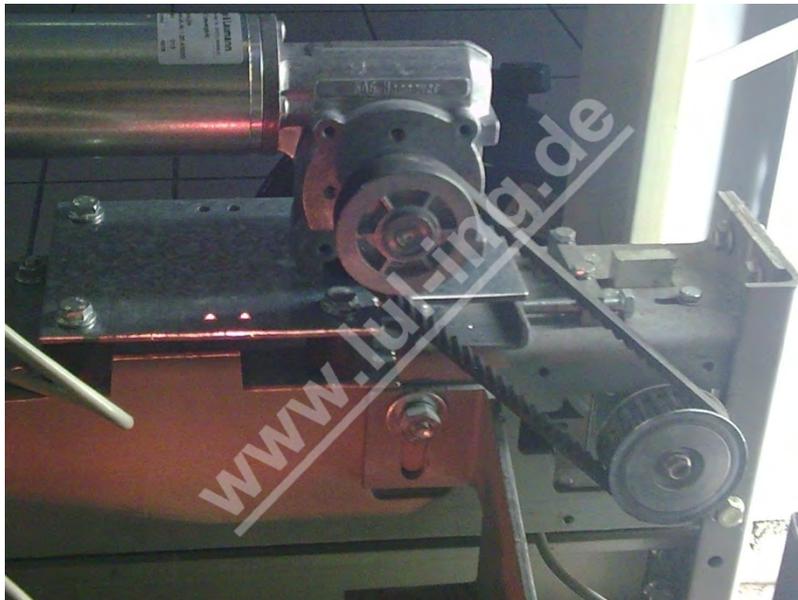


# Installation Instructions

## TSG in Marathon 100 / 200



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# **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.

## 2 Activity performed

Replacement of the existing drive motor and control unit on TSG door control device.

## 3 Advantages

- Very **economical** package
- **Just a few** mechanical attachments are required
- All materials required are included with the conversion package
- The conversion is **very quick** and **easy** to perform.
- The conversion kit is generally available as **warehouse inventory**

## 4 Tools required

Metal drilling machine

Metal drill bits 6, 9, and 11 mm

Fork wrenches size 10, 13, 17, 19

Screwdriver

Side cutter

Angle grinder for metal

## 5 Installation instructions



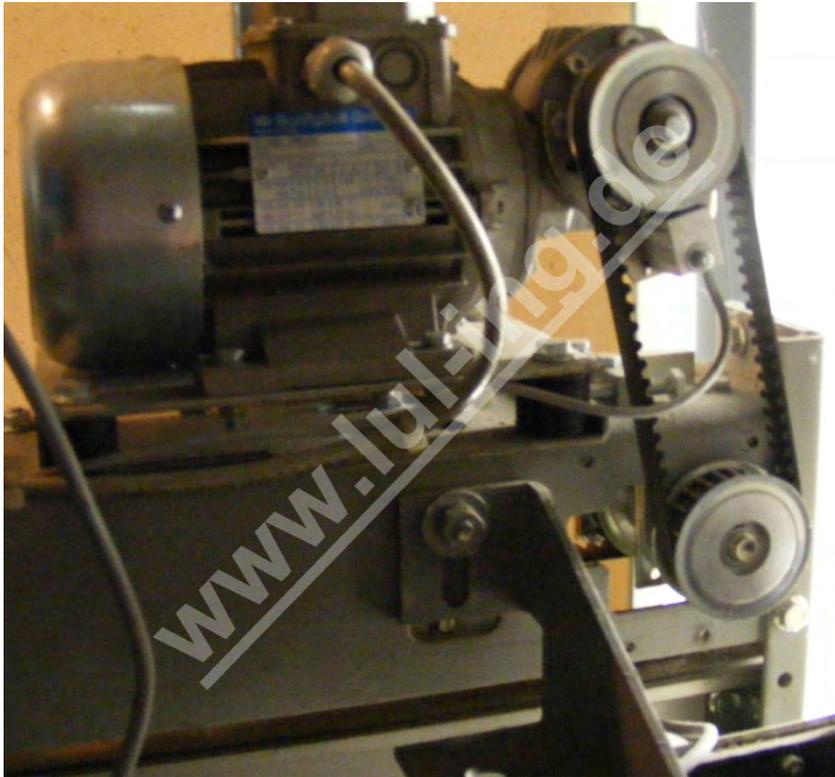
**NOTE:**

The order of assembly listed here is simply a recommendation. There is no claim of completeness.

The conversion instructions essentially show the conversion of a telescoping right-opening door. The conversion of a telescoping left-opening door is simply mirror inverted.

1. Remove the existing drive including motor plate (the motor plate is screwed together directly with the motor).
2. Remove the existing buffer stop on the top left of the door machine.
3. Cut a notch in the top left corner 70 x 28 [mm] in size (see Fig. 3: Corner marked for notching / page 8).
4. Make a drill hole at the point shown in the drawing (see Fig. 5: Dimensional diagram for corner to be notched out and additional drill hole / page 9) and fasten the buffer stop in place again (see Fig. 4: Corner with notch cut out and drill hole for buffer stop / page 8).
5. Mount the TSG drive on the motor plate included with delivery.
6. Place the motor plate with the TSG drive on the door machine on the 4 buffer stops and screw it into place.
7. Turn back the clamping device on the door machine.
8. Place the endless toothed belt on the TSG drive and pinion.
9. Clamp the motor plate with the TSG drive using the existing clamping device. The toothed belt must never jump out of place when measuring or in normal mode! If the buffer stops lead to problems they must be replaced with fixed spacers (for example spacing bolts).
10. Check the end stops on the door machine. There must be fixed stops present in the open and closed position. If necessary retrofit end stops or fasten in place.
11. Measure the TSG as described in the operating instructions and place in operation.

## 6 Illustrations



**Fig. 1: Door drive before conversion**



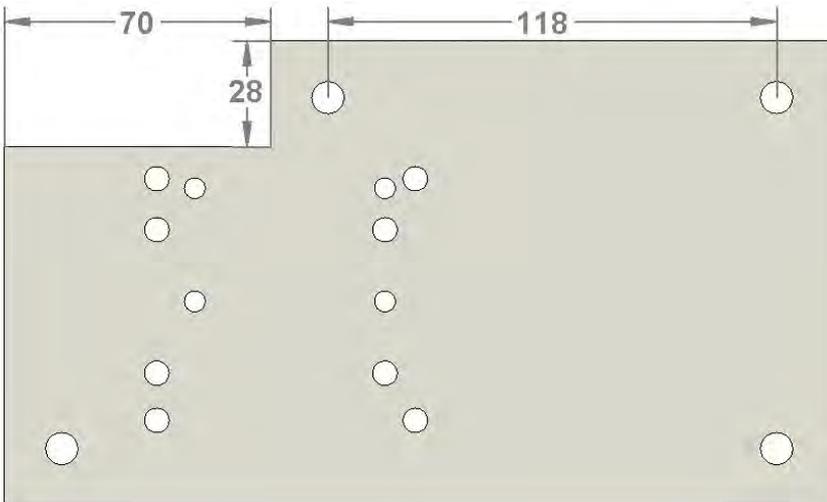
**Fig. 2: Door drive after conversion with TSG400**



**Fig. 3: Corner marked for notching**



**Fig. 4: Corner with notch cut out and drill hole for buffer stop**



**Fig. 5: Dimensional diagram for corner to be notched out and additional drill hole**



**Fig. 6: TSG drive fully mounted - view from above**



**Fig. 7: TSG drive fully mounted - view from the front (shown here: TR)**

## **6.1 Safety equipment**

All safety requirements listed in EN81 must still be observed after conversion with the new door operator.

If the elevator door is telescoping, make certain the door panels have a door lock.

Excerpt from EN81-1:

Section 8.10 Elevator car sliding doors with multiple door panels connected to each other mechanically

8.10.1 For elevator car sliding doors with multiple door panels mechanically connected directly to each other it is permissible

- a) for the device described in 8.9.2
  1. to be positioned either on one door panel only (on the fastest one for telescoping doors)
  2. or on the door drive if the connection between the drive section and the door panels are form fitted and
- b) if the case and conditions of 11.2.1 c determine that only one door panel will lock, if the one lock interferes with opening the other door panels (for telescoping doors) because the mechanisms engage in each other in the closed position

When positioning and commissioning the door operator in or on an elevator car, make certain the total permissible weight of the elevator car is not exceeded at maximum nominal load.

If the elevator undergoes an Emergency Stop or Off, it must be ensured that the TSG door control device will not cause any unintentional, dangerous or uncontrolled door movements.

The simulated limit switches for "Door Open", "Door Closed" and "Door Blocked" of the door and blade drive controller must not be used as safety-relevant limit switches.

## **7 Assembly instructions for electrical section**

### **7.1 *Measuring the door***

After the mechanical components are installed on the car and the car doors are mounted, the door must be measured once. The following conditions must be observed without exception:

- If a shaft closing weight is present, it must not skip.
- The car and shaft doors must be easy moving.
- The toothed belts must be tensioned (it should be possible to depress the belt to a depth of about 2 fingers in the middle).
- Connector bar X1 (inputs) and X2 (outputs) must be temporarily disconnected for measuring.

After the measurement is complete, reconnect connector bars X1 and X2.

(For more information about measuring the door, please refer to the enclosed operating instruction for the TSG door control unit).

## 8 Contact

If you have questions or are not certain about something, we can be reached at the following address:

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