OWNER'S MANUAL

Secondary Brake Device

Mounting & Operating Instructions

S2KLAS **S3KLAS**

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1.1 Technical Parameters of Starke Secondary Brake Device

Model	Wire Rope Diameter (mm)	Rated Load Capacity	Lock Speed (silver unlock handle)	Lock Speed (orange unlock handle)
S2KLAS	10.2	2,204 lb	45 FPM	100 FPM
S3KLAS	11.5	3,527 lb	45 FPM	100 FPM
Normal Operating Conditions	Ambient temperature: 14° Farenheit to 131° Farenheit			
	Ambient relative humidity: ≤90% (at 77° Fahrenheit)			

1.2 Operating Principle and Structural Features

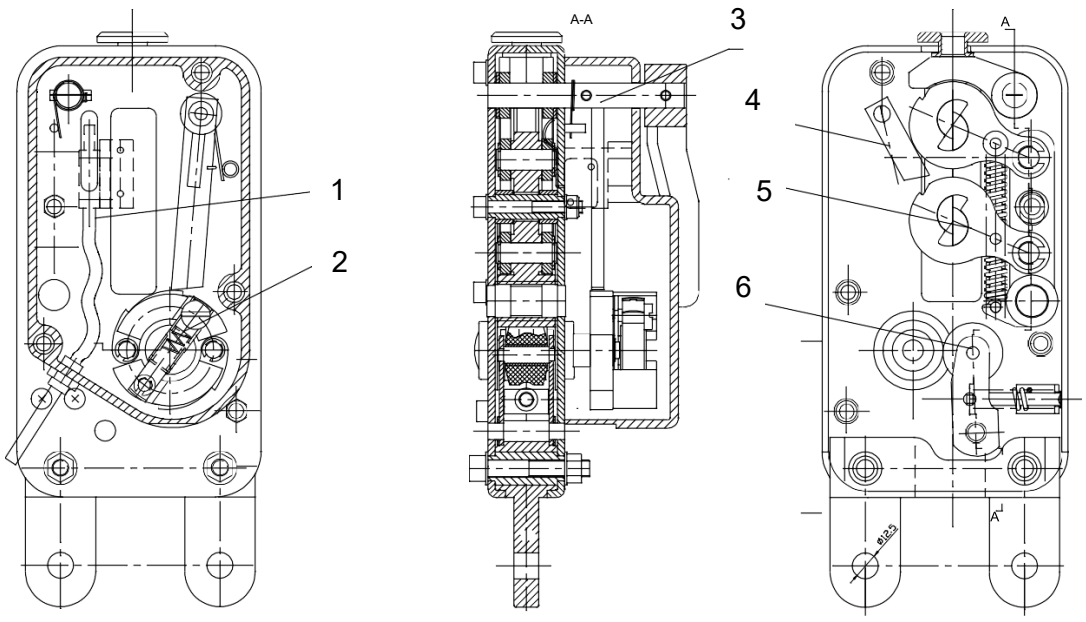
The centrifugally triggered secondary brake device consists of the lock rope mechanism, unlocking assembly, locking assembly, wire rope press assembly, centrifugal overspeed mechanism, and other components. The operation of the brake device is based upon the principle of a centrifugal speed limit. The wire rope runs through the pulley that is connected to the centrifugal overspeed mechanism. When the falling speed exceeds the limit, the pulley turns quickly to enable the swing block of the centrifugal overspeed mechanism to trigger the rope locking mechanism.

Optional accessory: Normally Open/Normally Closed switch power-off protection harness. If the unit is tripped the internal switch can provide a NO or NC circuit to cut power to your hoist or lifting device. When the unit trips, the micro switch will be triggered and then sends a signal to your electrical control system.

1.2.1 External View of Secondary Brake Device

Item No.	Part Description
1	Wire Rope Inlet
2	Unlocking Lever
3	Locking Lever
4	Cover
5	Bracket

1.2.2 Internal View of Secondary Brake Device



Item No.	Part Description
1	Rope Locked Switch
2	Centrifugal Overspeed Mechanism
3	Unlocking Assembly
4	Locking Assembly
5	Lock Wire Rope Mechanism
6	Wire Rope Press Assembly

2.0 Mounting and Delivery

- Danger of injuries due to falling objects, malfunction, or incorrect mounting.
- Danger of being pierced or cut.
- Please read the operating instructions carefully before mounting.
- Please wear safety gloves before any work on the wire rope.
- Do not touch the wire rope when the secondary brake device is activated.
- Do not touch the rope inlet of the secondary brake device.
- Keep a safe distance from the wire rope.
- Do not allow the wire rope to become tangled.
- Do not handle the running wire rope with your hands.

2.1 Items to Check Before Mounting

No.	Items	Results	Remark
1	Check if the brake device and fittings are complete.		
2	Check if the brake device is damaged.		
3	Check if the casing of the brake device is deformed.		
4	Check if the wire rope diameter and structure are compatible with the brake device.		
5	Check if the wire rope is damaged.		
6	Check if name plate is visible after mounting.		

2.2 Mounting and Requirements

- The mounting shall be conducted by personnel that have been properly trained.
- The maximum impact force shall be within the permissible range of the secondary brake device.
- The size of the mounting hole shall match the mounting dimensions of the secondary brake device.
- Fixation of secondary brake device
    - Use M12 bolts – 10.9 (Grade 8)
    - Use self-locking nuts to avoid missing and disengagement.
- The wire rope shall be inserted into the secondary brake device vertically.
- The actual working conditions shall meet the requirements for operating conditions of the secondary brake device.
- The wire rope must be taut with either a free hanging weight or tun buckle configuration.

3.0 Secondary Brake Device Dimensions

The following sketches illustrate the dimensions of the S2KLAS & S3KLAS:

3.1 (S2KLAS)

3.2 (S3KLAS)

4.0 Operation Warnings

- Risk of serious accidents.
- Danger of being injured by falling objects.
- Do not permit the continuous use of the secondary brake device.
- Do not permit use in an explosive area.
- Please read the operating instructions carefully before operating.
- Do not lean on the secondary brake device during use.
- Do not touch the wire rope or the wire rope inlet while the secondary brake device is activated.

4.1 Items to Check Before Use

No.	Items	Results	Remark
1	Check if the wire rope is fully secured.		
2	Check if the wire rope is damaged.		
3	Check if the wire rope is contaminated. If contaminated, clean the wire rope.		
4	Check if all connecting bolts are fastened securely.		
5	Perform the wire rope locking test on the brake device.		

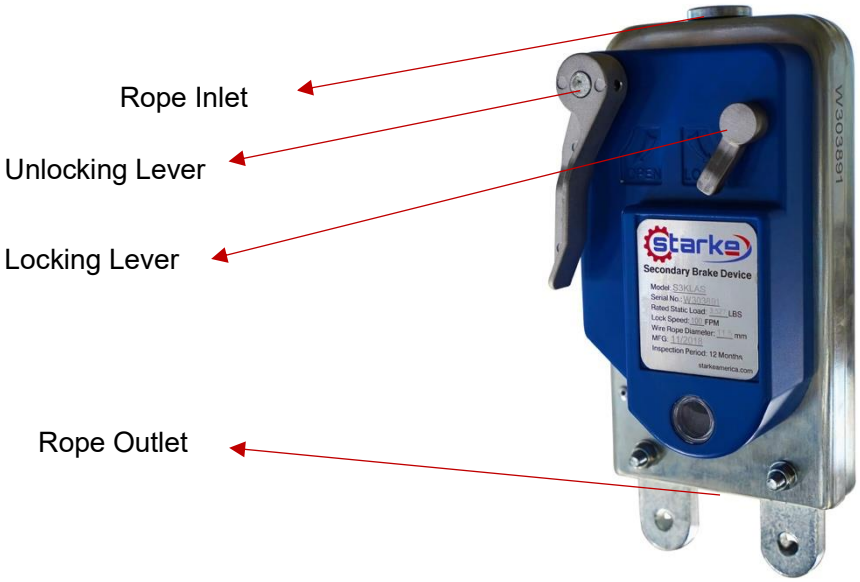
Locking test: With gloves on pull the wire rope above the unlocked brake device quickly through the device. If the brake device is locked immediately, it indicates that the wire rope locking mechanism functions normally. From the sight window of the brake device, check that the centrifugal overspeed mechanism rotates at a constant rate when the platform is being lifted or lowered. If the centrifugal overspeed mechanism rotates unevenly or is seized, remove it for inspection and repair.

5.0 Functional Description

The centrifugal secondary brake device is an independent mechanical device triggered by speed. When the lifting chain or rope of your system is broken or the lifting platform falls quickly, the secondary brake device will lock the secondary brake wire rope and inhibit the lifting platform from falling.

6.0 Operating Instructions

Mount the secondary brake device at the desired position. Turn the “Unlocking Lever” clockwise to open the secondary brake device. Insert the wire rope from the “Rope Inlet” at the top of the brake device through the “Rope Outlet” at the bottom of the brake device. Tighten the rope and fix a heavy weight or tun buckle. Now the brake device can be put into use.



If it is necessary to lock the safety wire rope manually, turn the “Locking Lever” counterclockwise. A “click” indicates that the wire rope is locked by the wire rope locking mechanism.

⚠**IMPORTANT NOTE: Do not lock the safety wire rope when in use.**

7.0 Dismantling

Dismantling Starke secondary brake shall be conducted by a person that has been properly trained. Safety gloves and special tools are necessary.

8.0 Care and Maintenance

- Do not lubricate the wire rope with disulphide containing lubricants.
- Please wear safety gloves before any work on a wire rope.
- Do not clean the wire rope or the secondary brake device with a high-pressure cleaner.

Maintenance activities include an inspection before each use, daily maintenance, annual inspection, a 2 year recertification, and other items as described. Users are responsible for daily maintenance and inspection. Annual inspections must be done by qualified personnel. **All maintenance activities must be recorded and signed.**

8.1 Check Before Each Use

Please refer to 4.1 for the list of items to check before use.

8.2 Daily Maintenance

The daily maintenance does not cover the replacement of parts. Users shall clean and maintain the secondary brake device as scheduled. Remove any dirt on the wire rope and brake device as well as rust on the wire rope, if possible.

8.3 Annual Inspection

Annual Inspection Periods:

Under normal circumstances, a Starke secondary brake device must be inspected once a year. The annual inspection of a secondary brake device must be completed by a qualified person approved by Starke, otherwise any liability of any kind will be placed upon the end user. The replacement parts must be OEM Starke components or parts.

The contents of the annual inspection include:

- Clean the outside of the secondary brake device.
- Check and replacement of wearing parts such as pressure wheel and centrifugal trigger.
- Test and adjust wire rope lock per sections 4.1, Locking Test above.

8.4 (2) Year Recertification

Recertify your device every 2 years

- Conducted biennially or 500 hours of operation.
- Clean the inside of the secondary brake device.
- Replace defective or worn parts
- Perform calibration of secondary brake device on test stand.
- Contact Starkeamerica.com for information about recertification

8.5 If an actual locking event occurs

If a Starke secondary brake should catch a falling load.

1. Lock out tag out the system electrical power immediately if there are electrical circuits in the vicinity. Wires could be frayed, and hidden dangers could be present. If possible, shut down the electrical circuits associated with items in the area.
2. If safe proceed to rescue any personnel who may be injured.
3. Support or safely remove any items that could fall off the platform.
4. **At the appropriate time remove the Starke secondary brake from service** and replace with a certified unit.
5. Replace unit or send in for recertification. Contact us at Starkeamerica.com

8.6 Maintenance

Maintenance items are detailed in the following table:

Interval	Maintenance items	Responsible Person
Every Day (Daily Check)	1. Check if the brake device is fastened. 2. Check if the wire rope is contaminated. 3. Check if all bolts are tightened. 4. Check if the brake device generates any abnormal sound.	User/Operator
Every Week	1. Check if the brake device is fastened. 2. Check the wire rope.	User/Operator
Two Year	Certification calibration of brake device	Authorized Personnel
When Needed	1. Clean the wire rope 2. Replace the wire rope	Qualified Personnel
When Needed	Adjust the wire rope locking speed	Authorized Personnel

9.0 Worn Parts

In the case of worn parts please contact Starkeamerica.com. The lock release handle is available as a service part.

Other parts are only available to certified repair centers for unit overhaul when performing a recertification of the unit.

10.0 Handling and Storage

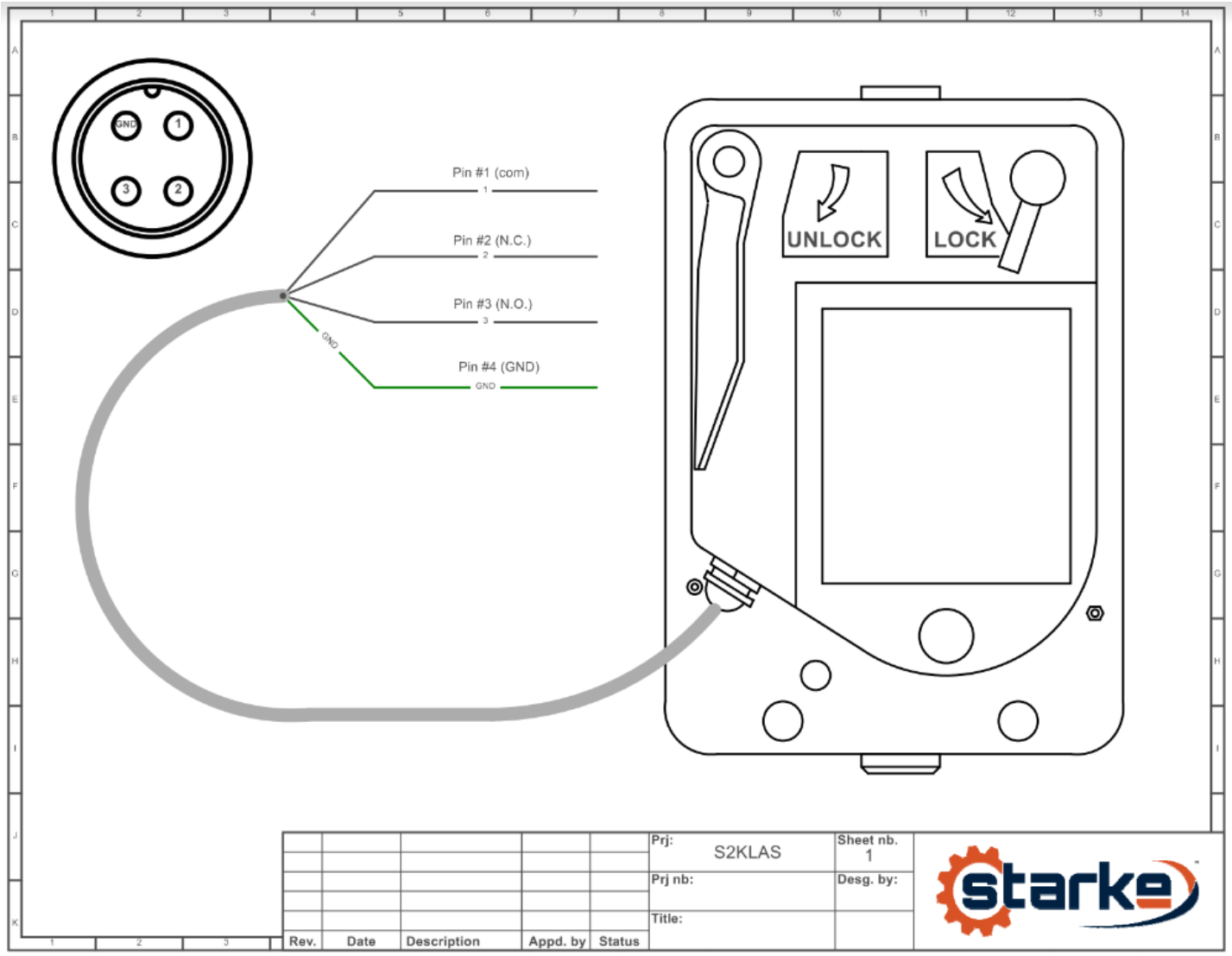
10.1 Transportation

Protect the secondary brake device from damage during transportation. Pack the secondary brake device in a suitable container for vehicle transport.

10.2 Storage

The secondary brake device must be stored in a dry and dust-free place at a stable temperature.

11.0 Electrical Wiring Diagram (Optional Attachment)



Starke Products Warranty

1 Year (12 Month) Parts & Labor Warranty

Unless otherwise specified, Starke guarantees that our products are free from material defects in design and workmanship under normal use, proper maintenance, and service.

This warranty is strictly limited to 12 months for single shift operation or 2,000 hours after installation, or 14 months after shipment, whichever is shorter. Within ten days after defect is found, warrantee must deliver a written notice to Starke providing defect information. All requested warranty information must be received promptly by Starke in no more than 5 business days.

Customer is responsible for all shipping charges on returned/warrantable items. Starke will cover the repair (parts and labor) at no charge or provide a replacement item at Starke's discretion.

This warranty does not cover defects or damage caused by acts of God, unusual wear and tear, improper use, or improper maintenance by the user. No responsibility for consequential damage is expressed or implied, and the responsibility under this warranty/guaranty is limited to the repair or replacement of the defective materials. Repair or replacement of the item is fully at the discretion of Starke.

ALL OTHER REPRESENTATIONS, EXPRESS OR IMPLIED, WARRANTY, OR LIABILITY RELATING TO THE CONDITION OR USE OF THE PRODUCT ARE SPECIFICALLY DISAVOWED, AND IN NO EVENT SHALL STARKE BE LIABLE TO BUYER, OR ANY THIRD PARTY, FOR ANY DIRECT OR INDIRECT CONSEQUENTIAL OR INCIDENTAL DAMAGES

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Notes

Contact Your Starke Representative for More Information on Products to Help Maximize Your Workplace Efficiency


Hoists & Trolleys

Crane Components


Electrification


Crane Kits


Slings


Safety