

Assembly Instructions

of

ThyssenKrupp D6C door operator

Conversion

to

**TSG**

### Documentation history

| No. | Ver. | Date     | Processed by |
|-----|------|----------|--------------|
| 1   | 3.0  | 01.08.13 | RAU          |
| 2   | 3.1  | 05.12.13 | CSA          |
| 3   | 3.2  | 29.07.15 | RAU          |
| 4   | 3.3  | 15.12.15 | JE           |
| 5   | 3.4  | 03.01.20 | CSA          |
|     |      |          |              |
|     |      |          |              |



Fordern Sie die Umbauanleitung **auf Deutsch** an,  
indem Sie den QR Code einscannen.



Demandez les instructions d'instruction de  
montage **en français**, en scannant le code QR.

**Langer & Laumann Ing.-Büro GmbH**  
Wilmsberger Weg 8  
48565 Steinfurt  
Germany

Tel.: +49 (2552) 92 7 91 0

Web: [www.lul-ing.de](http://www.lul-ing.de)

Email: [info@lul-ing.de](mailto:info@lul-ing.de)

© 2020 Langer & Laumann Ingenieurbüro GmbH All rights reserved

All rights for these operating instructions and the product described therein are reserved for **Langer & Laumann Ingenieurbüro GmbH** or their suppliers. In accordance with the laws of copyright protection, these operating instructions may not be copied in whole or in part without written approval of **Langer & Laumann Ingenieurbüro GmbH**, except as part of normal use of the product or to create a back-up copy. However, this exceptional provision does not extend to copies created for third parties or that are sold or transferred to third parties in any other manner. The whole of the material acquired (including all back-up copies) may, however, be transferred to third parties or made available on loan. According to the provisions of the law, preparing a translation also falls under the definition of copying.

**Langer & Laumann Ingenieurbüro GmbH assumes no warranty or guaranty for the content of these operating instructions. It declines any legal guaranty regarding the marketability or suitability for a specific purpose. Langer & Laumann Ingenieurbüro GmbH is not responsible for errors in these operating instructions or for direct or indirect damages associated with delivering, performing or using these operating instructions. Langer & Laumann Ingenieurbüro GmbH reserves the right to revise these operating instructions from time to time without advance notification and to make changes to the content.**

File: 1.20.91021\_Umbauanleitung\_Thyssen\_D6C\_auf\_TSG\_V3.4\_en.docx  
Printing date: 1/3/2020 5:20:00 PM

---

## **Content**

|     |                                             |    |
|-----|---------------------------------------------|----|
| 1   | Essential information                       | 4  |
| 1.1 | Value of assembly instructions              | 4  |
| 1.2 | Copyright protection                        | 4  |
| 1.3 | Instructions in the assembly manual         | 4  |
| 1.4 | Informal activities performed by the fitter | 4  |
| 1.5 | Requirements for assembly personnel         | 4  |
| 1.6 | Explanation of symbols                      | 5  |
| 2   | Activity performed                          | 6  |
| 3   | Advantages                                  | 6  |
| 4   | Tools required                              | 6  |
| 5   | Conversion instructions                     | 7  |
| 6   | User setting - h parameters                 | 8  |
| 6.1 | Short description                           | 9  |
| 6.2 | Activation of the function                  | 9  |
| 6.3 | Opening and closing time of drive           | 9  |
| 6.4 | Time delay between door drive and drive     | 10 |
| 6.5 | Technical data for TSG electronics          | 10 |
| 7   | Illustrations                               | 12 |
| 8   | Contact                                     | 19 |

## **1 Essential information**

### **1.1 *Value of assembly instructions***

The product assembly instructions are provided by the manufacturer or supplier to provide the information required by the customer or fitter to ensure proper, safe and reliable assembly. These brief assembly instructions serve to clarify the basic steps of mechanical assembly. The electrical connection, commissioning and settings of the TSG are explicitly not part of these instructions.

### **1.2 *Copyright protection***

We reserve all rights for this technical documentation. It may not be duplicated, made accessible to third parties or otherwise used in an unauthorised manner without our prior consent. Any changes require our explicit and prior written consent.

### **1.3 *Instructions in the assembly manual***

All instructions in the assembly manual must be followed without exception.

### **1.4 *Informal activities performed by the fitter***

The system fitter is personally responsible for participating in a training course. He or she must inform the manufacturer/supplier without delay of any missing or defective parts in the delivery.

### **1.5 *Requirements for assembly personnel***

Persons responsible for installation and maintenance must be instructed regarding generally applicable safety and labour health requirements. They must be familiar with Langer&Laumann products. Installation tools must be fully functional and measuring instruments must be subject to continuous monitoring.

## **1.6**     ***Explanation of symbols***



**WARNING:**

This symbol directs your attention to a possible hazard that could lead to severe bodily injuries or death.



**CAUTION:**

This symbol directs your attention to a possible hazard that could lead to minor bodily injuries. The same symbol is also used to warn of potential damage to property.



**NOTE:**

Your attention is drawn to applications and other useful information.

## 2 Activity performed

Replacement of the ThyssenKrupp D6C drive with a  Langer & Laumann Ing. Büro GmbH TSG door drive

## 3 Advantages

- Very economical package.
- A faulty control device and motor can be quickly and easily replaced with a TSG from  Langer & Laumann Ing. Büro GmbH .
- Just a few mechanical attachments are required.
- All necessary parts are included with delivery.
- The conversion is very quick and easy to perform.
- The electrical wiring can also be performed by less experienced fitters.
- No hand-held terminal is required for setting parameters. All parameters can easily be adjusted on the device.
- Measurements are very easy to perform.
- The conversion kit is available from  Langer & Laumann Ing. Büro GmbH as warehouse inventory.

## 4 Tools required

Angle grinder  
Drilling machine  
Metal drill bits, 9 and 11 mm  
Hexagon socket wrench set  
Fork wrenches size 10, 13  
Screwdriver  
Side cutter

## 5 Conversion instructions

1. Please remove all packaging and check against the parts list for completeness.
2. Disassemble the old door motor including gearbox. The remainder of the mechanics remains intact.
3. Remove the toothed wheel from the old door motor.
4. Disassemble the old door control electronics.
5. Fasten the toothed wheel onto the TSG drive.
6. Mount the TSG drive in the door machine. Set the toothed belt in place and tension it.
7. Stop with the door closed.  
Due to a design error, the door stop is missing for the "Closed" position in D6C doors. The door panel runs up against the door frame, where it produces a closing noise or it runs up against a pushbutton. The function of this pushbutton in the original D6C drives is to report to the door electronics system that the door has reached the end stop. This is missing in the TSG D6C package. The pushbutton must be replaced with the adjustable buffer-type stop enclosed in the package. It must be adjusted so that the door does not strike the frame.
8. Remove the old sword as enough space for the new electric skate.
9. New skate mount and electrically connect.
10. For information regarding electrical commissioning, please refer to the enclosed TSG operating instructions.



**CAUTION:**

The mains connection voltage of the TSG is 230 VAC! However, the connection voltage of the original D6C door drive is 400 VAC! Connecting 400 VAC to the TSG electronics will cause the TSG electronics to fail and be destroyed!



**NOTE:**

The X1 inputs on the TSG V4 can be switched either to positive or negative.

## 6 User setting - h parameters

Table 1: h parameters

| Parameter | Funktion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Min.-Wert | Default-Wert | Max.-Wert | Faktor | Einheit         |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|-----------|--------|-----------------|
| hA        | <p>Only for use with optional add on boards (valid from version TSG V4).</p> <p>00: Opportunity to move to the intermediate position and Ready For Operation (usable with add on board 4E/4A relais or 4E/4A electronic)</p> <p><b>01: interlock or skate drive (e.g. QKS9, usable with add on board additional drive)</b></p> <p>02: retiring cam magnet (e.g. KONE ADC, usable with add on board additional drive)</p> <p>03: interlock with emergency power supply (e.g. Koch, usable with add on board additional drive)</p> <p>04: enabling mode (usable with add on board 4E/4A electronic)</p> <p>05: external sensor, two channel (usable with add on board 4E/4A electronic)</p> | 00        | 00           | 18        |        |                 |
| h7        | Opening time of the skate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 00        | 50           | 80        |        | [1/100 Sekunde] |
| hb        | Closing time of the skate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 01        | 50           | 80        |        | [1/100 Sekunde] |
| hC        | Stop between opening of the skate and opening of the door                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 01        | 50           | 99        |        | [1/100 Sekunde] |

## 6.1 *Short description*

The TSG extension board for drive is able to activate and move at least two additional drives. It is connected with the control section of the TSG main board for this purpose. Parameters can be adjusted in the TSG main board for activating the function (hA), changing the opening and closing time of the drive (h7, hb) and setting the time delay between the opening of the drive and the opening of the door (hC).

## 6.2 *Activation of the function*

To be able to use the TSG drive expansion board function, activation must be set to **01** with parameter **hA**.



**NOTE:**

For additional information on parameter settings, see the TSG door control device manual.

## 6.3 *Opening and closing time of drive*

The opening and closing time of the drive can be adjusted with parameter **hb** and **h7**.

Values can be changed in increments of 0.1 seconds. A time of 0.7 seconds can be applied as the default value for both the in and out travel of the drive. However, this value must be monitored and adjusted to specific local conditions as appropriate.



**CAUTION:**

The values must not be set larger than the time actually required to move the drive in or out. Otherwise the drive could fail!



**NOTE:**

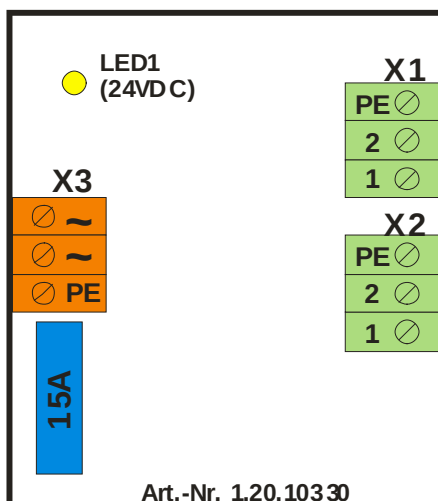
When a value is changed and confirmed, it is permanently stored. This means that the modified value is still available even after a power failure.

## 6.4 Time delay between door drive and drive

A setting can be made so that when an open command is sent from the elevator controller to the door control device, the drive first moves the skate apart and then the door moves up. Parameter **hC** can be adjusted for this purpose.

## 6.5 Technical data for TSG electronics

### 6.5.1 Overview of TSG drive expansion board



**X1:** Connection for drive 1

**X2:** Connection for drive 2

**X3:** Alternating voltage connection

**LED 1:** 24[VDC] ok



## 6.5.2 Terminal assignment for TSG drive expansion board

**Table 2: TSG expansion board X1 – drive 1**

| <b>X1 drive 1 (3-pin screw connector):</b> |              |  |
|--------------------------------------------|--------------|--|
| 1                                          | Connection 1 |  |
| 2                                          | Connection 2 |  |
| PE                                         | PE           |  |
|                                            |              |  |

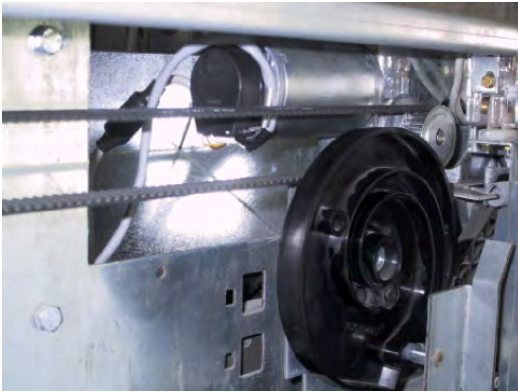
**Table 3: TSG expansion board X2 – drive 2**

| <b>X2 drive 2 (3-pin screw connector):</b> |              |  |
|--------------------------------------------|--------------|--|
| 1                                          | Connection 1 |  |
| 2                                          | Connection 2 |  |
| PE                                         | PE           |  |
|                                            |              |  |

**Table 4: TSG expansion board X3 – mains power connection**

| <b>X2 drive 2 (3-pin screw connector):</b> |              |  |
|--------------------------------------------|--------------|--|
| ~                                          | Connection 1 |  |
| ~                                          | Connection 2 |  |
| PE                                         | PE           |  |
|                                            |              |  |

## 7 Illustrations



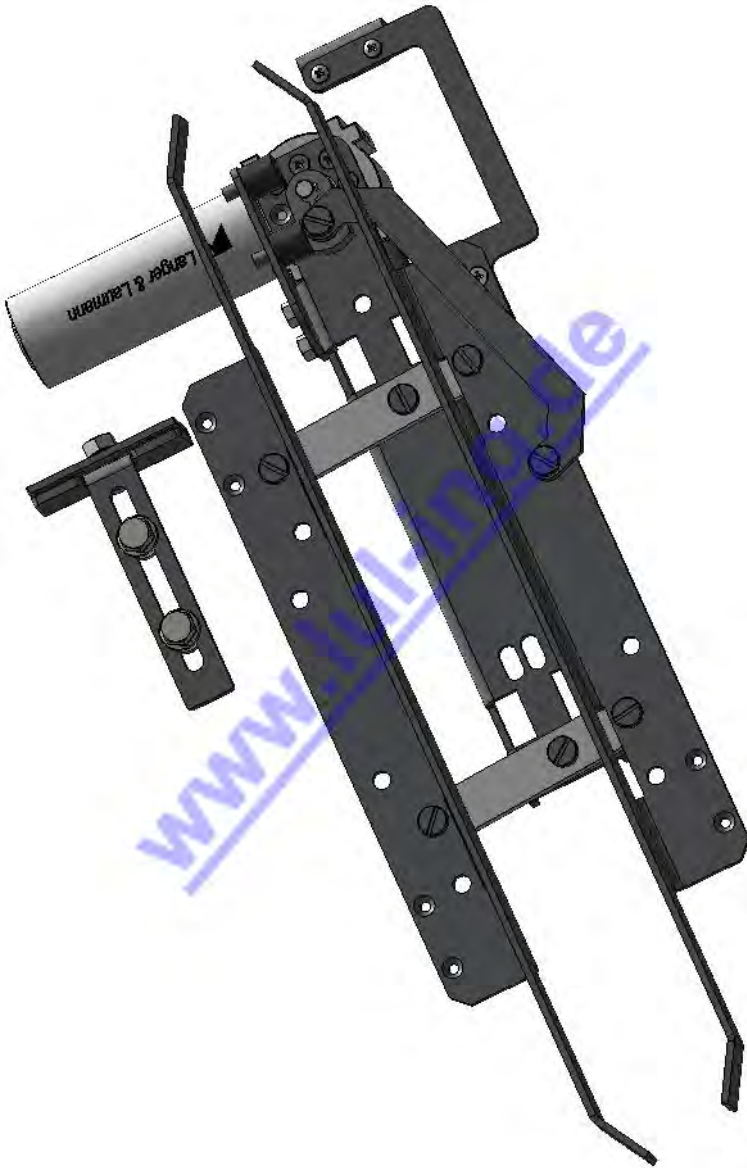
**Fig. 1: D6C with escargot**



**Fig. 2: D6C with Prisma**



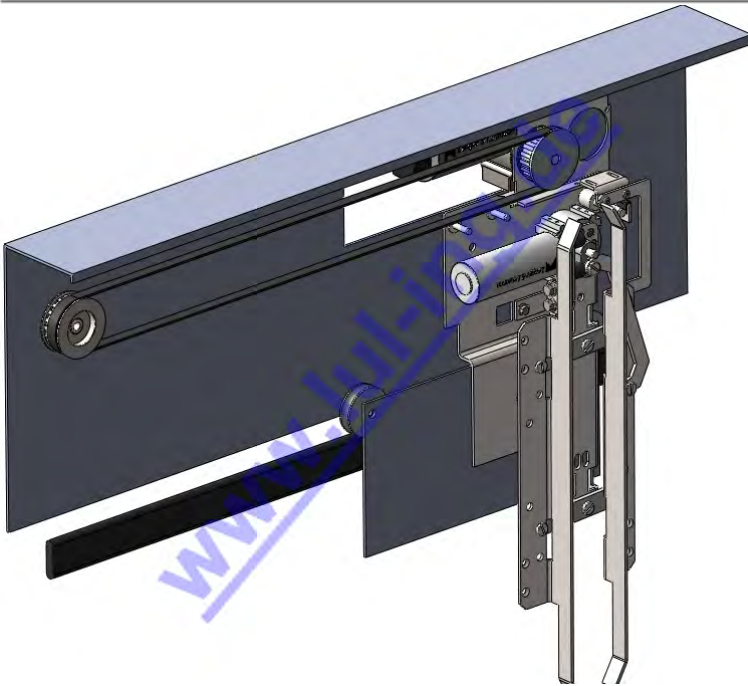
**Fig. 3: Stop provided by an 8 mm screw**



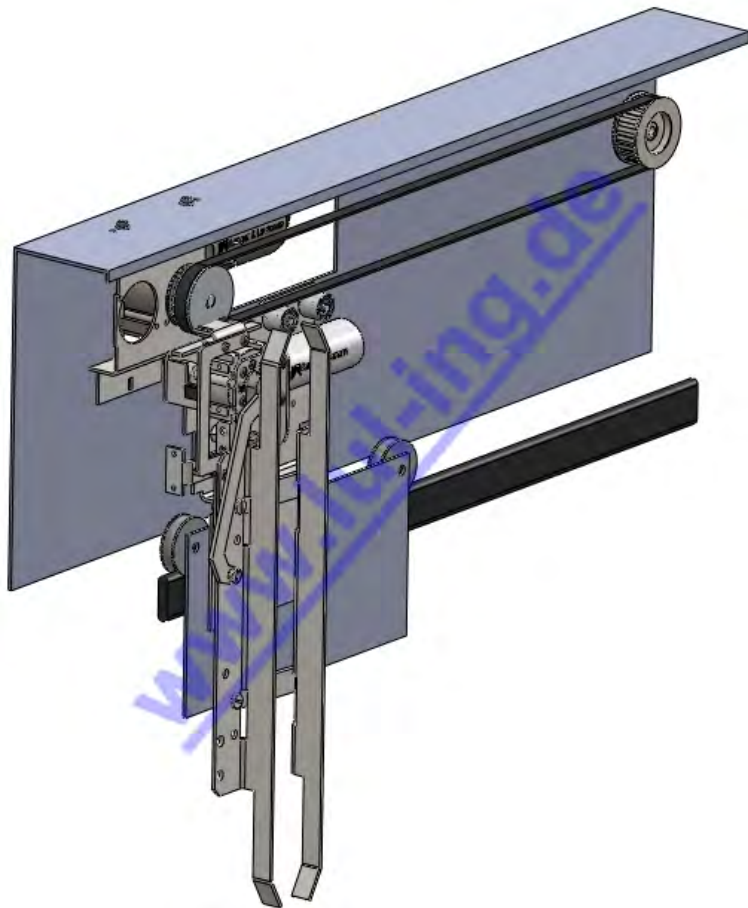
**Fig. 4:** part of delivery: skate with TSG Sinus drive, clamp tooth belt (here: for TL)



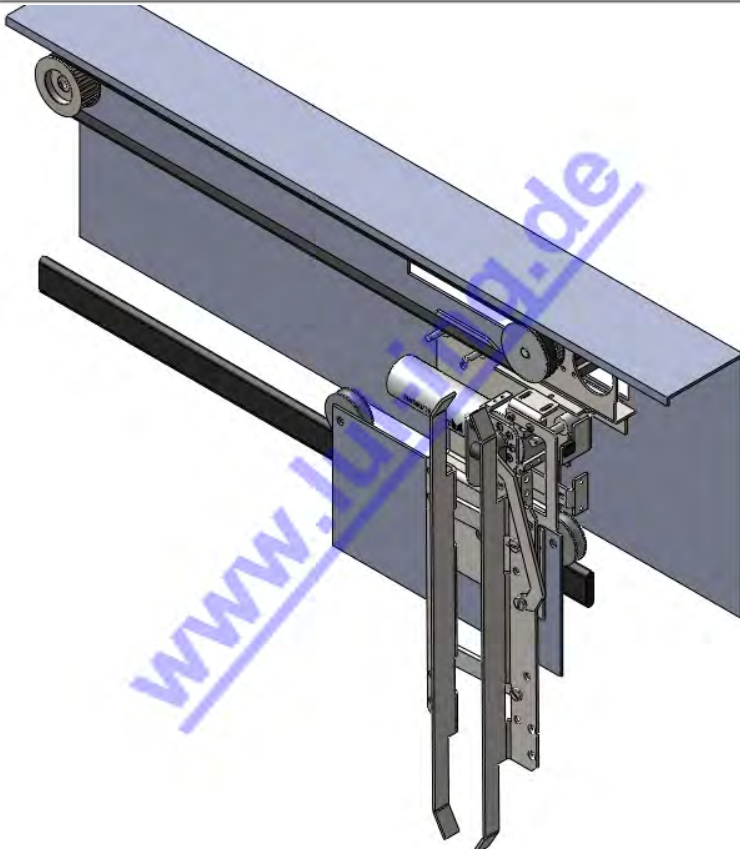
Fig. 5: part of delivery: skate with TSG Sinus drive, clamp tooth belt (here: for TR)



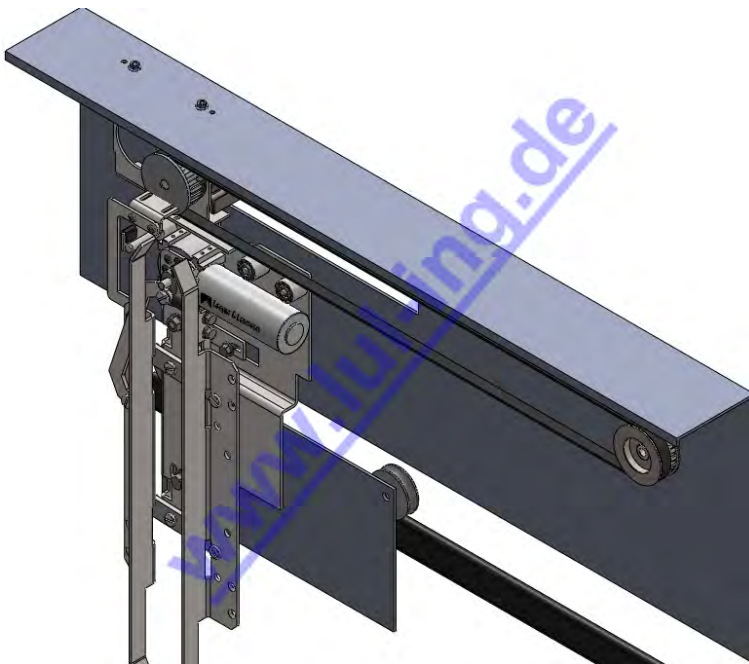
**Fig. 6: TSG in D6C completely fitted (here: in TL)**



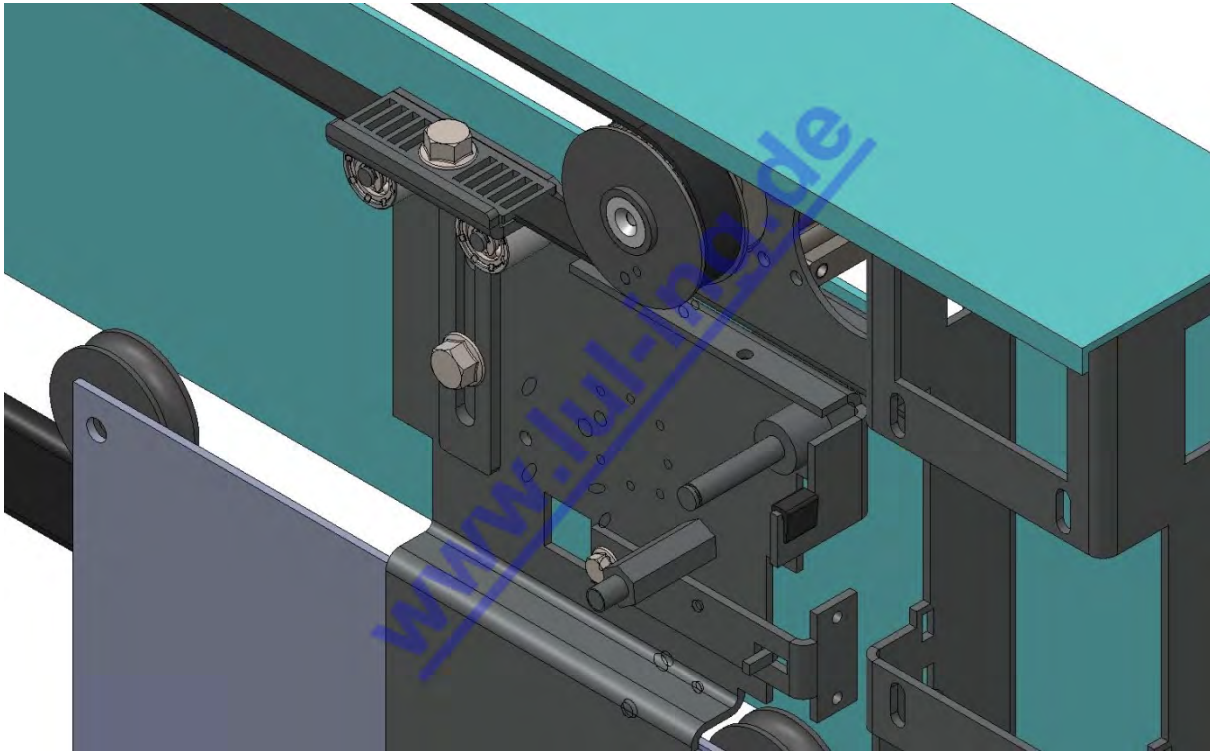
**Fig. 7: TSG in D6C completely fitted (here: in TR)**



**Fig. 8: TSG in D6C completely fitted (here: in TL)**



**Fig. 9: TSG in D6C completely fitted (here: in TR)**



**Fig. 10: TSG in D6C, picture without skate, with new clamp tooth belt**

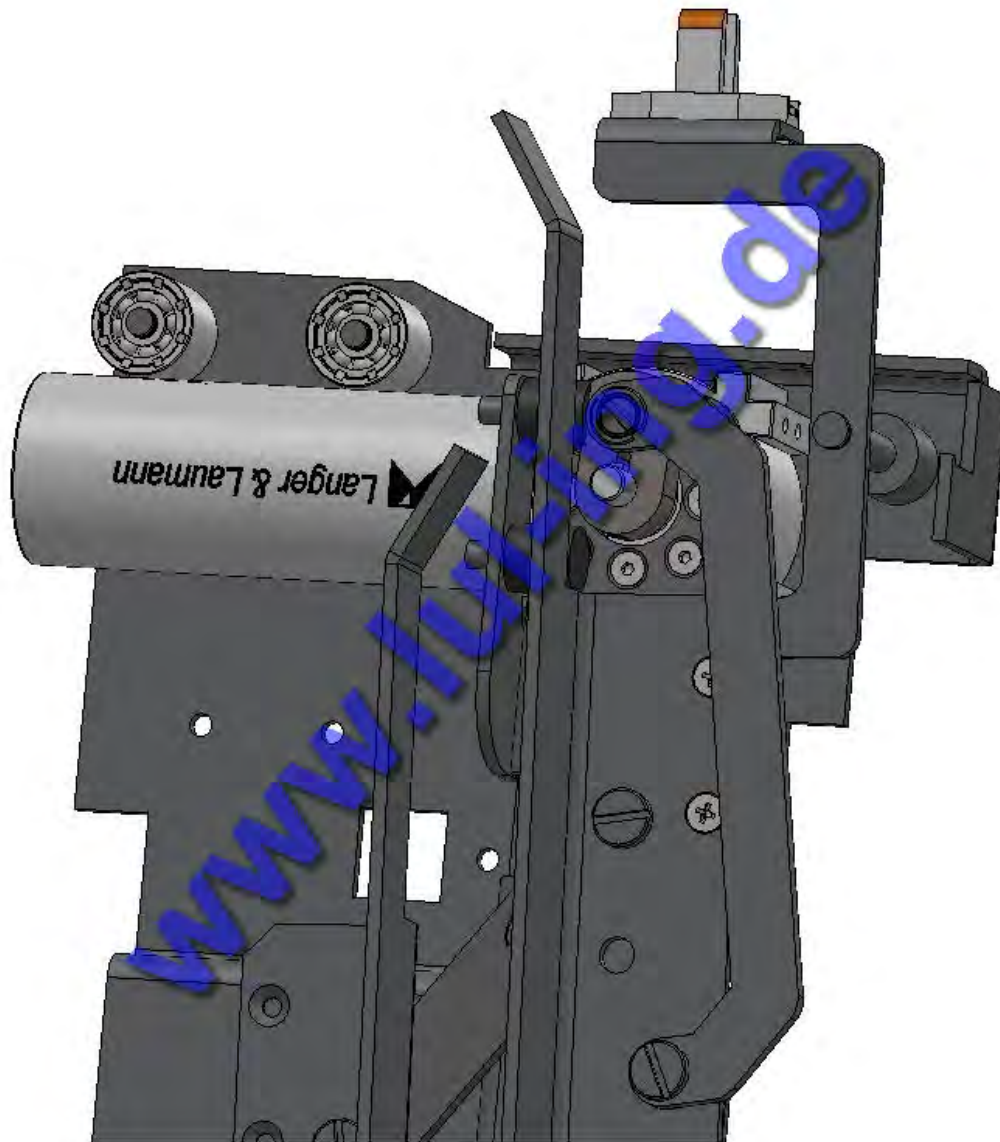


Fig. 11: TSG in D6C skate with holder for safety contact (escargot)

---

## 8 Contact

**Langer & Laumann Ing.-Büro GmbH**  
**Wilmsberger Weg 8**  
**48565 Steinfurt**  
**Germany**

Tel.: +49 (2552) 92 7 91 0

Web: [www.lul-ing.de](http://www.lul-ing.de)

Email: [info@lul-ing.de](mailto:info@lul-ing.de)