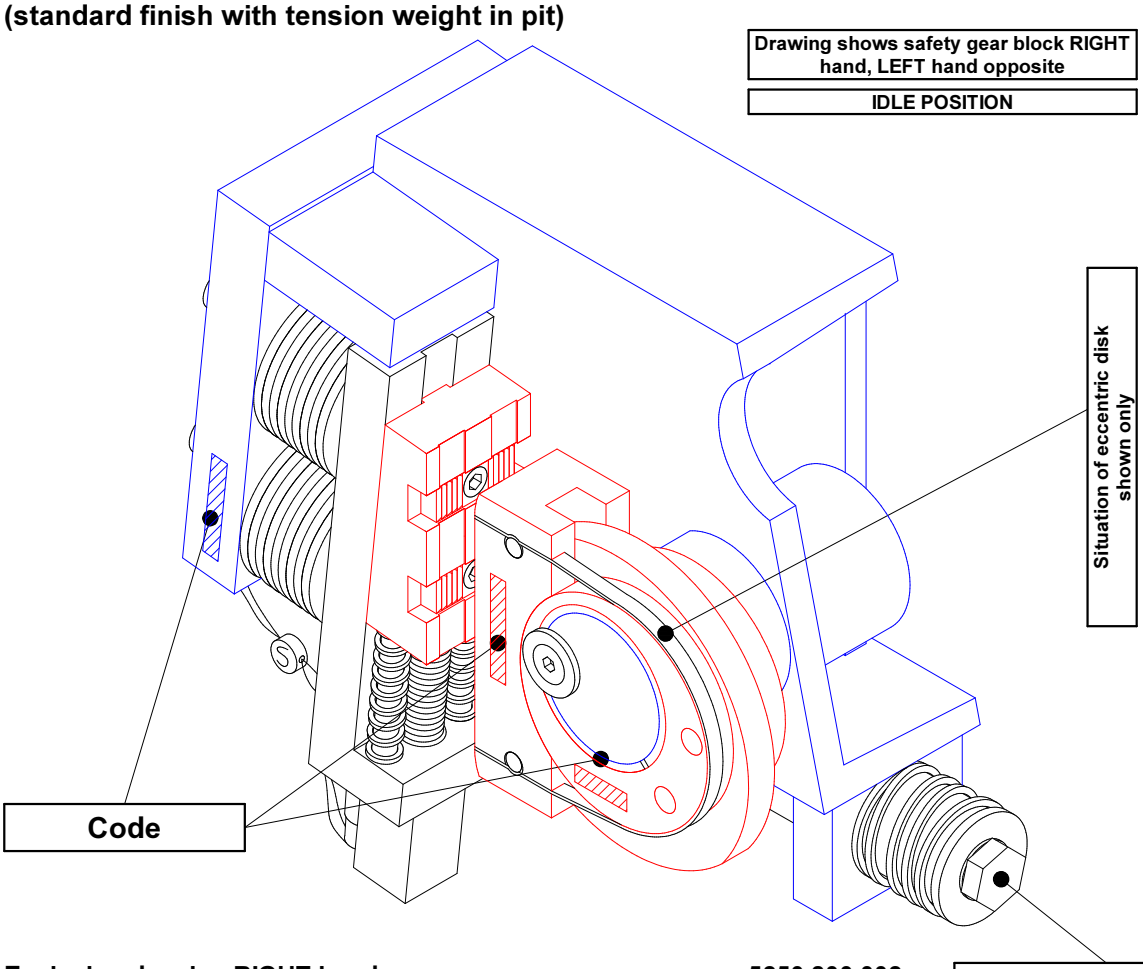
AUFZUGTECHNOLOGIE

SAFETY GEAR EB 75 GS ↓

Progressive safety gear - working in DOWN direction only
= rated load + car weight in DOWN direction (FREE FALL)

Activated by overspeed governor through overspeed governor rope
(standard finish with tension weight in pit)



Explosion drawing RIGHT hand	.....	**5250.800.002**
General Information	.....	**5250.800.003**
Schematic drawing engagement in DOWN direction	.....	**5250.800.004**
Actuating shaft INSIDE	.....	**5250.800.006 ... 5250.800.009**
Actuating shaft OUTSIDE	.....	**5250.800.010 ... 5250.800.013**
Installation and Maintenance	.....	**5250.800.014**
Check	.....	**5250.800.015**
Safety Book - GENERAL - 1	.....	**5230.800.016**
Safety Book - GENERAL - 2	.....	**5230.800.017**
Safety Switch in Idle Position	.....	**5230.800.018**

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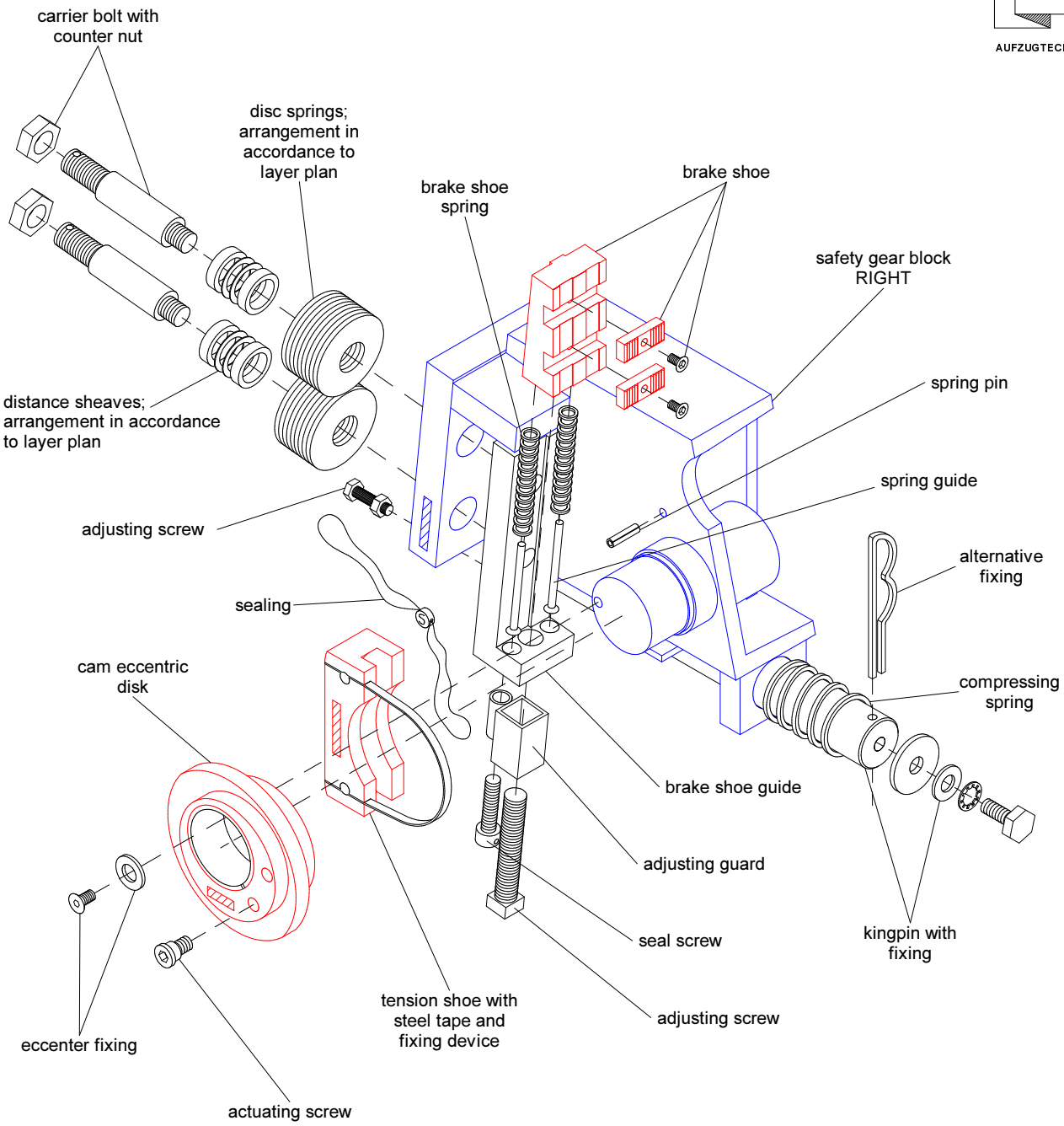

Nomination of parts	Drawing No.	Nomination of parts		Drawing No.
cam eccentric disc	5240.000.010	disk spring		5340.000.140
tension shoe	5240.000.020	brake shoe guide		5250.000.170
brake shoe	5250.000.030	brake shoe spring		5250.000.200
carrier bolt	5330.000.060	spring guide		DIN 661 4x60
safety gear block RIGHT	5250.100.000	adjusting guard		5250.000.190
safety gear block LEFT	5250.100.010	adjusting screw		5250.000.210
spring pin	DIN 1481 5x40	eccenter fixing	- screw	DIN 7991 M6x10
adjusting screw	DIN 933 M6x40		- disk	DIN 125 A Ø10,5
kingpin	5340.100.270	sealing	- wire	5330.000.110
actuating screw	5330.000.070		- seal	5330.000.120
compressing spring	5250.000.080		- screw	5250.000.220

Edition:		Manual EB 75 GS	Drawing No.:
16.07.2001		**Explosion drawing RIGHT hand**	**5250.800.002**

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Construction - Mode of operation:

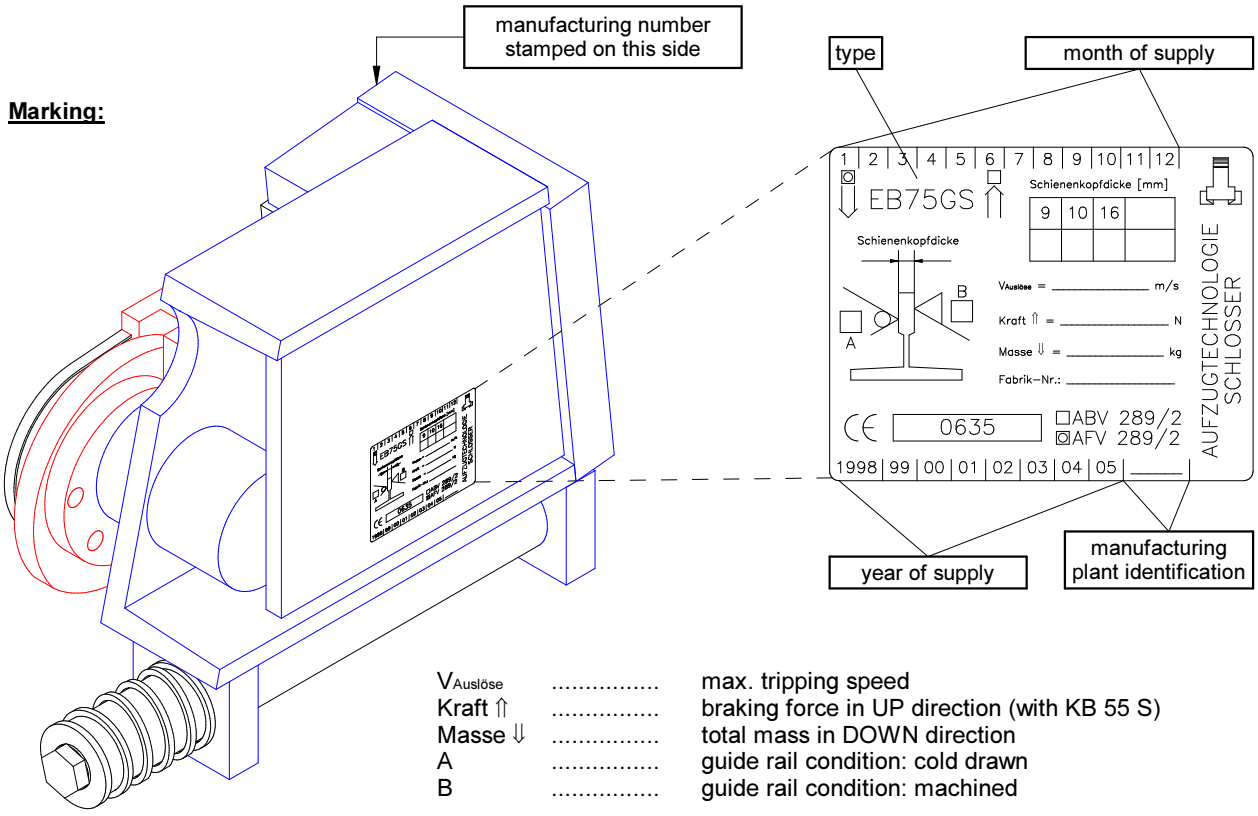
The safety gear housing is a solid steel structure welded in accordance with the high German standards. On one side is a carrier block to sustain the spring load transferred from the opposite side of the eccenter and brake shoe. The knurled eccenter disks are followed by the bearing eccenter disk fitted to the safety gear block. When both the eccenters reach the appropriate position the safety gear is engaged, thus ensuring that the kinetically limited spring stroke is limited.

Parameters:

	EB 75 GS
safety gear type	*accord. EEC type examination certificate ...*
guidethickness	*AFV 289 / _ (DOWN direction)*
guide rail surface	*ABF 289 / _ (UP direction)*
total mass	
contract speed	
tripping speed	

Guide rail condition: either cold drawn or machined, surface can be either dry or lubricated. Lubricant must be in accordance with DIN 51517, part 1.
The safety gear type EB 75 GS is certified to European Standards and hold certificates to DIN EN 81.

Marking:



$V_{Auslöse}$	.....	max. tripping speed
Kraft ⇑	.....	braking force in UP direction (with KB 55 S)
Masse ⇓	.....	total mass in DOWN direction
A	.....	guide rail condition: cold drawn
B	.....	guide rail condition: machined

Warranty and guaranty:

In case our product is not used for the application designed we can not take any responsibility whatsoever. It is the duty of the user to follow the local law and regulations under all circumstances.

AUFZUGTECHNOLOGIE

Figure - 1

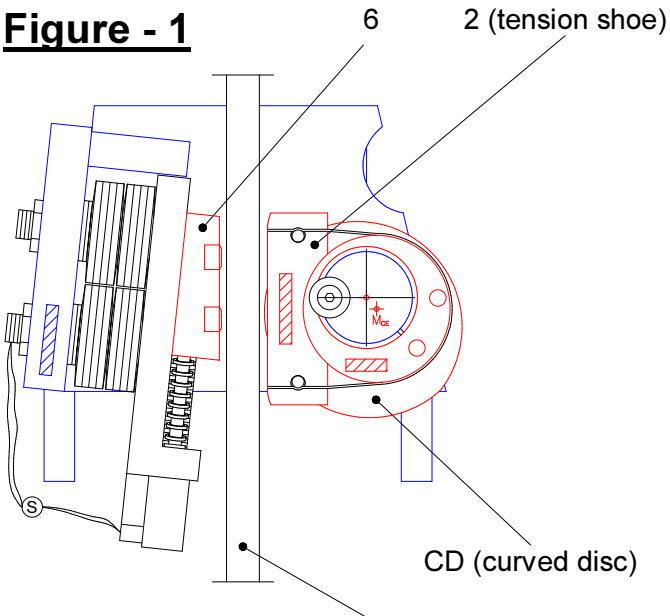


Figure - 1

Idle position = free movement
Guide rail (item 8) is not in contact with brake shoe (item 6), tension shoe (item 2) nor with curved disk (CD).

Figure - 2

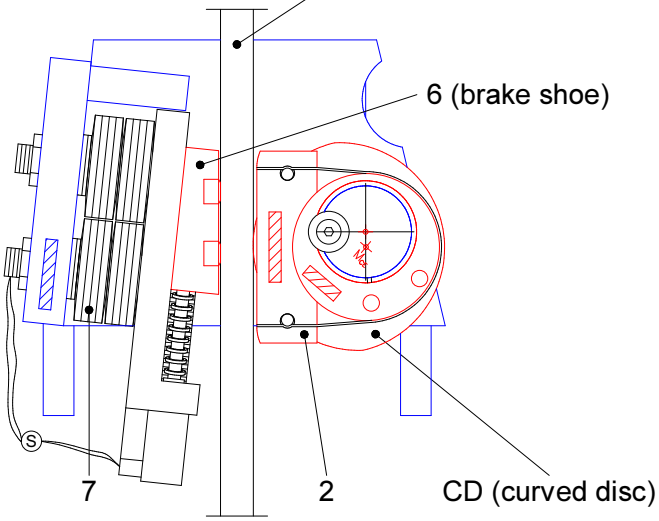


Figure - 2

Engaged position
Curved disk (item CD) is moved by the overspeed governor until the knurled surface of the curved disk (item CD) and the brake shoe (item 6) and the guide rail (item 8) makes contact on both sides. From this movement onwards the curved disk (item CD) will bring the required tension onto the disk springs (item 7).

Figure - 3

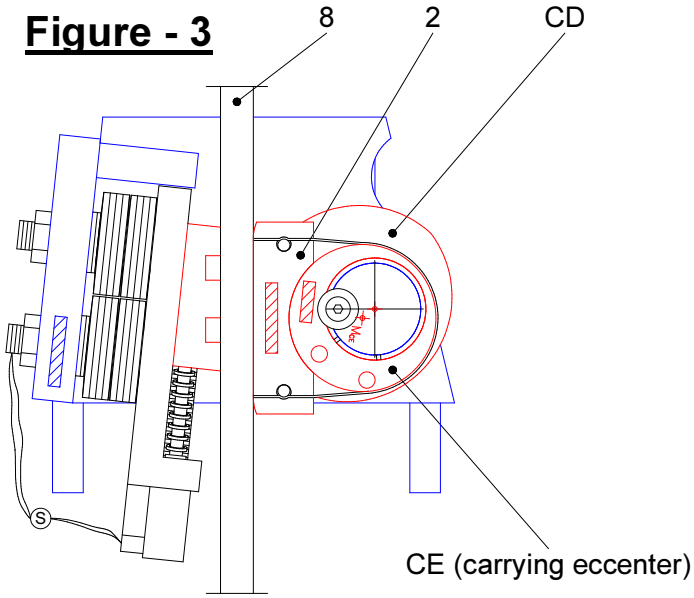
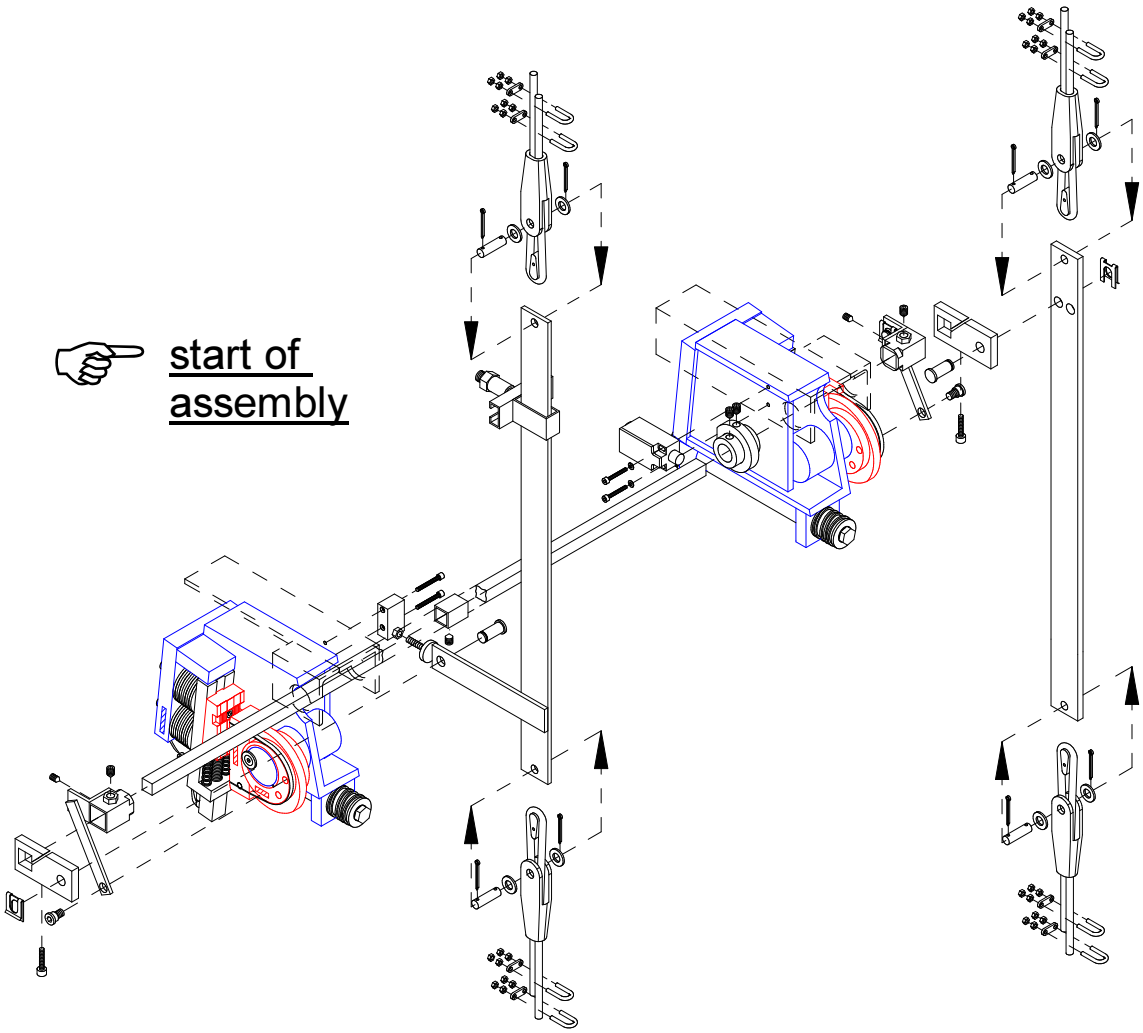


Figure - 3

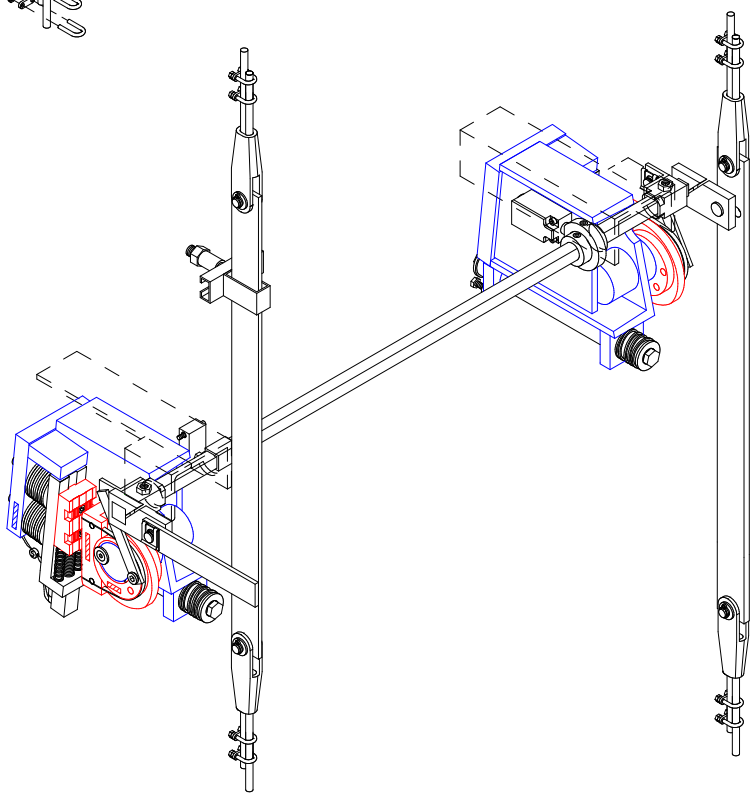
Brake position
The lagging carrying eccenter (item CE) brings tension shoe (item 2) in contact with the guide rail (item 8). Curved disk (item CD) looses contact with the guide rail (item 8), therefore the position of curved disk (item CD) cannot be changed anymore. In this way the car will be decelerated and finally stopped smooth. Dead point of the carrying eccenter (item CE) before brake position is reached (M_{CE}).

AUFZUGTECHNOLOGIE

start of assembly



assembling



completed unit

Edition:		Manual EB 75 GS	Drawing No.:
16.07.2001		Actuating shaft INSIDE	5250.800.006

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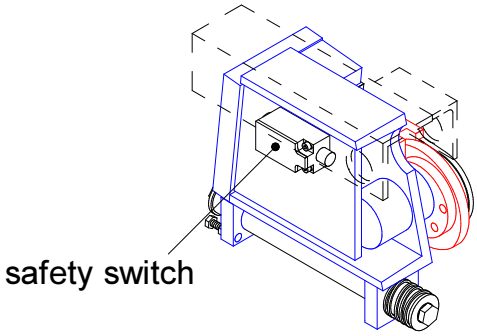
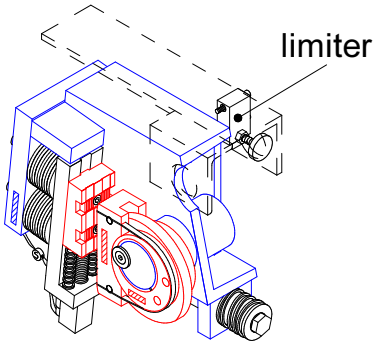
AUFZUGTECHNOLOGIE

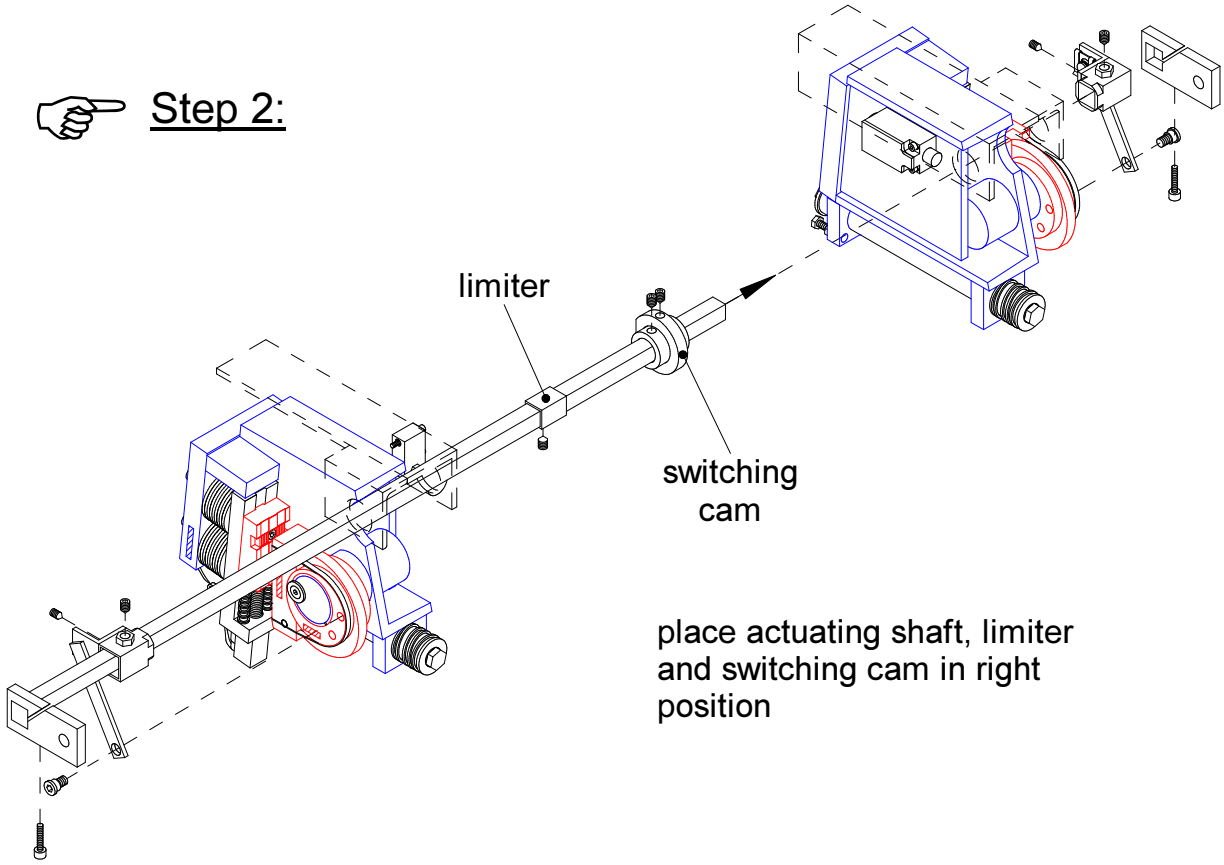
Step 1:





assemble safety gear blocks
safety switch and limiter must
be fixed in position

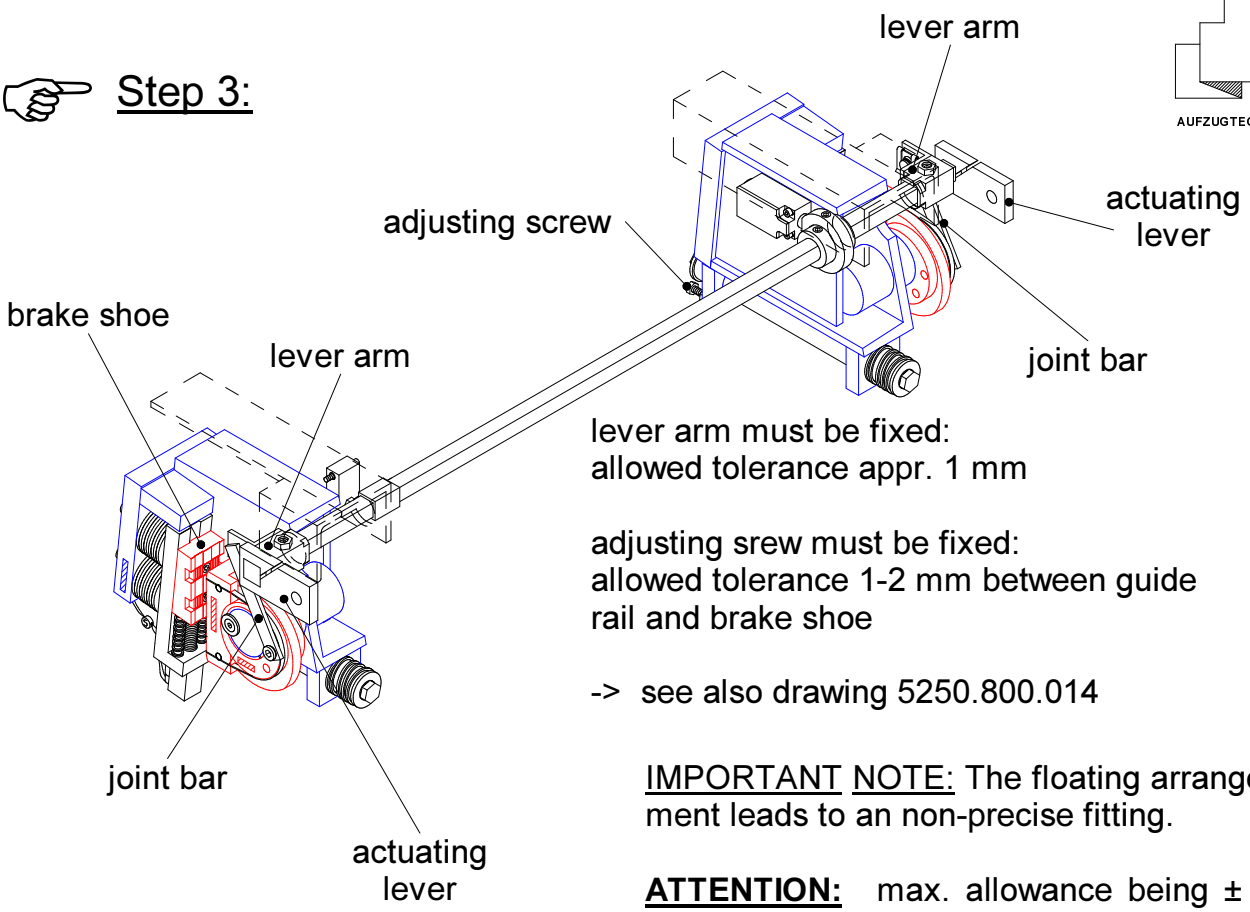
Step 2:



place actuating shaft, limiter
and switching cam in right
position

AUFZUGTECHNOLOGIE

Step 3:



lever arm must be fixed:
allowed tolerance appr. 1 mm

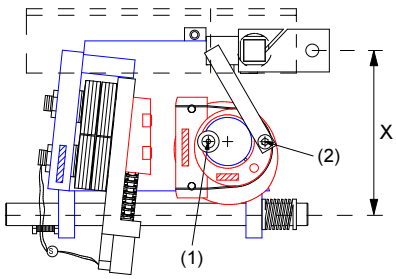
adjusting srew must be fixed:
allowed tolerance 1-2 mm between guide rail and brake shoe

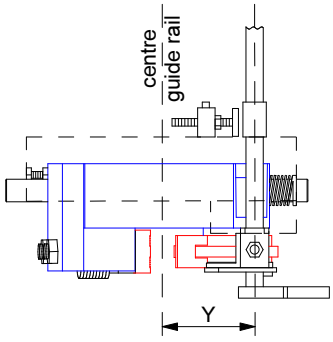
-> see also drawing 5250.800.014

IMPORTANT NOTE: The floating arrangement leads to an non-precise fitting.

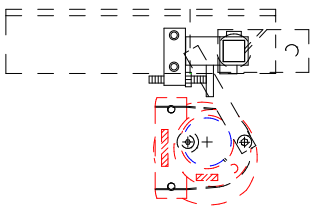
ATTENTION: max. allowance being ± 2 mm from the centre of the outer housing

centre eccenter fixing (1) and centre actuating bolt (2) HORIZONTAL in idle position

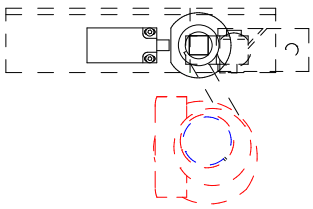




limiter adjustment



safety switch adjustment



see also drawing 5230.800.018

Standard Aufzug-technologie	X	Y
EB 75 GS	138	86

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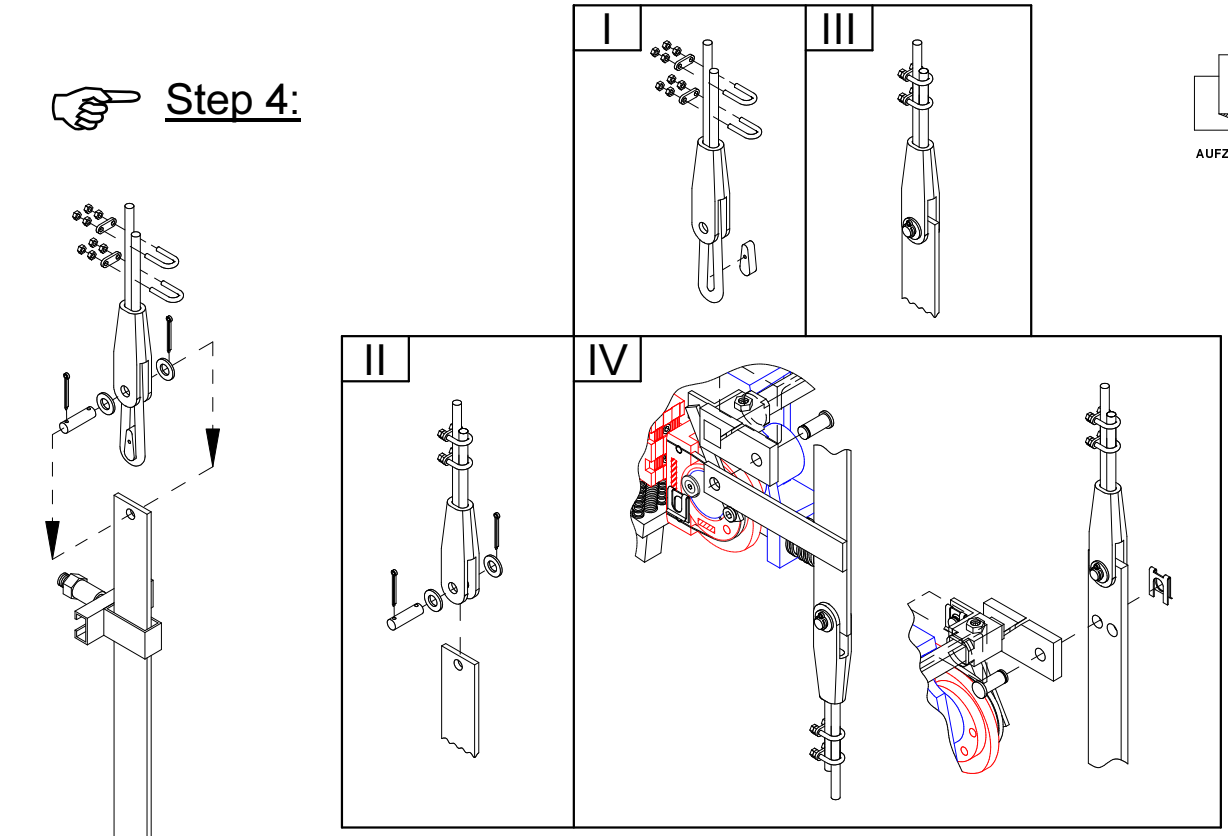
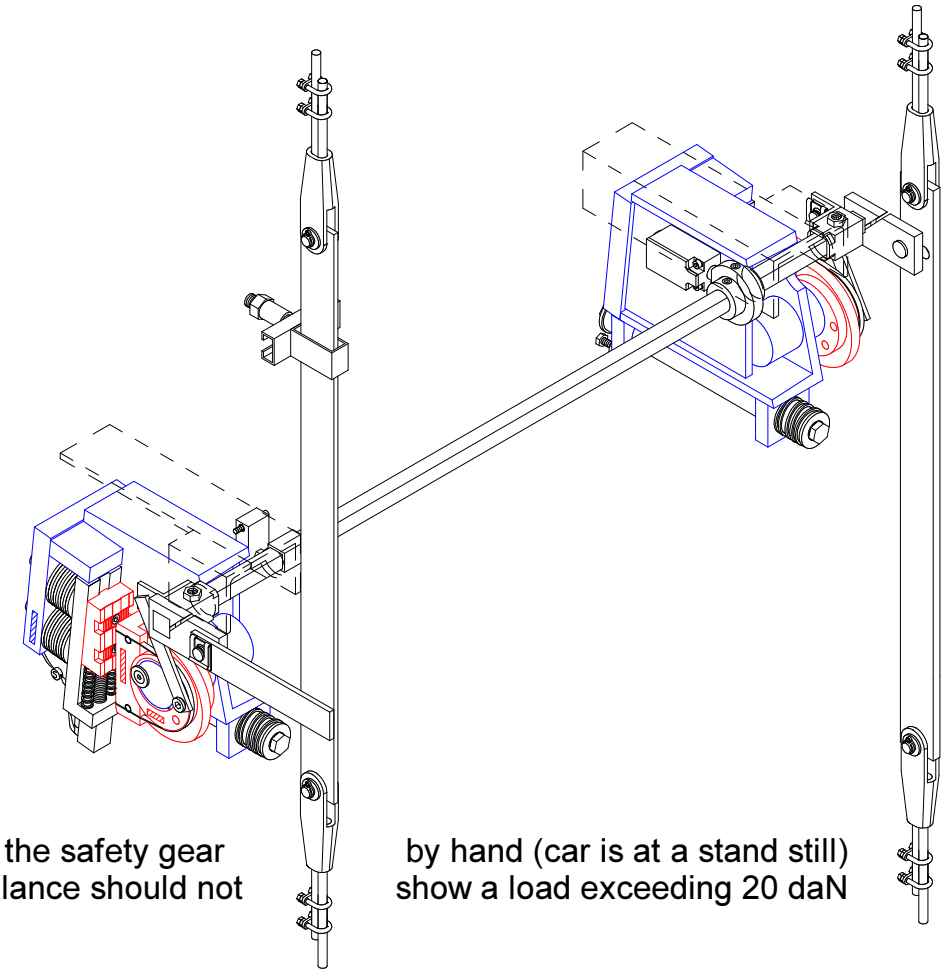
AUFZUGTECHNOLOGIE

Step 4:

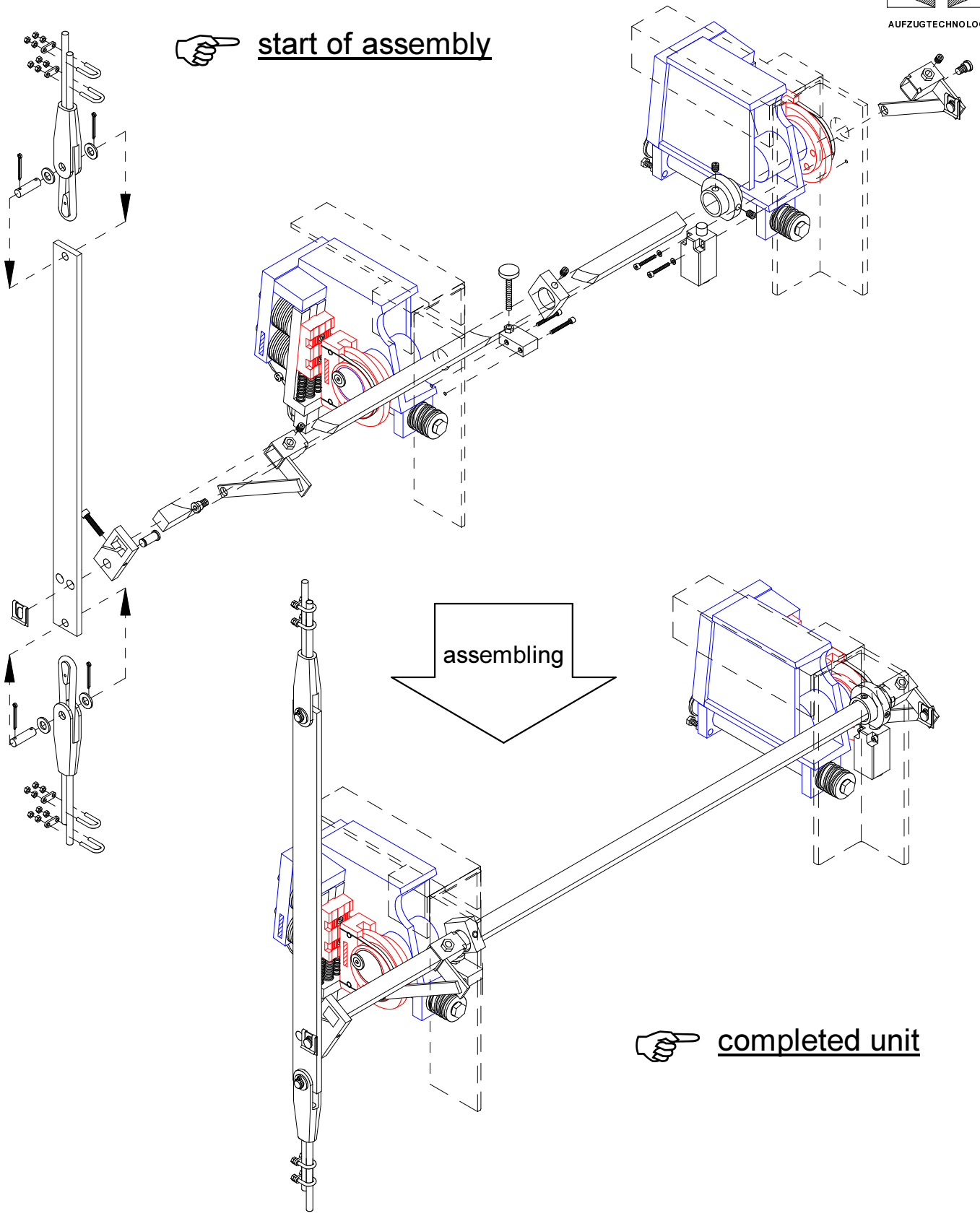




when testing the safety gear
the spring balance should not

by hand (car is at a stand still)
show a load exceeding 20 daN

AUFZUGTECHNOLOGIE



Edition:		Manual EB 75 GS	Drawing No.:
16.07.2001		Actuating shaft OUTSIDE	5250.800.010

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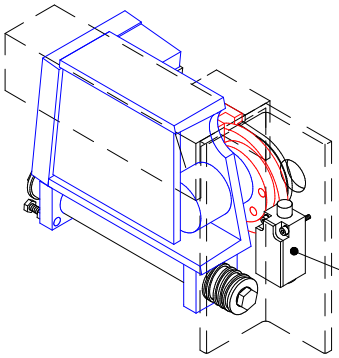
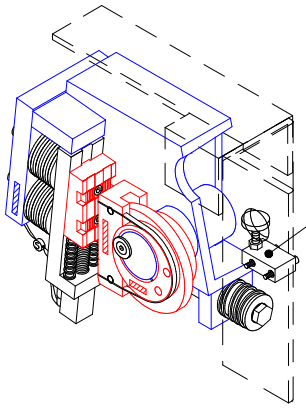
AUFZUGTECHNOLOGIE

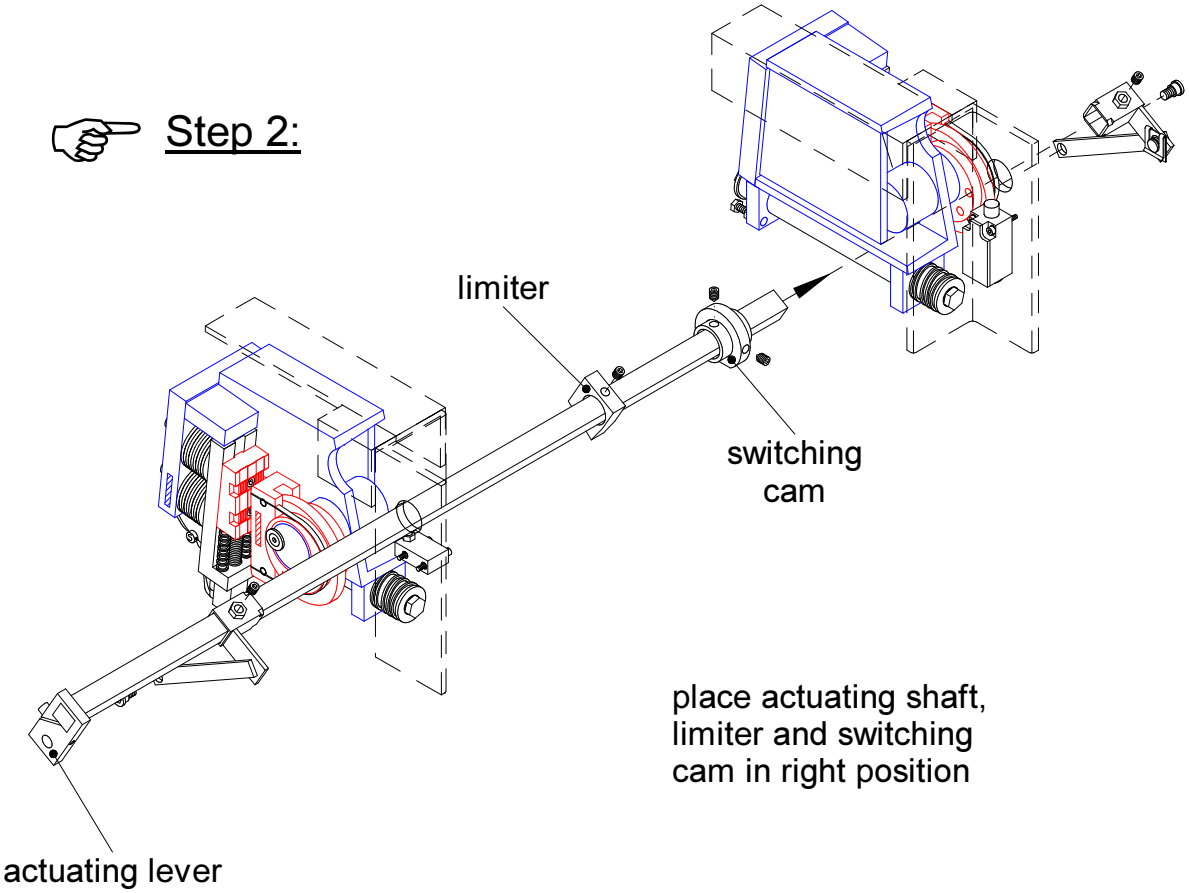
Step 1:





assemble safety gear blocks
safety switch and limiter must be
fixed in position

Step 2:



place actuating shaft,
limiter and switching
cam in right position

Edition:		Manual EB 75 GS	Drawing No.:
16.07.2001		Actuating shaft OUTSIDE	5250.800.011

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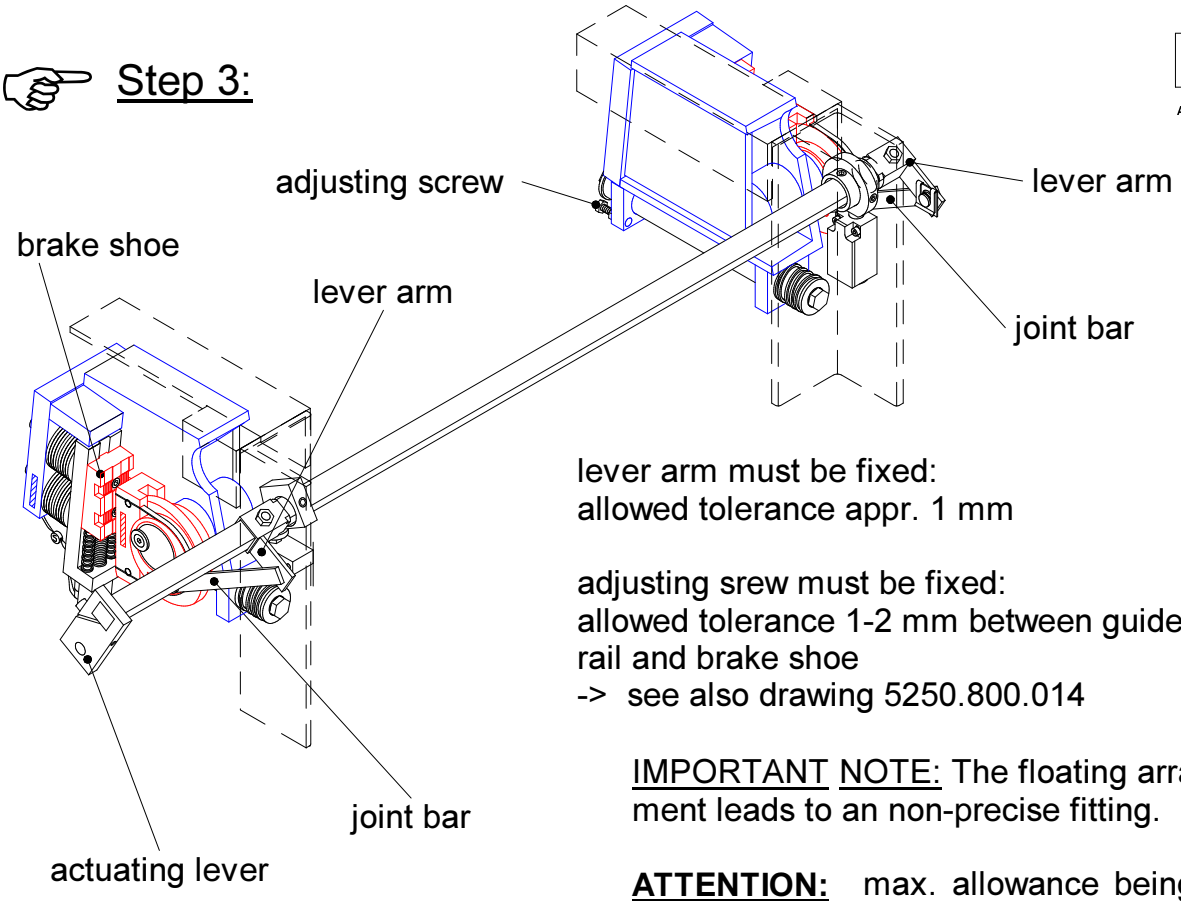
AUFZUGTECHNOLOGIE

Step 3:



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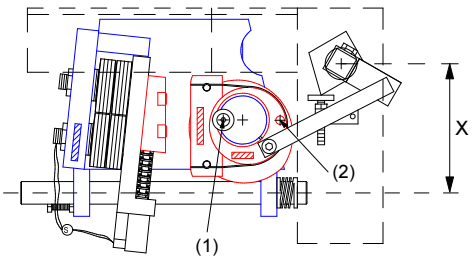
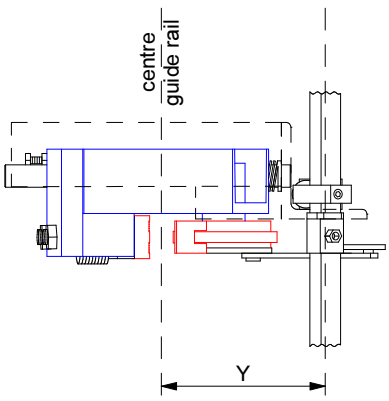
allowed tolerance 1-2 mm between guide rail and brake shoe
-> see also drawing 5250.800.014

IMPORTANT NOTE: The floating arrangement leads to an non-precise fitting.

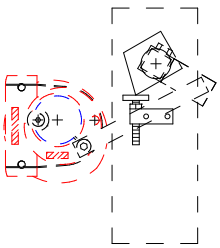
ATTENTION: max. allowance being ± 2 mm from the centre of the outer housing

centre eccenter fixing (1) and centre actuating bolt (2) HORIZONTAL in idle position

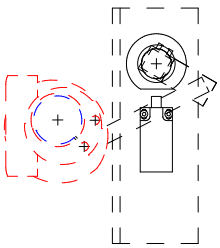




limiter adjustment



safety switch adjustment



see also drawing 5230.800.018

Standard Aufzug-technologie	**X**	**Y**
EB 75 GS	130	157

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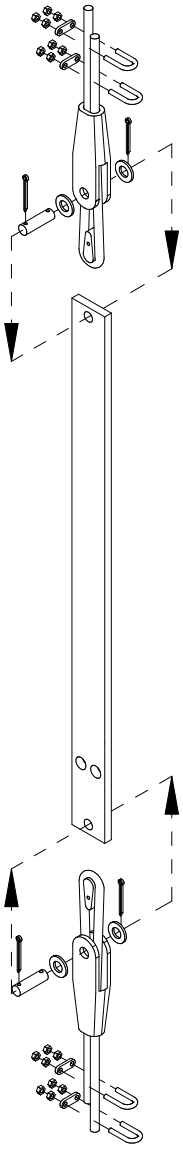
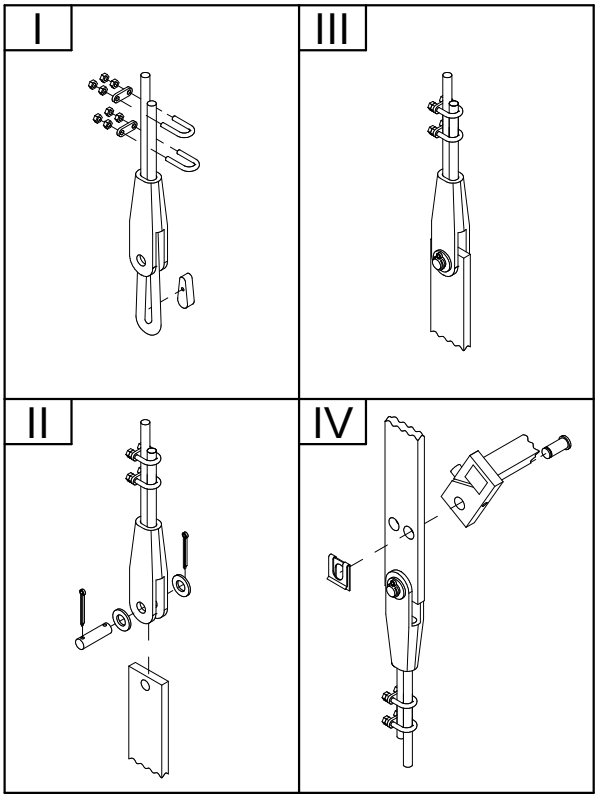
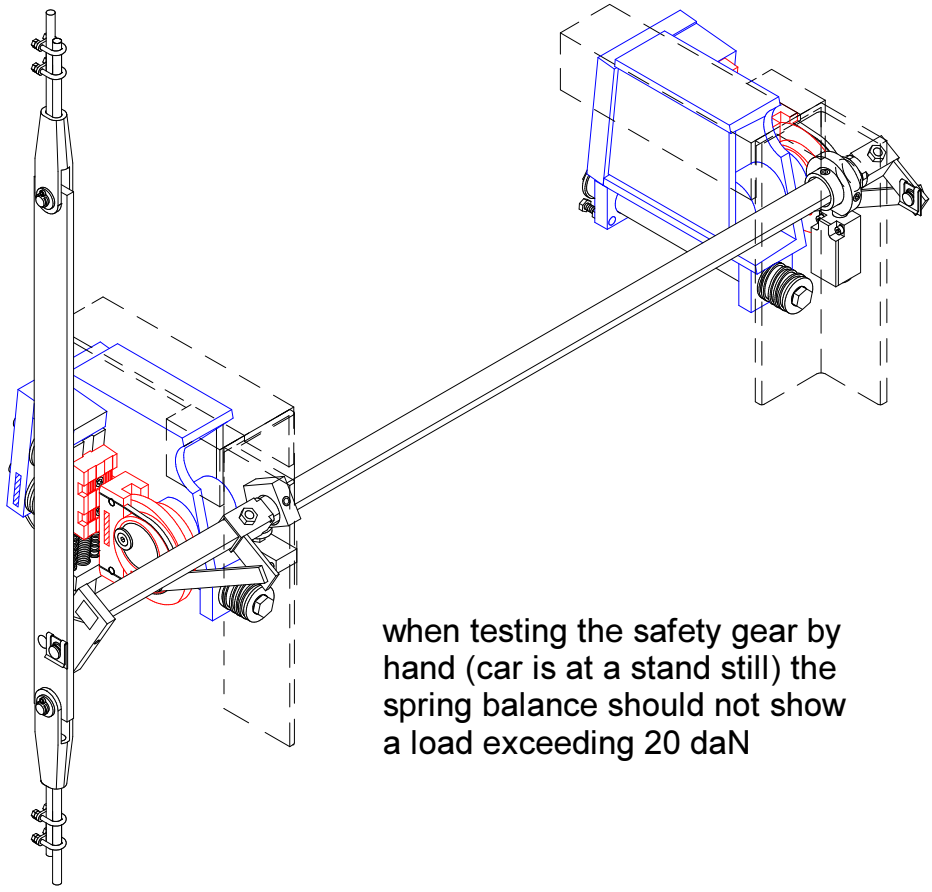
Step 4:

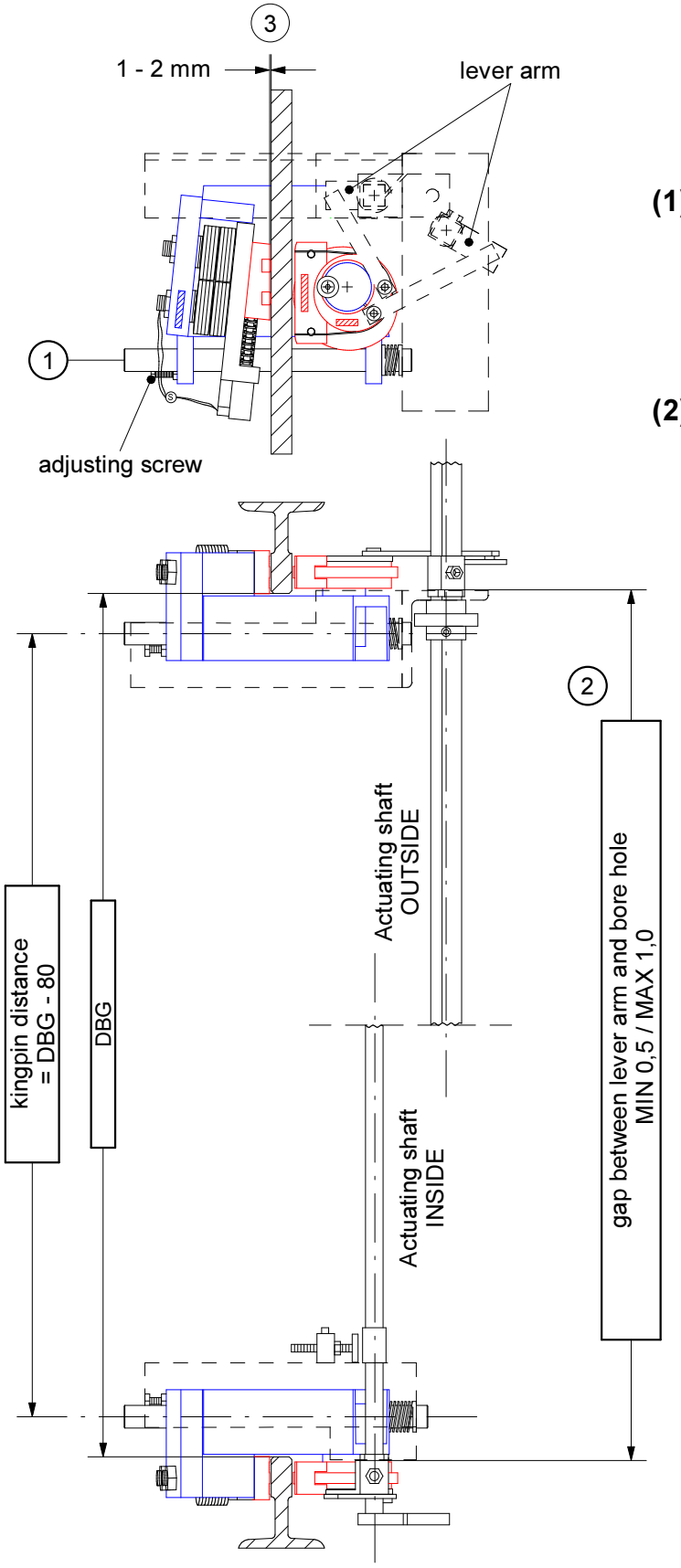






when testing the safety gear by hand (car is at a stand still) the spring balance should not show a load exceeding 20 daN

AUFZUGTECHNOLOGIE



(1) ATTENTION: Safety gears are vital parts of a lift. They are manufactured to DIN ISO 9001, checked and finally packed to reach all criteria required.
We strongly request that you check at your factory all data and compare the label with your order.

(2) Our safety gears are maintenance free. Please avoid rust arising from low temperatures and/or bad storage.
Lubricate all moving parts like hinges, between eccenter and steel tape, carrier bolt = floating arrangement.

(3)

1. THE KINGPIN MUST BE REMOVABLE. SO PLEASE TAKE CARE TO ALLOW THE NECESSARY.
2. Gap between diverting linkage and bore hole must be assembled by drilling bore hole and keeping an allowance of 1 to 2 mm.
3. Static brake shoe must be adjusted to the guide rail, leave 1-2 mm gap.

(4) THE FOLLOWING MUST BE NOTED FOR YOUR SITE ENGINEERS:

a) Square tube actuating must be easily moveable by hand until safety gear is activated.

b) Safety switch must be activated. When moving car in UP direction the actuating shaft must freely move back to the original position.

c) DEBRIS, DUST etc. will not allow a free dynamic movement.

d) Lubrication of guide rails with recommended oil.

e) COMMENT: Dry running guide rail is of advantage.

ATTENTION: Clean and properly maintained components are essential and guaranty a perfect function of our safety gears!

AUFZUGTECHNOLOGIE

TEST OF SAFETY GEAR:

The friction between guide rail and the brake shoes is strongly depending on the roughness of the guide rail surface, spring force and hardness of the brake shoes. The braking force also depends on the spring load and elasticity of the safety gear block housing.
In general we test each and every safety gear: hardness of brake shoe surface, the kinetic stroke of the spring block, as well as the "hook's" deforming of the safety gear housing. The hardness and roughness of guide rail surface used are beyond our control.

During installation experienced lift engineers will check engagement, activating way and the deceleration distance. Needless to say, the complete overspeed system have to checked as well.

WE ALSO HAND OVER SPRING CHARACTERISTIC DIAGRAMS AND ADJUSTMENT MANUALS TO THE SITE ENGINEER UPON REQUESTED.

reading of marks

DOWN UP

DOWN direction EB 75 GS

Before handing over, a safety gear test must be performed:

a) 1,25 x contract load, open brake on gear, do not loop safety switches of overspeed governor and safety gear

b) contract load, open brake on gear, do not loop safety switches of overspeed governor and safety gear

UP- and DOWN direction - EB 75 GD

a) DOWN contract load x 1,25 - as above

b) DOWN contract load - as above

c) UP, no load, run lift with open brake, main circuit breaker OFF, overspeed governor will engage and activate safety gear

d) -> with small loads, small travel height
-> poor efficiency on gear or single guide rail arrangement
PLEASE NOTE: a major defect (gear box failure) can not be simulated !
-> if there are several divertor the friction may progressively increase
In case the overspeed tripping speed is not reached, increase electrical speed on regulated lift control systems. After the test set back to original stage.

CANCEL THE BRAKE POSITION: FAST PASSING

In the **DOWN** direction mode during a short threshold period and in the deceleration mode a massive energy conversion will take place
In the **UP** direction mode - due to the soft engagement - a relative long threshold segment applies. The energy conversion can be ignored.

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

v = deceleration start speed [m/s]; s = deceleration distance [m]; a = deceleration [g];

SAFETY GEAR ↓

AUFZUGTECHNOLOGIE

WHY ARE YOU NOT MAKING YOUR LIFE EASIER !

Working with lifts needs a sense of responsibility and is also sometimes hard physical work.
You can take a lot of the strain from your site engineers by following our suggestion based on our long experience in the field.

(a) KEEP ALWAYS AMPLE ROOM AROUND ALL CONSTRUCTION PARTS OF THE CAR SLING AND SAFETY GEAR COMPONENTS:

- ☞ The kingpin must be easily removed.
- ☞ Keep easy access for works on the safety gear.
- ☞ Keep sufficient room at the car framework to check actuating gear and safety switch and each part.

(b) Make sure free ans easy running:

- ☞ At turning the actuating shaft no obstacle is to be feeled.
- ☞ At stressed resetting spring and safety switch screwed on the pulling force on the governor rope may not surpass 300 N.

(c) DO NOT USE HEAVY OVERSPEED GOVERNOR ROPE TENSION WEIGHT:

- ☞ Our tension weight DrawingNo. 5230.260.300 is tailor made for our units.
- ☞ Tension weight exceeding 60 kg demolishes the actuating shaft components and complicated the release of the safety gear blocks.

(d) CHECK ALL THE COMPONENTS IN ACCORDANCE TO EN 81.

(e) READ OUR INSTRUCTION MANUAL CAREFULLY.

(f) THE SAFETY GEAR ↓ IS THE SIGNIFICANT PART OF THE LIFT CONSTRUCTION. HENCE MAKE ABSOLUTELY SURE EVERY CARE IS TAKEN TO INSTALL THE COMPONENTS CORRECT.

☞ Clean and properly maintained components are essential and guaranty a perfect function of our safety gears!

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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 best 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 slib or become slack, and under the following conditions:

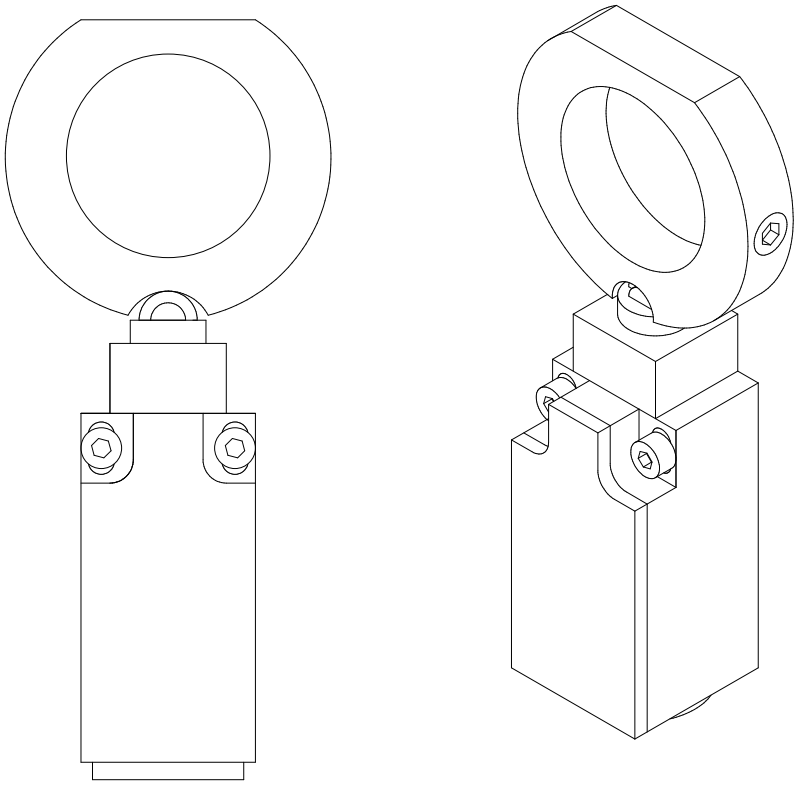
:

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 of the type tested progressive safety gear when dynamically tested with the suspen-sions 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.

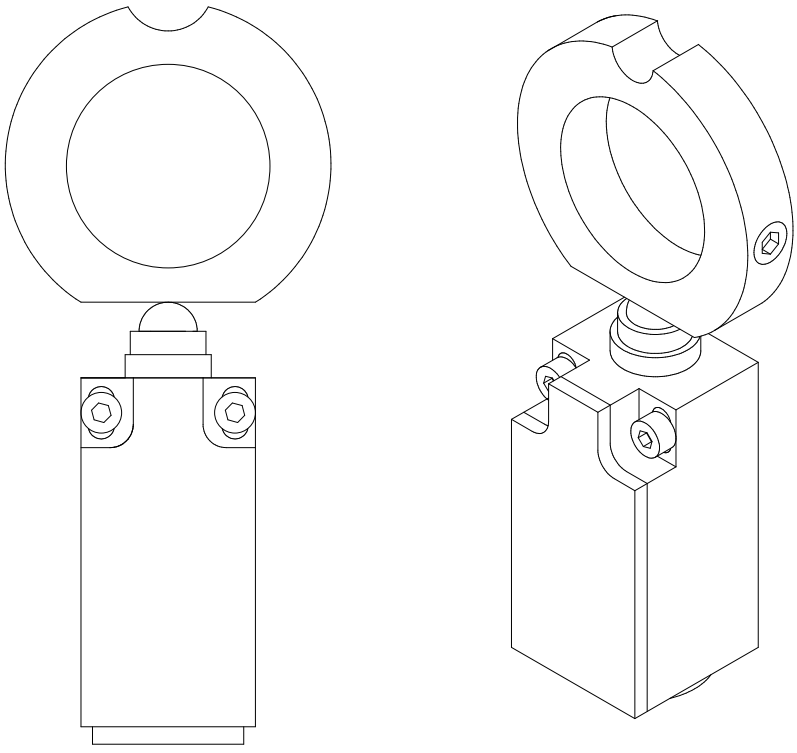
Note:
In order to faciliate disengagement of the safety gear, it is recom-mended that the test be carried out opposite a door in order to be able to unload the car.

AUFZUGTECHNOLOGIE

Safety Switch - IDLE POSITION
Safety Module (↑↓)



Safety Switch - IDLE POSITION
Safety Gear (↓)



Edition:		SAFETY SWITCH in IDLE POSITION	Drawing No.:
16.07.2001	↓ ↑↓		**5230.800.018**

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