

# Installation Instructions

For Garage Door Opener

# ST • 77

With automatic chain tensioner



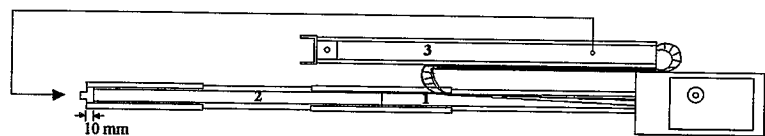
Serial number: \_\_\_\_\_

# Preassembly

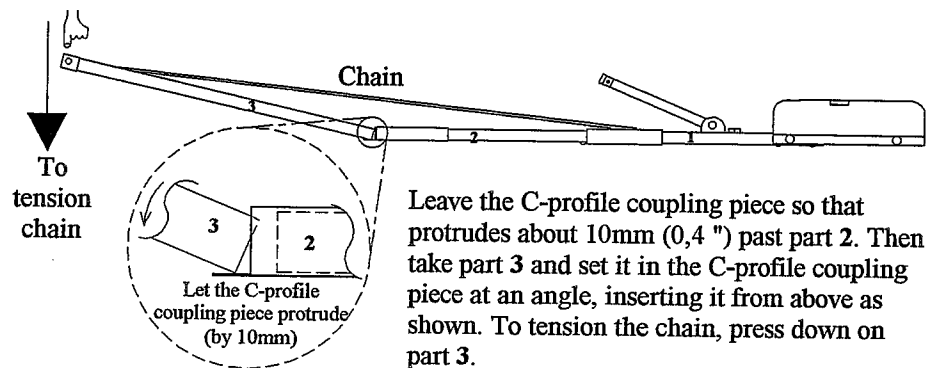
1. You have unpacked your **ST • 77** garage door opener and have it in front of you.



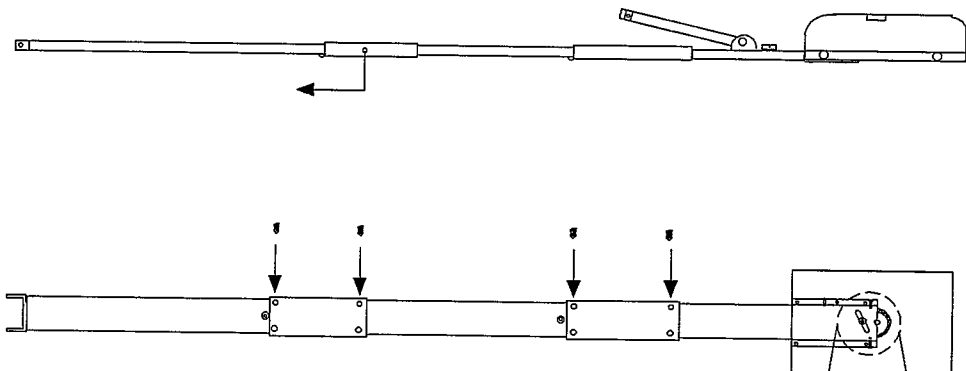
2. Take the part designated with a 2 in the drawing, and place it in front. Slide the C-profile coupling piece over part 2 all the way home. Part 1 and part 2 are now connected with one another.



3. When mounting part 3, make **absolutely sure not to twist the chain!**

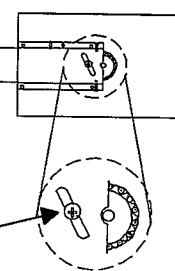


4. Push the C-profile coupling piece forward as far as it will go, then screw in at least one fixing screw to secure it.



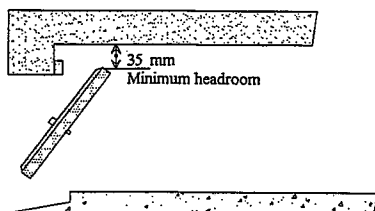
5. If you want to impart even greater stability to your C-profile rail, then screw in all of the supplied fixing screws.

The chain has been pretensioned in the factory; **do not change the chain tension!**



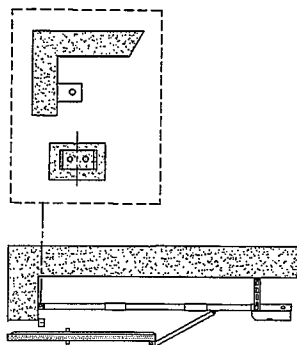
# Mounting

## Minimum headroom

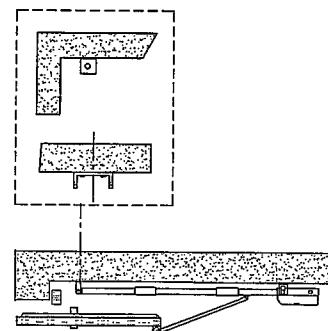


When mounting as shown in the diagrams at right, make sure there are at least 35 mm (1,37") of headroom between the ceiling and highest point reached by the door while pivoting.

## Installation on lintel

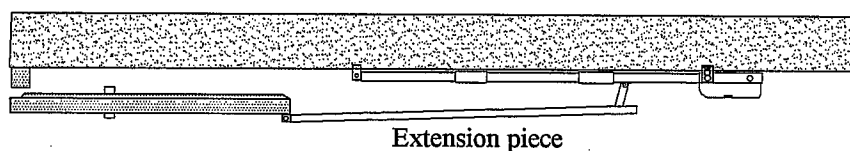


## Installation on ceiling



## Installation without the minimum headroom of 35 mm

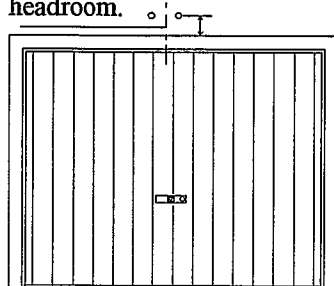
If there is not enough room to leave the minimum headroom of 35 mm, then the opener must be mounted with a drawbar extension (available as an optional extra).



# Procedure

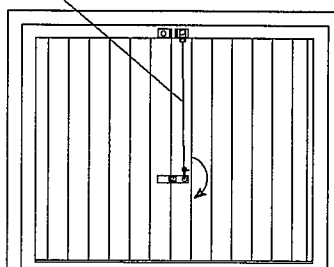
## Lintel attachment angle

Mount the lintel attachment angle above the middle of your garage door, either on the lintel or on the ceiling. Make sure to leave the required minimum headroom.



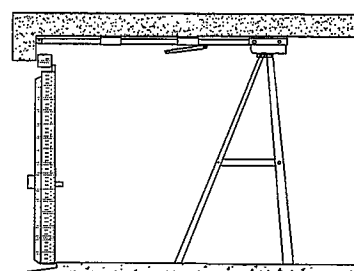
## Emergency release

The Bowden pull-wire for the emergency release must be attached to the garage door handle in such a way that it is pulled downwards when the handle is turned.

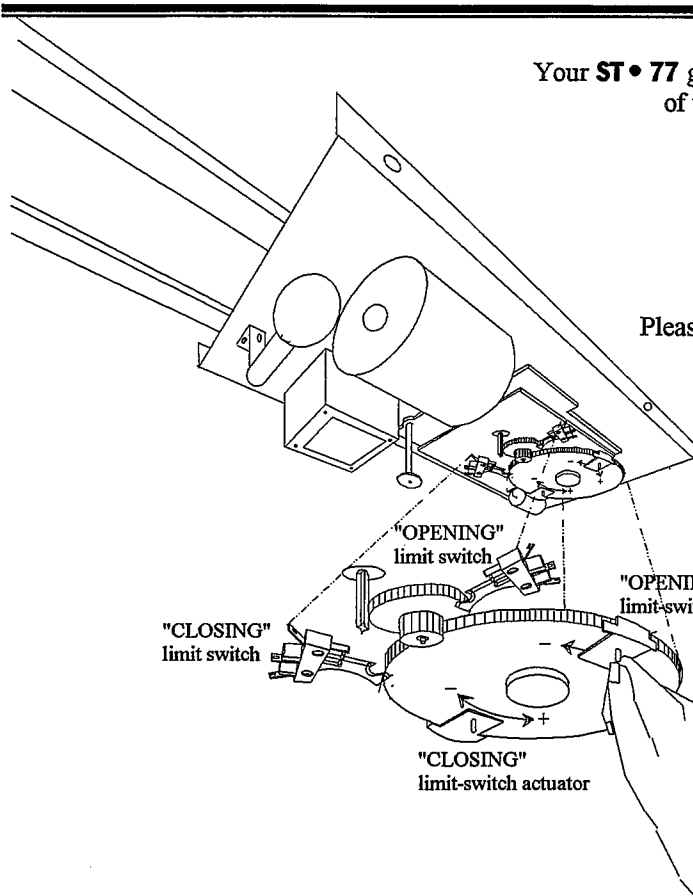


## Attaching the drive unit

When attaching the drive unit to the ceiling, we recommend placing a ladder underneath it.



## Adjusting the limit switches



Your **ST•77** garage door opener automatically stops when one of the red limit-switch actuators trips a limit switch (in either "closing" or "opening" direction).

Adjust the limit switches by hand

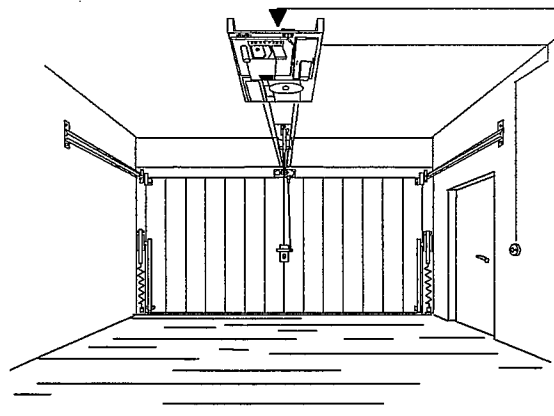
### "Opening" direction

Please set the limit-switch actuator for the "opening" direction so that the door comes to a halt about 30 mm (1,2") before its final resting position

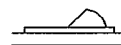
### "Closing" direction

Please set the limit-switch actuator for the "closing" direction so that the door lightly touches the door frame when closed.

## Setting the speed



### Speed switch S1

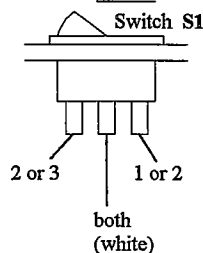


Your **ST•77** garage door opener lets you choose from among three different speeds.

This is done with the aid of switch S1, which is on the top of the drive unit. The following two speeds are preset in the factory:

- 1: 12 cm (4,7")/sec. (grey cable, 25 V AC)
- 2: 9 cm (3,5")/sec. (pink cable, 20 V AC)

You can easily select either of these speeds by changing the position of switch S1.



- 1 = grey
- 2 = pink
- 3 = red

Your **ST•77** garage door opener can also be set to a third speed by swapping two cables:

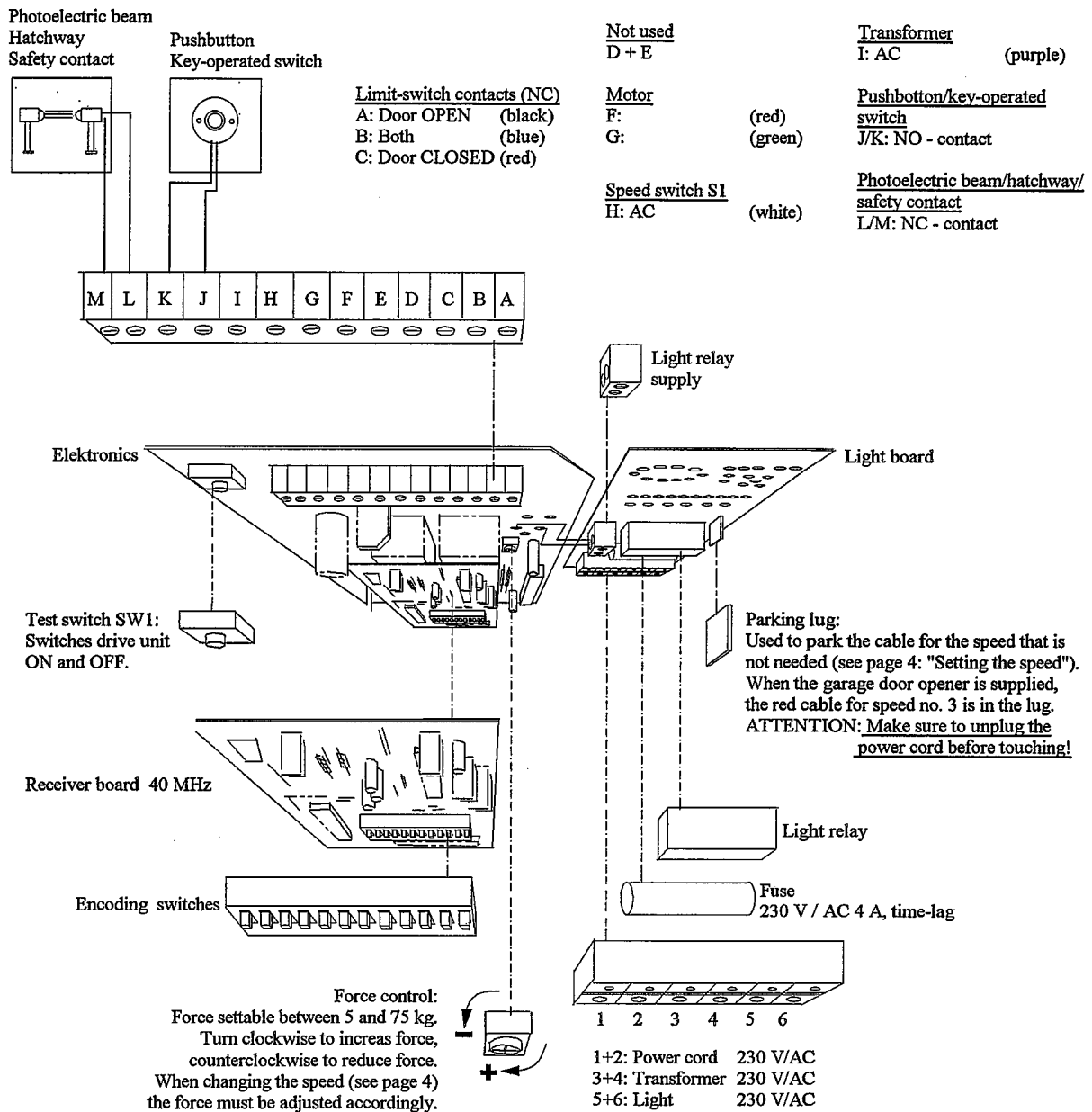
- 3: 16 cm (6,3")/sec. (red cable, 29,5 V AC)

Proceed as follows:

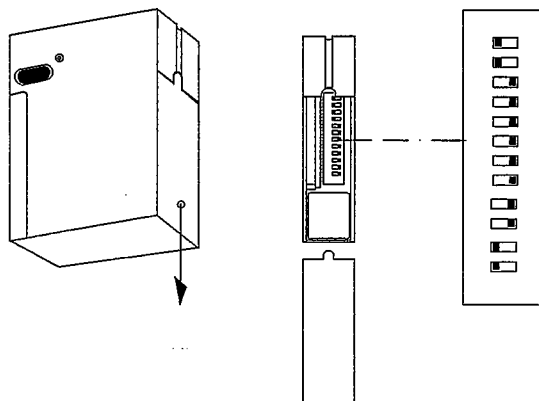
- Make sure to **unplug the power cord** first!
- Pull the pink cable out of switch S1
- On the light board (see page 5) there is a red cable on a parking lug. Exchange this cable for the pink cable.
- Insert the red cable into switch S1 to take the place of the pink cable.

Your **ST•77** will now travel at a speed of 16 cm (6,3")/sec. instead of 9 cm (3,5")/sec.!

# Elektronics and remote control



## Handheld transmitter



Open the flap on the side of your handheld transmitter. You will find the same encoding switches there as on the receiver board.

Set any desired combination. Then set the same combination on the receiver board (each switch can either be ON or OFF).

Do not select a combination in which all of the switches are either ON or OFF!

## Technical data ST • 77

DC motor	24 V- low noise	Space required above door	35 mm
Gears	self-locking	Motor unit length	360 mm
Operating speed, fast	16 cm per sec.	Motor unit width	210 mm
Operating speed, slow	10 cm per sec.	Motor unit height, inkl. housing	150 mm
Nett operating range	2640 mm	Weight, incl. packaging	22 kg
Overall length	3205 mm	Weight, excl. packaging	19 kg
Max. openings per day	20		
OPEN/CLOSE force, fast	5-75 kg adjustable	Standard specification:	
OPEN/CLOSE force, slow	5-60 kg adjustable	<b>ST • 77</b> garage door opener, complete with	
Power supply	190-260 volts AC	mounting components, remote control system (40	
Main transformer	230V-26V-20V -29V AC	MHz), transmitter, receiver, pushbutton unit and	
Lighting	230V AC - 25 Watt - E 14	packaging.	
Lighting duration	approx. 2 min.		

We reserve the right to make technical changes without notice.

## Extension (optional)

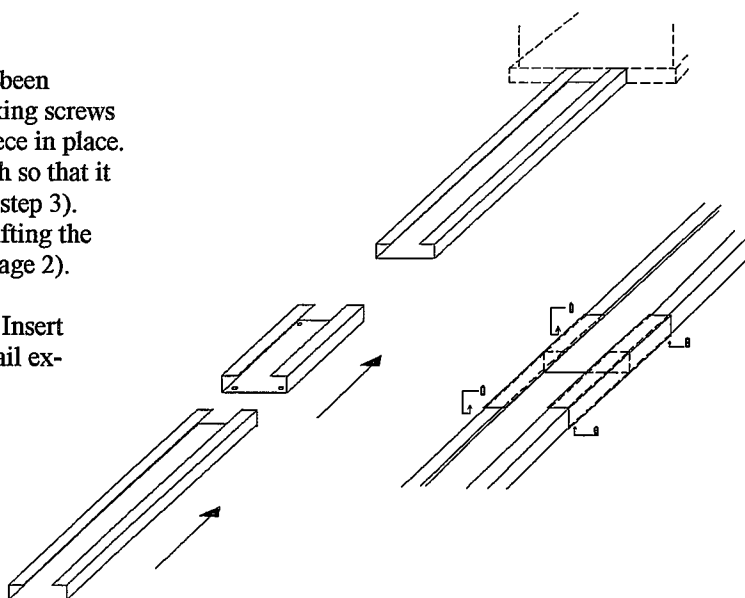
An extension piece can be ordered to extend the length of the C-profile rail up to 4,15 m (163").

Mounting the extension piece:

If your garage door opener has already been preassembled, start by loosening the fixing screws holding the front C-profile coupling piece in place. slide the coupling piece back far enough so that it protrudes by about 10 mm (see page 2, step 3). Now take the tension off the chain by lifting the front section of the C-profile rail (see page 2).

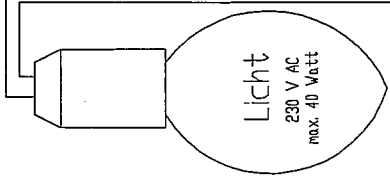
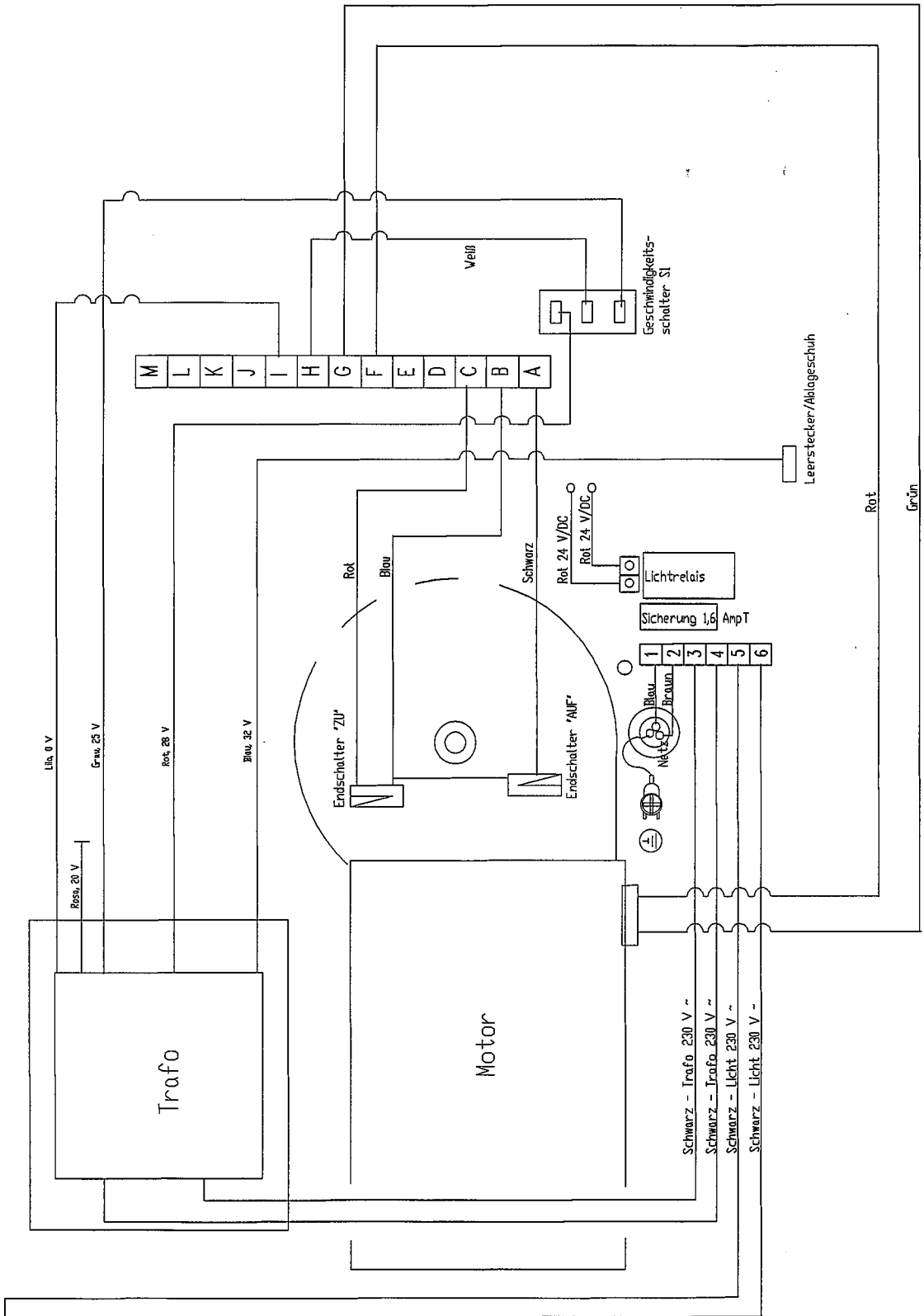
Open the chain on the chain tensioner. Insert the extension chain and the C-profile rail extension piece.

Now continue as described on page 2.



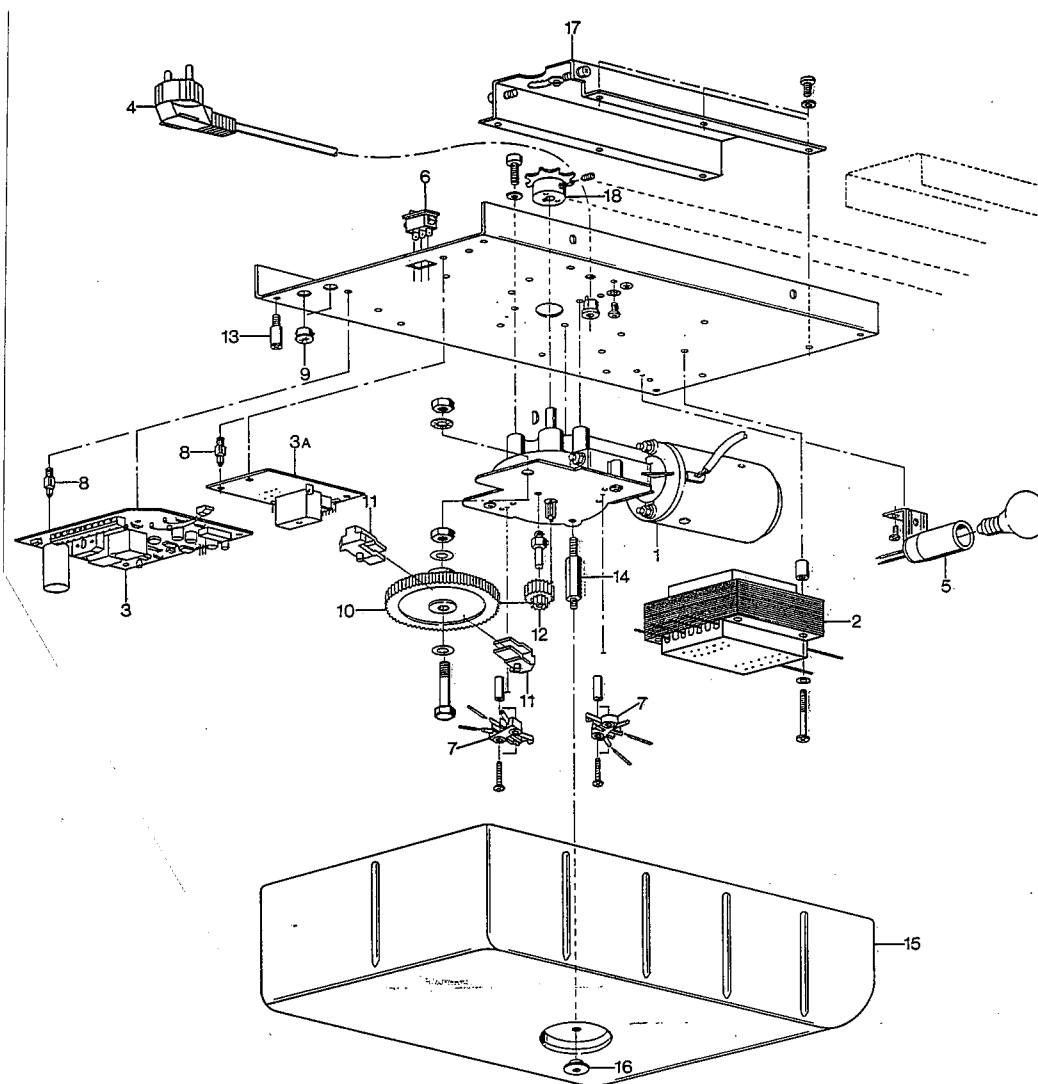
Each extension kit includes:

- C-profile rail
- C-profile coupling piece
- 1 chain
- 1 chain link (master link)
- 4 threaded studs



- |         |        |
|---------|--------|
| Blau    | blue   |
| Braun   | brown  |
| Grau    | grey   |
| Lila    | violet |
| Rosa    | pink   |
| Rot     | red    |
| Schwarz | black  |
| Weiß    | white  |

# Motor head unit ST • 77

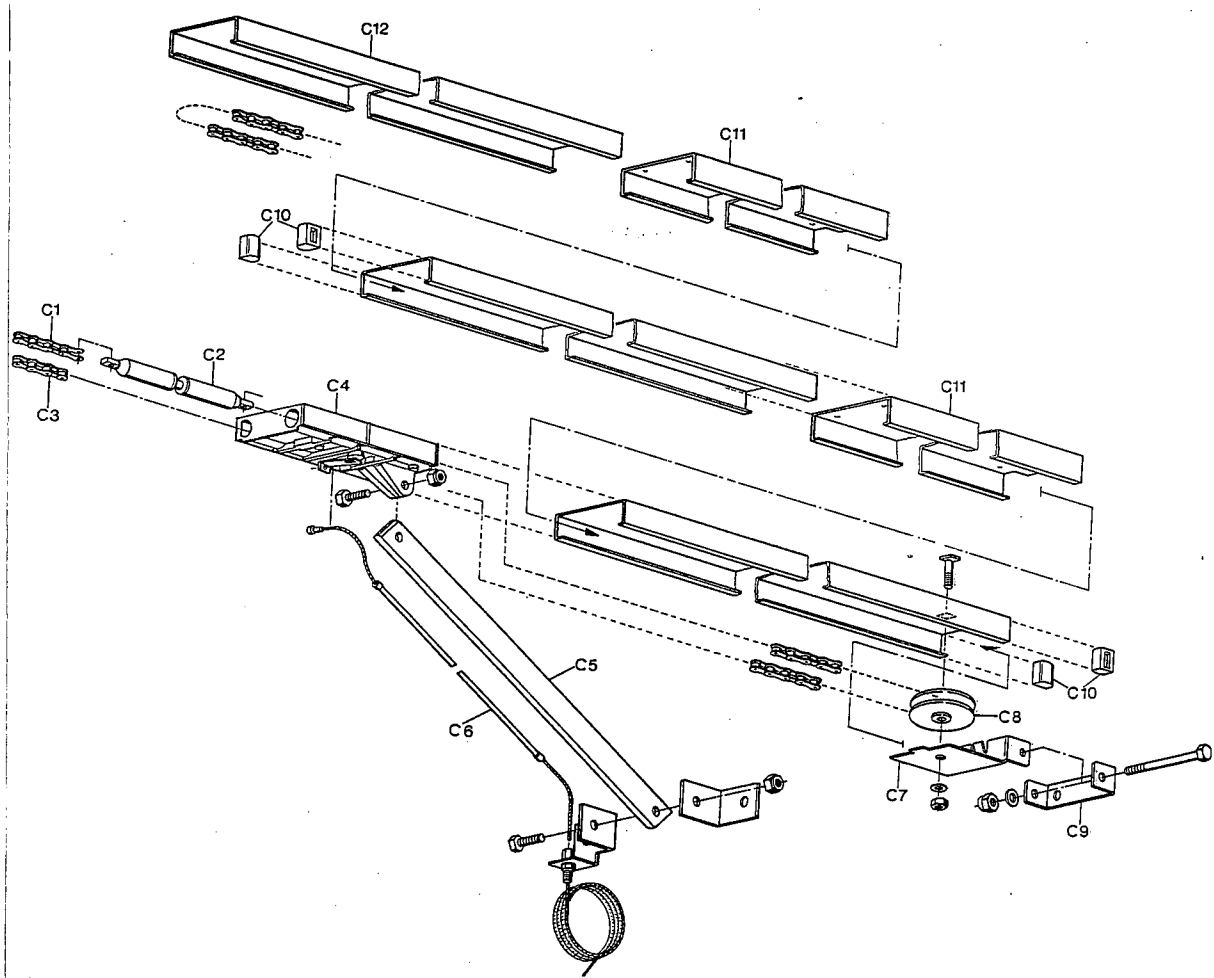


Part-No	Part-name	Order-number
1	Motor incl. module I and axle for step wheel	P0010
2	Transformer with cables and PTR clips	P1010
3	Electronics <ul style="list-style-type: none"> <li>• standard</li> <li>• AZ</li> <li>• <b>M</b> for integrated receiver</li> <li>• <b>M</b> with socle</li> </ul>	P2010 P2011 P2012 P2013
3A	Light board (only ST 77 standard)	P2100
4	Mains cable with earthing	P3010
5	Lampholder with cable and PTR clips	P3110
6	Speed switch	P3210
7	Limit switch unit with cable	P3310
8	Threaded distance piece for electronics	P3410

Part-No	Part-name	Order-number
9	Centering pin	P3420
10	Spur toothed wheel	P4010
11	Limit switch actuator	P4020
12	Step wheel	P4030
13	Distance piece with screw	P4160
14	Axle for fixing of the case	P4170
15	Case	P4110
16	Milled nut	P4173
17	C-shaped part	P4210
18	Pinion with threaded pin	P4310



# C-rail **EASY-** and **ST-series**



Part-No.	Part-name	Order-number
		ST • 77 and EASY-series
C1	Chain	P5110
C2	Chain tension unit	P5120
C3	Chain closing link	P5130
C4	Carriage	P5210
C5	Pulling bar with square	P5220
C6	Bowden cable with cover	P5240
C7	Guide pulley holder	P5310
C8	Guide pulley	P5320
C9	Fixing square with screw	P5230
C10	Silencers	P5310
C11	C-profile coupling piece	P5010
C12	C-rail (1 part)	P5410

# Problems? No problem.....

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**The opener doesn't react on the transmitter nor on the push-button switch.**

- Power failure?
- Disconnect and connect receiver.
- Is the door stuck because of snow and ice?
- Check the lines and the connections of the push-button switch.
- Is there water in the push-button switch or in the key operated switch?

**The opener reacts on the transmitter but not on the push-button switch.**

- Check the line of the push-button switch.
- Does the push-button switch work, when the receiver is disconnected? If so, your transmitter is defective.

**The opener reacts on the push-button switch but not on the transmitter**

- Check the accordance of the transmitter and the receiver code.
- Displace the antenna of the receiver. Avoid each metal contact (reduces the range).
- Check the battery of the transmitter

**The door opens and closes without order.**

- Change the code of your remote control (of transmitter and receiver).
- Disconnect the receiver or remove the transmitter battery. Use your push-button switch only. If this solves the problem, your sender may be defective.
- Disconnect the push-button switch and use your transmitter only. If this solves the problem, the push-button switch or the line of the push-button switch may be defective.

**The door doesn't open completely.**

- Is the limit switch "OPEN" correctly set?
- Is the door jamming while opening?
- Unlock the carriage manually (make the door running well). Lubricate and oil the pivotal points of the door.
- Increase the power.

**The door doesn't close completely and opens again.**

- Is the limit switch "CLOSE" correctly set?
- Is the door jamming while closing?
- Unlock the carriage manually (make the door running well). Lubricate and oil the pivotal points of the door.
- Increase the power.

**The emergency release doesn't work very well.**

- Is the limit switch "CLOSE" correctly set? If not, your opener switches off under pressure. In this case the chain is under tension and therefore the emergency release can hardly be unlocked. Make sure that the limit switch is correctly set, otherwise your opener can be damaged.

**The light doesn't go on.**

- Replace the bulb (max. 40 Watt)
- In certain areas there are important spikes in the electric network that often causes burning outs of a bulb. In this case the use of a 260 V bulb is required.

**The opener isn't running well.**

- Unlock the carriage of the opener. Move the door manually and make sure that the door is well balanced (must come to a stop at each position).
- The spring tension is too high or there is even a spring fracture.

**The motor is buzzing but the door doesn't move.**

- The door is jamming.

**The opener works, but the door doesn't move.**

- The carriage is unlocked. If you want to lock it, open the door, but not completely, and let the opener run. The carriage locks automatically.

**The opener doesn't work because of a power failure.**

- Unlock the carriage with the help of the emergency release and open the door manually. (If you have a garage where you can only enter from outside: Unlock the door with the key and turn the door-handle, then your opener will be unlocked. If you have a garage where you can also enter from inside: pull at the Bowden cable hanging from your carriage.)
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