

## INSTALLATION INSTRUCTIONS



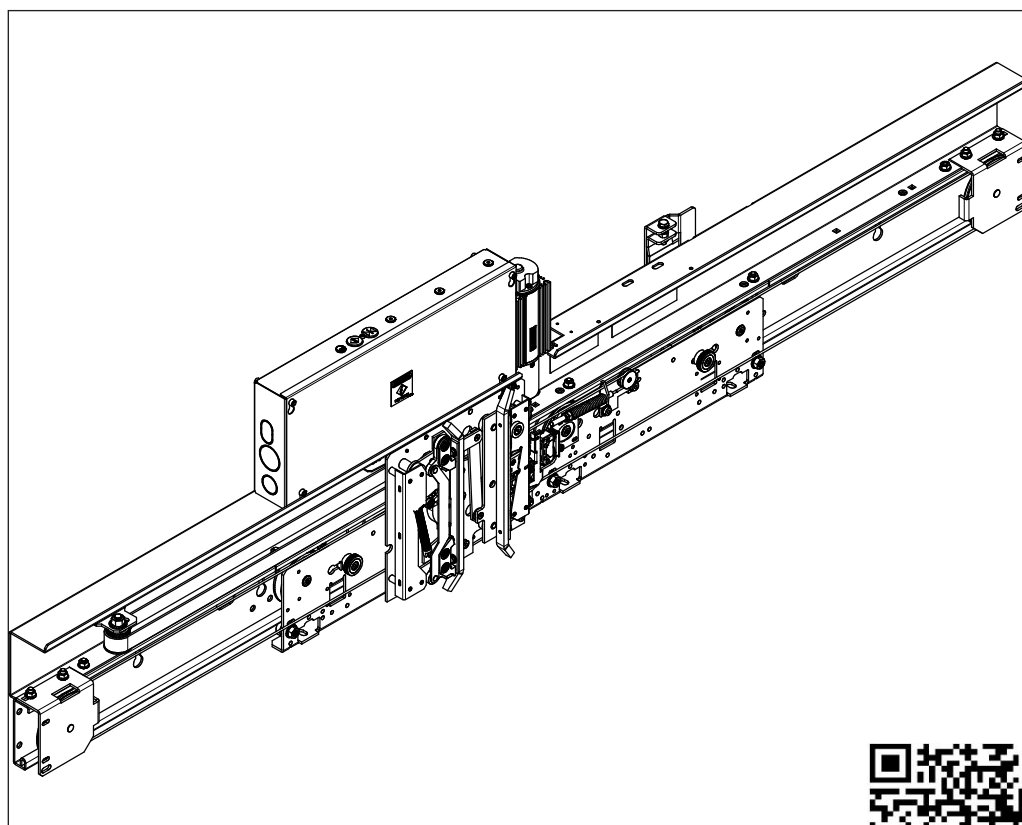
# Automatic Doors SGVNA

Code **AM.2.005257.EN**

Version **B**

Date **27.11.2020**

Car door operator



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Product manufacturer reference can be found on the product type label. For any support or further questions please contact your trading office.

[info@wittur.com](mailto:info@wittur.com)  
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**safety** in motion™



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## 1. General information prior to installation

### 1.1 Description and function

SGVNA car door operators are used for mid and high duty elevators.

The operator can move doors up to 275 lbf per door and 1325 lbf per complete door package.

### 1.2 Liability and guarantee

This instruction handbook is written for people who are familiar with lift servicing and installation. Competent knowledge of lifts is essential. WITTUR is not responsible for damage caused by improper handling, or for damage caused as a result of actions other than those stated in these operating instructions.

The WITTUR guarantee may be voided if parts other than those described in these instructions are installed. Always consider safety first and follow safety and installation procedures.

### 1.3 Safety precautions

It is essential to comply with and keep abreast of all safety rules and legal obligations in order to avoid personal / product damage during installation, maintenance and repair work.

Important safety advice and danger warnings are emphasised with the following symbols:



General danger warning



High danger risk warning (i.e. pinching edge etc.).



Risk of injury from damaged parts (i.e. due to incorrect installation).



Important information sign

These operating instructions belong with the whole installation and must be kept in a safe place at all times (i.e. drive room)

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### 1.4 Recommended tools & materials

Following tools and materials are needed:

- Combination wrenches 13 mm and 17 mm
- Ratchet + extension; sockets 13 mm and 15 mm
- "T"-handled hexagon keys 4 mm, 5 mm and 6 mm (Allen keys)
- Screw drivers (flat and phillips)
- Level
- Tape measure
- Carpenter's square
- Ground fault circuit interrupter (GFCI)
- Shims
- Barricades
- Drill with assorted bits

The car door operator is preadjusted at the factory.

No other mechanical and electrical adjustments than those mentioned in this instruction are required on site!

### 1.5 Delivery

Before installation work begins, it is in your own interests to clarify what structural and spatial conditions are available for installation work, so that you can see which installation procedures should be carried out.

Therefore it is recommended that all circumstances be taken into consideration, and to mentally plan the installation sequence before any rash or badly planned work is carried out.

Check the goods or parts for correct and full delivery upon receipt.

Car door operators are delivered in 2 pre-assembled units:

- SGVNA car door operator
- Car door interlock

Components are to be stored in the original package (plastic wrap). The components must not be unpacked before the installation begins.

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## 2 Identification

### 2.1 Equipment description

Before you can successfully install the car door equipment for the SGVNA door operator, compare the items received with the items listed on the shipping bill. The following items and their components should be accounted for before beginning car door installation.

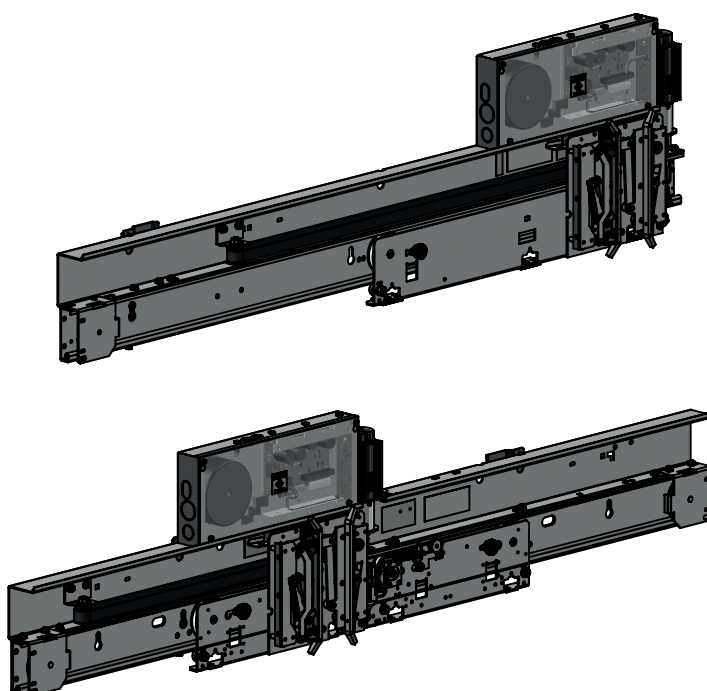
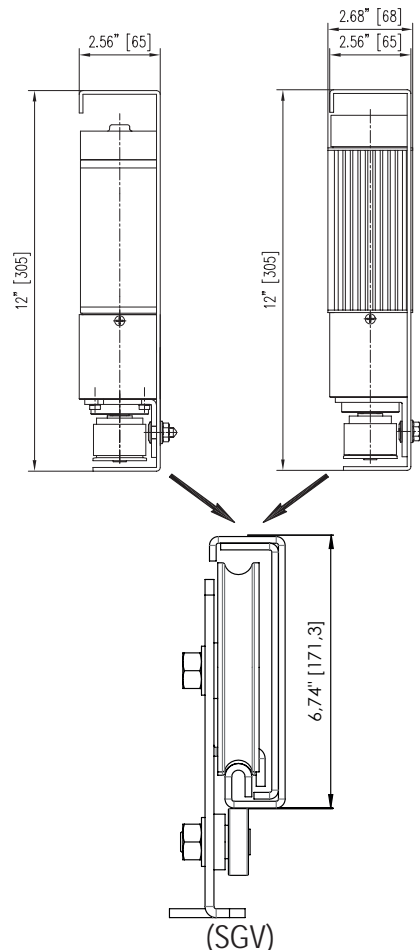
- SGVNA car door operator
- Car door interlock

SGVNA door operator offers the following operations and features:

- Brushless motor with reduction gear
- Linear tooth belt drive mechanism
- Car door interlock
- Electronically controlled closing force limiter
- Continuous position and speed feedback
- Close end position switch

Midi Drive

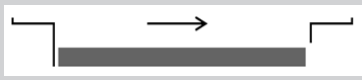



Supra Drive

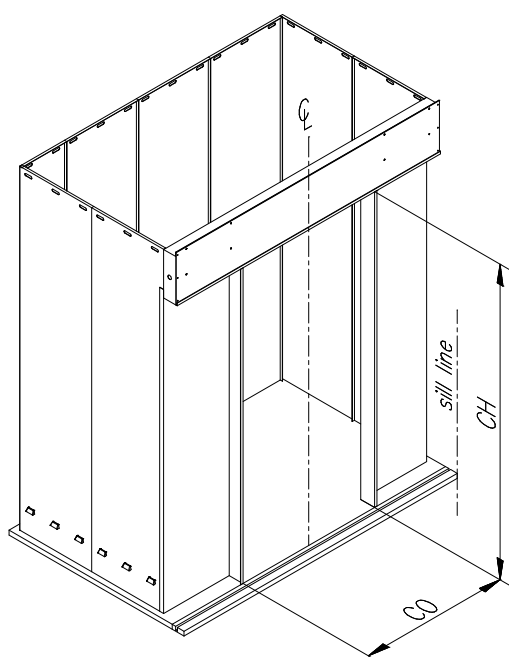


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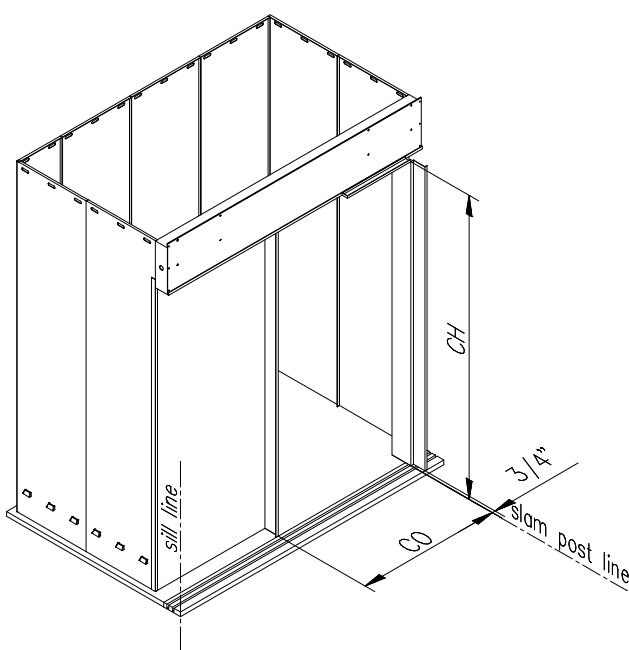
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SILL WIDTH	DOOR TYPE	ILLUSTRATION
3,25" 82,6 mm	1S	
3,25" 82,6 mm	2C	
4,75" 120,6 mm	2T	
4,75" 120,6 mm	4C	



Center opening



Side opening

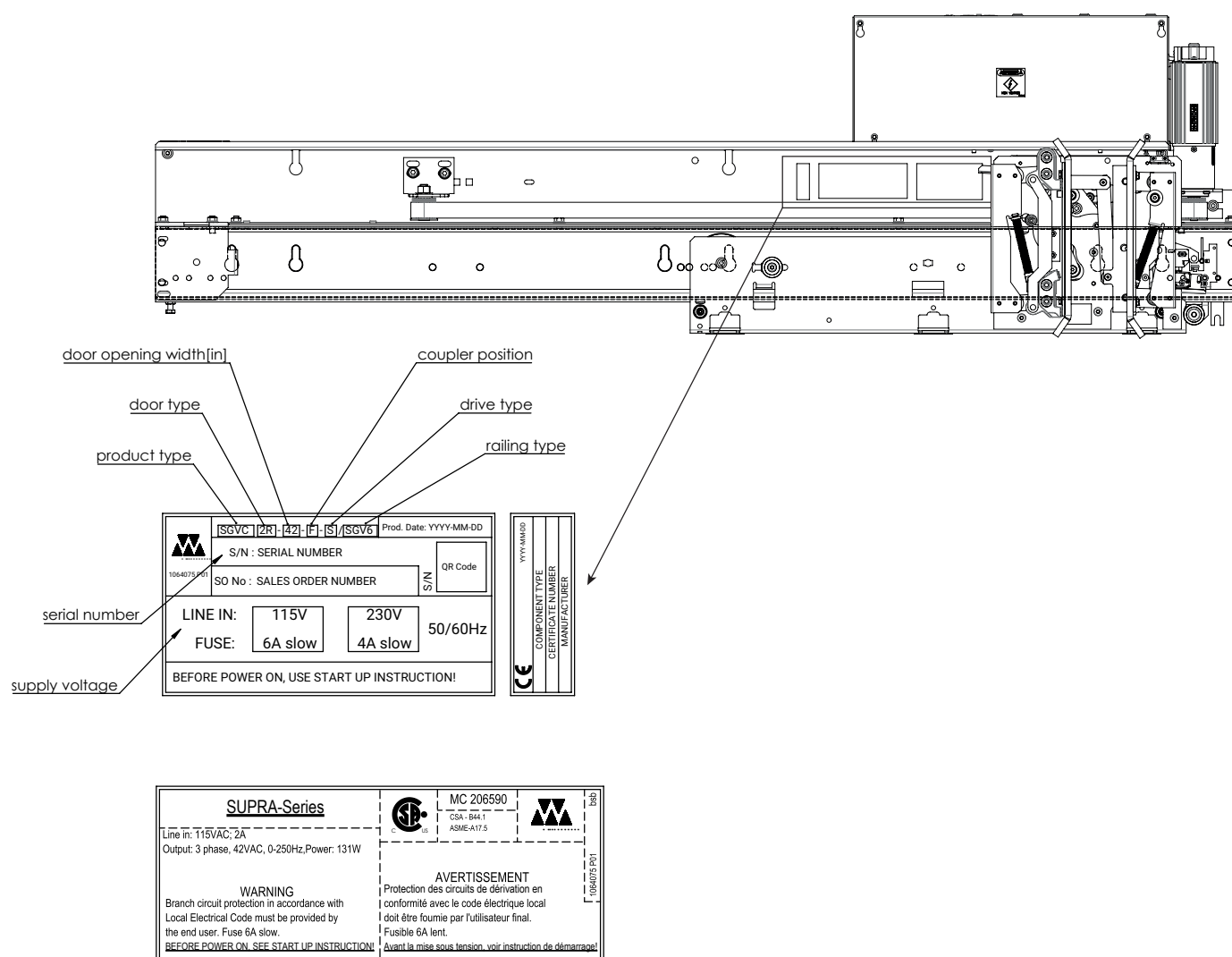
CH Clear entrance height  
CO Clear entrance opening  
CL Center line

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### 2.2 Type labels



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## 3 Installation

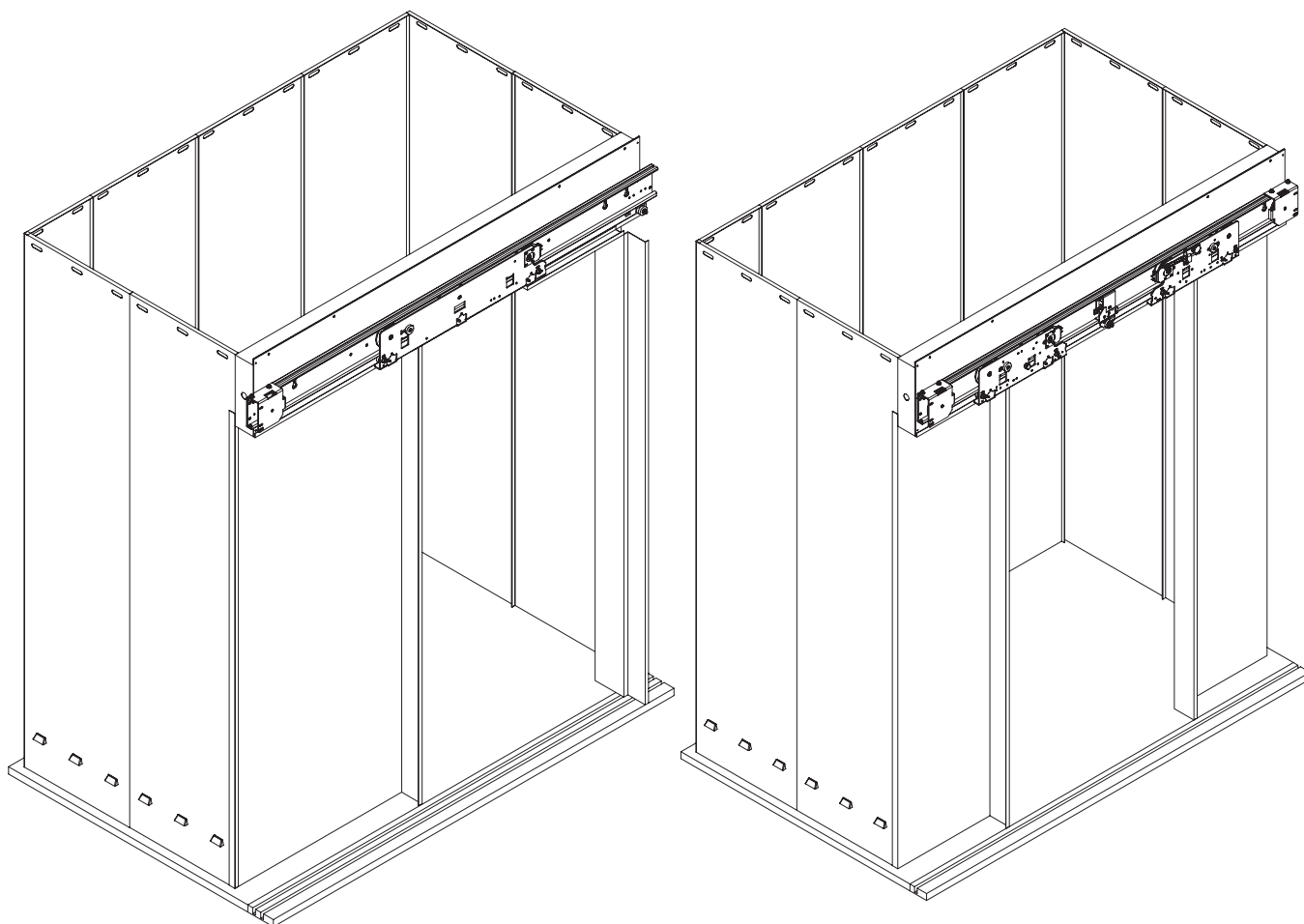
### 3.1 Car door entrance

#### Checking platform and cab

Before installing SGVNA car door hanger/header/transom, verify platform is level and cab is plumb. The only adjustment is leveling the track. A misaligned entrance may cause problems when installing the door operator and door panels.

Checking dimension from car sill to bottom of door track

Dimension from car sill to bottom of door track is height of doors plus 2-21/32 inches [67.5 mm]. On 7 foot doors, dimension from car sill to bottom of door track is 86-21/32 inches [2201 mm]



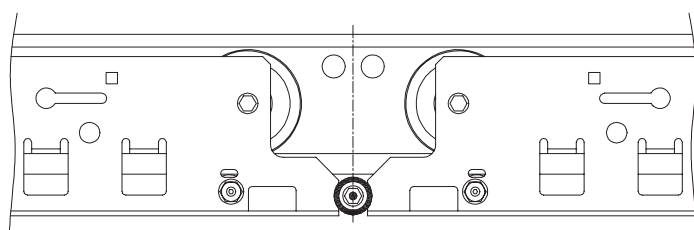


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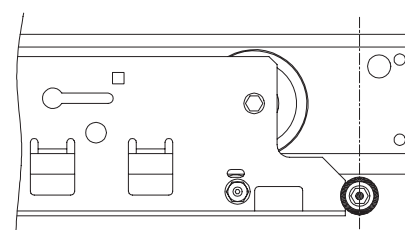
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The black rubber buffer at the bottom of the Railing is the horizontal reference for the position of all car and landing doors. While for center opening doors the buffer indicates the door center line, for side opening doors it indicates the clear opening (daylight line).



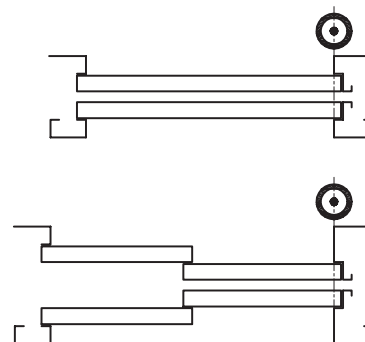
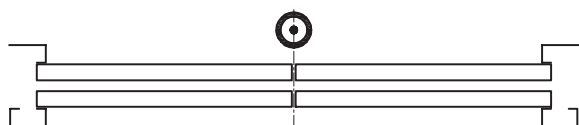
center opening

buffer



side opening

buffer



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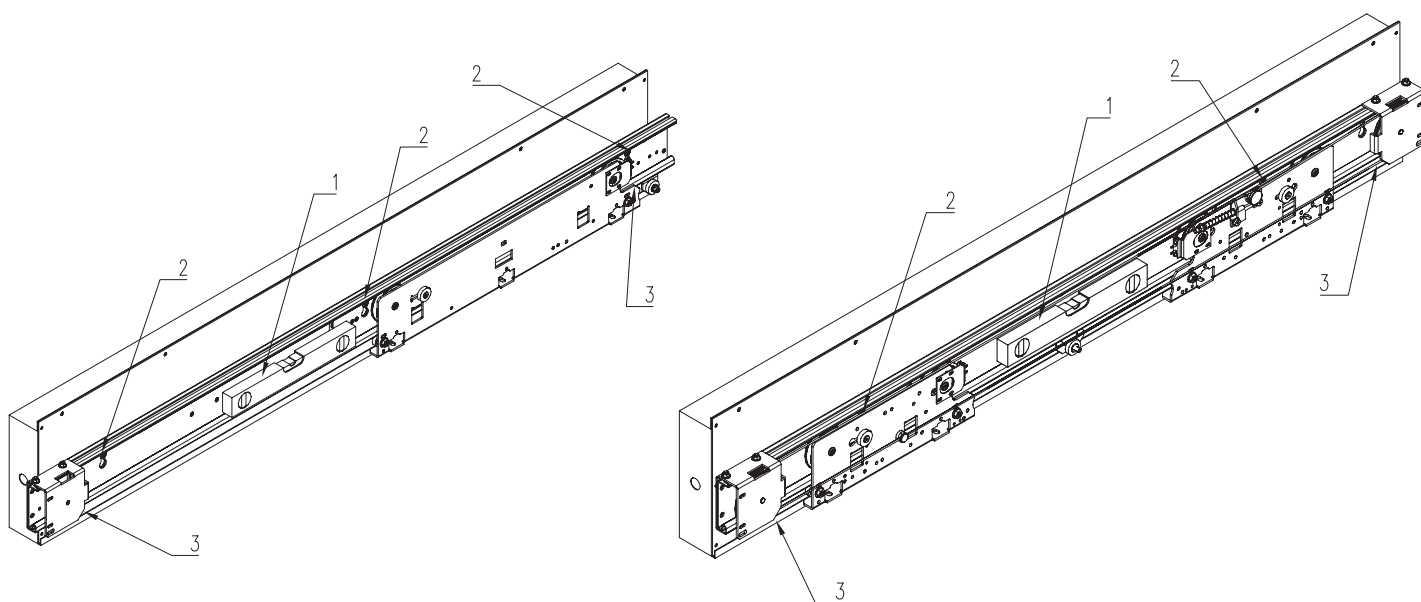
### 3.2 Leveling SGVNA car door hanger assembly

Step	Action
1	Use 2-foot level (1) to verify SGVNA cardoor hanger assembly is level.
2	If SGVNA car door hanger assembly is NOT level, loosen bolts in keyslots, and use slots (3) to level SGVNA car door hanger assembly, tighten bolts
2	Check dimension between sill and bottom of door track. Dimension from car sill to bottom of door track is height of doors plus 2-21/32 inches [67.5 mm].

#### Checking height of bolt heads



NOTE: Use the factory supplied bolts with flat head (M8x20) to attach the car door operator. Standard head bolts are too high and would collide with the hanger roller.



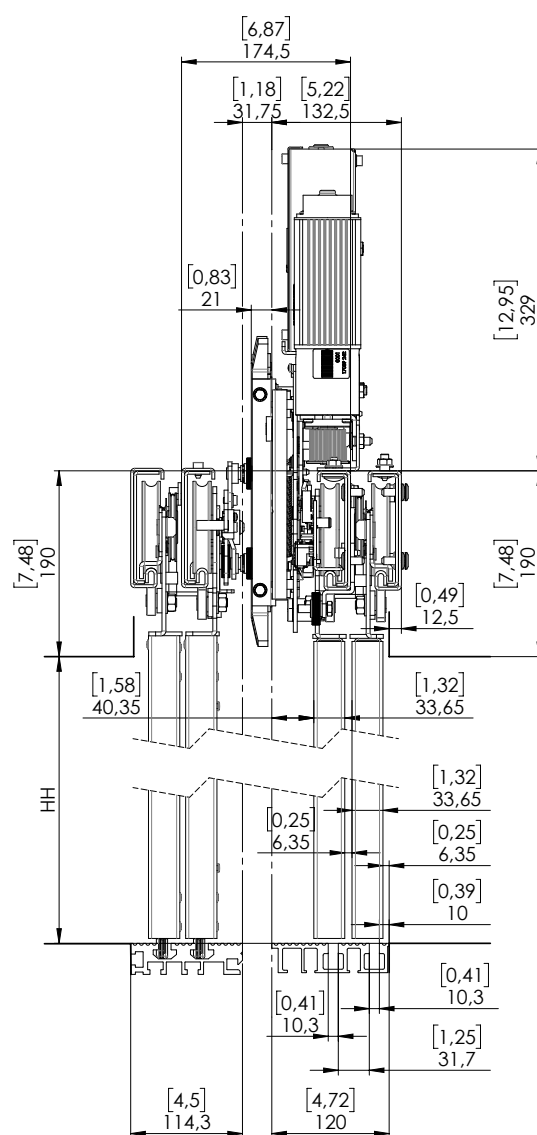
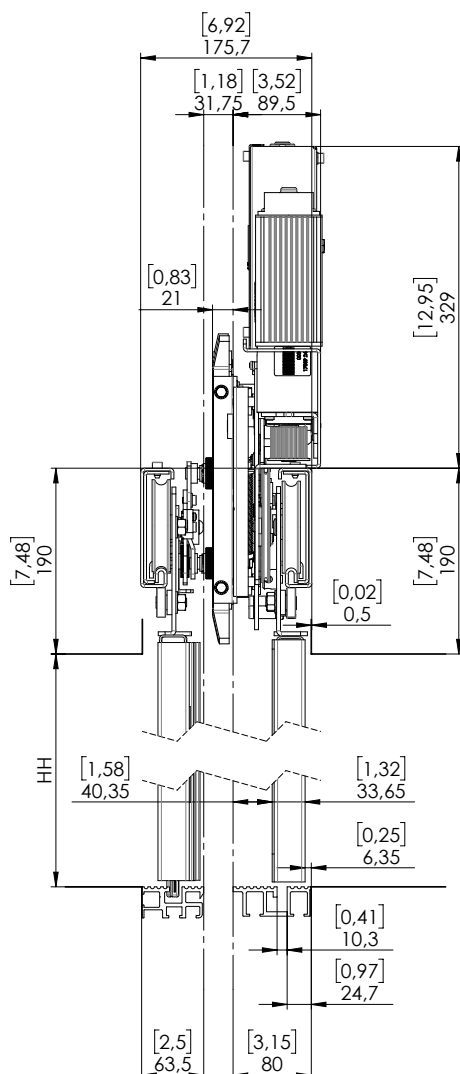
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### 3.3 Checking distance between car door hanger track and hatchtrack

Step	Action
1	Check dimension between car track and hatchtrack. Dimension should be 6.92" [175.7 mm] on center opening and- single slide doors, 6.87" [174.5 mm] on 2-speed doors.



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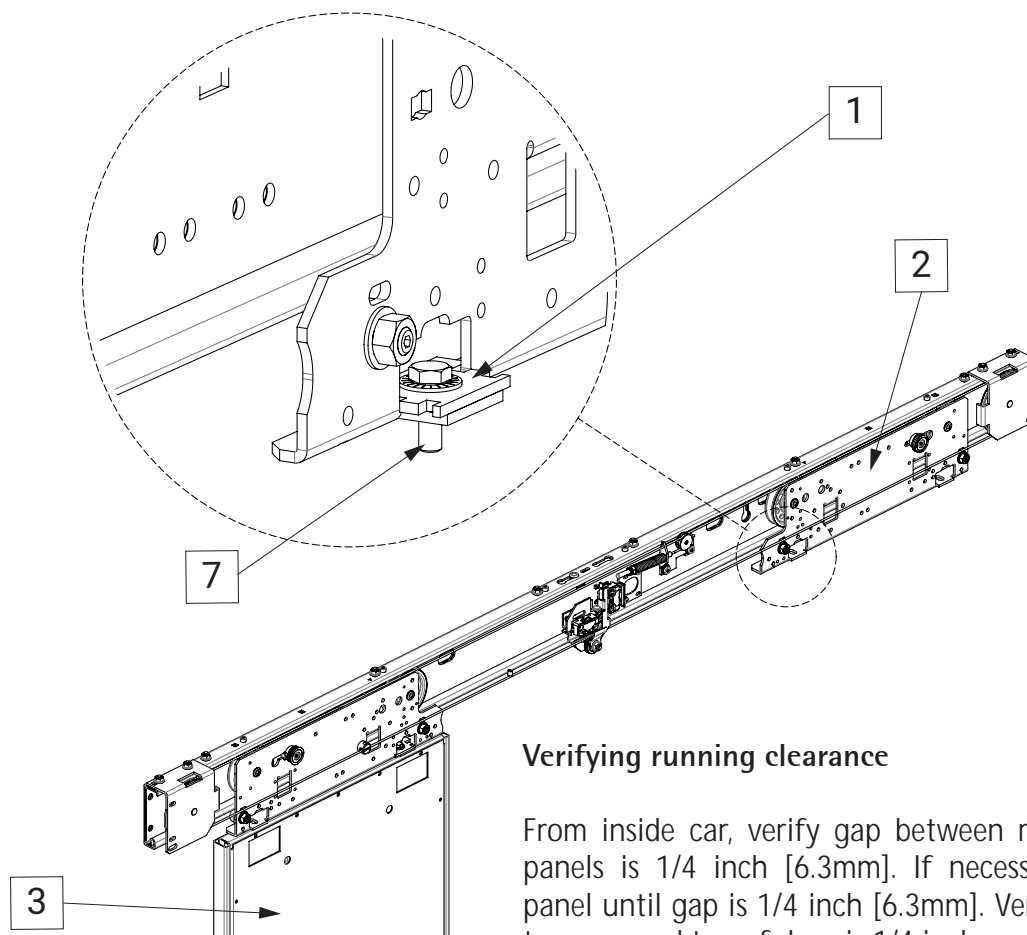
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### 3.4 Installing car door panels

Make sure pendant bolt plates (1) are installed on car door pendant (2) before installing car doors.

Step	Action
1	Slide car door pendant (2) into fully open position
2	Place the door panel (3) into the sill groove in the door opening.
3	Slide the car door pendant over the door panel and attach the door panel to the hanger
4	Tighten bolts (7) to secure doors.



#### Verifying running clearance

From inside car, verify gap between returns and door panels is 1/4 inch [6.3mm]. If necessary, adjust door panel until gap is 1/4 inch [6.3mm]. Verify gap between transom and top of door is 1/4 inch [6 mm].

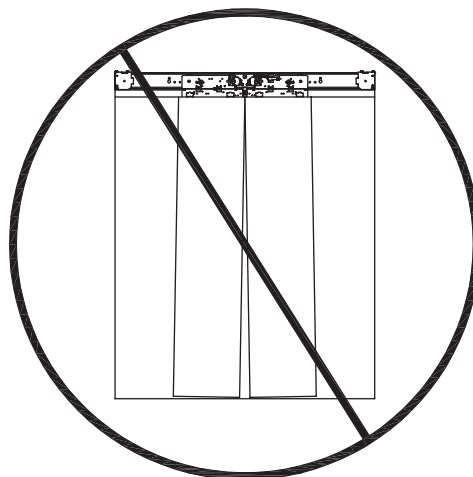
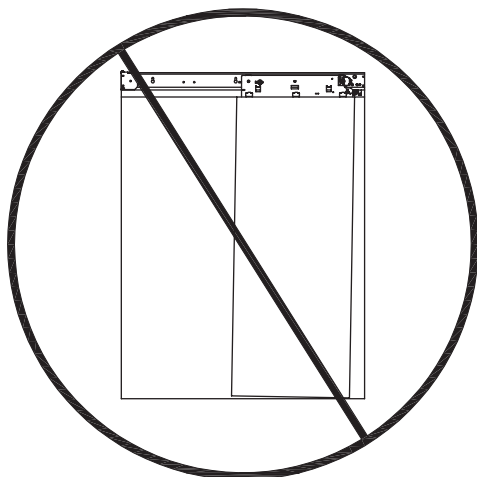
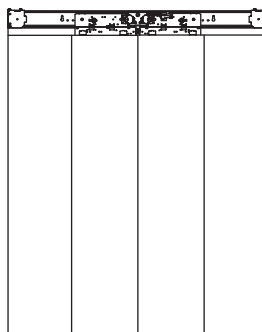
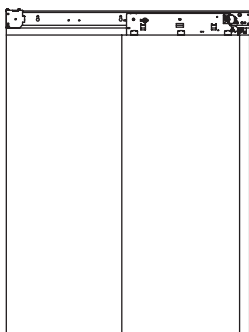
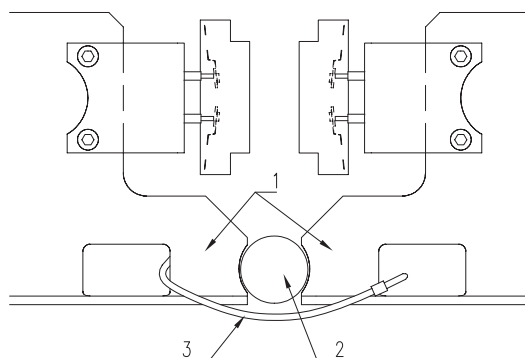
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### 3.5 Adjusting car door panels

Step	Action
1	Move door pendant(s) (1) to fully closed position against bumper (2).
2	Secure door pendant(s) (1) with wire-tie (3).
3	Adjust doors until upper and lower leading edge of door panel slightly touch strike jambs or opposite door panel on center-opening doors.
4	Verify door gib to sill clearance is 1/4 inch [6,3mm].



Leading edge of door panel to slightly touch with strike jamb of side-opening door, or opposite door panel on center-opening doors.

If necessary, add shims between door and pendant bolt plate.

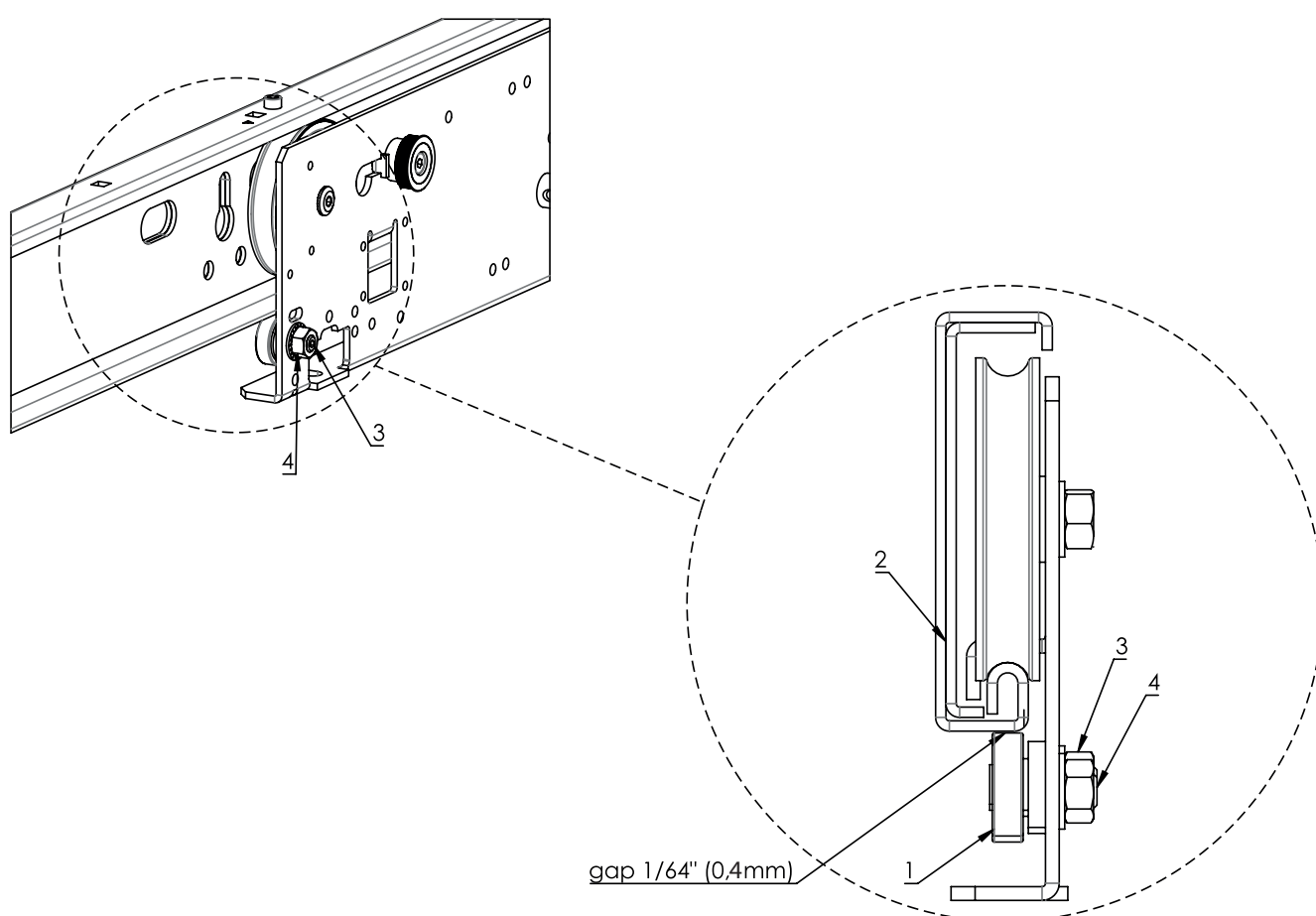
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### 3.6 Setting eccentrics on car door pendants

Step	Action
1	Verify gap between eccentric roller (1) and rail (2) is 1/64inch [0.4 mm]. Eccentric rollers are pre-adjusted from the factory and must not touch to the railing profile during open and close movement of the door
2	If eccentric roller (1) needs adjustment, loosen nut (3) and use allen wrench to turn roller shaft (4).



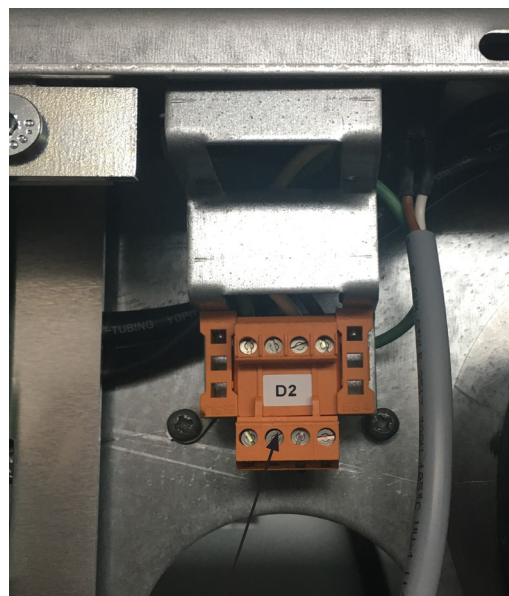
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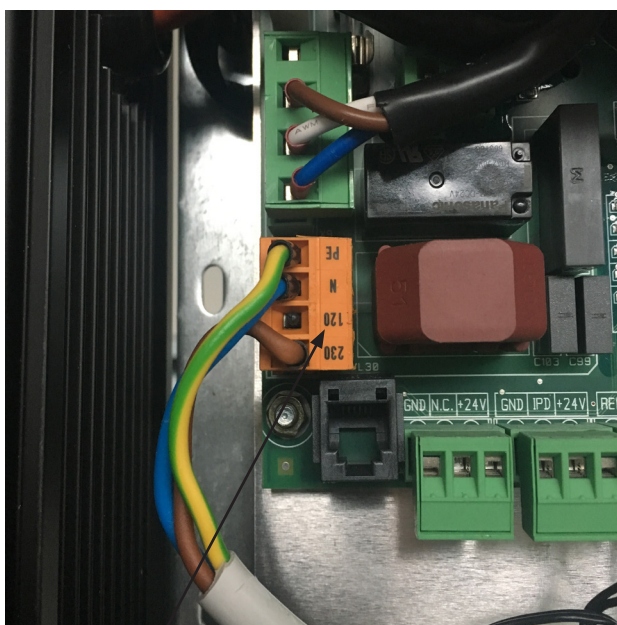
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### 3.7 Wiring and installing car door contacts & power supply

Step	Action
1	A terminal is provided on the door operator to connect the safety circuit
2	Plug the safety circuit wire to the terminal
3	Screw the ground wire with the green ground screw.
4	A terminal is provided to connect the power supply.



SAFETY CIRCUIT



POWER SUPPLY

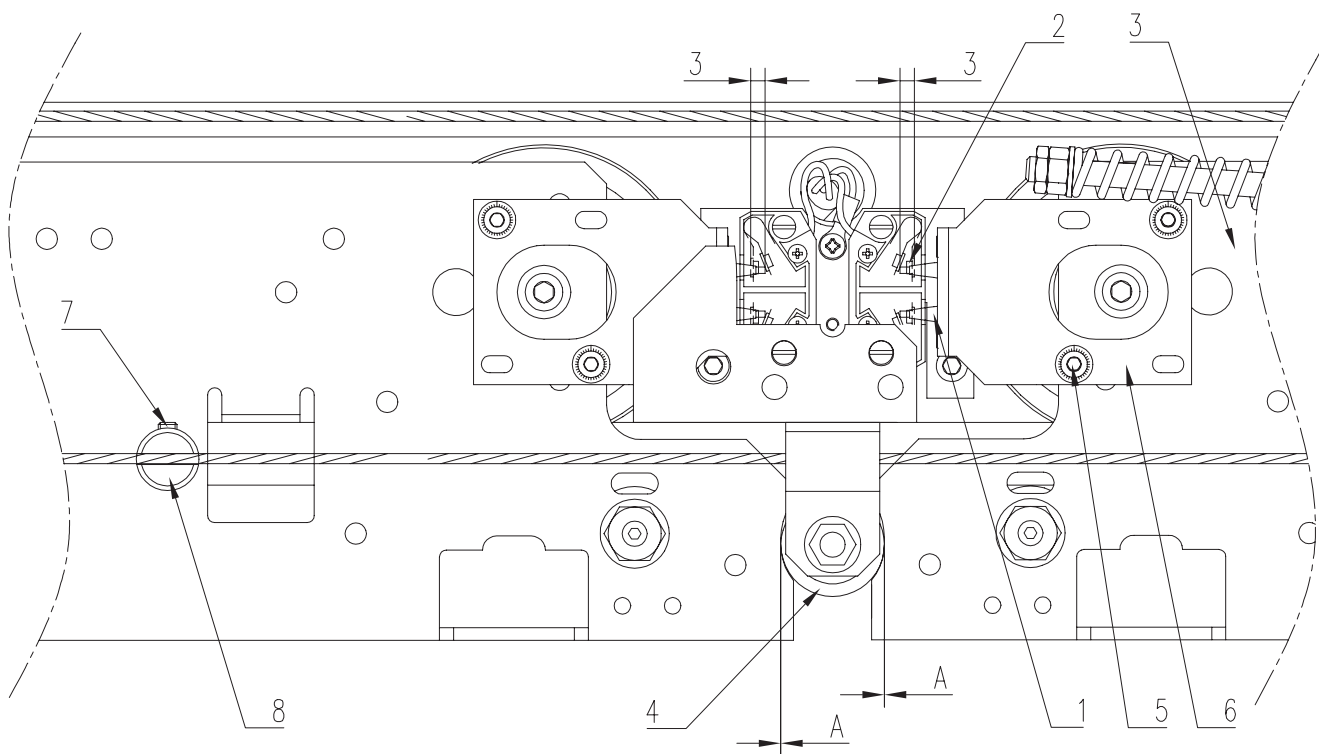
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### 3.8 Checking door contacts

Step	Action
1.	When door lock pins (1) are JUST touching door contacts (2), verify measurement "A" between door pendant (3) and bumper (4) is 1/8 inch [3 mm]. (Factory pre-adjustment)
2.	If measurement "A" is not 1/8 inch [3 mm], - Loosen screws (5). - Move bracket(s) (6).
3.	Re-check measurement "A".
4.	Center-opening doors. If dimension "A" is not equal for both pendants. - Loosen setscrew (7) on rope guide (8). - Move car door pendant until "A" is equal for both pendants. - Tighten setscrews (7) on rope guide (8).





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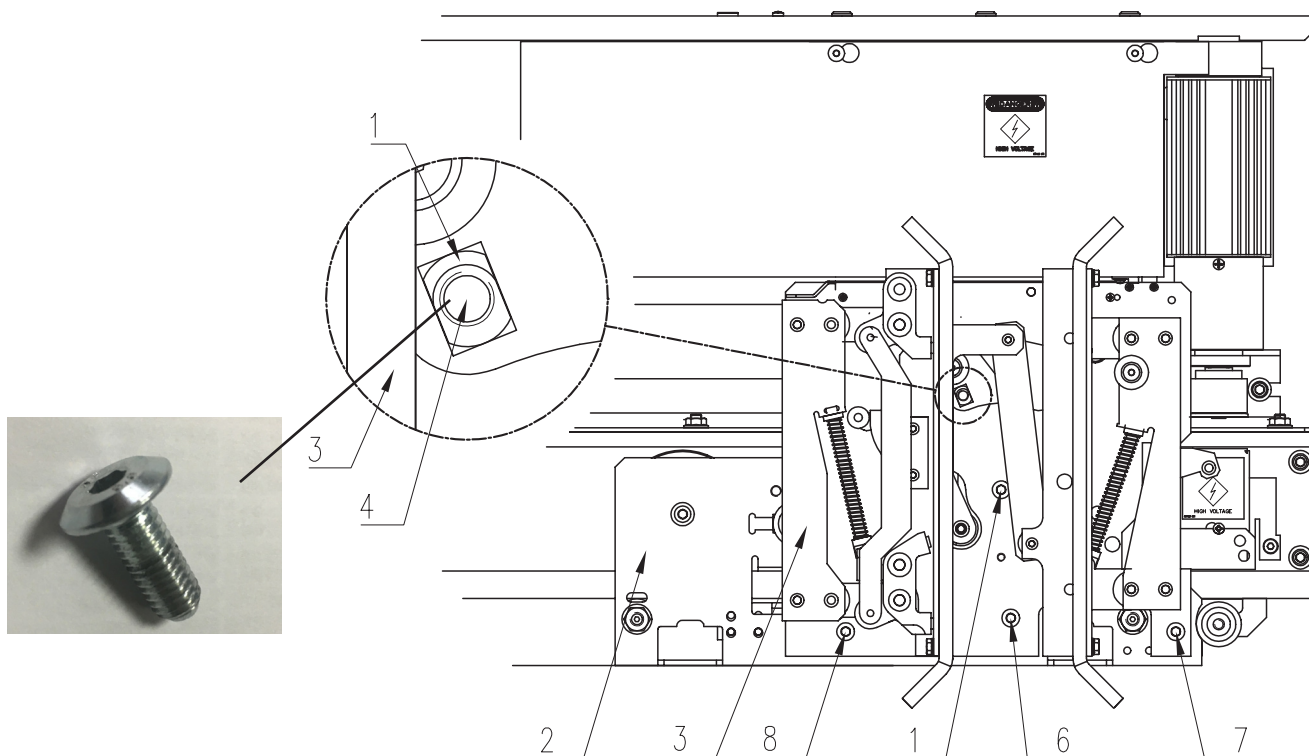
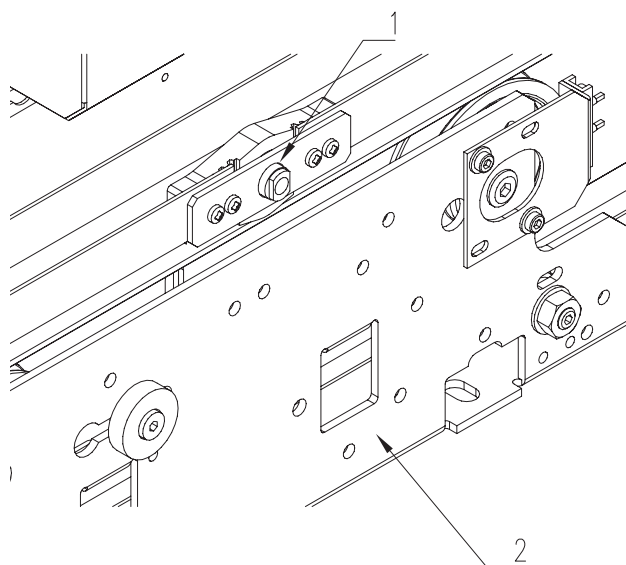
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### 3.9 Installing SGVNA clutch

SGVNA clutch is installed on belt fixing (1) and car door hanger (2).

Step	Action
1.	Attach SGVNA clutch to car door hanger with screws (5,6,7,8).
2.	Tighten screws (5,6,7,8).
3.	Align flats on belt fixing (1) with rectangular opening (4) on clutch (3).
4.	Attach belt fixing (1) to clutch (3) with the provided flat head screw.
5.	Check the proper function of the clutch by moving the belt until the vanes are opened completely. Loose the belt and check if vanes are closing completely (by means of the springs)



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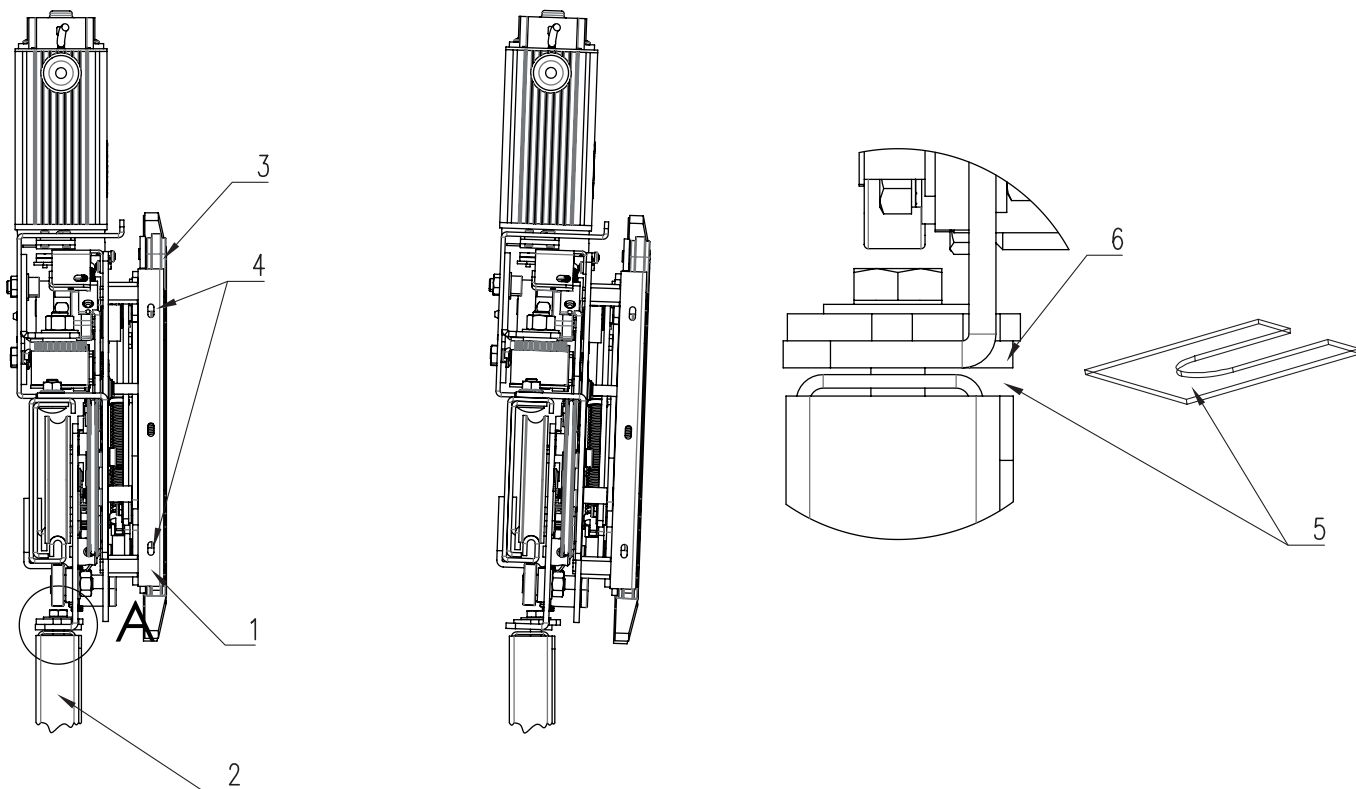
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## 4 Adjustment

### 4.1 Verifying car door hanger and clutch are plumb to door

Step	Action
1.	Check to make sure car door hanger and clutch (1) are not leaning forward at top, but are plumb to door (2).
2.	Make sure clutch vanes (3) are plumb. If necessary, loosen bolts (4) to adjust clutch vanes.
3.	If car door hanger and clutch (1) are not parallel to door (2), align by adding shims (5) between door and pendant bolt plate (6).



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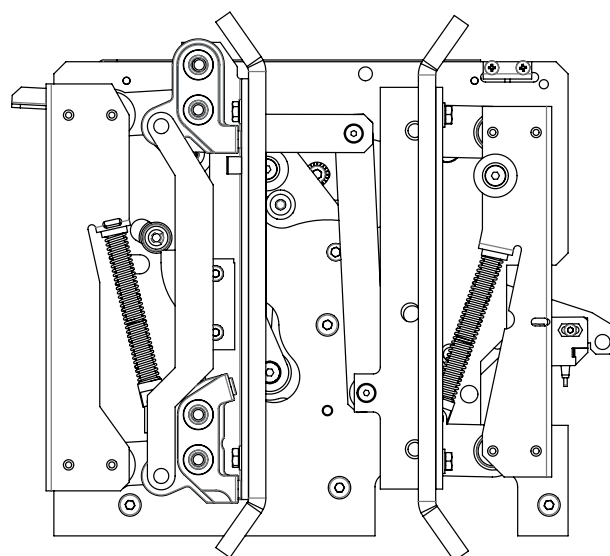
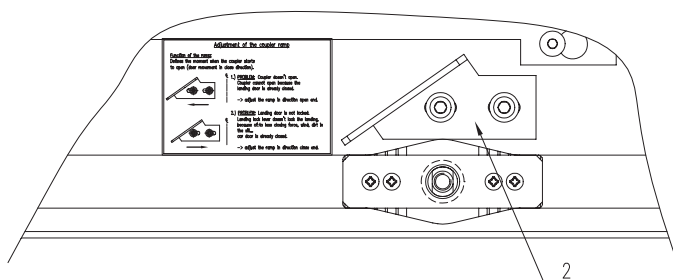
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### 4.2 Adjusting clutch ramp : if required

Clutch ramp (1) determines when clutch vanes (2) starts to open as car door is closing.

Step	Action
1.	If clutch vanes (2) DO NOT open. - Clutch vanes (2) cannot open because hoistway door is already closed, car door cannot close enough to unlock the car door lock mechanism - Move clutch ramp (1) in door open direction.
2.	If hoistway door IS NOT locked, and car door is closed. - Hoistway door latch does not lock, because of closing force, wind or dirt in sill. - Move clutch ramp (1) in door close direction.



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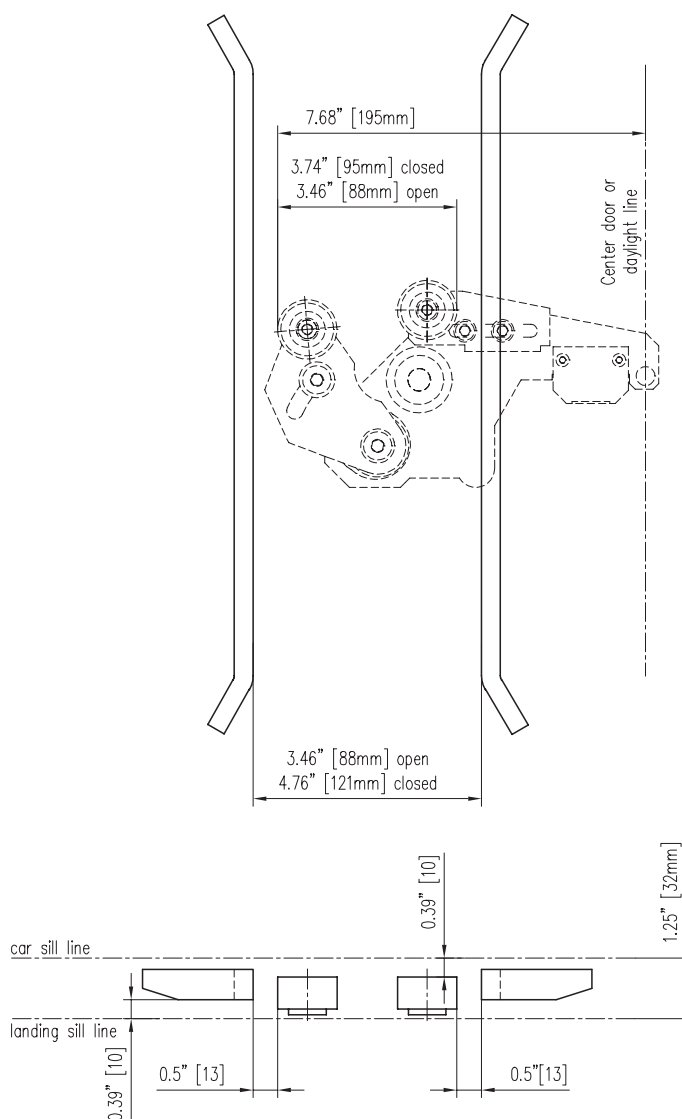
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### 4.3 Verifying distances between clutch and door drive rollers

Step	Action
1.	Make sure clutch opens and closes properly, by pulling the belt in close direction. Afterwards release the belt and check if the vanes are closing by means of the clutch springs
2.	Check clearance between door drive rollers and clutch vanes at all landings
3.	If necessary, adjust door drive rollers.

Verify door drive roller setscrews are tight.



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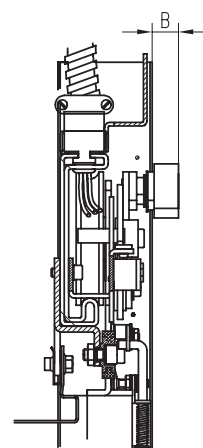
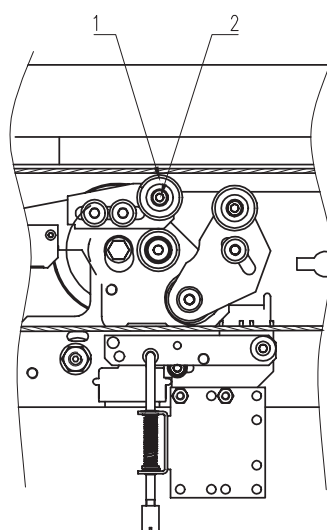
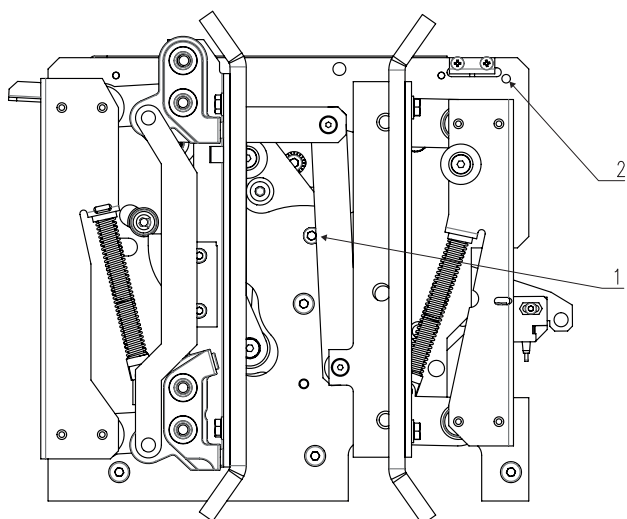
### 4.4 Checking running clearance between clutch and door drive rollers

#### Adjusting door drive rollers

Step	Action
1.	Remove screw (1) from parking position on clutch.
2.	Open clutch vanes and install screw (1) in lock position hole (2).
3	Run car on inspect and check running clearance between clutch and door drive rollers at each floor.
4.	After checking running clearance, remove screw (1) from lock position hole (3) and re-install in parking position hole.

Step	Action
1.	After clutch is installed, make sure that the door drive rollers are reaching "B" (20mm) into the sill gap.
2.	If adjustment is necessary, loosen set screws (2) and adjust door drive rollers (1) in or out.

After adjusting, verify set screws (2) are tight.



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### 5 Maintenance, checks and repairs

#### 5.1 Safety

Follow all the safety rules and instructions concerning general working with elevators.  
Be especially aware of open landing doors.  
Always ensure that open landing doors cause no danger to outsiders.  
Landing doors must be locked if the car is not on the landing.  
Ensure also that the door safety circuits are operative at all times, also during maintenance.

When lowering the cabin and opening the car door by door test drive buttons, look down in shaft to ensure that lower landing lock rollers are not engaged and lower landing door does not open.

#### 5.2 General checks

Step	Action
1.	Drive the elevator from floor to another like a normal user and check the door operation also from the landing side
2.	Check the operator from the highest landing.
3.	Check all landing doors from car roof
4.	The whole door should operate smoothly and should not rattle during drive.
5.	When the door is closing the panels should not bump against each other or against the slam post.
6.	In open position the panels should be correctly aligned with the post.
7.	Photocell, closing force limiter and light curtain must stop or reverse a closing door when operated.

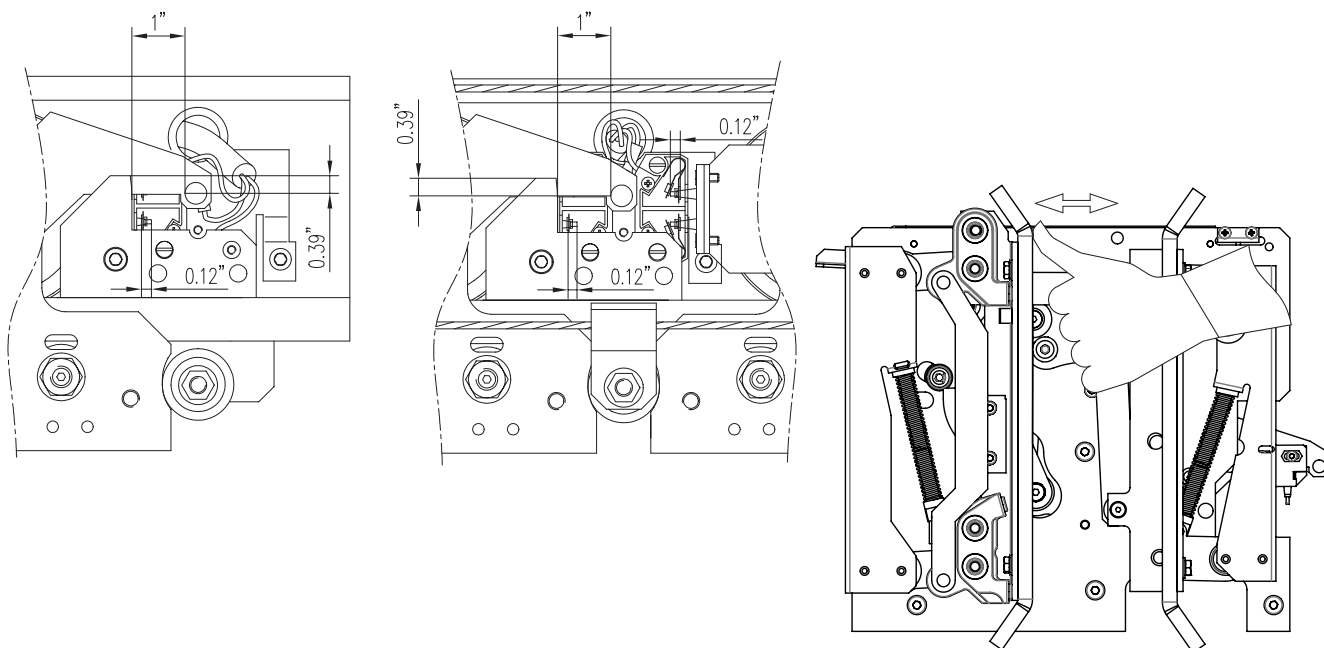
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### 5.3 Clutch with integrated restrictor

	Action	Measure
1.	Clutch must be securely fixed and keep the door closed	
2.	Safety circuit must be interrupted if the door opens	
3.	Lock hook and beak overlap when lock is fully closed must be	min. 0.39" [10mm]
4.	Play between lock hook and lock beak should be	1" [25.4mm]
5.	Contacts should be clean and have minimal wear	Metal visible
6.	The contact bridge should push the contact surface down	min. 0.12" [3mm]
7.	Electrical terminations should be tight and secure	
8.	Contact bridge should be aligned to the middle of contact or holes, not touching the hole edges	
9.	Check that lock hook is moving freely when pushing lock vane	



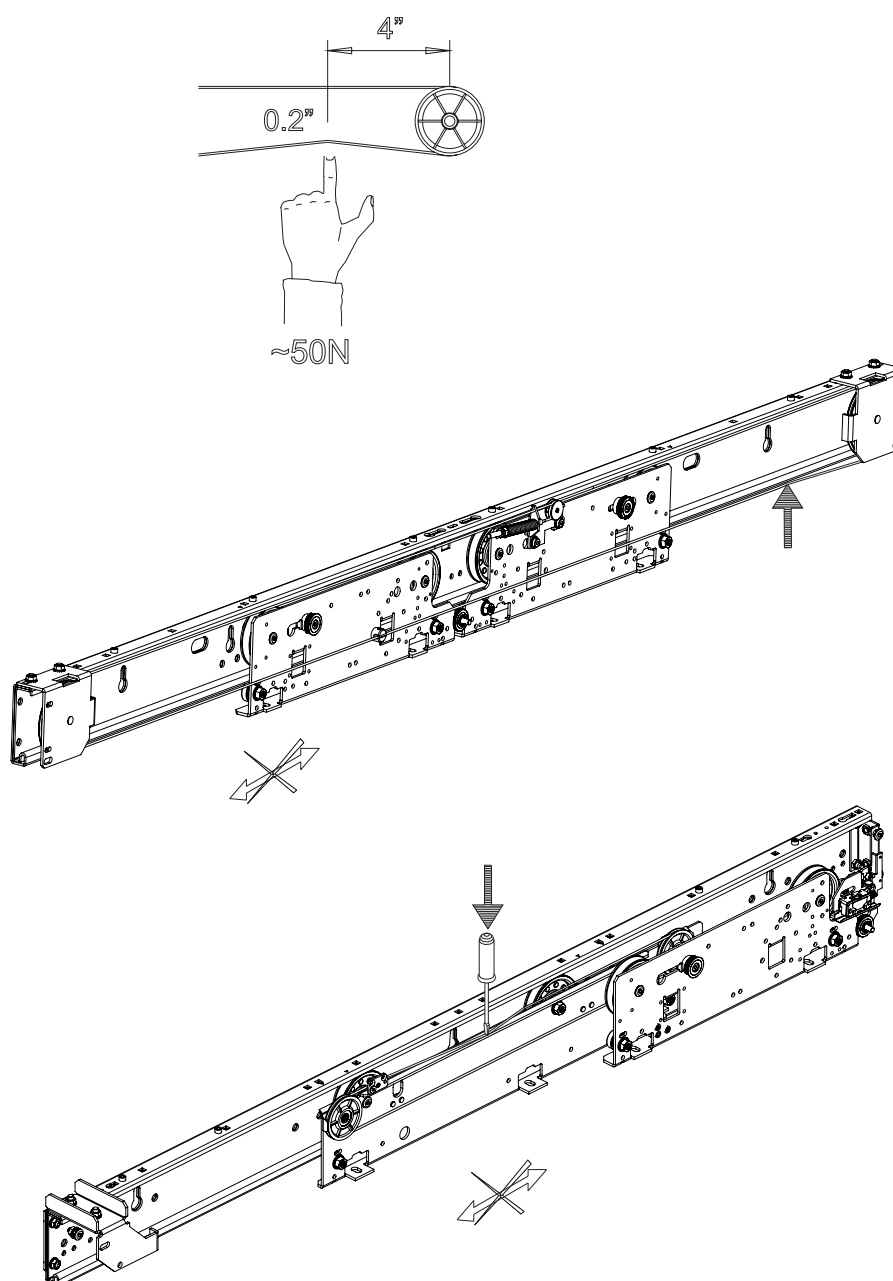
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### 5.4 Synchronization rope tension

	Action	Measure
1.	Synchronization rope should have no breaks or loose strands	
2.	Push rope by the finger as in picture, rope must bend about	0.2" [5mm]
3.	Synchronization rope should prevent loose play between panels	





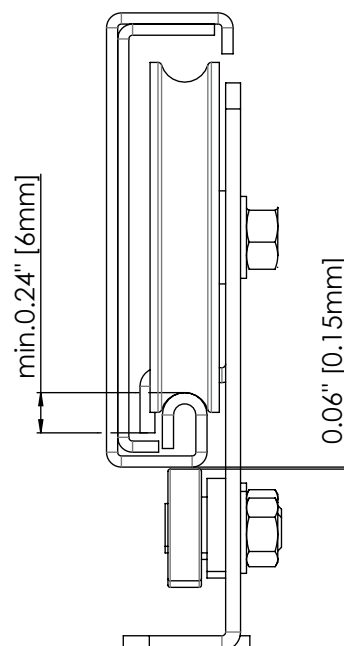
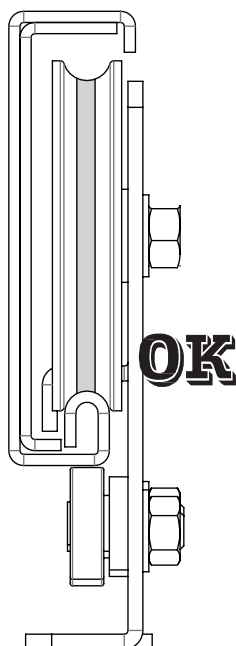
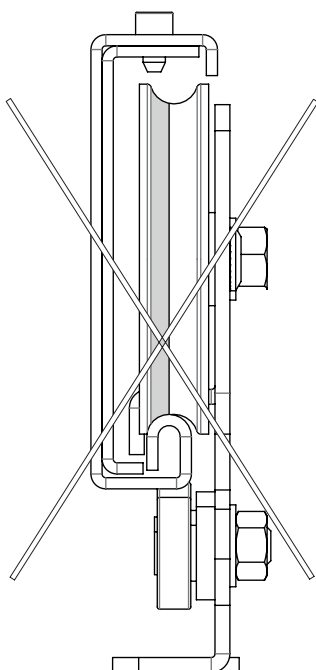
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### 5.5 Pendant and anti-tip rollers

	Action	Measure
1.	Rollers must be securely fastened and should run smoothly, aligned with the guide rail	
2.	Rollers must not have any asymmetric wear	
3.	Gap between counter rollers and railing	0.06" [0.15 mm]
4.	Hanger hook should be under the rail surface	min. 0.24" [6 mm]



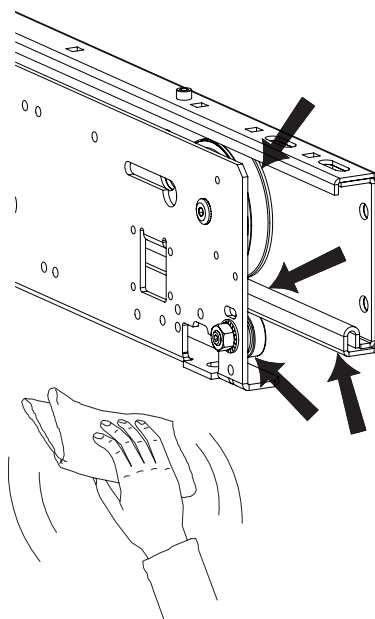
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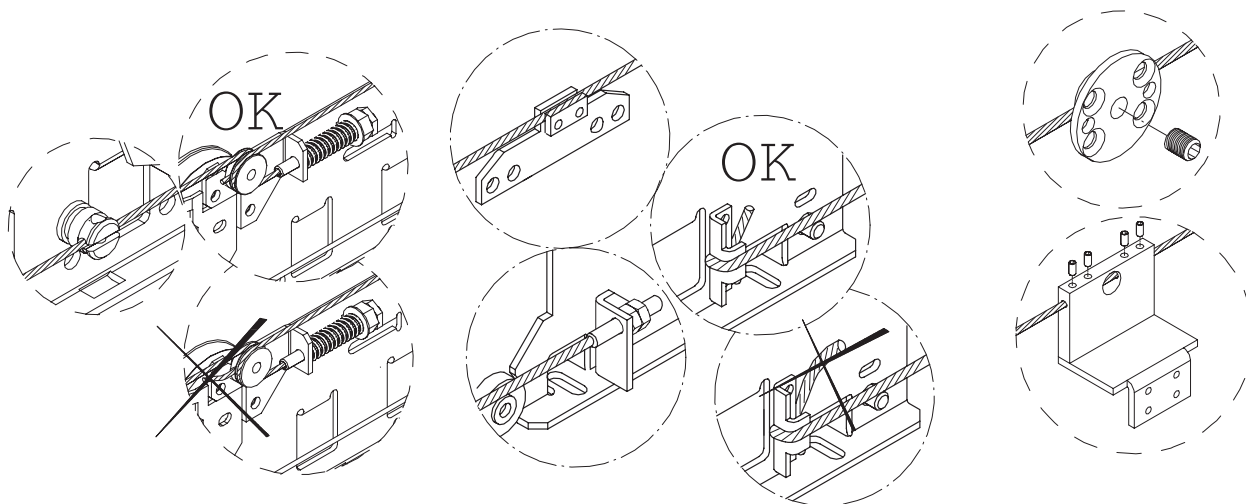
### 5.6 Railing profile

	Measure	Measure
1.	Railing profile and rollers must be clean and move easily (only dry cleaning, no grease or oil)	



### 5.7 Synchronization rope fixing

Fix the synchronization rope as shown in drawing below  
NOTE! Remember to cut the extra rope.



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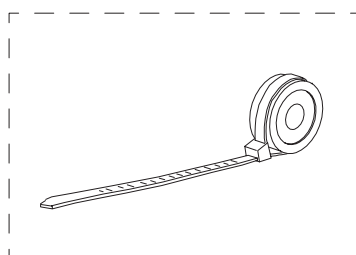
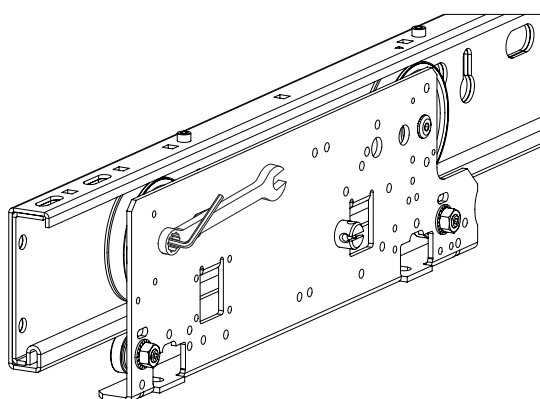
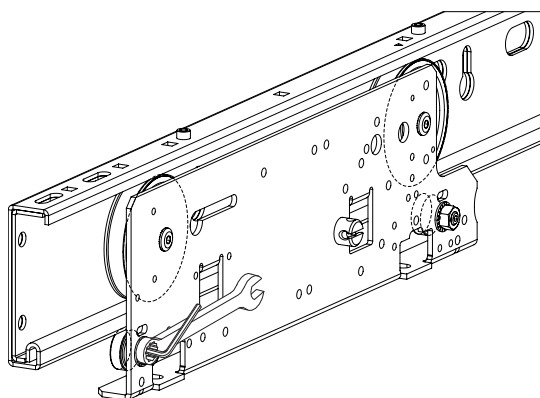
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### 5.8 Changing rollers

Change the rollers as shown.

NOTE! Pay special attention to get the square shafts properly into square holes.

	Action
1.	anti-tip roller has eccentric adjustment.
2.	You can use wire ties to put anti-dip roller to its place.



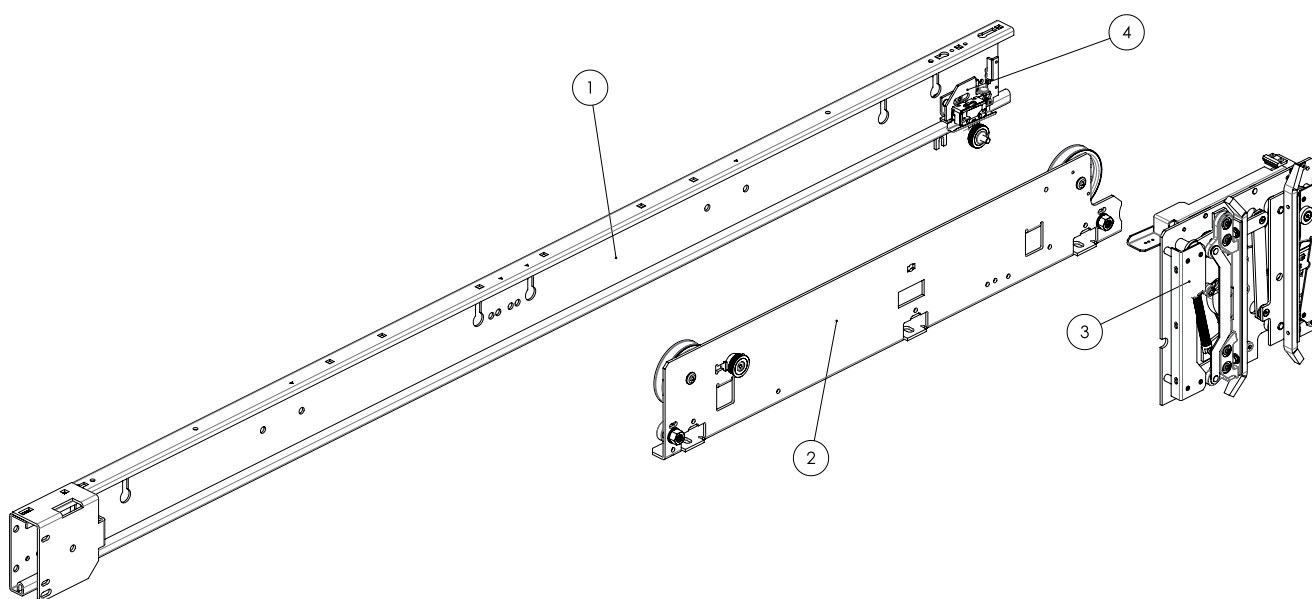
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## 6 Spare parts

### 6.1 SGVNA 1S, 1 panel side opening (1046915, picture left opening)



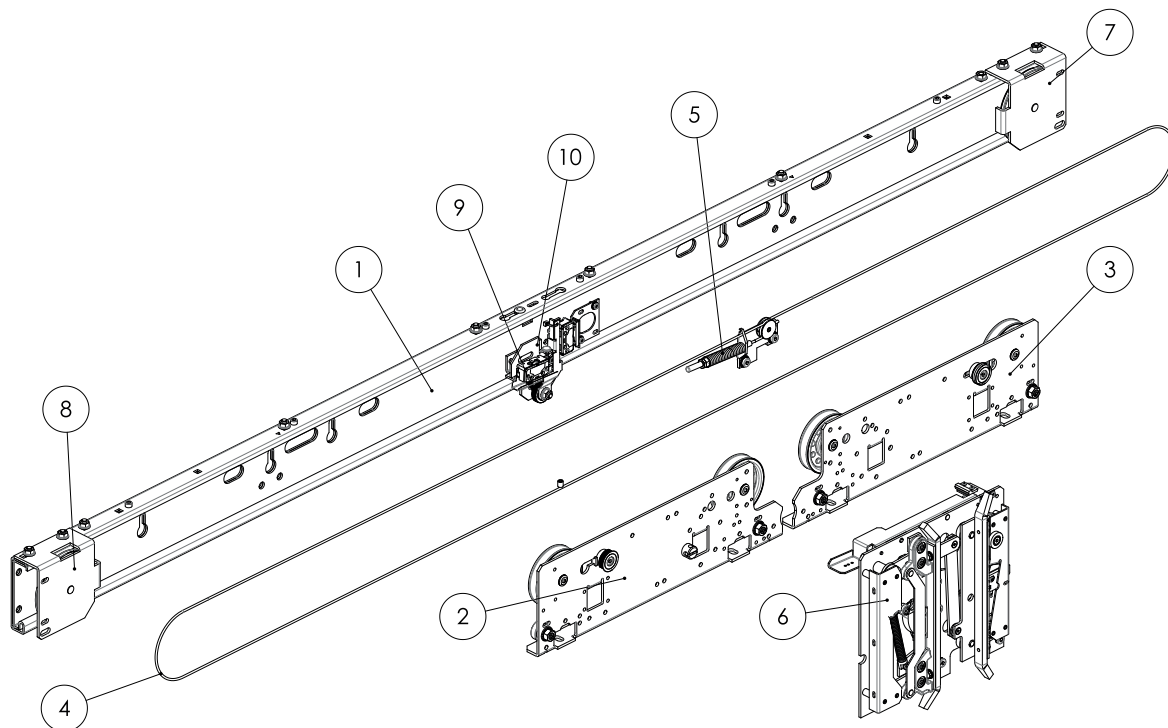
Pos.	Part number	Description	Remarks
1.	1046444 A01 1036479 P01	Profile, side opening	SGV 2 SGV 6
2.	1047340 A01 1047340 A02 1047340 A03 1047340 A04	Pendant complete Pendant complete Pendant complete Pendant complete	Left opening (shown as picture) 32"-42" Right opening (mirror image) 32"-42" Left opening 43"-48" Right opening 43"-48"
3.	1047306 A05 1047306 A06 0905070 A03 0905070 A13 1023806 A01 1023806 A02 1023385 A01 1023385 A02 1031490 A01 1031490 A02 1031827 A01 1031827 A02	Car door interlock SGVNA01L Car door interlock SGVNA01L Car door interlock WHY54E Car door interlock WHY54E Car door interlock WOTS55L Car door interlock WOTS55L Car door interlock WHE5A51L Car door interlock WHE5A51L Car door interlock WHEA5A2L Car door interlock WHEA5A2L Car door interlock GMD51L Car door interlock GMD51L	Left opening (shown as picture) Right opening (mirror image) Left opening (shown as picture) Right opening (mirror image) Left opening (shown as picture) Right opening (mirror image) Left opening (shown as picture) Right opening (mirror image) Left opening (shown as picture) Right opening (mirror image) Left opening (shown as picture) Right opening (mirror image)
4.	1046129 A01 1046129 A02	Door contact complete Door contact complete	Left opening (shown as picture) Right opening (mirror image)

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### 6.2 SGVNA 2C, 2 panel center opening (1040038, picture left handed)



picture shows clutch position left

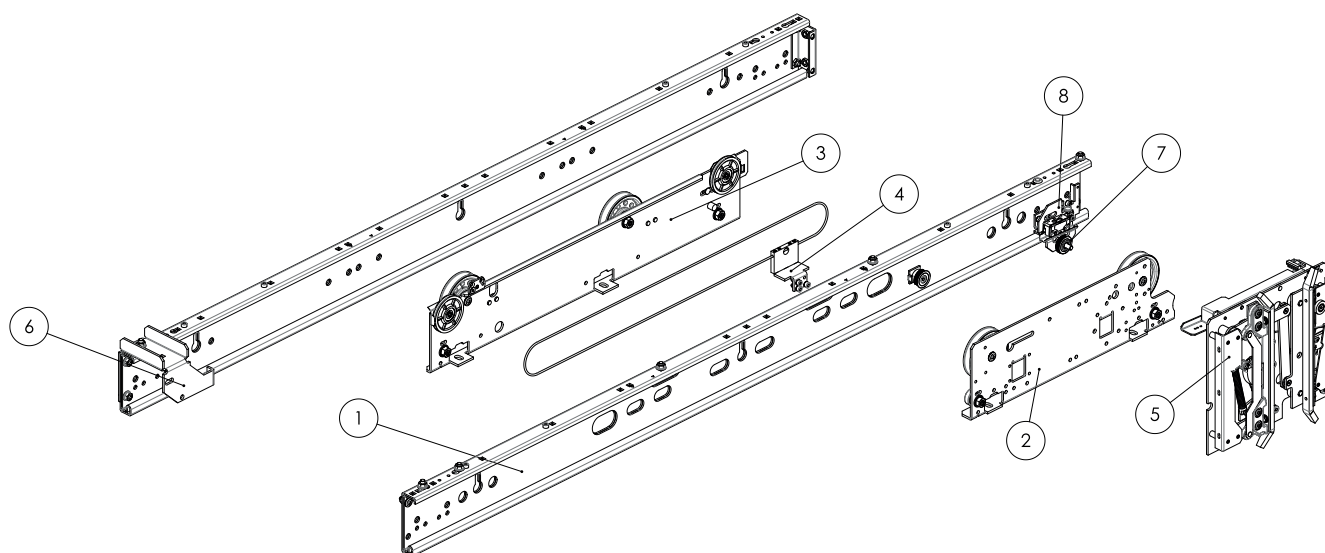
Pos.	Part number	clutch-left	clutch-right	Description	Remarks
1	1039613 A01 1039610 P01			Profile, centre opening	SGV 2 SGV 6
2	1047248 A ->	A03	A01	Pendant complete, left	see chapter 6.4
3	1047248 A ->	A02	A04	Pendant complete, right	see chapter 6.4
4	1048611 A04 1048611 A02 1048611 A04 1048611 A06			Synchron. rope L=4080mm Synchron. rope L=4690mm Synchron. rope L=5910mm Synchron. rope L=6700mm	LL<= 36" LL<= 42" LL<= 54" LL<= 60"
5	1047621 P01			Spring	
6	605390 A -> 0905070 A -> 1023806 A -> 1023385 A -> 1031490 A -> 1031827 A ->	A05 A06 A01 A01 A01 A01	A06 A02 A02 A02 A02 A02	Lock clutch complete	SGVNA01L WHY54E WOTS55L WHEA51L WHE5A52L WGMD51L
7	1048598A02			Rope diverting pulley	
8	1048598 A01			Rope diverting pulley	
9	1042748 A01			Buffer complete	
10	1047249 A ->	A05	A06	Door contact complete	

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### 6.3 SGVNA 2T, 2 panel side opening (1048177, picture left opening)



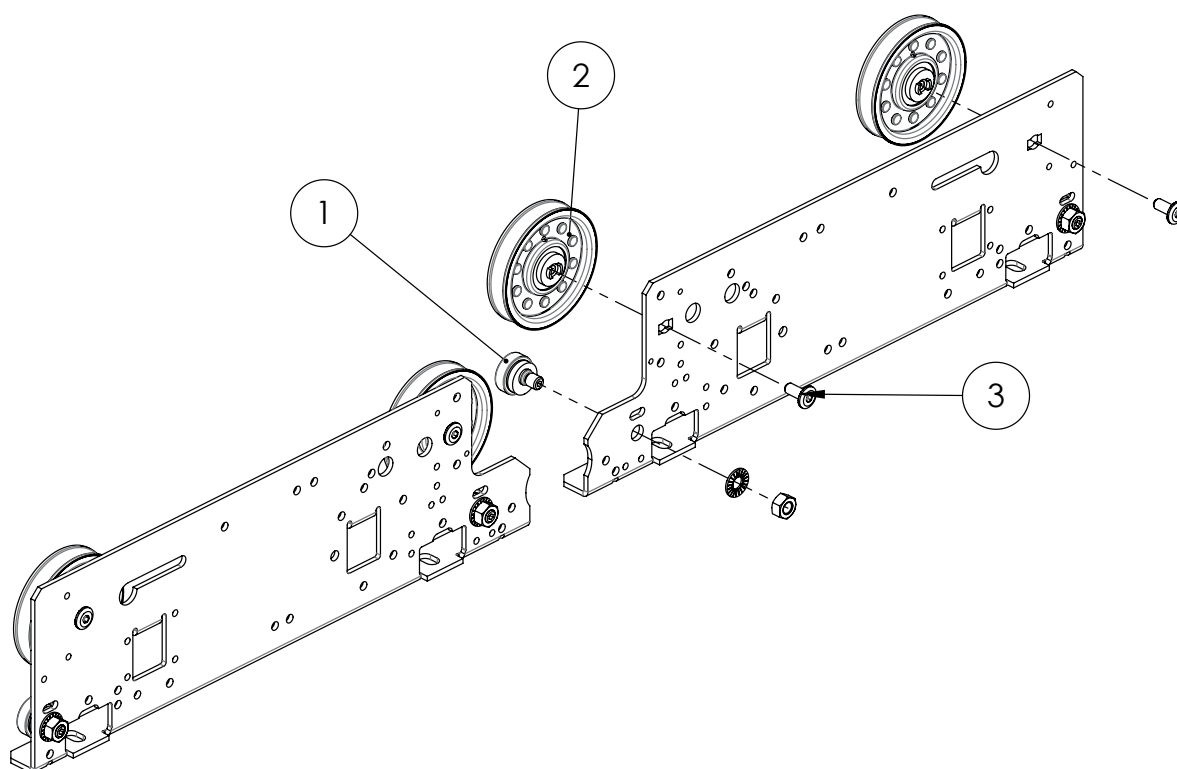
Pos.	Part number	Description	Description
1	1043974 A04 1043974 A01 1039421 P01 1039421 P02	Profile, side opening	SGV 2 slow hanger SGV 2 fast hanger SGV 6 slow hanger SGV 6 fast hanger
2	1047629 A02 1047629 A01	Fast pendant complete Fast pendant complete	left opening (shown as picture), See chapter 6.4right opening (mirror image)
3	1014375 A02 1014375 A01	Slow pendant complete Slow pendant complete	left opening (shown as picture), See chapter 6.5right opening (mirror image)
4	W002147	Synchronization rope	L=2100mm
5	part no.	car door interlock	same as / see 6.1
6	1046086 P02 1046086 P01 1048331 A01 1048331 A02	End stop 36"-72" End stop 36"-72" End stop 30"-35" End stop 30"-35"	left opening (shown as picture) right opening (mirror image)
7	1042748 A01	Buffer complete	
8	1046129 A01 1046129 A02 W002171 W002175	Door contact complete Door contact complete Contact Contact bridge	left opening (shown as picture) right opening (mirror image) SEL2-A1Z P PO-Bet.

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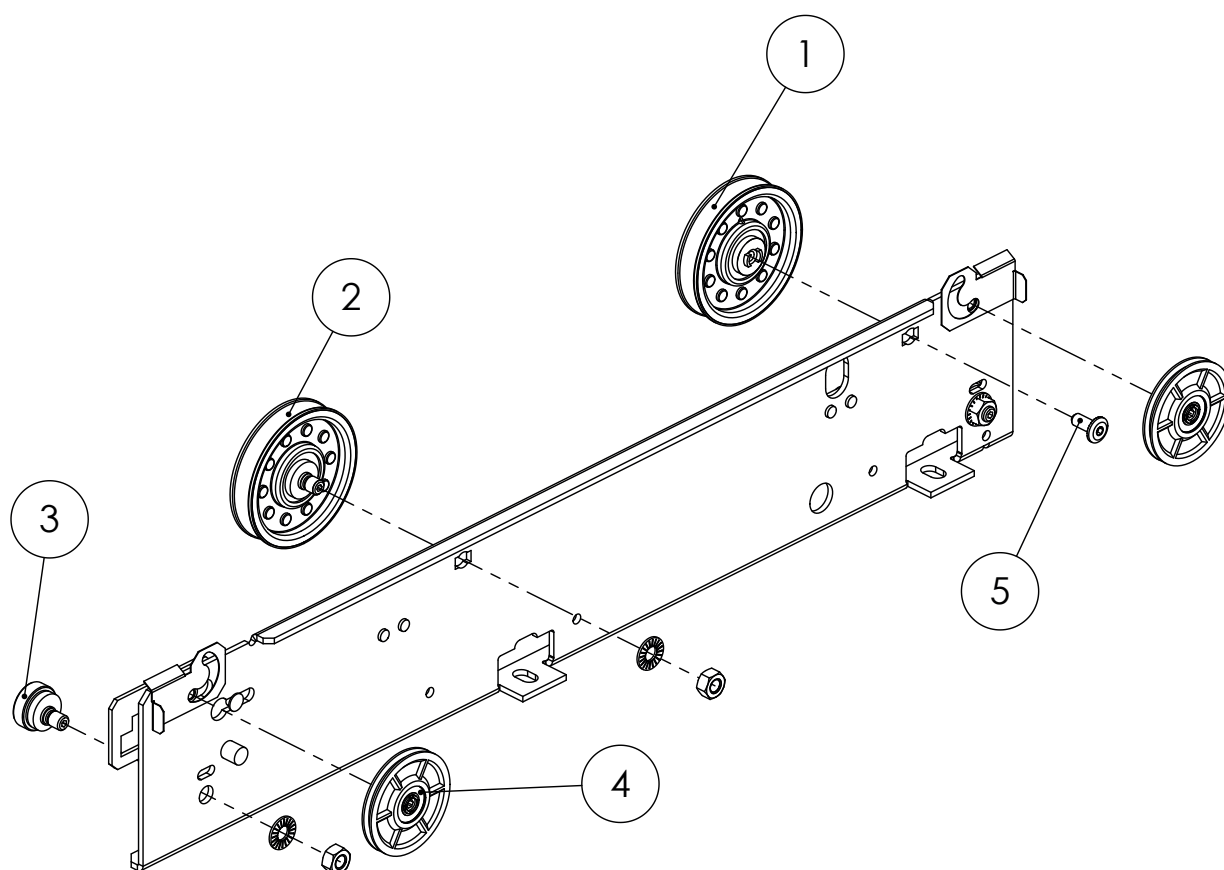
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### 6.4 Fast hanger parts (1047629)



Pos.	Part number	Description	Description
1	1044077A01	Roller	Counter roller, upthrust
2	1044072 A01	Roller	Hanger roller
3	1044055 P02	Bolt, sheave M8x20	Low head screw

### 6.5 Slow hanger parts (1040375)

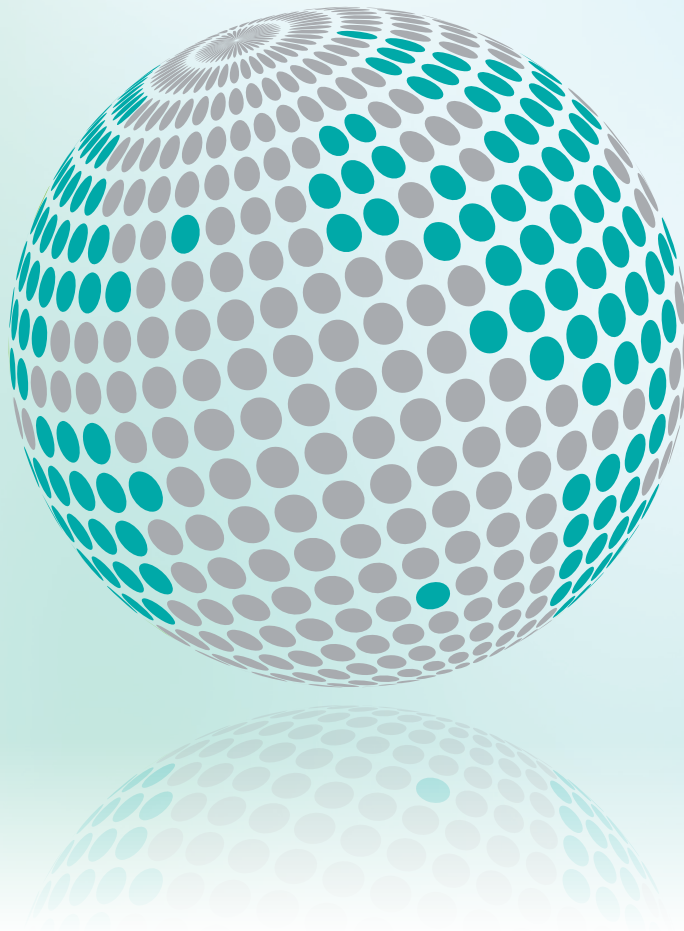


Pos.	Part number	Description	Description
1	1044072 A01	Roller	Hanger roller
2	1044072 A02	Roller	Hanger roller with eccentric bolt
3	1044077 A01	Roller	Counter roller, uptrust
4	1044538 A01	Roller	Synchronization roller
5	1044055 P02	Bolt, sheave M8x20	Low head screw





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