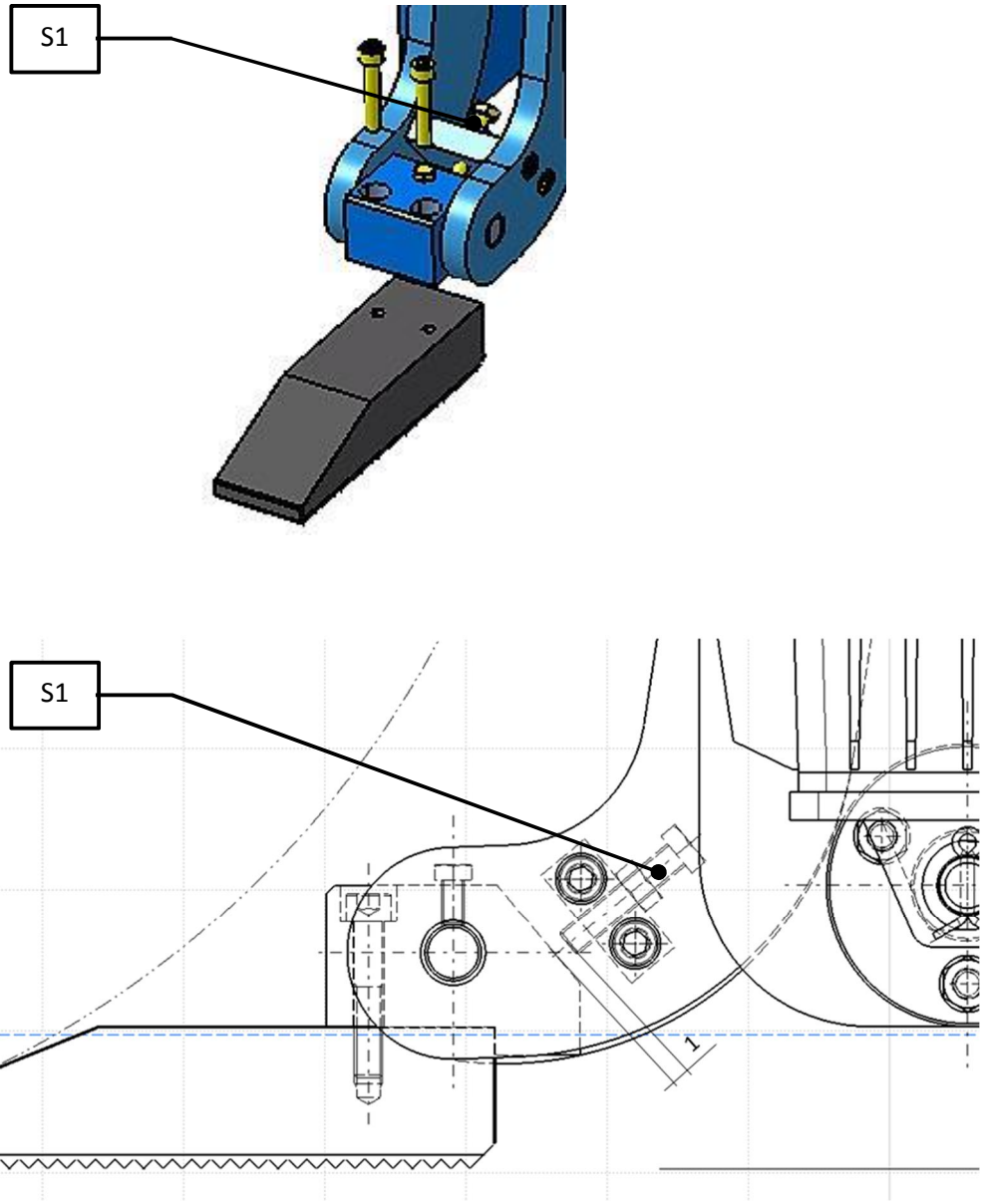


Fig. 2 Mounting the RKB

6. Operation

WARNING!

During operation the brake is connected to the electrical power supply. Pay attention to electrical current especially in the area of the sensors.

WARNING!

During operation of the brake avoid contact with the brake and brake disc / brake drum. Due to high clamping forces there is the risk of crush injuries to hands and fingers especially between brake linings and brake disc / brake drum, but also at other components of the brake.

CAUTION!

Protect the area of the linings from dust and other friction reducing substances.

NOTE!

Also refer to the instructions provided by the plant / machinery manufacturer!

7. Maintenance

7.1 Routine Inspections

The following inspections are stipulated by the manufacturer to maintain operational safety.

Daily checks:

- Visually inspect of the wheel chock on the rail
- Visually inspect hydraulic unit and threaded pipe connections for leaks
- Visually inspect all bolted connections
- Check all add-on parts (limit switch)

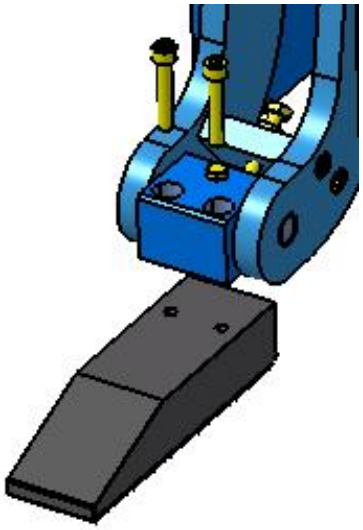
Checks every 3 - 6 months:

- Inspect entire brake system
- Check electrical cables
- Check the wheel chock on the rail

As soon as any wear is detected during visual check, the coefficient of friction/ holding force must be verified

7.1 Replacement of brake shoe

To replace the brake shoes all steps described under ñcrane settingsñ has to be done until the brake shoe rest on the rail. After pulling out the bolt the brake arm can be lifted and fixed with the safety bolt.
Now remove the brake shoe from the rail. After placing the brake shoe on the rail the wheel chock can be activated as described in ñcrane settingò With the help of the bolt the brake shoe is mounted to the brake arm. Then you can release and arrest the wheel chock.



WARNING!

There is a high risk of crush injuries to hands and fingers while carrying out the above work!

Fig. 3 Replacement of brake shoe

8. Disassembly

8.1 Preparation

Observe the utmost cleanliness when working on the brake system.
The inner components should be disassembled only in a room that is free of dust and dirt. Each component must be cleaned, dried and freshly greased prior to reassembly. Dirt particles considerably reduce the service and cause damage.
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8.2 Disassembly

The disassembly of the brake takes place in the reverse order compared to the assembly in chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**.

CAUTION!

Before starting any service work, switch off the drive unit and secure it against unintended power up.

9. Spare Parts Stock

Keeping a stock of the most important spare and wearing parts is an important prerequisite for ensuring the brake system remains fully operational at all times. In case of need of spare parts contact us, we will be pleased to assist you.

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Spare Parts for the RKB:

1.wheel chock

2.thruster

3.limit switch

CAUTION!

We shall accept no liability and warranty claims for damage that arises from the use of non-genuine SIBRE spare parts.

10. Shutting Down and Disposal

Disposal of the product should only be carried out by a disposal company that has the necessary know-how and experience in the field of waste disposal.

NOTE!

Also refer to the information provided by the hydraulic unit suppliers

Hydraulic fluid	Hydraulic fluid must be disposed of professionally in order to avoid polluting the environment. The oil must be drained from the brake and the hydraulic unit and filled into special vessels to dispatch it to a specialist disposal company.
Electrical components	If the brake is equipped with electrical components such as sensors, these components must be disposed of together with electronics scrap.
RKB - Brake	The product is generally made from machined steel. Once the seals, electrical components and/or hydraulic fluid have been removed, the brake can be classified as metal scrap.

11. Notes

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