



OWNER'S MANUAL

## Secondary Brake Device Owner's Manual



# Secondary Brake Device



## Mounting and Operating Instructions

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## Brief Description:

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Starke reserves the copyright of this Owner's Manual. The operating instructions are intended for users of the secondary brake device. Users must be familiar with all information before mounting, use, or maintenance of the secondary brake device. Starke is not liable for any serious consequence.

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**Manufacturer:** Starke

**Website:** [starkeamerica.com](http://starkeamerica.com)

## Technical Parameters of Starke Secondary Brake Device

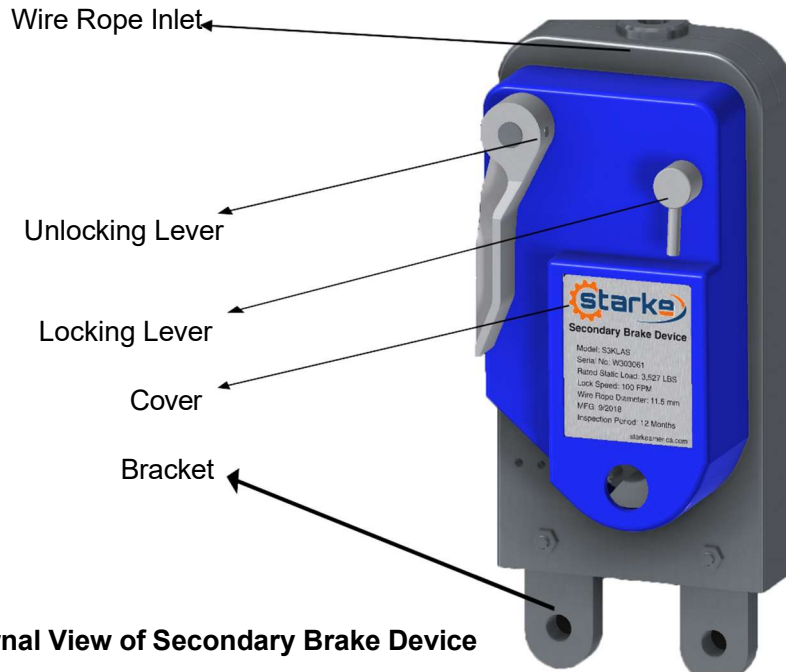
Model	Wire Rope Diameter (mm)	Rated Load Capacity	Lock Speed
S2KLAS	10.2	2,204 lb	100 FPM
S3KLAS	11.5	3,527 lb	100 FPM
Normal Operating Conditions	Ambient temperature: 14° Fahrenheit to 131° Fahrenheit		
	Ambient relative humidity: ≤90% (at 77° Fahrenheit)		

### 1. Operating Principle and Structural Features

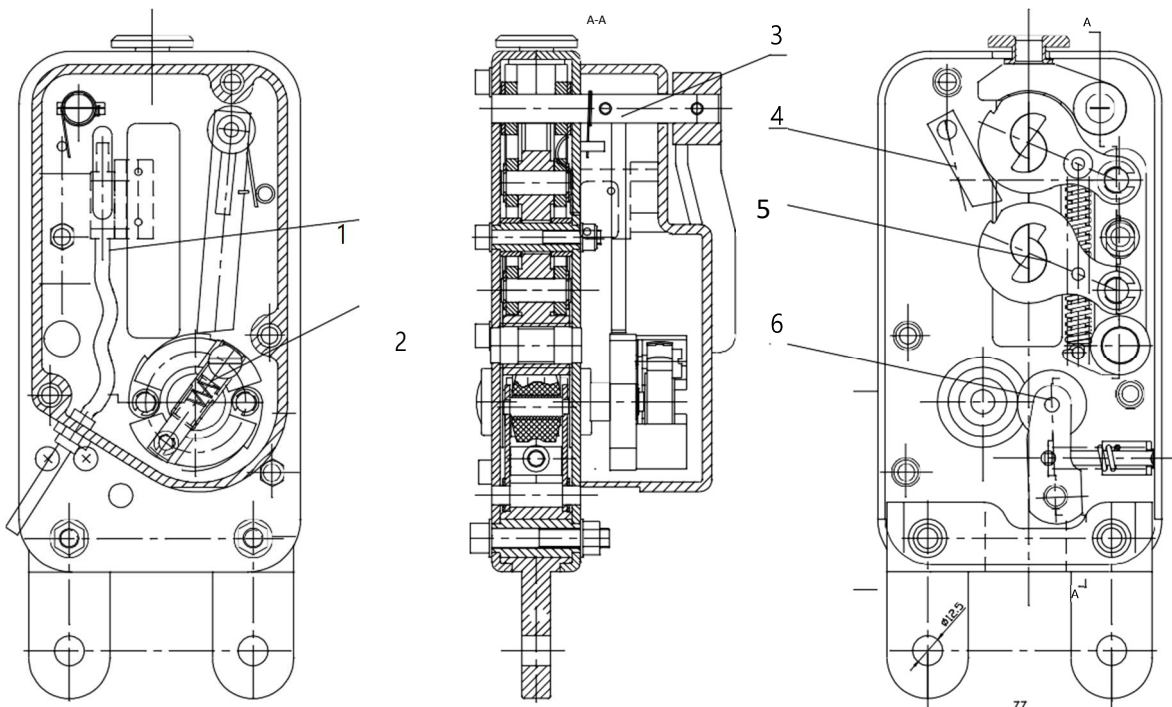
The centrifugally triggered secondary brake device consists of the lock rope mechanism, unlocking assembly, locking assembly, wire rope press assembly, centrifugal overspeed mechanism, and other components. The operation of the brake device is based upon the principle of centrifugal speed limit. The 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. Then the rope clip locks the safety wire rope swiftly.

Optional accessory: Lock wire rope power-off protection device that is to install a micro switch in the safety lock. When the safety lock locks the rope, the micro switch will be triggered, and sends a signal to the electrical control system to cut off the power.

**External view of secondary brake device**



**Internal View of Secondary Brake Device**



**1**-Rope Locked Switch

**3**-Unlocking Assembly

**5**- Lock Wire Rope Mechanism

**2**- Centrifugal Overspeed Mechanism

**4**-Locking Assembly

**6**- Wire Rope Press Assembly.

## 2. 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

1. The mounting shall be conducted by personnel that have been properly trained.
2. The maximum impact force shall be within the permissible range of the secondary brake device.
3. The size of the mounting hole shall match the mounting dimensions of the secondary brake device.

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

### Secondary Brake Device (S2KLAS)



### Secondary Brake Device (S3KLAS)



4. Fixation of secondary brake device
  - i. Use M12 bolts – 10.9 (Grade 8)
  - ii. Use self-locking nuts to avoid missing and disengagement.
5. The wire rope shall be inserted into the secondary brake device vertically.
6. The actual working conditions shall meet the requirements for operating conditions of the secondary brake device.
7. The wire rope must be taut with either a free hanging weight or tun buckle configuration.

### 3. Operation



- Risk of serious accident.
- 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.

#### 3.1 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: Pull the wire rope quickly above the unlocked brake 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.

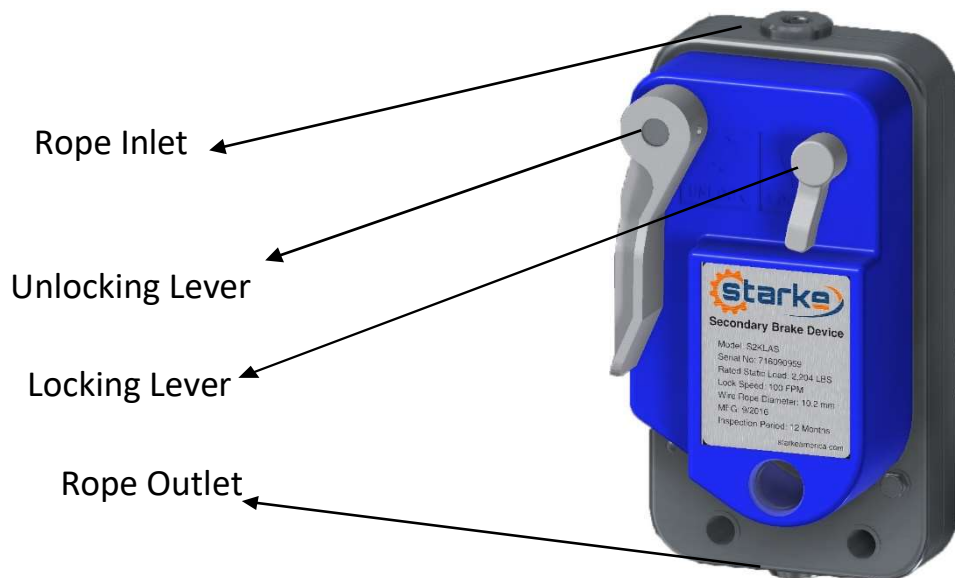


### 3.2 functional Description

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

### 3.3 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.

Note: Do not lock the safety wire rope when in use.

### 3.4 Dismantling

The dismantling shall be conducted by a person that has been properly trained. Safety gloves and required tools are necessary.

## 4. 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, bi-annual recertification, and others. Users are responsible for daily maintenance and inspection. Annual inspections must be done by qualified personnel. All maintenance activities must be recorded and signed.

### 4.1 Check before each use

Please refer to 3.1 for the list of items to check before use.

### 4.2 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.

### 4.3 Annual Inspection

#### Annual Inspection Periods:

Under normal circumstances, a 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 the liability will be placed upon the end user. The replacement parts must be OEM Starke components.

The contents of the annual inspection include:

1. Clean the outside of the secondary brake device.
2. Check and replacement of wearing parts such as pressure wheel and centrifugal trigger.
3. Test and adjust wire rope locking speed.

#### 4.4 Bi-annual Recertification

1. Must be conducted bi-annually or 500 hours of operation.
2. Clean the inside of the secondary brake device.
3. Perform calibration of secondary brake device.

#### 4.5 Maintenance

Maintenance items are detailed in the following table:

Interval	Maintenance items	Responsible person
Every Day (Daily Check)	<ol style="list-style-type: none"> <li>1. Check if the brake device is fastened.</li> <li>2. Check if the wire rope is contaminated.</li> <li>3. Check if all bolts are tightened.</li> <li>4. Check if the brake device generates any abnormal sound.</li> </ol>	User
Every Week	<ol style="list-style-type: none"> <li>1. Check if the brake device is fastened.</li> <li>2. Check the wire rope.</li> </ol>	Operator
Two Year	Bi-annual calibration of brake device	Authorized Personnel
When Needed	<ol style="list-style-type: none"> <li>1. Clean the wire rope</li> <li>2. Replace the wire rope</li> </ol>	Authorized Personnel
When Needed	Adjust the wire rope locking speed	Authorized Personnel

Conduct an overall maintenance and inspection after each project use.

## 5. Wearing Parts

No.	Parts Name	Article Number in Drawing
1	Rope Pressing Wheel	39
2	Rope Pressing Rolling Wheel	12
3	Outside Wire Rope Clip	26
4	Inside Wire Rope Clip	25

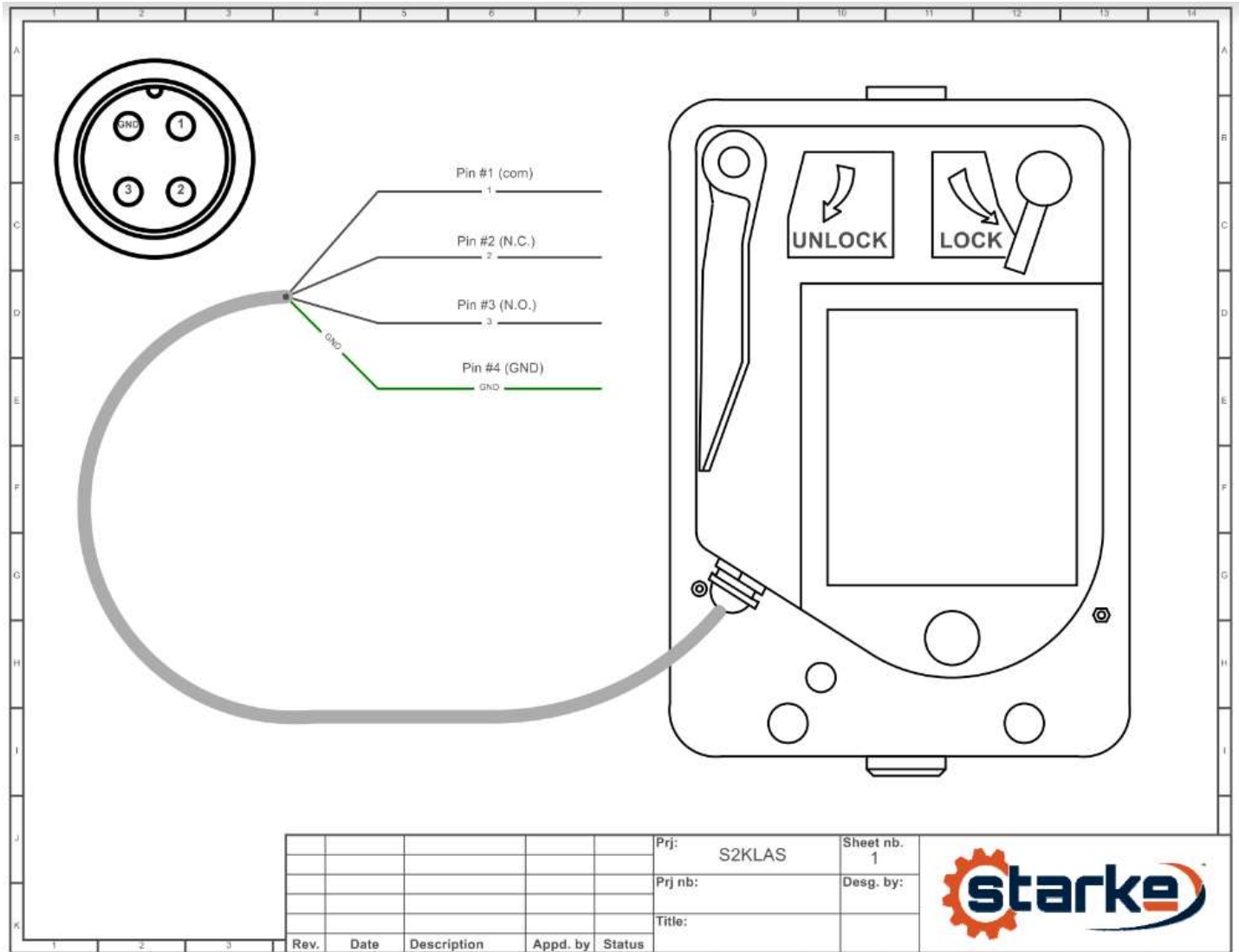
## 6. Handling and Storage

### 6.1 Transportation

Protect the secondary brake device from damage during transportation. Pack the secondary brake device in the carton for vehicle transport.

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

## Electrical Wiring Diagram (optional attachment)

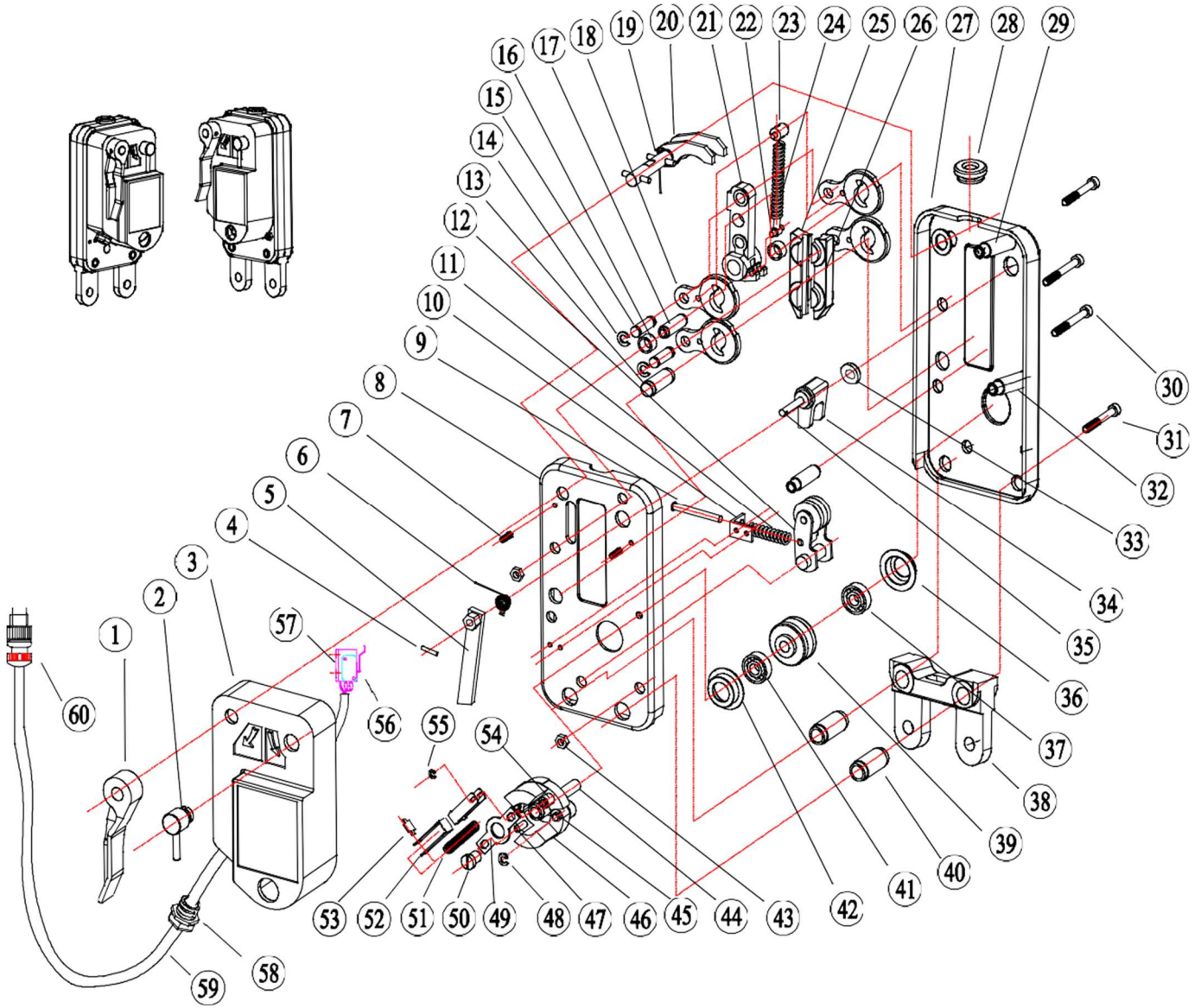




**Attached table 1: Part List of Secondary Brake Device (S2KLAS)**

No.	Description	No.	Description	No.	Description
1	Lever	21	Connection	41	Bearing 6000-2Z
2	Locking bracket	22	Wire Rope locking spring rod	42	Bearing cover (sight window)
3	Casing	23	Spring block	43	Locking nut M6
4	Spring pin 3×16	24	Wire Rope locking spring	44	Rotating shaft
5	Shift lever	25	Wire Rope clip (inside)	45	Fixation column
6	Return spring	26	Wire Rope clip (outside)	46	Swing block
7	Screw M4×12	27	Rear panel	47	Connecting column 1
8	Front panel	28	Wire Rope Inlet	48	Split washer 6
9	Rope pressing spring rod	29	Screw sleeve of casing	49	Connecting plate
10	Fixation angle aluminum	30	Inner hexagon screw M6×55	50	Fastening cap
11	Rope pressing spring	31	Inner hexagon screw M6×45	51	Spring
12	Rope pressing device	32	Screw sleeve	52	Movable clip
13	Bearing axle	33	Shaft sleeve 2	53	Stop shim
14	Split washer 8	34	Wire Rope outlet	54	Positioning tube
15	Cleading shaft	35	Top block	55	Split washer 4
16	Shaft sleeve 1	36	Locking shaft		
17	Screw sleeve	37	Bearing cover (blind)		
18	Cleading	38	Bearing 6000-2Z		
19	Lever return spring	39	Rope Pressing Rolling wheel		
20	Unlocking fork assembly	40	Big pin		

Attached Figure 2: Structure of Secondary Brake Device (S3KLAS)





**Attached table 2: Part List of Secondary Brake Device (S3KLAS)**

No.	Description	No.	Description	No.	Description
1	Lever	21	Connection	41	Bearing 6000-2Z
2	Locking bracket	22	Wire Rope locking spring rod	42	Bearing cover (sight window)
3	Casing	23	Spring block	43	Locking nut M6
4	Spring pin 3×16	24	Wire Rope locking spring	44	Rotating shaft
5	Shift lever	25	Wire Rope clip (inside)	45	Fixation column
6	Return spring	26	Wire Rope clip (outside)	46	Swing block
7	Screw M4×12	27	Rear panel	47	Connecting column 1
8	Front panel	28	Wire Rope inlet	48	Split washer 6
9	Rope pressing spring rod	29	Screw sleeve of casing	49	Connecting plate
10	Fixation angle aluminum	30	Inner hexagon screw M6×55	50	Fastening cap
11	Rope pressing spring	31	Inner hexagon screw M6×45	51	Spring
12	Rope pressing device	32	Screw sleeve	52	Movable clip
13	Bearing axle	33	Shaft sleeve 2	53	Stop shim
14	Split washer 8	34	Rope outlet	54	Positioning tube
15	Cleading shaft	35	Top block	55	Split washer 4
16	Shaft sleeve 1	36	Locking shaft	56	Micro switch (Optional)
17	Screw sleeve	37	Bearing cover (blind)	57	Connection plate (Optional)
18	Cleading	38	Bearing 6000-2Z	58	Screw (Optional)
19	Lever return spring	39	Rope Pressing Rolling wheel	59	Cable (Optional)
20	Unlocking fork assembly	40	Big pin	60	Cable plug (Optional)



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## 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 the defect is found, the 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.

**The 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 defective materials. Repair or replacement of the item is fully at the discretion of Starke.

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