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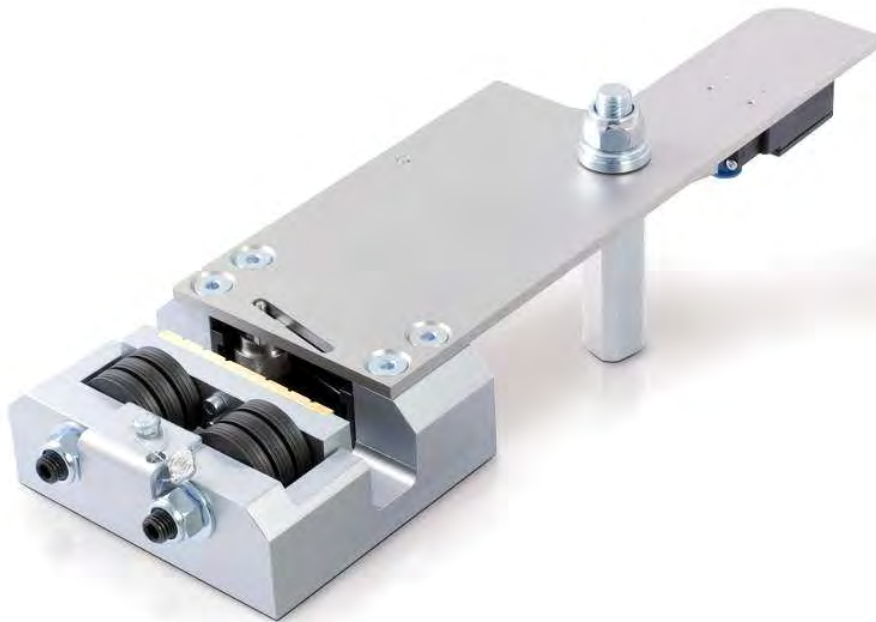


Manual

300.001.123
Version 02.2019

Progressive safety gear SG braking downwards

Safety gear
SG1D-1





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Table of content

1. Safety instructions	3
1.1 Designations and signs	3
1.2 Principle / intended use of the safety gear	3
1.3 Selection and qualification of personnel / basic responsibilities	4
1.4 Safety instructions governing assembly and specific operational phases	4
2. General notes	5
2.1 Designation	5
2.2 Criteria for the selection of safety gears	5
2.3 Type-Examination Certificate	5
2.4 Manufacturer of the safety gear	5
3. Technical Data	6
3.1 Range of application	6
3.2 Tripping	6
3.3 State of delivery	7
4. Mounting and dimensions	8
5. Specification and function	11
5.1 Specification of the safety gear	11
5.2 Function of the safety gear	11
6. Assembly	12
6.1 Assembly of the safety gear at the lift car	12
7. Commissioning	14
7.1 Functional check	14
7.2 Commissioning at the lift	14
7.3 Acceptance test or commissioning of the lift	14
7.4 Check after braking	14
8. Content of QR-Code	15
9. Maintenance	16
10. Transport	16
11. Annexe	16

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1. Safety instructions

This product information refers to the progressive safety gear type SG1D-1 braking downwards and contains important information on correct and safe installation, putting into service, use and maintenance of the safety gear. Observing these instructions helps to avoid danger, to reduce repair costs and downtimes and to increase the reliability and life of the safety gear.

The product information has to be supplemented by instructions based on national rules and regulations concerning accident prevention.

The product information must always be available wherever the safety gear is in use. The manual must be read and applied by any person in charge of carrying out work with and on the safety gear.

In addition to the product information and to the mandatory rules and regulations for accident prevention in the country and place of use of the safety gear the generally recognized technical rules for safe and proper working must also be observed.

1.1 Designations and signs

The following designations and signs are used in this product information to designate instructions of particular importance:



DANGER

In this manual refers to the risk of death, heavy injuries and extensive damage if the required prevention measures are not taken.



WARNING

In this manual refers to light injuries or damage if the required prevention measures are not taken.



IMPORTANT

In this manual refers to important information about the product or is meant to attract the readers' attention to important parts of the product information.

1.2 Principle / intended use of the safety gear

The safety gear has been built in accordance with Lifts Regulations 2016 and current standards and the recognized safety rules. Nevertheless, its use may constitute a risk to life and limb of the user or cause damage to the safety gear and to other material property.

The safety gear must be operated in technically perfect condition only, in accordance with its intended use and with the instructions set out in this product information.

Any functional disorders, especially those affecting the safety of the safety gear should therefore be rectified immediately!

The safety gear SG braking downwards is designed exclusively for preventing the fall of the lift car (see EN81-20:2020, chapter 5:6:2:1).

Using the safety gear for purposes other than those mentioned above is considered contrary to its designated use. The manufacturer cannot be held liable for any damage resulting from such use. The risk of any misuse lies entirely with the user.

Operating the safety gear within the limits of its designated use also involves observing the instructions set out in this manual and complying with the inspection and maintenance directives.

Never make any modifications, additions or conversions that might affect safety without the supplier's approval!

Spare parts must comply with the technical requirements specified by the manufacturer. Spare parts from original equipment manufacturers can be relied to do so.

Adhere to prescribed intervals for routine checks and inspections!

For the execution of maintenance work tools and workshop equipment adapted to the task on hand are absolutely indispensable.

1.3 Selection and qualification of personnel / basic responsibilities

Any work on and with the safety gear must be executed by reliable personnel only. Statutory minimum age limits must be observed!

Employ only trained and instructed staff and set out clearly the individual responsibilities of the personnel for operation, set-up, maintenance and repair!

Make sure that only authorized personnel works on or with the safety gear!

1.4 Safety instructions governing assembly and specific operational phases

Assembly	Always wear personal protective equipment during assembly work.
Standard Operation	Avoid any operational mode that might be prejudicial to safety! Take the necessary precautions to ensure that the safety gear is used only when in a safe and reliable state!
Main-tenance	Ensure that the maintenance area is adequately secured! For carrying out overhead assembly work always use specially designed or otherwise safety-oriented ladders and working platforms. Wear a safety harness when carrying out maintenance work at greater heights! Before cleaning with water or detergents cover or tape up all openings which - for safety and functional reasons - must be protected against water or detergent penetration. After cleaning remove all covers and tapes applied for that purpose! Always tighten any screwed connections that have been loosened during maintenance and repair! Ensure that all consumables and replaced parts are disposed safely and with minimum environmental impact!
Gas Dust Steam Smoke	Carry out welding or grinding work on the safety gear only if this has been expressly authorized, as there may be a risk of explosion and fire! Before carrying out welding or grinding operation, clean the safety gear and its surroundings from dust and other inflammable substances and make sure that the premises are adequately ventilated (risk of explosion)! When there is little space for working observe the national rules and regulations!
Oil Grease etc.	When handling oil, grease and other chemical substances, observe the product-related safety regulations! Be careful when handling hot consumables (risk of burning or scalding)!

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2. General notes

2.1 Designation

SG.. - .	Safety Gear
1D	braking in 1 Direction ↓
2D	braking in 2 Directions ↑↓ (see manual 300.000.155)
- 1	Type 1

Example SG1D-1 = Safety gear SG braking downwards, type 1

2.2 Criteria for the selection of safety gears

Rail head width			
Load of safety operation P+Q			
Counterweight mass			
Car speed			
Guide rail	→	machined	→ dry oiled
	→	drawn	→ dry oiled

2.3 Type-Examination Certificate

Certification number of the EC type-examination certificate:

Type	Certification no.
SG1D-1	UK-SG 802/1



Please note:

Type-examination certificates according to Lifts Regulations 2016 can be downloaded on the homepage of SLC:
<https://www.slc-liftco.com/service/download-certificates/?lang=en>

2.4 Manufacturer of the safety gear

Manufacturer of the safety gear and holder of the type-examination certificate:

Sautter Lift Components GmbH
Remsstraße 26
70806 Kornwestheim | Germany

3. Technical Data

Range of application

	Machined rails		Drawn rails	
	dry	oiled ¹	dry	oiled ¹
SG1D-1				
Min. width of running surface	19 mm			
Rail head width	5 – 16 mm			
Max. rated speed [m/s]	3.23		3.23	
Total mass min.-max. [kg]	543 – 3'095	523 – 2'935	305 – 2'605	299 – 2'547

Maximum tripping speed of the overspeed governor and range of maximum rated speed:

Max. tripping speed [m/s]	3.23
Max. rated speed [m/s]	2.50 – 2.80

3.1 Tripping

Below the minimum tripping force (without tripping device) required to trip the safety gear

Type	Braking downwards
SG1D-1	120 N

The maximum admissible tripping force required at the safety gear shall not exceed 1600 N.

The individually needed tripping force has to be ascertained at the lift, considering all components.

Standard EN81-20:2020 rules that for the tripping of safety gears twice the required tripping force has to be available – at least 300 N!

¹ the indications for oiled guide rail refer to use of mineral oils without additive (for example lubricant C according to DIN 51517, Part 1).

3.2 State of delivery

The safety gear is adjusted in the factory to the following lift specific characteristics:

- ❖ Mass of lift car (P)
- ❖ Mass of payload (Q)
- ❖ Mass of compensation ropes
- ❖ Rated speed of the lift car
- ❖ Rail head width (5 – 16 mm)
- ❖ Manufacturing mode of rails (machined, drawn)
- ❖ Surface condition of rails (dry, oiled)

The setting is secured against alterations by the manufacturer by means of a seal.



DANGER

Wrong setting of the safety gear can result in falling-down of the lift.

The safety gear is adjusted by the manufacturer. As the deceleration depends on different, partially lift-specific factors (material of guide rail, surface hardness of the rail, ...) a precise pre-adjustment cannot be guaranteed.

If a setting correction is exceptionally required, the setting has to be carried out only by specially trained personnel after consultation with the manufacturer. The new setting has to be secured against unauthorized alterations by means of a seal.



WARNING

The manufacturer cannot be held liable for damages caused by unauthorized setting alterations.



ACHTUNG

WARNING

Before installing the safety gear on the lift car its type plate characteristics have to be compared with the lift characteristics. The type plate is mounted on the safety gear.

The safety gear must only be applied within the permission scope of application: see EC type-examination certificate "Scope of application", certificate no. see chapter 2.3.



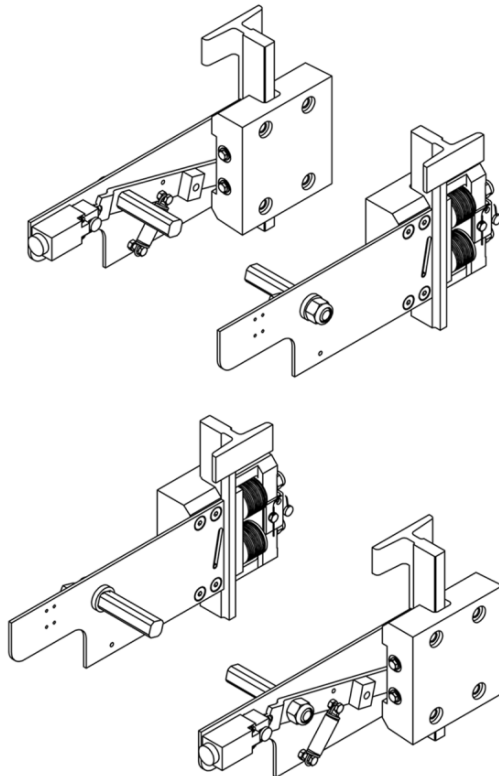
IMPORTANT

The safety gear is set at work according to values specified in the order form for safety gears to obtain the required braking force.

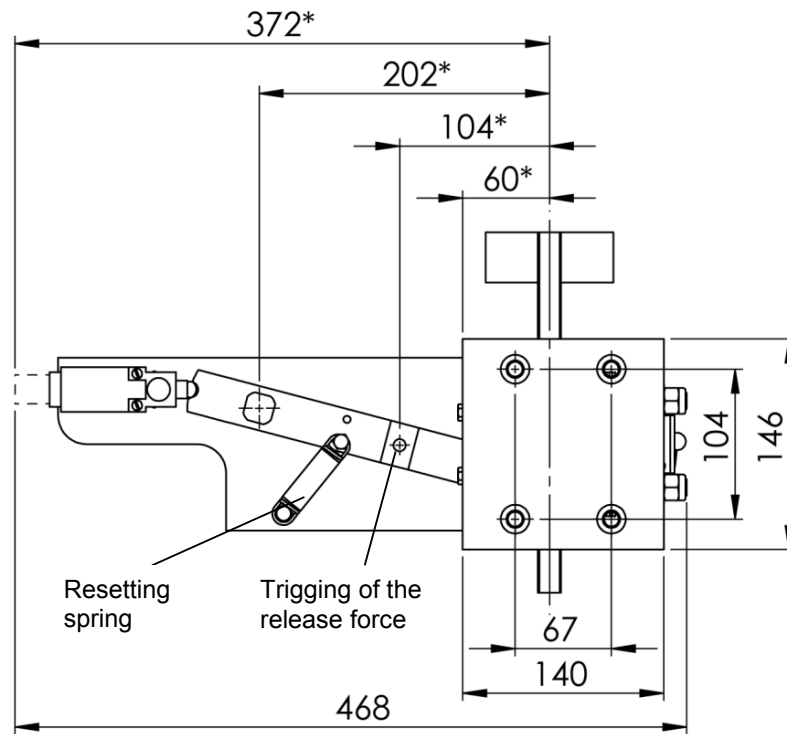
4. Mounting and dimensions

Type	Installation dimensions			
	Weight (Pair)	Height	Width	Depth
SG1D-1	18 kg	144 mm	417 mm	55 mm

SG1D-1

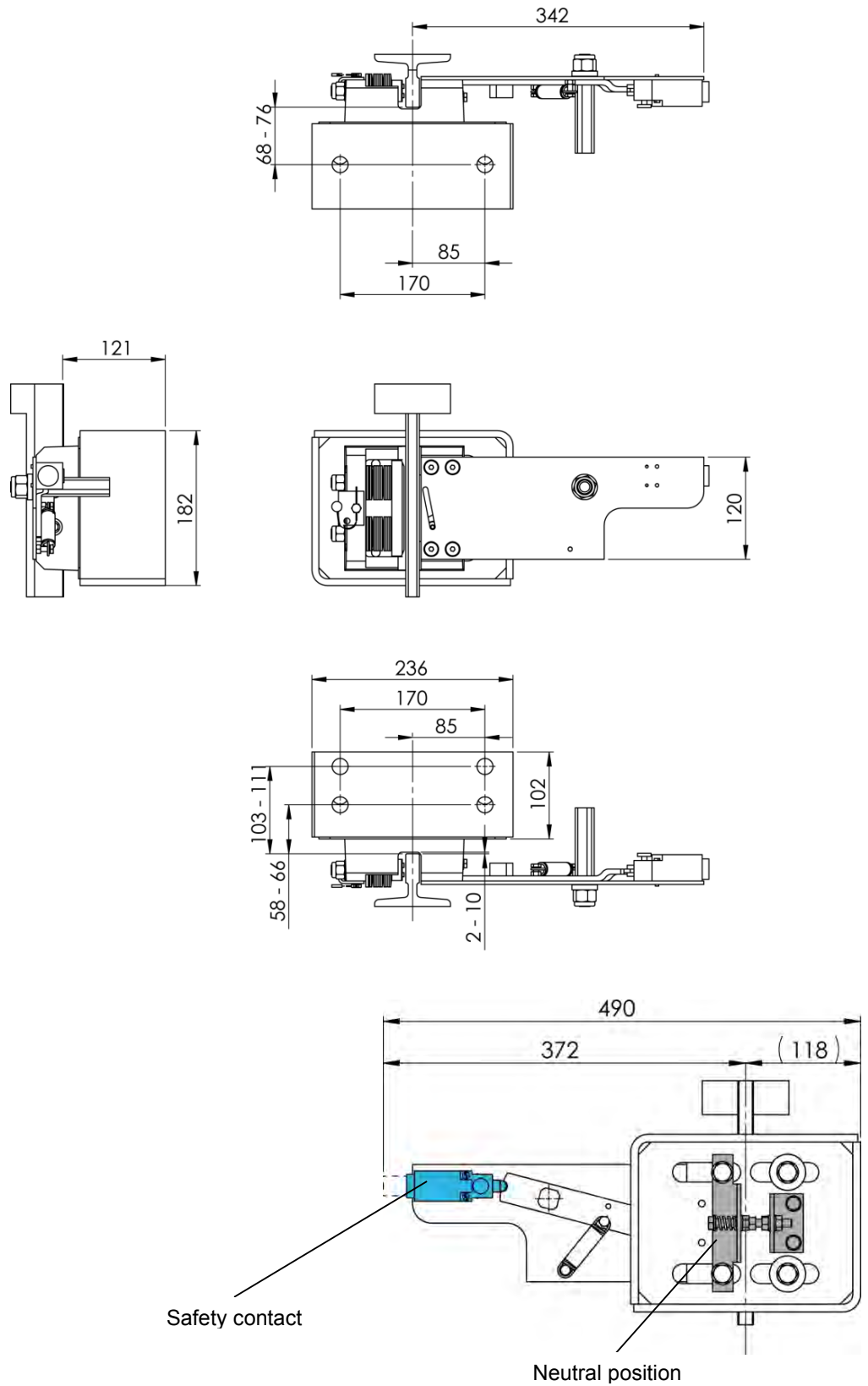


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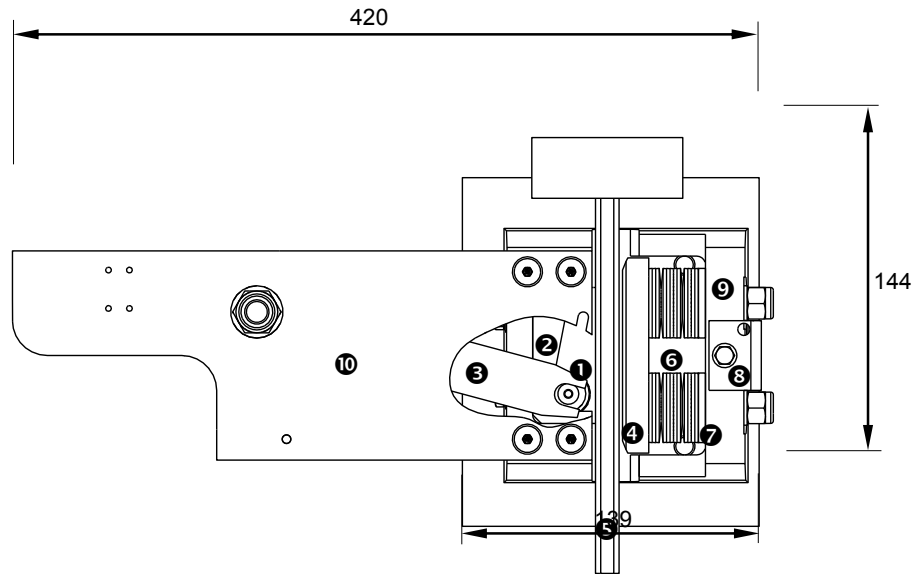
* When brake is activated, the measure increases by approximately 5 mm.

SG1D-1 with mounting brackets



5. Specification and function

5.1 Specification of the safety gear



- | | |
|----------------------|--------------------|
| ① safety gear roller | ⑥ disk spring |
| ② roller guide | ⑦ distance plates |
| ③ lever | ⑧ safety plate |
| ④ brake shoe | ⑨ internal housing |
| ⑤ rail | ⑩ fishplate |

5.2 Function of the safety gear

Upon tripping the overspeed governor both levers ③ synchronised by the actuating shaft are turned by 15°.

In doing so the safety gear roller ① moved by the lever makes contact with the rail surface. The safety gear roller is pressed into the wedge-shaped gap between rail and roller guide ②. Owing to the wedge effect of the roller guide the full floating beared safety gear is moved until the brake shoe ④ rests against the rail ⑤.

The disc spring transmits the braking force to the internal housing. To adapt to different widths of guide blades distance plates of various thickness ⑦ are placed under the disc.

The spring pressure is preset and secured by a safety plate ⑧ and a led-sealing to prevent unauthorized adjustment.

In the braking process the brake shoe fixed on the bracket cuts into the rail surface. The braking effect is caused by metal cutting in the rail surface, friction and spring tensioning work.

Moving the lift car upwards releases the brakes and lever and the safety gear rollers return to neutral position.

The safety gear is ready for action again.



IMPORTANT

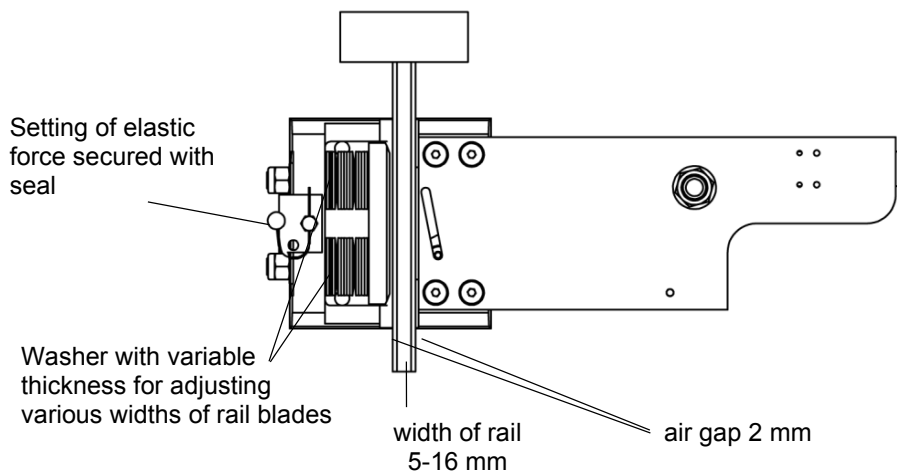
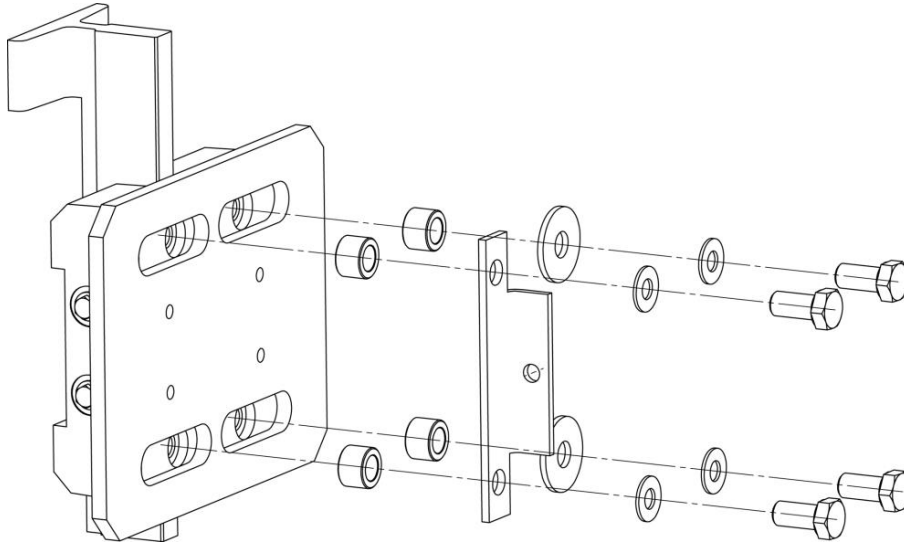
The safety gear transmits the braking force to the car. This braking force must be taken into account in the construction of the interface between safety gear and car.

6. Assembly

6.1 Assembly of the safety gear at the lift car

The safety gear is fixed to the lift car with four screws of type M12 and bushes.

Pay attention to the full floating bearing the safety gear as this is the key to the safety gear sliding into braking position after being tripped by the overspeed governor.



WARNING

When the safety gear is in neutral position it can be adjusted using the adjustment mechanism.

The following points must be observed:

The rail running guide must cover the brake shoes completely. The air gap between the rail running surface and the brake shoe must be adjusted to 2 mm.

The safety gear must be installed so that the spring mounted brake shoe is parallel to the rail and in direction of travel.

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WARNING

Ensure that the mounting screws in the long slots of the external housing have enough play in both directions in neutral positions.

Correct position of the safety gear

During assembly the safety gear on the car take care for the correct position of the safety gear.

Firstly, there is an advice on the type plate of the safety gear, secondly the following characteristics of the safety gear roller is only given if the safety gear is mounted correctly:

By pulling the lever upwards the gap between safety gear roller and rail gets smaller until the safety gear roller rests against the rail.



WARNING

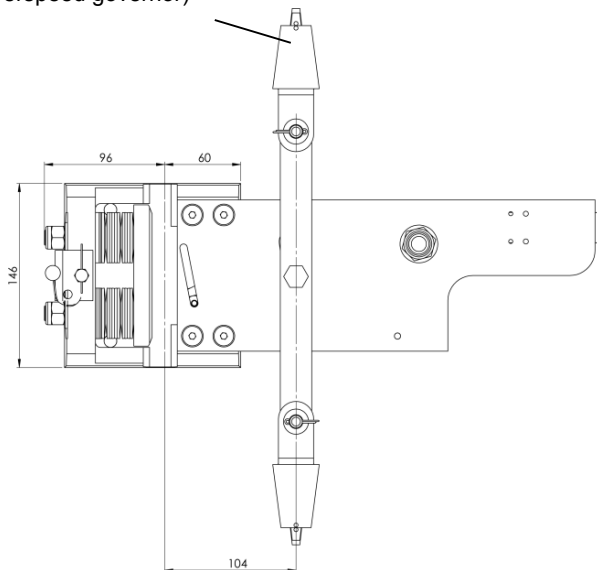
Incorrect installation of the braking device causes a functional disorder of the safety gear.

Linkage of the braking units

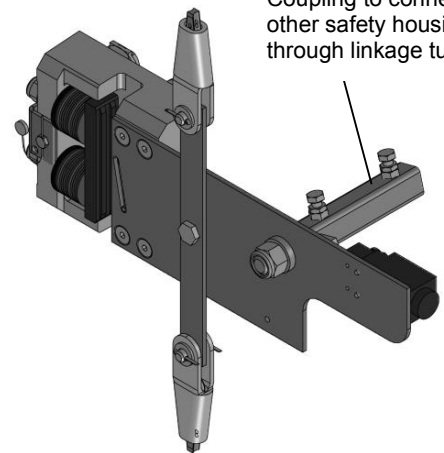
Both safety gear units are linked with an actuating shaft.

The actuating shaft is fixed to the lever of the safety gear with attachment screws or spring type straight pins. The actuating shaft is connected by mean of two square-type tubes □ 20x20 mm.

Linked to OSG-rope
(Overspeed governor)



Coupling to connect with
other safety housing
through linkage tube



7. Commissioning

7.1 Functional check



WARNING

Before commissioning the safety gear

- ❖ make sure that the overspeed governor works correctly, that the safety gear is attached to the overspeed governor and that the produced tractive force is two times the force required for engaging the safety gear.
- ❖ the guide rail must be cleaned of dirt. Most suitable for cleaning is cold solvent.

Before commissioning the lift car

- ❖ the lift car must be braked statically:
by turning the actuating shaft until both safety gear rollers contact the guide rail as well as letting the car down slowly. It has to be checked if both safety gear rollers move to their working position.
- ❖ the lift car must be braked with low speed.
It has to be checked if both safety gear rollers move to their working position.

For checking the braking force, it is possible to trip the safety gear with rated speed or overspeed.

By pulling out from braking position the lever of the safety gear roller turns back into neutral position.



WARNING

The safety gear may be operated only in combination with an overspeed governor.

7.2 Commissioning at the lift

Braking the car in down direction with 125% of payload decelerations of the car must be between 0,2g and 1g (9,81m/s²).

7.3 Acceptance test or commissioning of the lift



IMPORTANT

Engagement test downwards

Tests before commissioning the lift according to EN81-20:2020, chapter 6.3, resp. periodic tests according to EN81-20:2020, Annex C.

7.4 Check after braking

After every braking the safety gear has to be rechecked by a qualified person.

There is to be checked visually whether any changes or dirtying at the braking elements has occurred.

The following points have to be rechecked:

- ❖ excessive wear of the brake shoes
- ❖ deformations
- ❖ smooth running

The rubbed-off particles have to be removed and the braking marks grinded down.

Braking again on a re-grinded braking track is not causing an essential change of the braking force.



DANGER


For guide rail lubrication oil products approved in the type examination certificate shall be used only. Use machine oil of viscosity class ISO 68-150 without extreme pressure additive. See mineral oils without additive (for example lubricant C according to DIN 51517, Part 1.) Oils for hydraulic aggregates, gears and motors are not suitable for this use.

8. Content of QR-Code

Description	Data field	Type	Length (symbol)	Safety components from other suppliers
1	Product name	CHAR	40	Product name of safety gear
2	Release	NUM	2	
3	Revision	NUM	2	
4	Identification number	CHAR	35	SL product number
5	Serial number	CHAR	18	
6	Batch number	CHAR	10	Only when serial number is not available
7	Manufacturer name	CHAR	30	Name of manufacturer
8	Manufacturer postal code	CHAR	10	Postal code of manufacturer
9	Manufacturer town	CHAR	30	Town of manufacturer
10	Manufacturer country code	CHAR	5	Two-character country code according to ISO 3166-1
11	Importer name	CHAR	30	Name of importer
12	Importer postal code	CHAR	10	Postal code of importer
13	Importer town	CHAR	30	Town of importer
14	Importer country code	CHAR	5	Two-character country code according to ISO 3166-1

Notice: Data fields without values are marked with "---". If numbers 2 and 3 (approval and revision) are not necessary, fields remain empty.

Example of QR-code for SG1D-1 safety gear from SLC:

Description	Data field	Text in QR-code	Sample QR-code
1	Product name	SG1D-1	
2	Release		
3	Revision		
4	Identification number	50100505	
5	Serial number	16/5821	
6	Batch number	---	
7	Manufacturer name	Sautter Lift Components GmbH	
8	Manufacturer postal code	70806	
9	Manufacturer town	Kornwestheim	
10	Manufacturer country code	DE	
11	Importer name		
12	Importer postal code		
13	Importer town		
14	Importer country code		

9. Maintenance

Upon maintenance the safety gear shall be checked for:

- ❖ smooth operation
- ❖ synchronous operation of the two units
- ❖ wear
- ❖ rust
- ❖ dirt
- ❖ sealing

If, after a couple of braking tests, the braking rollers or the safety gear base show signs of wear they are to be replaced by qualified persons.

Material numbers:

Brake shoe	106.930.288
Safety gear roller	106.920.120
Roller guide	106.700.191

10. Transport

Any work upon transport, storage, installation and commissioning as well as (if any) demounting and disposal of a safety gear is to be carried out by qualified persons only.

They shall be responsible for proper assembly, transport and installation, and for putting the safety gear into operational condition. If this is not ensured, the manufacturer shall not be held liable for any damages that might occur.

Upon transport the safety gear must be protected against:

- ❖ humidity
- ❖ shock
- ❖ dirt
- ❖ falling-down, etc.

11. Annexe

- ❖ UK Type-Examination Certificate UK-SG 802
- ❖ Certificate of Conformity



IMPORTANT

Find more certificates of conformity in additional languages on our homepage:
<https://www.slc-liftco.com/service/download-certificates/?lang=en>