

Anleitung für Montage und Betrieb

Garagentorantrieb SupraMatic S / SupraMatic K

Fitting and operating instructions

Garage door operator SupraMatic S / SupraMatic K

Instructions de montage et de manœuvre

Manoeuvre électrique SupraMatic S / SupraMatic K

Handleiding voor montage en bediening

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Istruzioni per il montaggio e l'uso

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Instrukcja montażu i obsługi

Napędu do bram garażowych SupraMatic K / SupraMatic K Szerelési és működtetési útmutató

SupraMatic S / SupraMatic K garázskapu-mozgató

Dear Sirs,

The SupraMatic Garage Door Operator is in a class of its own with its patented, maintenance-free operating system and smoothness of operation thanks to soft start soft stop functioning in its travel limits.

Continuous control during production guarantees a high technical standard. It goes without saying that the SupraMatic Garage Door Operator features Telecom-approved remote control for optimal effciency.

Please read the information and instructions in this manual thoroughly; you will find important advice for the installation and use of the device. Keep the instruction manual in a safe place for later reference. We hope that you will get a lot of pleasure out of our product.

Your partner for gates, doors, frames and windows.

General information:

The SupraMatic Garage Door Operator can be fitted to

- Up-and-over doors (fig. 1.1)

 (universal installation set included in the supply package)
- Sectional doors (fig. 1.2)

 (universal installation set included in the supply package for Hörmann
 Series 30 Sectional Doors LTE, LPU and LTH. For other brands a mounting bracket, item no. 564 312, is required)

Installation Conditions

Do not install the operator outdoors. Protection category: only suitable for dry locations.

Functional testing of the door:
Ensure that the garage door meets the

Ensure that the garage door meets the manufacturer's functional description.

The door should be no more than 3m in height.

Before installing the operator, test the door for:

- trouble-free, smooth travel
- corrosion and signs of cracks
- wear of the turning hinges and bearing
- functioning of the compensating springs

Please follow the operating and maintenance instructions supplied with the doors.

Any faults you might find should be rectified by a qualified specialist.

Structural Conditions:

The garage ceiling's design must be such as to enable the optimal mounting of the operator.

The clearance (b) between the door's top edge and the ceiling must be at least 40 mm, also when the door is moved. Please check the respective dimensions (see fig. 1.1 - 1.2).

Fit extended door links if the clearance is less than specified.

If the ceiling is too high, it will be necessary to make use of additional cross braces when fixing the drive unit into place.

The specified safety socket should be fitted approx. 50 cm alongside the motor head (see fig. 23).

Ensure that on-site electrical fittings comply with the relevant safety regulations (220-240 volt / 50 Hz).

Installation Advice

Follow the corresponding safety regulations when carrying out the installation.

Always pull out the mains plug before starting installation work involving the motor head.

When adjusting the basic settings ensure that there are no persons or objects within the doors' area of travel.

Excessive closing force can lead to injury of persons and property damage - adjust accordingly!

If your garage does not have a second access we recommend using our emergency unlocking device art. no. 152 352 for N80/DF95/DF98 Berry and Series 2000 retractable Doors, or art. no. 561 371 for Sectional Doors.

Always ensure that the doors are closed when carrying out installation and fitting.

Fig. 1.1 - 1.2 Ceiling clearance:

Hörmann up-and-over Doors:

- with sheet steel infill 20 mm (a)

- with surface-mounted timber infill 35 mm (a)

Hörmann up-and-over garage doors DF80/DF95/DF98:

 with sheet steel infill or timber infill

45 mm (a)

Hörmann sectional doors:

Series 30 LTE, LPU and LTH

Normal tracks (N)

with side lock 185 mm (a) with centre lock 185 mm (a)

Low headroom tracks (L)

- with side lock 90 mm (a

- with centre lock 90 mm (a)

Other brands:

Up-and-over doors 40 mm (b) Sectional doors 40 mm (b)

(a) = - Hörmann Berry Doors /
Series 2000 Retractable:
Top edge of door frame to ceiling

Hörmann Sectional Doors:
 Top edge of door leaf to ceiling

(b) = highest point of door to ceiling

Observe headroom (c) (clearance):

Hörmann up-and-over Doors:

- with sheet steel infill 65 mm

- with surface-mounted timber infill 80 mm

Hörmann up-and-over garage doors DF80/DF95/DF98:

- with sheet steel infill or timber infill 85 mm

Hörmann sectional doors:

Series 30 LTE, LPU and LTH

Normal tracks (N)

with side lock 245 mm with centre lock 245 mm

Low headroom tracks (L)

with side lockwith centre lock150 mm

Other makes:

The lintel height must be determined according to the respective model.

Fig. 2

You will need the following to install the SupraMatic:

Spirit level

Folding rule or measuring tape

Combination wrench KW 10

Combination wrench KW 13

Socket wrench KW 10

Socket wrench KW 13

Screwdriver size 8

Screwdriver size 5

Phillips screwdriver size 2

Masonry drill 10 mm

Masonry drill 6 mm

Metal drill 5 mm

Metal drill 3 mm

Pliers

Hack saw

Electric drill

Fig. 3

SupraMatic Garage Door Operator Supply package:

- 1) Motor head
- (2) Fastening screws M6 x 12 (x4) (prefitted on the motor head)
- 3) Lamp cover (x1)
- (4) Light bulb 40 watt (x1)

- Electronic aerial with connecting lead (x1)
- Screws with 6 mm Ø wall plugs (x2) for fastening the electronic aerial
- DH01 single-channel hand transmitter (x1)
- Battery 9 volt (x1)
- Velcro tape for attaching the hand transmitter wherever required
- Slotted anchor (x2)
- Hexagonal head screw M8 x 16 (x2) Plain washer 8.4 (x2) Serrated lock washer 8.4 (x2) Hexagonal nut M8 (x2)
- Screws with 10 mm Ø wall plugs (x4)
- (13)Boom
- Carriage with cord knob
- Clamp clip (x2) for fastening the carriage to the motor head
- Hexagonal head screw M8 x 80 with locking nut (x1)
- Lintel bracket (x1)
- Door link bracket spacer for Berry Doors N80, DF80 and DF 95 (x1)
- Door link bracket (x1)
- Self-tapping screw B6.2 x 16 (x6)
- Toggle lever (device to prevent forced opening of door) (x1)

- Top clamp clip (device to prevent for ced opening of door) (x1)
- Bottom clamp clip with plastic clips (device to prevent forced opening of door) (x1)
- Flat-headed screw M6 x16 with nut (x3)
- 24) 25) 26) 27) 28) Door latch pin set N80/DF80
- Door latch pin set DF95
- Spacer ring for sectional doors
- SL safety bolt (x1)(bolt + clip)

Lighting:

Screw light bulb (max. 40 watt) into the socket on the motor head and clip on the lamp cover.

Light bulbs are excluded from any guarantee claims.

Figs.4 - 7 **Locking Device:**

Ensure that the door-locking devices are so firmly fixed that automatic locking cannot take place once the door has been closed.

Use the supplied door latch spacers when fastening the latches to Hörmann doors.

Fig. 4.1 - 4.2

Hörmann up-and-over garage door Berry N80 / Series 2000 retractable: (old door latch version)

Pull the door latch out with the locking bar and insert the door latch spacer (25). Bend the upper half (DF80) down and repeat the procedure on the opposite side.

Fig. 4.3

Move the yellow spring brakes (a) on both sides of the retractable door towards the centre of the door.

Figure 4.4 - 4.6

Hörmann up-and-over garage door Berry N80 / Series 2000 retractable: (new door latch version)

Loosen hex-head nut (a) on door latch and remove screw (b) from underneath. Pull back the plastic latches and push latch bearing (c) approx. 15 mm in direction of the door leaf.

From above now introduce screw (b)into the rear drill hole and screw tight. From below screw hex-head nut (a) onto screw(b).

Figs. 5.1 - 5.3

<u>Hörmann DF95/DF98 Berry Door /</u> Series 2000 Double

Press in door latches and insert latch pin 26 as shown. Repeat the procedure on the opposite side.

Figs. 6.1 - 6.2

Hörmann Berry Door DF80

First remove the lower halves (N80) of the door latch spacer 26. Use the locking rod to pull out the door latch and then insert the door latch spacer.

Figs. 7.1 - 7.2

Hörmann Sectional Doors

Unlatch the door and clip on the spacer ring (27) as shown.

Fig. 8.1

Adjustment of the upper track rollers on sectional doors in the 30 series:

Loosen the roller retainer © and move it upwards (approx. 10 mm) until the marking on the retainer is visible above the roller bracket (b). Screw the roller retainer on tightly.

Fig. 8.2

Setting the top track rollers on Series 30 sectional doors using normal tracks (N):

Remove pressure spring (a) (see diagram). Loosen roller holder (c) and push upwards (approx. 10 mm) until the marking is visibly centered in slotted holes (d) of roller bracket (b). The track roller must locate in the top third of the track radius in accordance with the diagram.

Carry out this adjustment on both sides of the door.

Fig. 8.3

Setting the top track rollers on Series 30 sectional doors using normal tracks (L): Loosen roller holder © and push upwards

(approx. 10 mm) until the marking is visibly centered in slotted holes (d) of roller bracket (b). The track roller must locate in the top third of the track radius in accordance with the diagram.

Carry out this adjustment on both sides of the door.

Figs. 9.1 - 9.2

Fitting the motor head and boom.

Unscrew the pre-fitted fastening screws

(2) (see fig. 3) on the motor head.

Place the boom (13) onto the drive shaft (d) and fix in place on the motor head with the clamp clips (15) and fastening screws (2).

Figs. 10.1 - 10.7

Fitting to Hörmann Berry and Sectional Doors

Figs. 10.1 - 10.2

Hörmann N80 Berry Doors /

Series 2000 Retractable::

To fasten the door link bracket, insert door link bracket spacer (18) as shown in fig. 10.1 into door link bracket (19).

Attach door link bracket (19) to centre of the door's top edge and fix in place with 4 screws ②. (Drill holes: 5 mm Ø)

Use the engraved, upward-pointing arrow as orientation to align lintel bracket (17) centrally to the door link bracket (19) screw onto the door frame using 2 screws (20). With the N80 Berry Door, you can use the pre-drilled holes in the frame (see fig. 10.2).

Figs. 10.3 Fitting to the DF95/DF98/ Series 2000 Double Door

Hörmann DF80/DF95 and DF98 Berry Doors:

To fasten the door link bracket, insert door link bracket spacer (18) as shown in fig. 10.1 into door link bracket (19).

Attach door link bracket (19) to centre of the door's top edge and fix in place with 4 screws (20) (Drill holes: 5 mm Ø).

Use the engraved, upward-pointing arrow as orientation to align lintel bracket (17) centrally to door link bracket (19) and fasten to the lintel.

Use screws with 10 mm Ø wall plugs (12). Observe the measurements given in the drawing.

Figs. 10.5 - 10.6

Hörmann Series 30 Sectional Doors:

Fit as for Berry Doors, but without the door link bracket spacer. For timber doors, use the 5×35 Spax screws from the pack of fastenings supplied with the door (Drill hole: $3 \text{ mm } \emptyset$.).

Fig. 10.6 - 10.7

Use the engraved, upward-pointing arrow as orientation to align lintel bracket (17). centrally to door link bracket (19) and fasten to the lintel.

If the door is side or central locking, fasten 135 mm above the door's top edge.

For sectional doors with

- normal tracks (N)

- 135 mm 40 mm
- low headroom tracks (L)
 above the top edge of the door.

To fasten the lintel bracket, use screws with 10 mm \varnothing wall plugs 12.

Fig. 11

Lift the pre-assembled drive unit over the rearspacer bar and fasten the boom to the lintel bracket with the M8 x 80 hexagonal head screw (16).

When fixing the lintel bracket to the ceiling use the upper drill hole on the boom's attachment.

Fig. 12 Drive unit alignment.

Ensure that the boom (3) is parallel with the door tracks and horizontally aligned.

Measure the **distance y** between the upper edge of the motor head and the ceiling.

Fig. 13

Bend the anchor fixture (10) as shown (see sketch) and shorten if necessary. Screw the anchor fixtures onto the motor head. Use the screws provided (11), see fig. 3.

Fig. 14

Align the drive unit so that it is again parallel to the door track mark and drill holes on the ceiling.

Important:

Cover the drive unit when drilling. Drilling dust and chips can cause malfunctions.

Secure the door operator under the ceiling with two screws and 10 mm wall plugs (12). Subsequently, check that the operator is positioned horizontally; adjust if necessary.

Fig. 15

Disengagement

Pull the cord knob(g) and move the carriage (14) towards the door. The carriage can be freely moved in the boom by pulling the cord knob. This means that the fitted door can be manually operated in the event of a power failure.

Fig. 16.1

Connection to Hörmann Berry Doors / Series 2000:

Fit toggle lever (21) as shown and screw in place using the flat-headed screw (a) with lock nut already attached to it. Take second screw (b) from the pack of fastenings supplied with the drive unit (pos. 24, fig. 3).

Fig.16.2

Fit toggle lever (21) to the carriage using the SL safety bolt (a) already attached to the carriage. Connect toggle lever to the door link bracket (19) using the SL safety bolt (28) from the pack of fastenings supplied with the drive unit.

Fig. 16.3

Connection to Hörmann Sectional Doors:

Fit toggle lever 21 as shown and screw in place using the flat-headed screw (a) with lock nut already attached to it. Take second screw 24 from the pack of fastenings supplied with the drive unit (fig. 3).

Fig. 16.4

Fit toggle lever (21) to the carriage using the SL safety bolt (a) already attached to the carriage. Connect toggle lever to the door link bracket (19) using the SL safety bolt from the pack of fastenings supplied with the drive unit.

Note:

If the installation conditions do not cor respond to those described under figs. 16.2/16.4/16.6, the function of the security device to prevent the door from being forced open may be impaired.

Fig. 17

Re-engagement

Press the red lever on the boom to re-engage the carriage. **Slowly** open the door manually until the carriage engages.

Fig. 18

- Malfunction indicator
- B. Impulse signal indicator
- C. Mains current display
- D. Travel limit adjusting screw "Close"
- E. Travel limit adjusting screw "Open"
- F. "Close" indicator
- G. "Open" indicator
- H. Automatic cut-out adjusting screw "Close"
- Automatic cut-out adjusting screw "Open"
- J. Test button "Close"
- K. Test button "Open"
- Connecting terminals for external impulse buttons (if installed)
- M. 1.- Programming switch for connecting external "Stop" button
 - Programming switch for connecting external photocell or closing edge safety device
- N. Programming button for remote control coding
- Plug socket for external control elements with system plug

P. Plug socket
for electronic aerial and external
photocell or
closing edge safety device

- Q. ains fuse, max. 2.5 A
- R. Motor fuse, max. 10 A
- **S.** Adjusting pin (attached to the inside of the cover cap)

Legend:

(?)

N

Symbols Explanation



Impulse signal

Malfunction

"Open"

רן "Close"

Power limitation

External connecting terminals



Dual coding switch



Programming button



"Stop" button



External control elements



Electronic aerial



External photocells, transmitters



The drive

The drive unit's factory-adjusted presettings are not matched to the door. When adjusting the settings please ensure that there are no persons or objects within the door's area of travel (danger of accident!).

Set up the mains connection and open the front cover of the control unit.

Setting the automatic cut-out

The automatic cut-out can be separately adjusted in 16 stages in both directions. If

the arrows on control buttons \bigoplus and \bigcap are pointing upwards, this means that the most sensitive setting has been selected. You will automatically get this setting again after a complete rotation of the adjusting screw.

Use the most sensitive settings possible for the automatic cut-out. Check efficient functioning regularly.

Setting the travel cut-out

Press test buttons (J) or (K) so that the door travels to the respective travel limits as set at the factory.

Turn adjustment screws (E) and (D) to increase or decrease the travel distance for (*) = "Open" and (*) = "Close" Turning in the (+) direction increases the travel distance; turning in the (-) direction shortens the travel distance.

Turning the adjustment screw by one notch adjusts the travel distance by approx. 3 mm.

One complete rotation produces an adjustment of approx. 48 mm. You can use the adjusting pin (\$\ointigs\$) to make these adjustments.

The LEDs (G) and (F) in the electronic control unit light up when the travel limits have been reached.

Figs. 20.1 - 20.2

Setting the security device to prevent the door from being forced open.

Operate the door to reach its "CLOSE" end of travel position. Once this travel limit has been reached, hook (a) of toggle lever (21) engages into the boom. (If necessary, re-adjust the travel limit).

Establish **measurement x** up to the carriage and unlatch the carriage. Clamp bottom clamp clip ② into the slot in the boom (see fig. 20.2) and screw to the top clamp clip ② using the flat-headed screws and nuts ② (see fig. 3). Observe the measurement given in the drawing (3 to 6 mm).

Make a test run and check whether hook a of toggle lever 21 dips behind the clamp clips (If necessary, re-adjust the position of the clamp clips).

Note:

Please make sure that the spacers of the lower clamp clip (23) firmly engage in the boom slot - otherwise the emergency unlocking device might not work properly.

Figs. 21.1 - 21.2 Electronic aerial

Protection category: only for dry buildings

- (A) Electronic aerial
- (B) Antenna wire
- C Connecting lead with plugs
- (D) Fitting accessories

Plug the connecting lead \bigcirc into the control unit's plug socket (P), pay it out fully and then connect it to the electronic aerial \bigcirc .

Please note:

The plugs must be heard to snap in.

Having coded and activated the hand transmitter (pt. 25), adjust the aerial to find an optimal range.

Be sure to keep a distance from the door since the door leaf can have a screening effect.

Pay out the aerial wire (B).

Figs. 22.1 - 22.3

Hand transmitter

- (A) Function display
- (B) Control button
- C) Battery compartment cover
- D) 9 volt battery

To change the battery, first remove the cover \bigcirc by pressing it in and sliding it downwards.

Check for correct polarity when changing batteries.

Batteries are excluded from any guarantee claims.

Keep transmitters out of the reach of children

Remote control coding

- (E) 10-digit coding switch
- S Adjusting pin
- N Programming button

Set your personal security code via the 10-digit coding switch (E) and close the battery compartment. Use the adjusting pin (S) to activate the programming button

- N for about 2 seconds until the display
- G flashes.

The Display will flash slowly. Press the control button on the hand transmitter until the display light flashes quickly.

The coding is now stored and the remote control system is ready for use.

You can change the code as often as you like.

In the event of a power failure the coding and all other settings remain unaffected.

Fig. 23

Assembly plan

- (A) SupraMatic drive unit
- B Safety plug, 240 volt, 50 Hz (site-fitted)
- (C) Electronic aerial
- (D) Interior button (if installed)
- (E) Key switch (if installed)

Fig. 24

SupraMatic circuit diagram

"Open" with press-and-release "Close" with press-and-release

Function: sequential phase control

- Impulse drive operates
- 2. Impulse drive stops
- 3. Impulse -drive operates in opposite direction

Function: directional control

- Drive stationary
- 1a. Impulse "Open" door opens
- 1b. Impulse "Close" door closes
- 2. Drive operates
- 2a. Impulse "Open" drive stops
- 2b. Impulse "Close" drive stops
- F1 Fuse 2.5 A (Q)
- F2 Fuse 10 A (R)
- H4 Drive unit lighting (max. 40 watt)
- T1 Transformer with thermal contact
- M1 Motor
- S Main switch (site-fitted)
- S1b "Impulse" button (site-fitted)
- S22 Reference point button
- X1 Safety socket (site-fitted)
- X2 Safety plug

- X3a Plug socket for operating elements from the Hörmann series (O)
- X3b Operating elements from the Hörmann series
- X3c Connecting terminal for "Impulse" button (site-fitted), terminals 1 + 2 (L)

To tap a supply voltage of 24 volts use terminals 1 (= -) and 3 (= +) (L).

X4a Plug socket for electronic aerial P

X4b Electronic aerial

Caution - low voltage!

External voltage at the terminals X3a, X4a or terminal screws X3c can seriously damage the entire

electronics.

Please note:

If a "Stop" button is fitted, switch over code switch 1 "Stop" (M).

Important:

comply with local regulations!

Fig. 25

Connection of external operating elements and function of the 2-digit code switch (M)

All Hörmann operating elements are fitted with ready-to-plug-in mains cables. Use the plug socket (1) to connect. Each of the external control elements in the Hörmann range comes with a connection plan. Control elements without a Hörmann system connection can be connected via terminals 1 and 2 in the terminal block (1).

Important:

external voltage at any of the connecting points can seriously damage the electronics.

- a Connection leads for Hörmann control elements (interior and exterior buttons are not part of the SupraMatic supply package but are available as extras)
- L Connection for site-fitted control elements (use metal connecting terminals which are not part of the SupraMatic supply package but are available as extras)

- M Dual coding switch
 - Programming switch for connecting external "Stop" button
 - Programming switch for connecting external photocell See table for connection.
- **b** Front cover of the control unit

Open the front cover (b). Plug connection lead (a) for external control elements fitted with Hörmann system plugs into the control unit as shown, or connect site-fitted control elements to terminal block (L).

Close the front cover when the connecting plug or button connection has been inserted.

Functions of the dual coding switch (M):

Switch	Explanation		
	1 - External "Stop" button not connected 2 - External photocell not connected		
	1 - External "Stop" button connected 2 - External photocell not connected		
	1 - External "Stop" button not connected 2 - External photocell connected		
	1 - External "Stop" button connected 2 - External photocell connected		

Test instructions (for the specialist only) Trouble shooting Fault Cause Remedy Indicator "green" No voltage Check mains supply, check socket- outlet. Check mains fuses does not light up. (18/Q, R). Thermal overload protection in the transfor-Allow transformer to cool down mer has been activated Control unit is defective. Disconnect drive unit from mains. Remove control unit. Pull control unit forward, pull out connecting plug and remove unit. Have the control unit checked Indicator "red" Setting of automatic cut-out too sensitive. Adjust automatic cut-out to less sensitive setting by turning Door operation too sluggish. Door blocks. adjusting screws (18/H for "Close") and (18/I for "Open") clockwise. lights up. Ensure door moves easily. Drive unit is blocked mechanically. Separate drive unit from mains. Check drive belt and belt travel in the boom. Have drive unit checked Indicator "red" External photocell defective or interrupted. Remove obstruction or have have photocell checked. flashes slowly. Connecting terminals for "Impulse" button Try disconnecting wired key switches or interior buttons from the No response to impulse signal. bridged, e.g. because of line short circuit control unit. or incorrect clamping. Take out plug (18/O) and check wiring faults. Programming switch for "Stop" button Switch programming switch (25/1) accordingly or connect "Stop" (28/1) open but "Stop" button not button (opener). connected.

Test instructions (for the specialist only) Trouble shooting

Fault	Cause	Remedy
Drive only	Programming button for photocell (28/2)	Adjust programming switch (25/2) accordingly or connect
operates in "Open"	is open but photocell is not connected.	photocell.
direction but not in		
"Close" direction.		
Indicator "yellow"	Electronic aerial is not plugged in.	Connect aerial to control unit (21.2)
does not flash	Hand transmitter coding incorrectly pro-	Re-programme coding as in 22.2/22.3
after impulse sig-	grammed.	
nal from hand	Battery flat.	Insert new 9 volt IEC 6F22 battery (22.2). Flashing LED in
transmitter.		transmitter shows battery status.
	Hand transmitter, control unit or electronic	Have all three components checked.
	aerial defective.	
Remote control	Battery empty.	Insert new 9 volt IEC 6F22 battery (22.2). Flashing LED in
range too small		transmitter shows battery status.
(less than 5 m)	Electronic aerial incorrectly laid.	Re-position aerial casing. Ensure that the connecting lead to the control unit is fully paid out.
		Maintain proper distance from the garage door leaf. Lay the aerial
		opposite the boom to its side or behind it. Align the aerial wire,
		preferably hanging free.
Indicators "yellow"	RPM monitor not functioning.	Have the drive unit checked.
and "red" flash.		Disconnect drive unit from mains, then reconnect to mains.
Alternate flashing	Malfunction in the control unit.	Have the control unit checked.
of the "yellow "and		Disconnect drive unit from mains, then reconnect to mains.
"red" indicators.		

Initial Operation

Power-driven windows, doors and gates must be checked by an expert before initial use and according to requirement, but at least once a year.

Maintenance Instructions

The Hörmann SupraMatic Garage Door Operator works virtually maintenance-free. All moveable parts of the door and drive system should however be checked regularly and kept in an easily movable condition.

Important:

Never lubricate or grease the drive belt!

The door should be easy to operate manually. The separate door counter-balance mechanism is to be checked regularly (with the door uncoupled from the drive unit).

For specialists only

Figs. 26 - 28

Shortening the boom

Please note:

the boom can be shortened by a maximum 200 mm in certain cases.

The boom can only be shortened at the lintel end.

Fig. 26

Detach the drive unit and remove from the boom. Unlatch the carriage and remove bracket (a) by loosening hexagonal nut (b). Remove plain washer and spring.

Note: Remember the initial tension of the drive belt

Move the deflection roller unit towards the motor head.

Mark the length by which the boom is to be shortened and saw off at right angles.

Make the necessary measurement for the topside securing hole (drill hole ø 5 mm).

Fig. 27

Release drive belt on the smooth side at the coupling piece. Leave the belt threaded in. Pull out double the length by which it is to be shortened. Re-fasten the belt and cut off the excess length.

Align the belt and connect the deflection roller unit to the bracket under initial tension.

Carry out the initial tensioning as in fig. 28.