

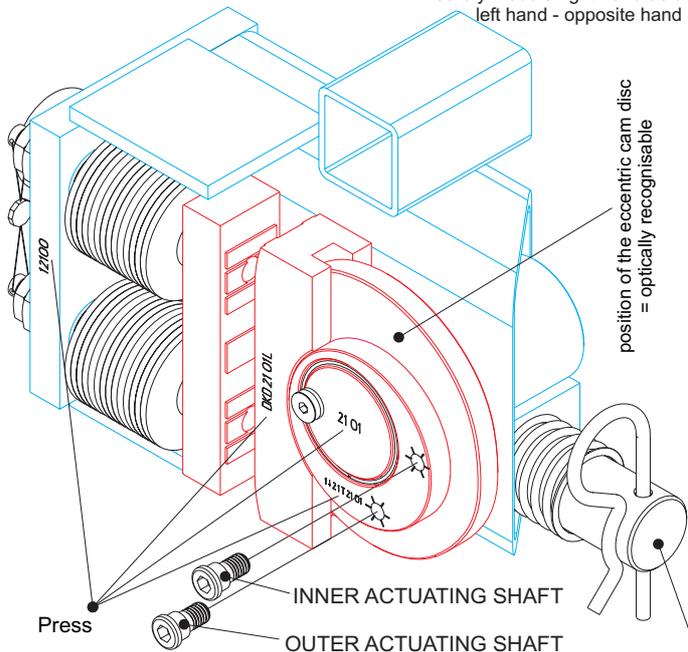
SAFETY MODULE ↓↑

Progressive Safety gear = rated Load + Lift car mass in free fall
 Breake device = ½ Rated load + Lift mass in upward direction
 Release through over speed governor

EB 59 D
 EB 75 KD

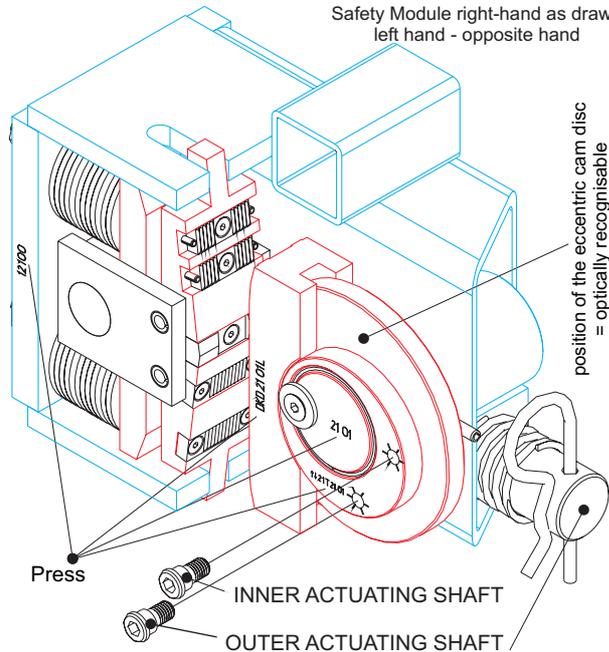
Eccentric cam disc

Safety Module right-hand as drawn
 left hand - opposite hand



EB 75 GD Eccentric cam disc +
 Double Key Rating Shaft

Safety Module right-hand as drawn
 left hand - opposite hand



DRAWINGS AND DESCRIPTIONS:

Fitting + service	5330.800.015
Governor rope loadings inner Actuating Shaft	5330.810.010
Governor rope loadings outer Actuating Shaft	5330.810.020
Governor rope loadings- release from breaking position	5330.890.010
Main examination under En81	5330.800.018
General instructions	5330.800.017
Working Area requirements	5330.800.019

Recognition of resting -/ tripping ↓ - / breaking ↑ positions according to the clock times: over-speeding of the eccentric discs is not possible!

Resting position

It is 3 o'clock: The eccentric disc is free

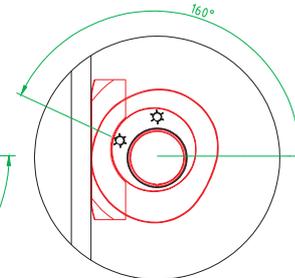
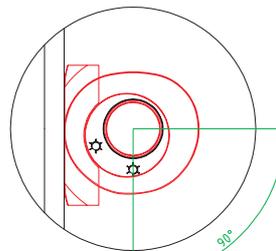
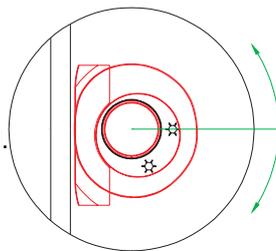
RESTING POSITION

TRIPPING POSITION ↓

BREAKING POSITION ↑

Tripping position

It is 6 o'clock: ↓ The eccentric disc and counter Shoes are on the same level.



Breaking position

It is 10 o'clock: ↑ The eccentric disc and counter Shoes are on the same level.

INSTALLATION



DIRT AND DUST ARE THE ENEMY OF EVERY SAFETY DEVICE

Ausgabe / Edition:

23.09.2003



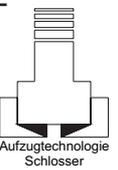
SAFETY MODULE

EB59D-EB75KD/GD

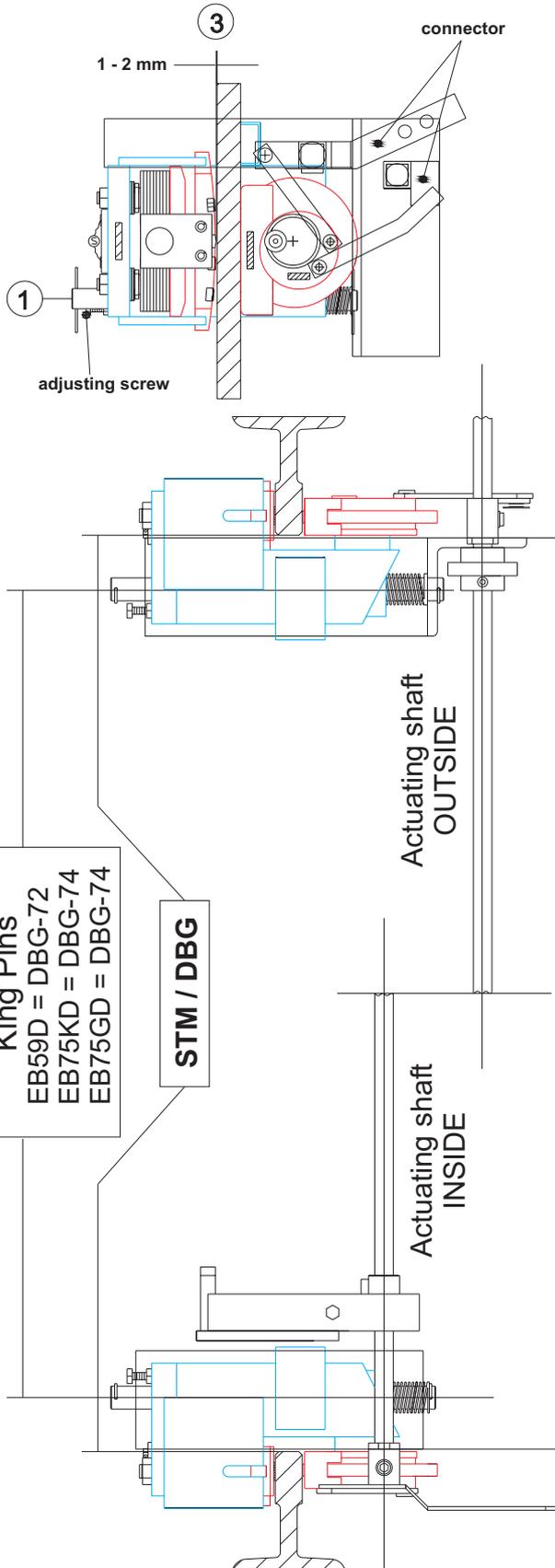
Zeichnung Nr. / Drawing No.:

5330.800.001

Fundamentally set in accordance with DIN-EN 81-1/81-2.
This setting is shown by type-shield:



SAFETY MODULE ↓↑ IS ONLY ALLOWED TO BE BUILT IN, IF THE REGISTERED INFORMATION CORRESPONDS TO THE LIFT DATA! CHECK SEALING!

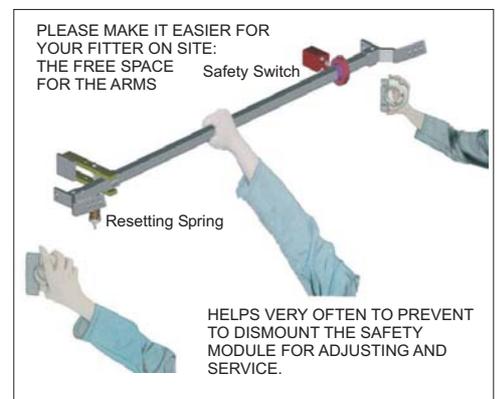


A...Drawn Guides

B...Machined Guides

1	2	3	4	5	6	7	8	9	10	11	12
↓						↑					
Schielenkopfdicke (mm)											
9			11			16					
Schienenkopfdicke A <input type="checkbox"/> B <input type="checkbox"/>											
Vauweise = _____ m/s Kraft \bar{F} = _____ N Masse \bar{M} = _____ kg Fabrik-Nr.: _____											
CE <input type="checkbox"/> 0635 <input type="checkbox"/> ABFV <input type="checkbox"/>											
1998 99 01 01 01 02 03 04 05											

- (1) **Safety Modules** ↓↑ are safety devices.
- (2) The safety modules ↓↑ are fundamentally service free: rust can be prevented by avoiding dew point and salt water. Oil all coupling joints; especially between Flat spring keep, tensioning eccentrics and King pins to the safety gear = floating bearings.
- (3)
 - (a) The king pins must be extractable, space for removal must be allowed.
 - (b) Connecting links and Actuating shaft drilling must be drilled together allowing between 1 to 2mm clearance.
 - (c) Locat solid break shoes to guide by setting the adjusting screw; allowing clearance between 1 to 2mm
- (4) PLEASE NOTE THE FOLLOWING IN YOUR SERVICE PLAN.
 - (a) It must be possible to turn the square actuating shaft by hand, to the engagement point of the tensioning eccentric
 - (b) Safety switch must be operational and the Actuating shaft must jump back into disengaged position when the lift is travelling in the upward direction.
 - (c) Guides must only be oiled with specified lubricants



INSTALLATION



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SAFETY MODULE

INSTALLATION AND SERVICE EB59D-EB75KD/GD

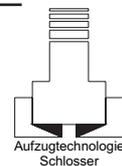
Zeichnung Nr. / Drawing No.:

5330.800.015

Eccentric cam disc types:

EB59D, EB75KD, EB75GD

tripping gear in accordance with No. 5300, actuating shaft INSIDE

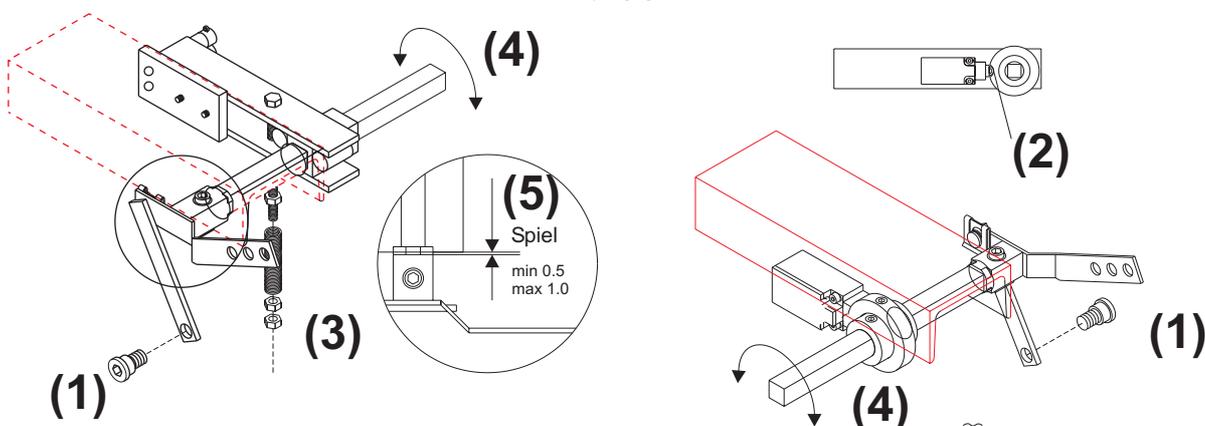


EN 81/ 9.9.4. states the governor rope must be:

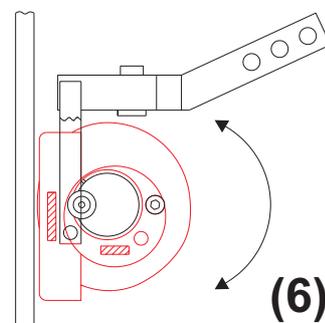
- 1) twice the actuating force $\downarrow\uparrow$ including initial load
- 2) 300 N in both directions $\downarrow\uparrow$

The above safety module types, equitably assembled and precision built, triggered by a Governor rope loading of under 150N, by movement of the eccentric cam lever, self locking is activated. The test is undertaken quite easily in a stationary position with a spring scale. Where 150N is not sufficient the easy movement of the bearing position was disregarded.

- a) loosen the actuating bar (1), free the cam safety switch (2) and remove the resetting spring (3):
- the actuating shaft must now be able to turn freely (4), if not, the actuating lever, for example, sticks with insufficient play. (5):



- b) turn the eccentric cam disc by hand (6); while doing this, check the play in particular:
- no resistance should be felt in either cam until guide contact; where resistance is felt, check the torque in the shaft bearings (7) or in particular, friction between the steel band spring and eccentric cam (8), use a liquid lubricant if necessary



Where by choice, a customer specified tripping gear is to be fitted, this point is also to be observed.

- c) fix now the actuating bar (1):
- the actuating shaft must be able to turn easily both eccentric cams by hand until guide contact.
- d) install safety switch
- e) fix the resetting spring, whereas the spring strength is left open:
- the spring scale on the governor rope must not register more than 150N until guide contact.

INSTALLATION



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SAFETY MODULES - Actuating shaft INSIDE
ACTUATING FORCES $\downarrow\uparrow$ with tripping gear 5300

Zeichnung Nr. / Drawing No.:

5330.810.010

Eccentric cam EB59D, EB75KD, EB75GD

disc types: tripping gear in accordance with No. 5300, actuating shaft OUTSIDE

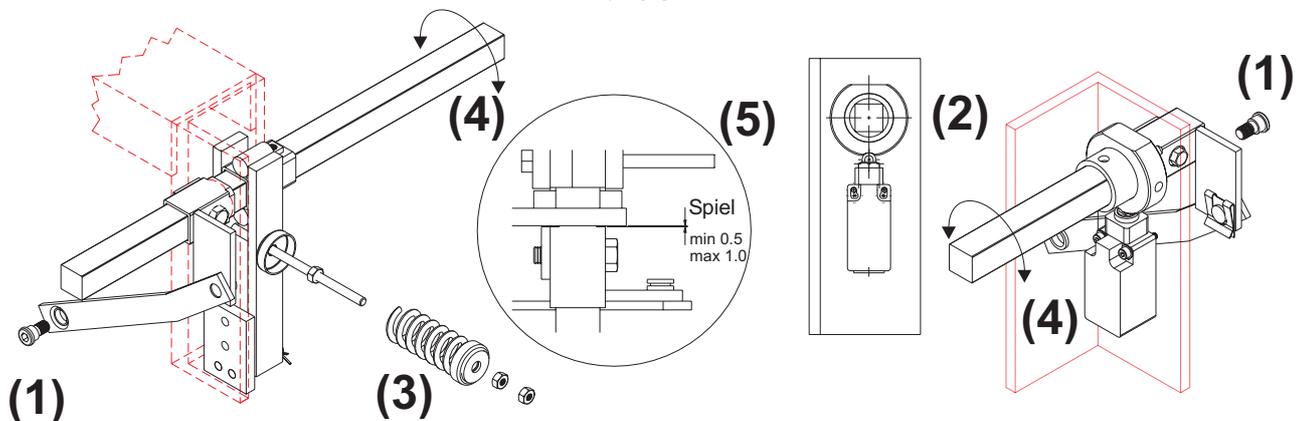


EN 81/ 9.9.4. states the governor rope must be:

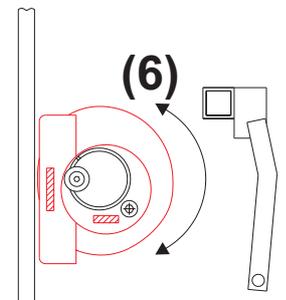
- 1) twice the actuating force $\downarrow\uparrow$ including initial load
- 2) 300 N in both directions $\downarrow\uparrow$

The above safety module types, equitably assembled and precision built, triggered by a Governor rope loading of under 150N, by movement of the eccentric cam lever, self locking is activated. The test is undertaken quite easily in a stationary position with a spring scale. Where 150N is not sufficient the easy movement of the bearing position was disregarded.

- a) loosen the actuating bar (1), free the cam safety switch (2) and remove the resetting spring (3):
- the actuating shaft must now be able to turn freely (4), if not, the actuating lever, for example, sticks with insufficient play. (5):



- b) turn the eccentric cam disc by hand (6); while doing this, check the play in particular:
- no resistance should be felt in either cam until guide contact; where resistance is felt, check the torque in the shaft bearings (7) or in particular, friction between the steel band spring and eccentric cam (8), use a liquid lubricant if necessary (but NOT fat!).



Where by choice, a customer specified tripping gear is to be fitted, this point is also to be observed.

- c) fix now the actuating bar (1):
- the actuating shaft must be able to turn easily both eccentric cams by hand until guide contact.
- d) install safety switch
- e) fix the resetting spring, whereas the spring strength is left open:
- the spring scale on the governor rope must not register more than 150N until guide contact.

INSTALLATION



DIRT AND DUST ARE THE ENEMY OF EVERY SAFETY DEVICE

Ausgabe / Edition:

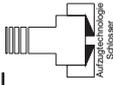
23.09.2003



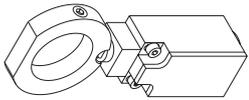
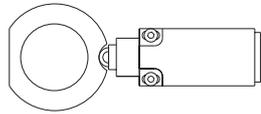
SAFETY MODULES - Actuating shaft OUTSIDE
ACTUATING FORCES $\downarrow\uparrow$ with tripping gear 5300

Zeichnung Nr. / Drawing No.:

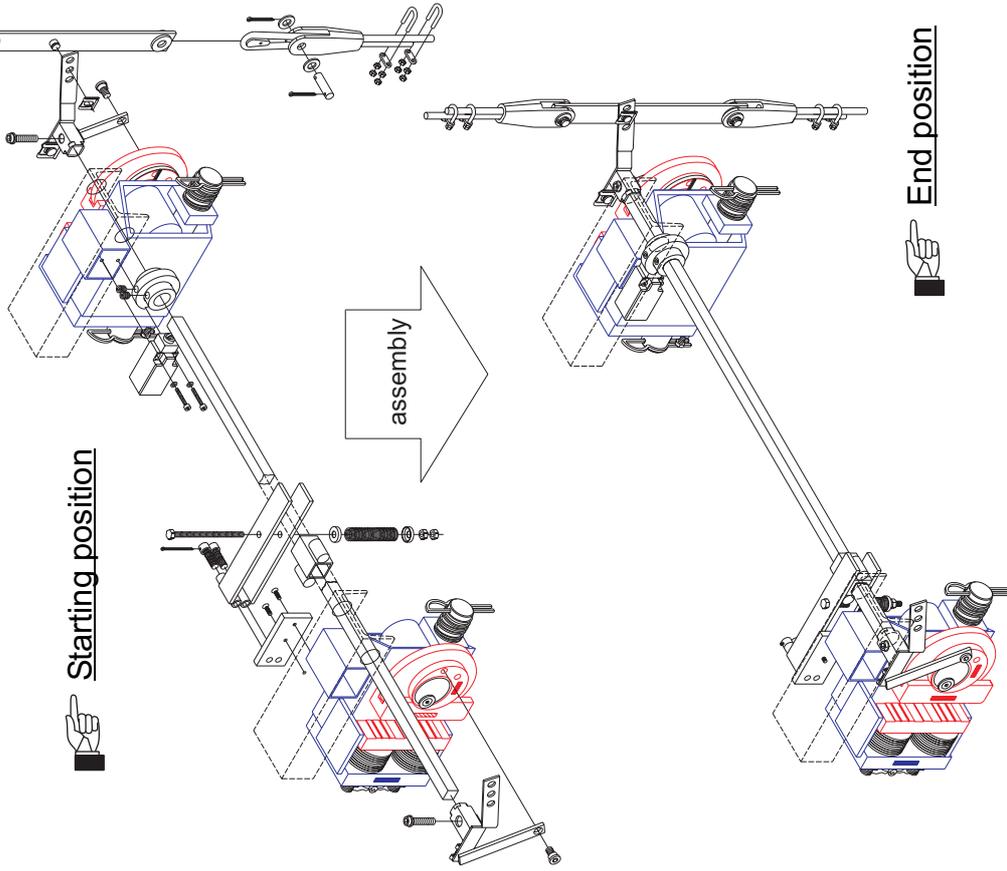
5330.810.020



Safety switch - zero position
by Safety modules ()



Starting position

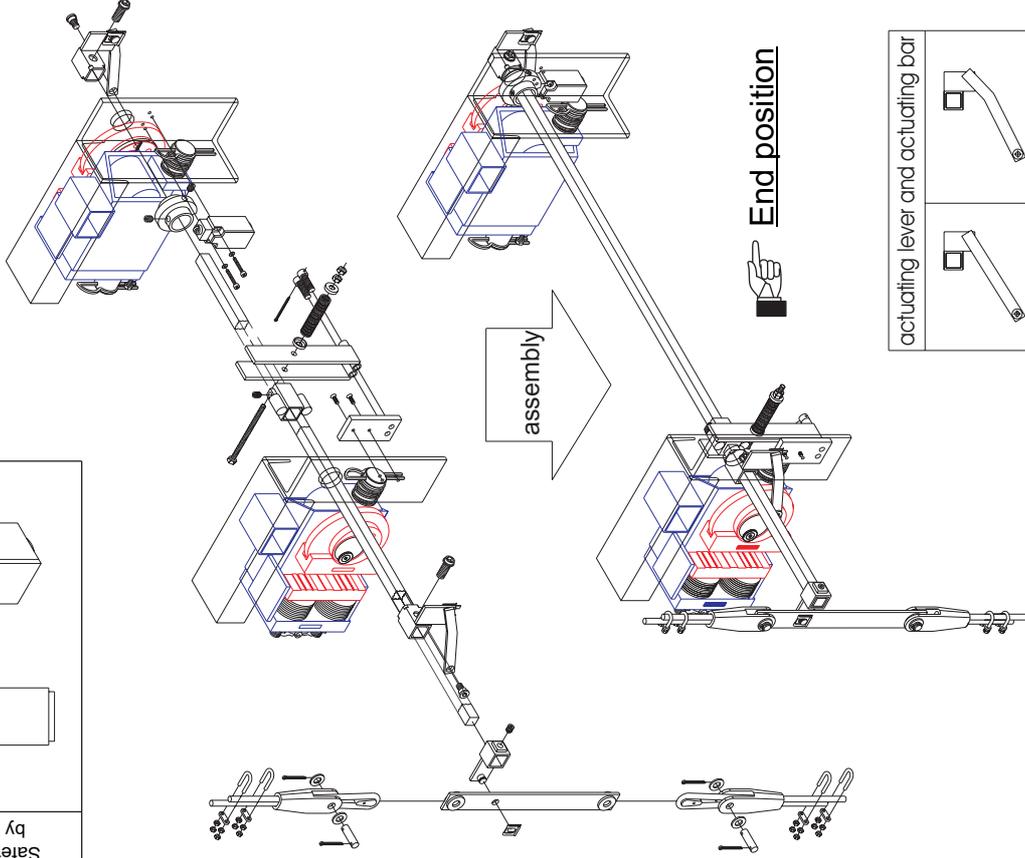


End position



actuating lever and actuating bar		EB 59 D	EB 75 KD
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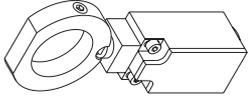
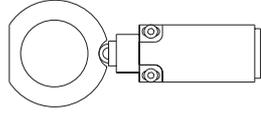
Starting position



End position



Safety switch - zero position
by Safety modules ()



DIRT AND DUST ARE THE ENEMY OF EVERY SAFETY DEVICE

Ausgabe / Edition:

05.08.2002

ASSEMBLY

Actuating shaft **INSIDE**

Zzeichnung Nr. / Drawing No.:

5330.800.007

Ausgabe / Edition:

05.08.2002

ASSEMBLY

Actuating shaft **OUTSIDE**

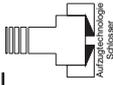
Zzeichnung Nr. / Drawing No.:

5330.800.011

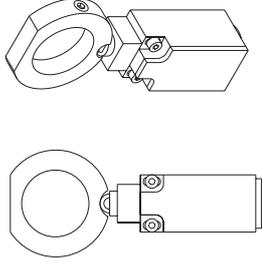
DIRT AND DUST ARE THE ENEMY OF EVERY SAFETY DEVICE

D-85221 Dachau Felix-Wankel-Str. 4 Tel: +49 8131 51860 / A-3872 Amalendorf Hauptstr. 278 Tel: +43 2862 53452

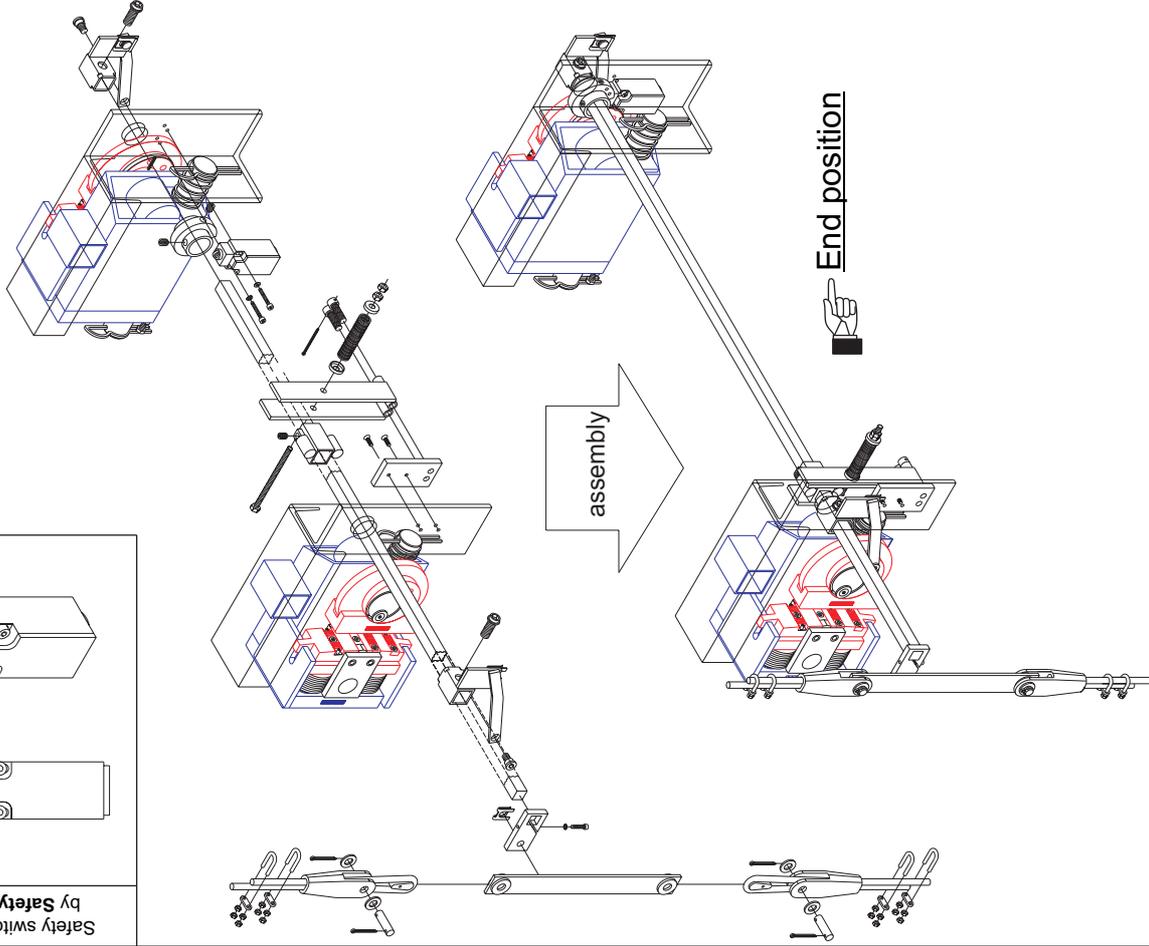
D-85221 Dachau Felix-Wankel-Str. 4 Tel: +49 8131 51860 / A-3872 Amalendorf Hauptstr. 278 Tel: +43 2862 53452



Starting position



Safety switch - zero position
by Safety modules ()



End position



DIRT AND DUST ARE THE ENEMY OF EVERY SAFETY DEVICE

Ausgabe / Edition:

05.08.2002

ASSEMBLY

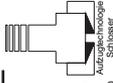
Actuating shaft **OUTSIDE**

EB75GD

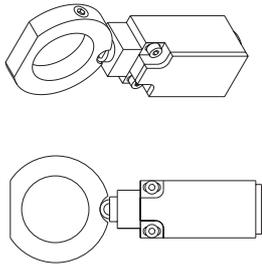
Zzeichnung Nr. / Drawing No.:

5350.800.011

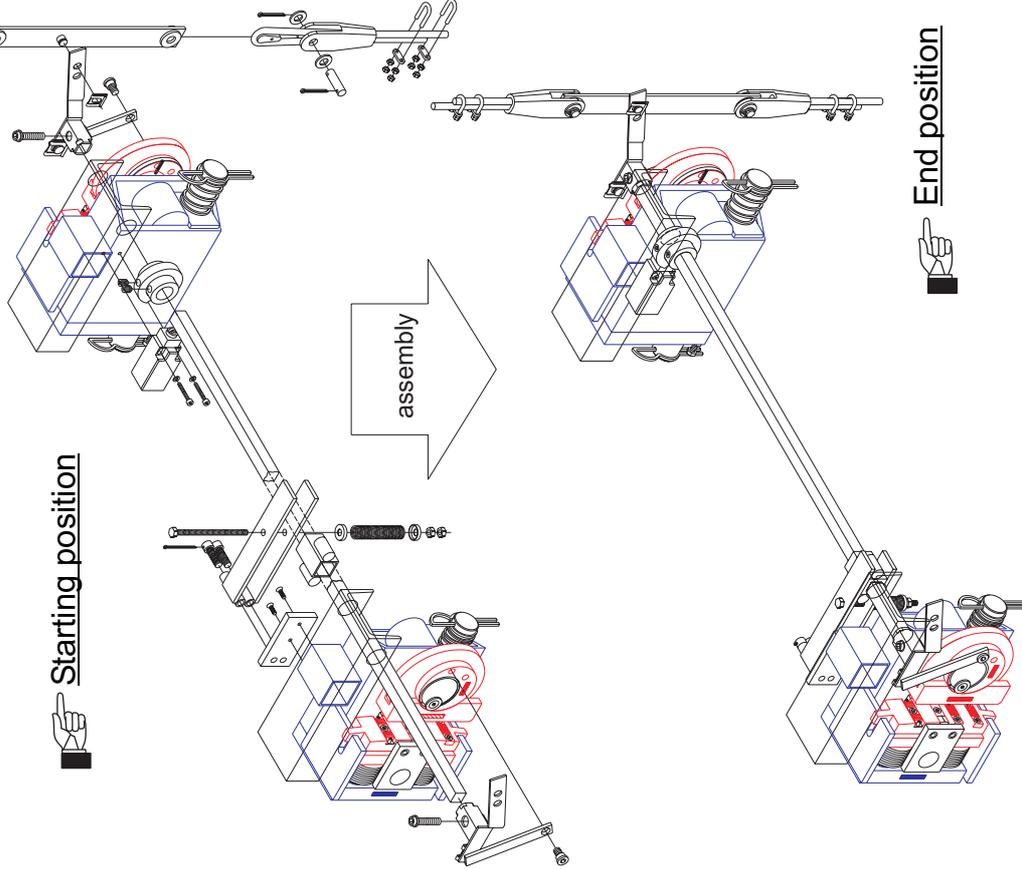
D-85221 Dachau Felix-Wankel-Str. 4 Tel: +49 81 31 51860 / A-3872 Amalendorf Hauptstr. 278 Tel: +43 2862 53452



Starting position



Safety switch - zero position
by Safety modules ()



End position



Ausgabe / Edition:

05.08.2002

ASSEMBLY

Actuating shaft **INSIDE**

EB75GD

Zzeichnung Nr. / Drawing No.:

5350.800.007

D-85221 Dachau Felix-Wankel-Str. 4 Tel: +49 81 31 51860 / A-3872 Amalendorf Hauptstr. 278 Tel: +43 2862 53452

GOVERNOR ROPE FORCES:

EN81/9.9.4. states the governor rope force must be:

- 1) twice the tensile force ↓↑ including initial force
- 2) 300 N in both directions ↓↑

Clause EN81/9.8.1.1 specifies the fully loaded lift car must be brought to a stationary position during free fall, EN81/9.10.1 states the empty lift car with uncontrolled ↑ movement must also be brought to a stationary position i.e. not accelerated.

3)  = safety directly at passenger cell:

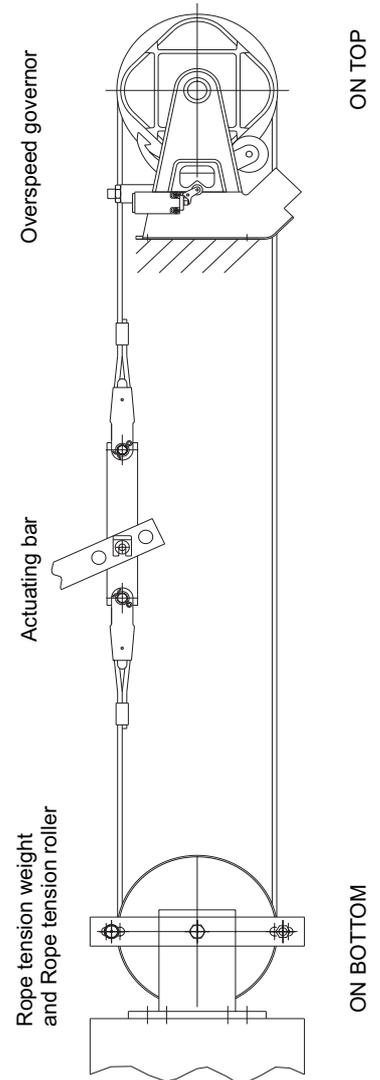
- a) ONE ↓ tripping-/ ↑ arrangement
- b) ONE release with switch ↓↑
- c) ONE Over speed governing ↓↑

4) tensile force ↓↑ to governor rope force ↓↑

- a) when using our tripping gear No. 5300... ff. the governor rope load ≤ 150 N see No. 5330.810...
- b) when using tripping gear of another design please refer to point b) No. 5330.810.010.
→ must be observed in every case.

5) tension weights which are too heavy destroy tripping gears and make it more difficult for releasing the safety gear.

6) over speed governors travelling with the lift car or pneumatics i.e. magnetic release (unfortunately residual delay!) are just in use.



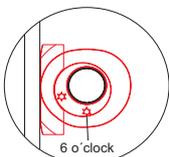
RELEASE OUT OF ↓ TRIPPING ↑ BREAKING POSITION

Please make allowance that the release force may be higher than the breaking force. Additionally we have to increase the breaking force by between 10 and 20%, due to the fluctuating surface hardness and the roughness of the guides.



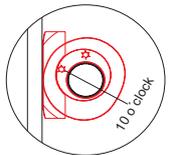
Eccentric cam discs cannot over wind due to kinetic reasons.

BREAKING POSITION ↓



- ↓ Tripping position: The second M8 hole in the eccentric cam disk shows 6 o'clock.
Remove from the ↓ tripping position in steps:
- Smoothly downwards with return control.
 - Do this repeatedly = principally: loosening and tightening the ropes.
 - Turn hand wheel
 - Empty the lift car
 - V-sheave-clamps etc.

BREAKING POSITION ↑



- ↑ Breaking position: The first M8 Hole in the eccentric cam disk shows 10 o'clock.
Remove from the ↑ breaking position in steps:
- Smoothly upwards with return control.
 - Do this repeatedly = principally: loosening and tightening the ropes.
 - V-sheave-clamps etc.
 - Load the lift car

INSTALLATION



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SAFETY MODULE - GOVERNOR ROPE LOADING
RELEASE OUT OF ↓ TRIPPING ↑ BREAKING POSITION

Zeichnung Nr. / Drawing No.:

5330.890.010

D.2 Tests and verifications

j) car safety gear (9.8)

the energy which the safety gear is capable of absorbing at the moment of engagement will have been verified in accordance with F.3. The aim of the test before putting into service is to check the correct mounting, correct setting and the soundness of the complete assembly, comprising car, safety gear, guide rails and their fixing to the building. The test shall be made while the car is descending, with the required load uniformly distributed over the car area, with the machine running until the ropes slip or become slack, and under the following conditions:

2. progressive safety gear:

the car shall be loaded with 125 % of the rated load, and travel at rated speed or lower. When the test is made with lower than rated speed, the manufacturer shall provide curves to illustrate the behaviour or the type tested progressive safety gear when dynamically tested with the suspensions attached.

After the test, it shall be ascertained that no deterioration, which could adversely affect the normal use of the lift has occurred. If necessary, friction components may be replaced. Visual check is considered to be sufficient.

Note:

In order to facilitate disengagement of the safety gear, it is recommended that the test be carried out opposite a door in order to be able to unload the car.

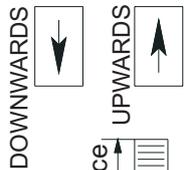
3. By modern lifts it is popular to use: 100% normal load with an open drive break assembly.

n) ascending car overspeed protection means (9.10):

the test shall be made while the empty car is ascending at not less than rated speed, using only this device for braking.

1. By modern lifts: Empty Lift Car with open Drive Break Assembly.

Reading of rim paths



WE DON'T MIND TO PUT FORWARD YOUR PROFESSIONAL WORK STAFF THE PRECISION CHARACTERISTICS I.E. ADJUSTMENT AND TUNING

DOWNWARDS: 1.25 times rated load

- a) 1.25-times rated load: electrical drive, **DO NOT** by-pass the safety switch
- b) Rated load: Turn off Main switch,

UPWARDS: Empty Lift Car

- a) low lift output: electrical drive, **DO NOT** by-pass the safety switch
- b) high lift output: Turn main switch off

Tripping in the **Downward** Direction undertakes in the short threshold and braking thrust periode a considerable energy transformation.

Tripping in the **Upward** Direction, due to the softer engaging and longer directional increase, in this phase it is easier to neglect the energy transformation.

$$\text{Retardation in [g]: } a = \frac{v^2}{2 * s * 10} = \frac{[\quad]^2}{2 * [\quad] * 10}$$

v = Break starting speed [m/s]: s = Braking distance [m]: a = retardation [g]:

INSTALLATION



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23.09.2003



SAFETY MODULE - EB59D - EB75KD / GD
EXAMINATION before putting into service EN81-1:1999

Zeichnung Nr. / Drawing No.:

5330.800.018

INSTALLATION



PLEASE MAKE IT EASIER FOR YOUR FITTER ON SITE !

The fitting of Lift equipment requires physical hard work and a large amount of responsibility.
You can help your lift technicians, by our information and tips collected during our years of experience in this area.

STOP (a) LEAVE ENOUGH SPACE AROUND THE LIFT CARS AND THE SAFETY GEAR COMPONENTS:



The King Pins must be easily retractable.



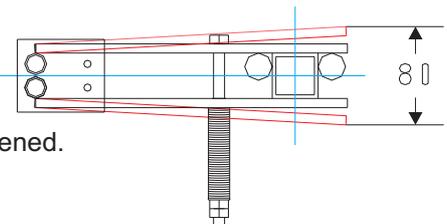
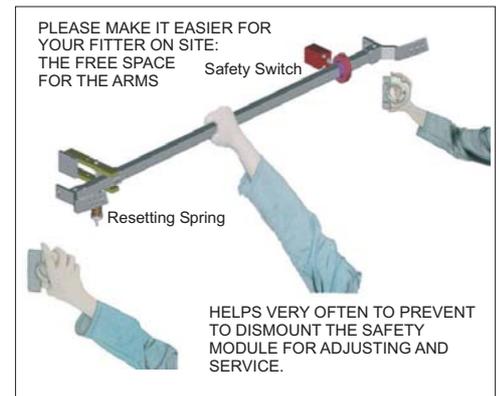
Make space in the sling frame construction, so that the safety gear is easy to remove



Ensure sufficient spaces is available for releasing, inspecting and removal of the Safety Switch.



Ensure sufficient space is available, for the Resetting Clamp which holds the Actuating Shaft in the central position.
This resetting clamp must not touch another part if opened.



STOP (b) DO NOT USE ANY HEAVY TENSION WEIGHTS FOR THE ACTUATING:



Tension Weight over 80 kg destroy Tripping Gear devices and make it more difficult for disengaging the Safety Gear.



Locking of Tension Weight is not to be used.

STOP (c) USE ONLY CIRCLE KEEPING GOVERNOR ROPES.

STOP (d) CHECKS ARE TO BE MADE ACCORDING TO EN 81.

STOP (e) READ OUR OPERATING INSTRUCTIONS.

STOP (f) SAFETY PARTS ARE ONLY AS GOOD AS THE FUNCTIONAL POSSIBILITIES:



A clean inside face of Safety Shoes is a stipulation for a safe function.



Safety Modules are to be built in after the guides have been cleaned.

THE **SAFETY MODULE** SAFETY GEAR ASCENDING SAFETY **IS THE MOST IMPORTANT SAFETY FEATURE IN VERTICAL TRANSPORT. THEREFORE INSTALL EVERY COMPONENT PRECISELY AND CORRECTLY.**



DIRT AND DUST ARE THE ENEMY OF EVERY SAFETY DEVICE

Ausgabe / Edition:

23.09.2003



SAFETY MODULE
GENERAL NOTES EB59D-EB75KD/GD

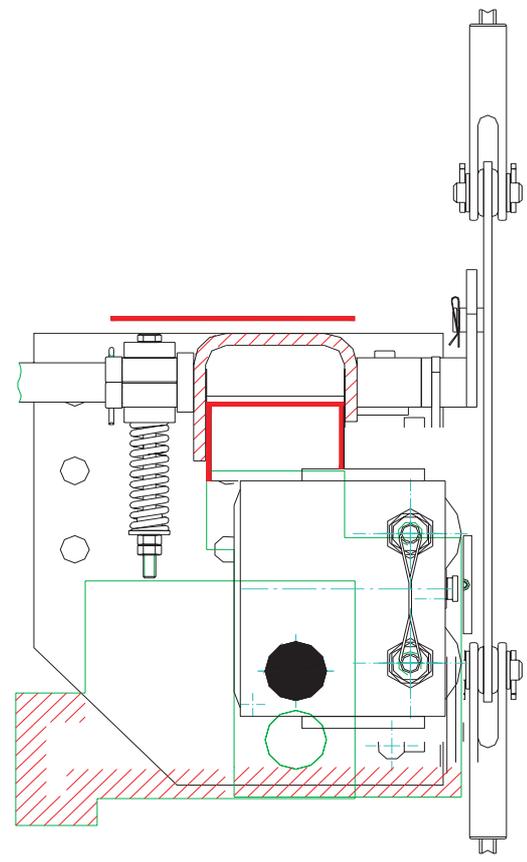
Zeichnung Nr. / Drawing No.:

5330.800.017

Construction

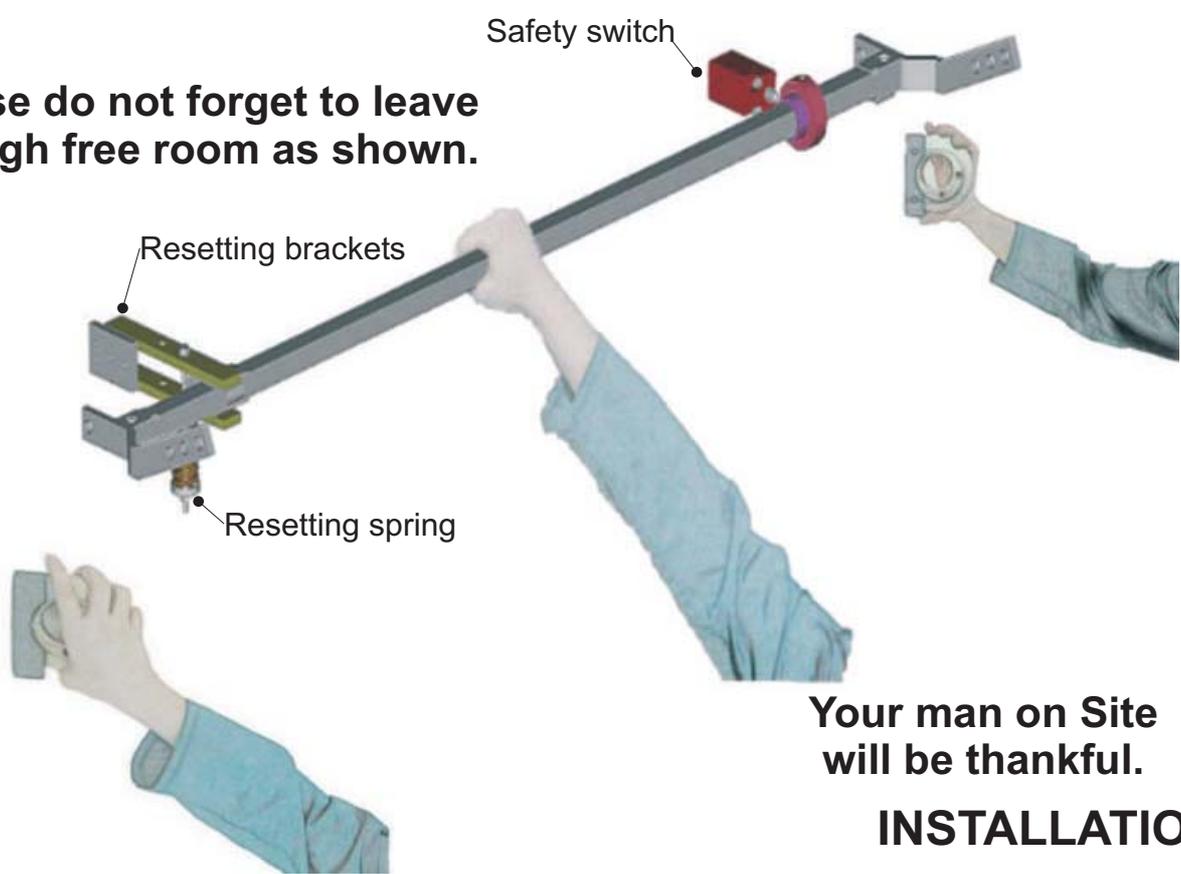
Working space must be available:

- a) The King pins must be removable.
- b) The complete Safety Modul ↓↑ must be removable without dismantling **Sling parts - or Electrical devices.**
- c) 15mm must be left between the guide profile.
- d) The arrangement must allow for the fitting and removal of parts, for adjustments and examinations.



In the case of panorama lifts where parts are specified to be covered up because of optical reasons, basically use the easiest design for dismantle or leave windows free.

Please do not forget to leave enough free room as shown.



Your man on Site will be thankful.
INSTALLATION



DIRT AND DUST ARE THE ENEMY OF EVERY SAFETY DEVICE