



**Installation Instructions
for the garage door operators**

TS 75

TS 100

Content

Information and Remarks

Important Information for the Installer

- Directives and Regulations
- Use of the operators
- Garage Doors
- The installers declaration of conformity
- Older Garage Doors
- Instruction of the users

Security Advises for the Installation

Installation

Different Conditions for Installation

- Minimum space above the garage door
- Door Arm Extension
- C-Rail Extension
- Bow Arm Conversion

Pre-Mounting the operator

Installing the operator

The Emergency Release

- When there is a second entrance to the garage
- When the garage door is the only entrance

Printed Circuit Board: Adjustments and Connections

Devices for Adjustments

- TEST/RUN-Button (1)
- LERN/LEARN-Button (2)
- Potentiometer „PRESSURE OPEN/CLOSE“ (3)
- Potentiometer „LIGHT“ (4)

Limit-Switch Adjustment and Force Measurement

- Information
- 1.) Adjusting the maximum force for the learning-cycle
- 2.) Starting the learning-mode
- 3.) The Limit-Switch Adjustment
- 4.) Starting the learning cycle
- Quick Reference

The most important connectors

- Push-button and Key-switch
- 24V DC Supply
- 230V AC Supply
- Receiver-Module

Advanced Connectors

- Photo-Cell without selftest:
- Photo-Cell with selftest
- Security Beam and Hatch Door
- Modules for Special Functions
- Cycle Counter

LED-Lamps

- LED „TEST“
- LED „Diag“
- LED „Vp“
- LED „SLZ“
- LED „LSZ“
- LED „SEZ“
- LED „SEA“

Special Functions

- DIP-Switch Settings
- Automatic Force Measurement
- Additional Force
- Pre-Warning light before every movement
- Full reversion in OPENING direction
- No reversion on Security-Beam when door closed
- Side Hinged Doors

4 Remote Control

Programming the hand-transmitters

- Basics
- Programming Transmitter and Receiver

Technical Informationen

Technical Data

Optional Special Functions

- Module „Automatic Closing“ (AZ)
- Module „Separated Impuls“
- Module „One Way Traffic Control“

Wiring

- Internal Wiring
- External connections

Spare Parts

Handling Problems

- Errormessages via the operators lighting
- Additional messages via the LED „Diag“

Declaration of Conformity

	15
3	
4	
5	
6	
7	
8	
9	
10	
12	
12	
14	
	16
	18
	18
	19
	20

Important Information for the Installer



The use of a Seip door operator with any garage-door that was approved for the use with other certified door operators is possible and within legal regulations without any restrictions!

Directives and Regulations

The operators TS 75 and TS 100 apply to the latest European directives and regulations. The declaration of conformity is enclosed at the end of these instructions.

Use of the operators

The operators were designed for the use with up-and-over doors (tilting and canopy-type) and sectional doors. They can be used with side-hinged doors using a special conversion-kit.

Any garage door needs to be maintained before automating it - it must easily be opened and closed by hand. A garage door must not be automated when it is not possible to easily use it manually.

Garage Doors

In January 2001 the European regulations EN12604 and EN12605 became compulsory for garage doors. Before installing an automatic door operator it must be assured that the garage doors applies to these regulations (the information can be obtained from the manufacturers' declaration of conformity). A Seip door operator may be installed to any door that complies to the regulations. Should a garage door not be compliant then please refer to the chapter „older garage doors“.

The installers declaration of conformity

No matter whether a door operator was delivered together with a garage door or separately, the installer must issue a declaration of conformity for the complete installation.

With this declaration the installer assures, that the installation was made according to the instructions given by the manufacturers (e.g. the installation instructions of the garage door and the operator). This declaration can only be issued by the installer and may not be issued from the manufacturer!

If both components comply to the directives and the installation was made as to the manufacturers instructions the whole installation will normally be CE-compliant.

Older Garage Doors

When automating an older garage-door the TS-series will still comply to the regulations - through the automatic force setting the requested values for forces and reversion will be according to the regulations.

But it needs to be taken in consideration that most older garage doors do not meet the regulations EN 12604 and EN 12605 - especially regarding security features. They might still have sharp edges bearing the danger of severe injuries - for example sectional doors might not have a finger protection between the sections. Automating a garage doors.

Unfortunately the entire regulations do not mention how to handle the automation of such an older garage door - the danger basically is not the automation but the construction of the door.

Therefore we strongly recommend to

- check the garage door for sharp edges bearing danger when the door is moving; take any necessary action to avoid the dangers and make the door safer
- check the doors' springs and readjust them if necessary
- grease or oil the pivotal points and rollers of the garage door
- check that the door may be easily used by hand

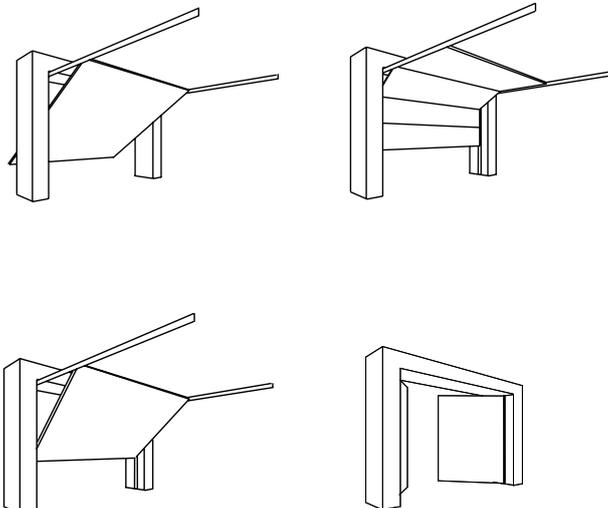
If, however, the dangers cannot be avoided we recommend to use the automatic pre-warning function of the operator. The operators' lighting will then be blinking for approx. 5 sec. before every movement of the garage door. People inside the garage will be warned before the opening and can step back from the garage door in time.

Eine Muster-Konformitätserklärung die vom Installateur zu komplettieren ist liegt diesem Antrieb bei. Die Konformitätserklärung verbleibt zusammen mit der Bedienungsanleitung beim Endkunden

Instruction of the users

Please instruct the users as follows:

- Use of the hand transmitter
- Use of the emergency release in case of a power failure
- Hand over the separate „User Manual“ to the customer
- Inform the user about the Security Advises in the User Manual



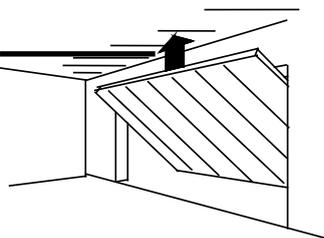
Security Advises for the Installation



Different Conditions for Installation

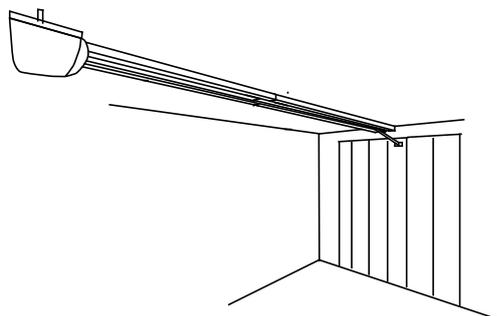
Minimum space above the garage door

35mm Minimum



Before installing the operator you should check the garage for the conditions of installation. You will need optional extras in either of the following situations:

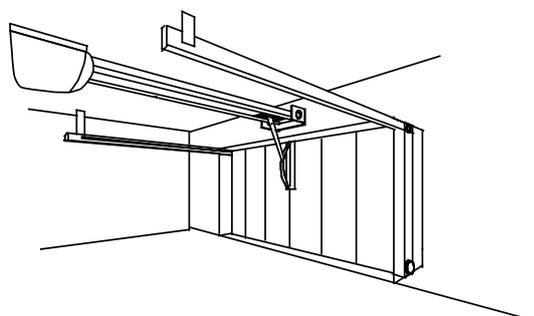
C-Rail Extension



The garage door is higher than 2.250 mm: you will need a c-rail extension. Two sizes of extensions are available: 500mm and 1.000 mm.

The operator may be extended by a maximum of 1.500mm - the maximum height of a garage door is 4.150mm.

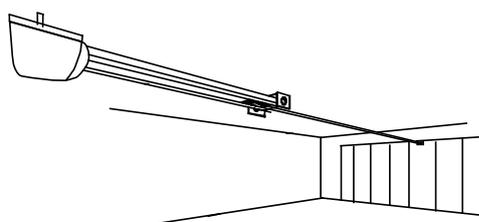
Bow Arm Conversion



For a canopy-type garage door (inside turning door) you will need a bow arm conversion to automate the door.

Inside turning doors are equipped with a roller on each side at the bottom of the door. With these rollers the door cannot tilt outside - an automation without the bow arm conversion is not possible.

Door Arm Extension



Should the minimum space between the garage door and the ceiling be smaller than 35mm then a door arm extension is needed.

For an extension you can use a metal beam from any DIY-market. The beam shall not be shorter than the doors' height.

Pre-Mounting the operator

During this procedure be careful not to twist the chain. **Therefore do not lift the parts - slide them along the floor.**

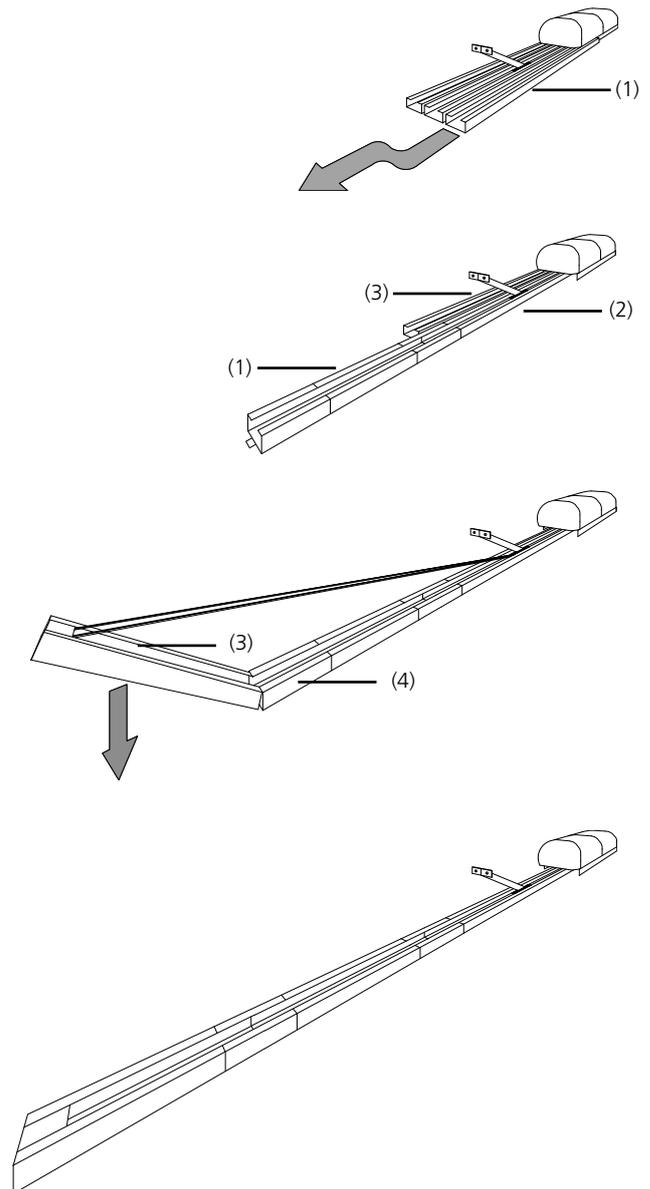
1. The operator is laying unpacked in front of you. The motor-head unit is on your right hand side.
2. Lay part (1) to the front.
3. Fix through pushing the C-profile coupling piece (2) over it all the way home.
4. Slide C-rail part (3) in front of part (1)
5. Set part (3) in the C-rail coupling piece (4) at an angle, inserting it from above as shown.
6. Press down part (3) to tension the chain.
7. Turn around the operator and screw in the milled nuts into the C-rail coupling pieces.

Your operator now is readily premounted for installation.

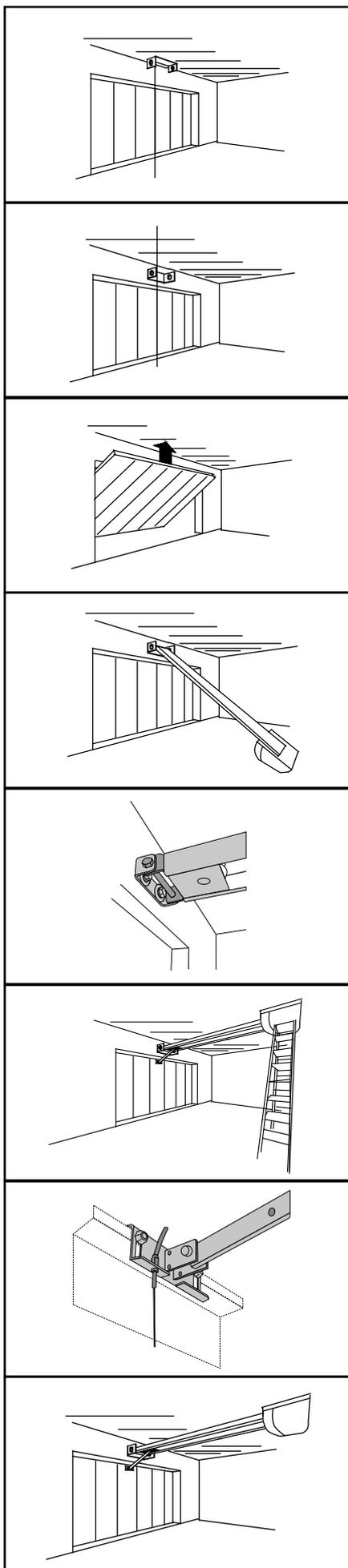
The chain has been pretensioned in the factory; **do not change the chain tension!**

ATTENTION:

The setting of the limit-switches and the automatic-force adjustment were set for factory testings. When you change the limit-switch settings you first have to run a new learning cycle to make the operator work properly! (Please refer to the pages 10+11)



Installing the operator



Measure the distance between the ceiling and the highest point reached by the garage-door (1).
The minimum-headroom necessary for mounting the operator is 35 mm. If there is less headroom please pay attention to page 2.

The front fixing-angle can be mounted either at the lintel or at the ceiling.

1. Measure the middle of your garage-door and make a mark on the lintel and the top of your door.
2. Fix the front fixing-angle in the middle- either at the lintel or at the ceiling. (We recommend the lintel if possible).
3. Attach the C-rail to the front fixing-angle (4). Put a carton-piece under the motor-head unit to avoid damages.
4. To fix the motor-head at the ceiling we recommend to use a ladder (5). When the operator is laying on the ladder you can open the garage-door. Adjust the C-rail according to the mark you made in the middle of the garage-door.
Fix the operator to the ceiling when you made sure the C-rail is running straight to the front.
5. Now fix the door-arm to the garage-door. Take care that the angle between the operator and the door-arm does not exceed a max. of 45° (it may be lower).

6. Before running the operator dismantle the doors locking-bolts! Else the operator cannot open the door and this will lead to damages on your operator and the garage-door. The self-locking gear of your operator will assure that the door cannot be manually opened (please also refer to page 8). If you wish an additional security by using door bolts, please ask your dealer for our locking-set, which is available as an optional extra.



The Emergency Release

In case of a power failure the garage door can be opened by hand. Therefore the operator first needs to be released.

When the garage door is the only entrance

It is necessary to connect the emergency release to the doors handle (pic. 1). Else the garage cannot be accessed in a power failure situation.

Proceed as follows:

1. Find out in which direction the door-handle moves when opening the door.
2. Drill a hole in that side of the door-handle which turns downwards.
3. Thread the cable through the hole and fix it with the enclosed metal-clamps. Be careful not to put a high tension on the emergency release cable - the operator then might release from the garage-door during a normal opening-cycle.
4. Check the function of the emergency release together with a second person. Stay inside the garage and close the door with the operator. Let the second person open the door manually with the door-keys. If this works, the emergency-release is mounted properly.

Do not leave the garage and close the garage-door with the operator before you have tested the emergency-release!

When there is a second entrance to the garage

You can use the supplied handle for the emergency release (pic. 2).

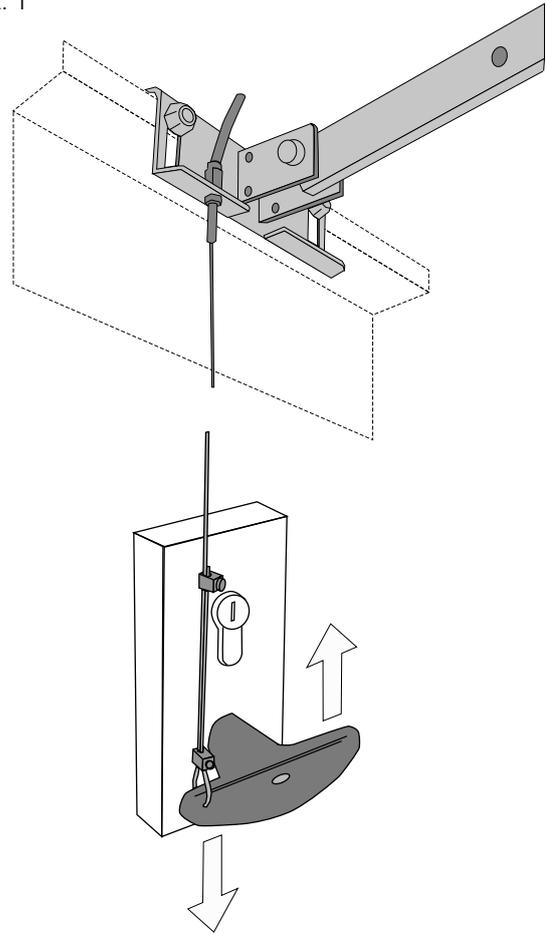
Thread the emergency release cable through the handle.

Fix the metal clamps to the cable where the handle shall be placed.

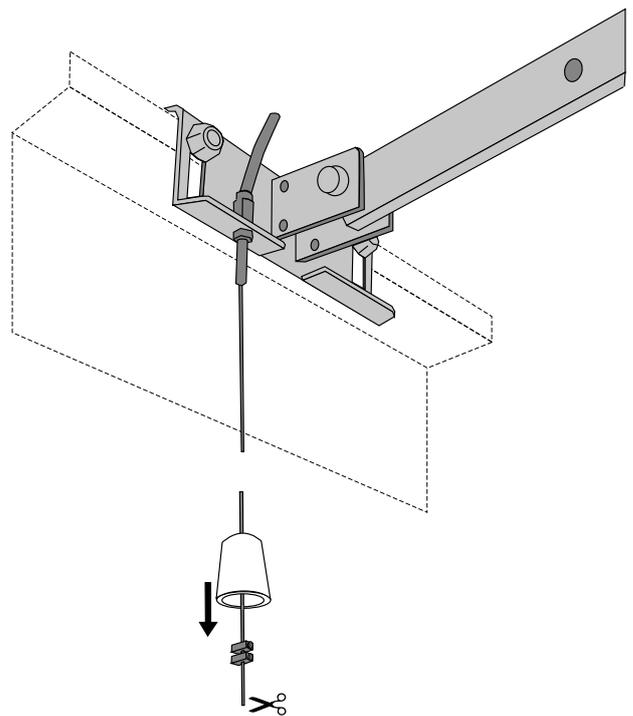
Shorten the cable below the metal clamps - the handle is now being held by the clamps.

In case of a power failure the user can now open the garage door by releasing the operator with the handle for the emergency release.

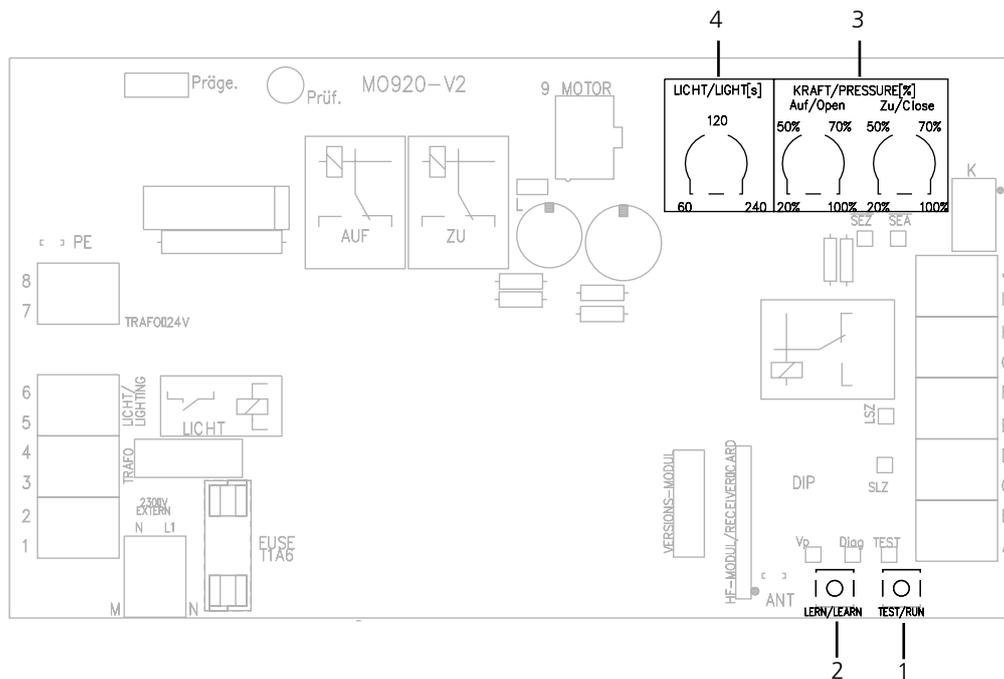
Pic. 1



Pic. 2



Devices for Adjustments



TEST/RUN-Button (1)

With this button you put the operator into operation. The button works on the OPEN-STOP-CLOSE principle, e.g. the first push opens the door, the second push stops the door and the third push closes the door etc.

The LED-lamp „TEST“ is switched on as long as you press the TEST-button and shows that the impulse was received and recognized by the electronics.

LERN/LEARN-Button (2)

This button has two functions:

1. Learning the forces
2. Registering (learning) a hand-transmitter

The LERN/LEARN-button must be pressed for approx. 3 sec.; the button can be released once the operators' lighting starts blinking. Whilst the operators' lighting is blinking you can either register a new hand-transmitter by pushing the hand-transmitters button OR you may start the learning of forces by pressing the button once again.

Details on both procedures can be obtained from the chapters „Automatic Force Setting“ and „Remote Control“.

Potentiometer „PRESSURE OPEN/CLOSE“ (3)

With these potentiometers you must adjust the maximum force for the force learning cycle (please refer to the chapter „Automatic Force Setting“) separately for OPENING and CLOSING direction. The operator will never override the adjusted forces, neither during the learning cycle nor in later use!

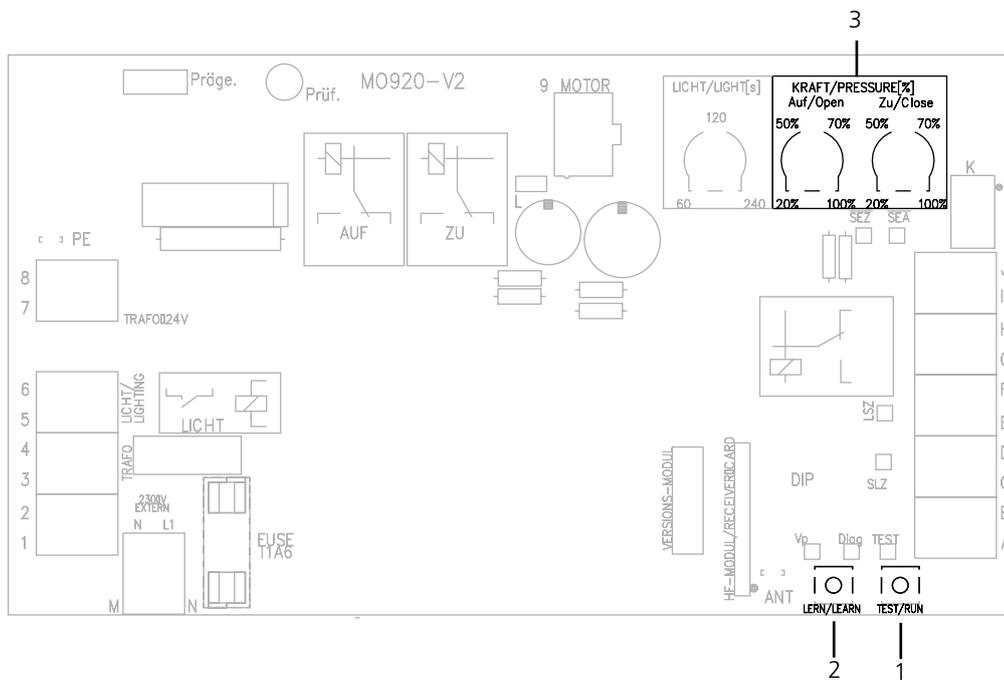
The maximum forces are shown in %. Depending on the operator model this means:

max.force %age	Operator with 75 kg max.	Operator with 100 kg max.
20%	15 kg approx.	20 kg approx.
50%	37 kg approx.	50 kg approx.
70%	52 kg approx.	70 kg approx.
100%	75 kg	100 kg

Potentiometer „LIGHT“ (4)

With this potentiometer the time for the internal lighting is adjusted in seconds. Values from 80 to 240 seconds are adjustable.

Limit-Switch Adjustment and Force Measurement



Pictures:

- 1: TEST/RUN-Button
- 2: LERN/LEARN-Button
- 3: Potentiometer for Force-Adjustment

Information

The first steps to use the operator are to adjust the limit-switches and to learn the required force. Without these adjustments the operator will only run for approx. 5 seconds when pressing the TEST-button.

The limit-switch adjustment and the force-learning are both done in one combined programming step. The operator needs to be set into programming-mode - the programming-mode is indicated by the blinking operators' lighting. During the programming-mode the limit-switch setting is done first, followed by the force-setting.

The procedure of adjustments:

- 1.) Adjustment of the maximum force for learning-mode
- 2.) Start of programming-mode
- 3.) OPENING limit-switch
 - b.) Adjustment CLOSING limit-switch
- 4.) Start the learning-cycle for force and distance.

Descriptions of each step will be found in the following text.

1.) Adjusting the maximum force for the learning-cycle

The force adjusted via the potentiometers „FORCE OPEN“ and „FORCE CLOSE“ determines the maximum forces for the learning cycle and in later use. The factory setting is 60% for both. On smaller, easy running doors a force of 40% will be sufficient.

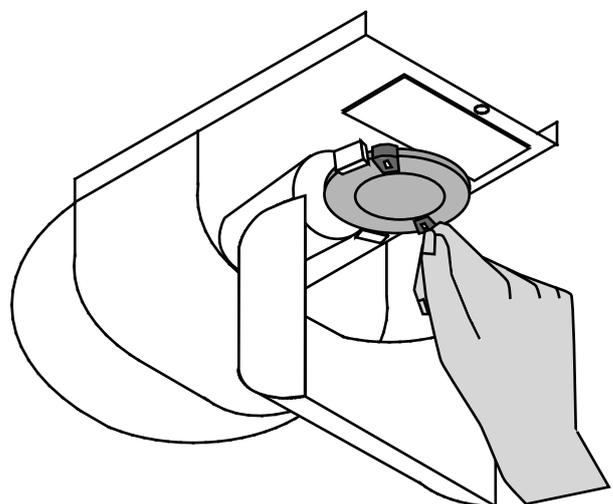
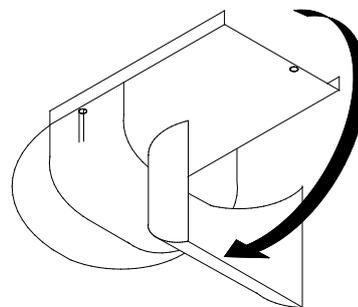
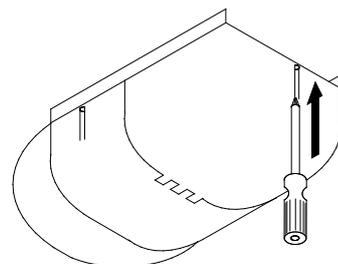
2.) Starting the learning-mode

Press the LERN/LEARN button (2) on the main electronics for approx. 3 seconds. When the operators' lighting begins blinking - release the LERN/LEARN button.

The operator now runs in learning-mode. *The learning-mode runs without time-limit - there is no need to rush with the following adjustments.*

3.) The Limit-Switch Adjustment

In CLOSING-position the garage door shall not be pressed hard onto the doors' frame. If it is pressed too hard then the operator will reverse after each CLOSING and the garage door will remain open for approx. 5 cm.



Limit-Switch Adjustment and Force Measurement

Basics: During the learning-mode the operator will follow the limit-switches automatically when these are moved.

E.g.: The operator hits the CLOSING limit-switch but the garage-door still is not completely closed. You can now slide the red limit-switch actuator off the CLOSING limit-switch - the operator will automatically start running in CLOSING direction until it hits the CLOSING limit-switch again. You do not have to press the TEST/RUN button to activate the operator.

The procedure works vice versa in OPENING direction.

Attention: the operator only follows the limit-switch in ONE direction - the CLOSING limit-switch is only followed in CLOSING direction, the OPENING limit-switch is only followed in OPENING direction.

To run the operator in another direction you have to press the TEST/RUN button.

The operators' lighting will be blinking throughout the whole procedure of setting the limit-switch.

3.)a.) Adjusting the OPENING limit-switch

1.) Run the operator in OPENING direction using the TEST/RUN button (1) (the button follows the principle OPEN-STOP-CLOSE etc., e.g. first impuls OPEN, second impuls STOP, third impuls CLOSE etc.)

2.) When the garage door is almost opened to maximum you have to stop the operator using the TEST/RUN button. Then slide the OPENING limit-switch actuator so that it hits the limit-switch.

3.) When the OPENING limit-switch is hit before the garage door is opened to maximum then simply slide the red limit-switch actuator further in OPENING direction - the operator will follow the movement.

3.)a.) Adjusting the CLOSING limit-switch

1.) Run the operator in CLOSING direction using the TEST/RUN button (1) (the button follows the principle OPEN-STOP-CLOSE etc., e.g. first impuls OPEN, second impuls STOP, third impuls CLOSE etc.)

2.) When the garage door is closed you have to stop the operator using the TEST/RUN button. Then slide the OPENING limit-switch actuator so that it hits the limit-switch.

3.) When the CLOSING limit-switch is hit before the garage door is closed then simply slide the red limit-switch actuator further in CLOSING direction - the operator will follow the movement.

4.) Starting the learning cycle

Press the LERN/LEARN button after the limit-switches are adjusted properly (the garage-door should then be closed and the CLOSING limit-switch is actuated).

The operator then starts the automatic learning cycle and will do three runs:

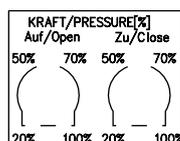
- OPENING the garage door
- CLOSING the garage door
- OPENING the garage door.

All three runs are done fully automatic.

After the learning cycle the operator will rest in OPENING position - the operators' lighting stops blinking. **The operator now is ready for use.** For programming the hand-transmitter please refer to the chapter „remote-control“.

Quick Reference

1.) Force Adjustment



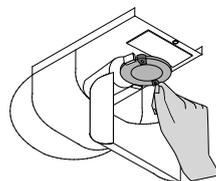
Adjust the maximum force for OPENING and CLOSING direction for the learning cycle

2.) Start programming mode



Press the LERN/LEARN button for approx. 3 seconds. The operators' lighting begins blinking - release the LERN/LEARN button

3.) Limit-Switch Adjustment



a.) Adjust OPENING limit-switch
b.) Adjust CLOSING limit-switch
(The operator can be run in OPENING and CLOSING direction using the TEST/RUN button)

4.) Start learning cycle

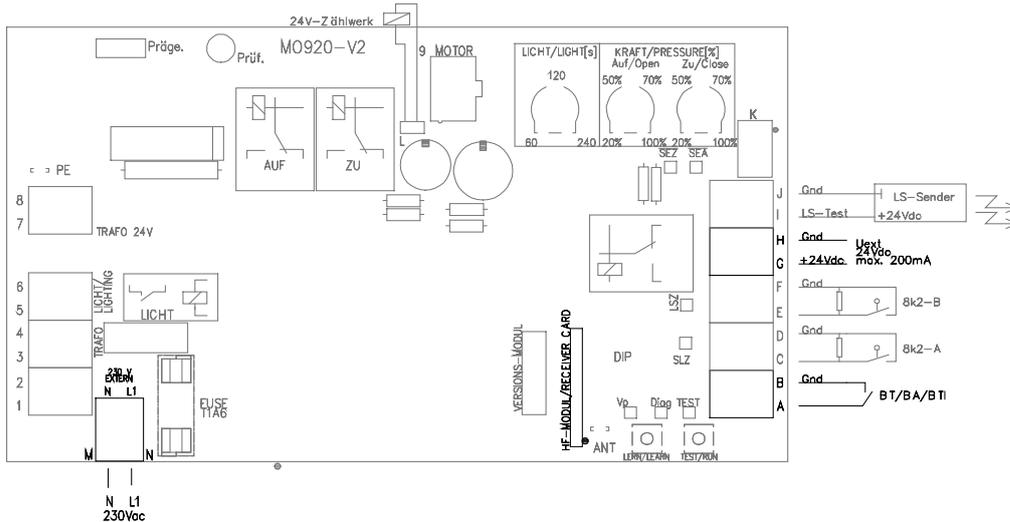


The garage door is closed and the operators hits the CLOSING limit-switch
Press the LERN/LEARN button shortly
The operator does three runs (OPENING-CLOSING-OPENING)

The learning cycle stops after the three runs. The garage door is then opened and the operators' lighting stops blinking. The programming is now complete.

5.) Proceed with the chapter „Remote Control“

The most important connectors

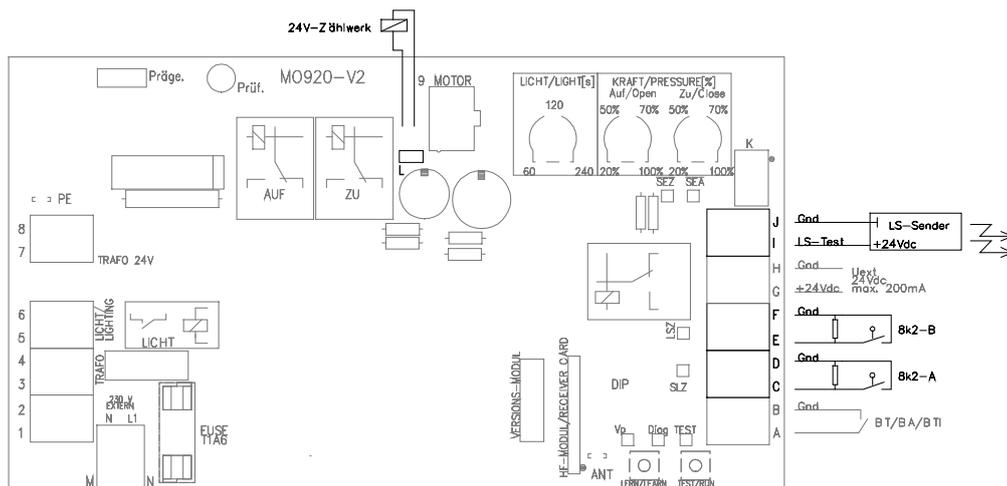


Component	Connector	Function
Push-button and Key-switch	A + B	Resistance-free connector for push-button and key-switch - do not bring any voltage on these connectors! When using an external receiver the impuls-wires are connected to this terminal.
24V DC Supply	G + H	24V DC power supply for external components (external receiver, photo-cell), a maximum of 200 mAmp. is allowed.
230V AC Supply	M + N	230V AC power supply for external components. Shortcuts created by external components on this connector will influence the house-fuse directly.
Receiver-Module	HF-Modul / Receiver-Card	Plug for Seip remote-receiver cards.

Advanced Connectors

Component	Function
<p>Photo-Cell without selftest:</p> <p>C + D (with 8,2 kOhm resistor)</p>	<p>Wiring:</p>
<p>Photo-Cell with selftest</p> <p>C + D (Photo-Cell receiver)</p> <p>I + J (Photo-Cell transmitter)</p>	<p>The main electronics provides the possibility of testing the photo-cell before every movement - within milliseconds a malfunction of the photo-cell is simulated. To enable the main-electronics for this testing the impuls-cables of the photo-cells' transmitter must be connected to I + J and the impuls-cables of the photo-cells' receiver must be connected to C + D.</p> <p>ATTENTION! If you want to use this selftest option, you <u>must</u> connect the photo-cell <u>before</u> the limit-switch setting and force-adjustment. Else there will be no selftest in later use.</p>

Advanced Connectors



Security Beam and Hatch Door

E + F
(mit 8,2 kOhm Auswertung)

Function

OPENING direction: when releasing the CLOSING limit-switch the connector is checked for 3 seconds (= hatch door closed or opened). Impulses coming in later during the OPENING cycle will be ignored.
CLOSING direction: the connector is being checked throughout the whole CLOSING cycle. If an obstacle is recognized (by the security-beam) the operator will reverse (please also refer to chapter „Special Functions“, paragraph „DIP-Switch 4“).

Two devices may be connected to this connector:

1.) Security-Beam

This device is normally equipped with a 8.2 kOhm resistor. Therefore you have to remove the 8.2 kOhm resistor from the connectors E + F before connecting the security-beam.

2.) Hatch-Door Switch

A hatch-door within the garage door can be secured with a switch - when the switch is not activated (e.g. the hatch-door stands open) the operator will not work.

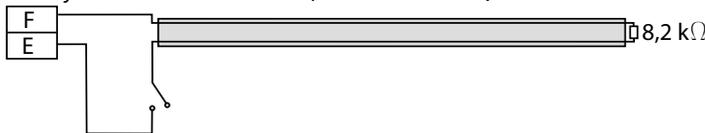
Security Beam (8,2 kOhm resistor connected in line):



Hatch-Door Switch (8,2 kOhm resistor connected in line):



Security Beam and Hatch-Door (connected in line):



Modules for Special Functions

„Versions Mo-
dule“

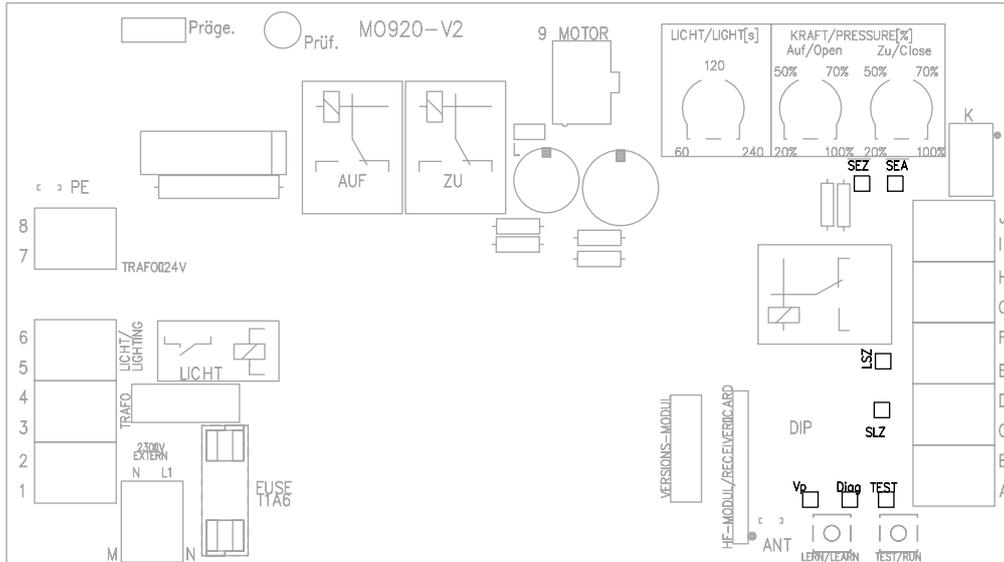
Plug for optional modules providing special functions:

- Automatic Closing (AZ)
- 1 Second Impuls (resistance free) to activate an external device
- One-Way traffic control (traffic-light regulation)
- Dead-Man-Function (push-button needs to be pressed during the whole CLOSING cycle, else the operator stops)

Cycle Counter

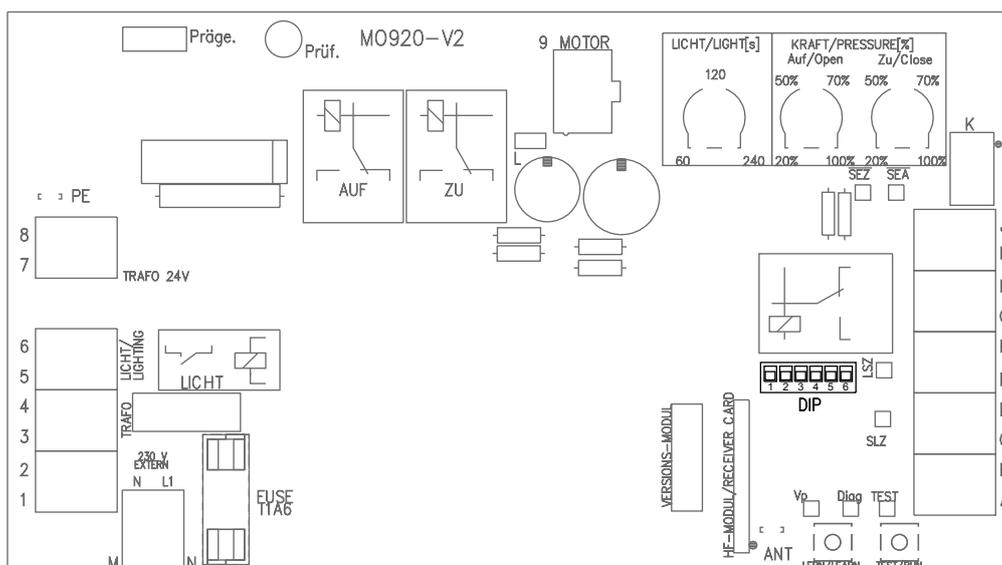
L A counter for OPENING/CLOSING cycles can be connected (24V)

LED-Lamps



LED	Function	ON	OFF
LED „TEST“	„ON“ when a device connected to A+B (push-button, key-switch) or the electronics' TEST-button gives an impuls	Incoming Impuls	No incoming impuls
LED „Diag“	„ON“ when an impuls from a programmed hand-transmitter is received. More functions of this LED are named in the chapters „Learning the force“, „Remote-Control“ and „Error messages“.	Incoming impuls from a programmed hand-transmitter	No incoming impuls from a hand-transmitter
LED „Vp“	„ON“ when mains power supply is o.k.	Mains power supply o.k.	No mains power
LED „SLZ“	Photo-Cell Possible Errors: - an obstacle is registered by the photo-cell - the connection wires might be broken or a short-cut was created - the photo-cell is damaged - the 8.2 kOhm resistor is not connected properly	Error or obstacle	o.k.
LED „LSZ“	Security-Contact / Hatch-Door Switch Possible Errors: - the security-beam registers an obstacle - the hatch-door is open - the connection wires might be broken or a short-cut was created - Security-beam or hatch-door switch is damaged - the 8.2 kOhm resistor is not connected properly	Error or obstacle	o.k.
LED „SEZ“	Checks the function of the CLOSING limit-switch - when the limit-switch is activated, the LED goes on. If it does not, then the limit-switch is damaged.	aktivated	not activated
LED „SEA“	Checks the function of the OPENING limit-switch - when the limit-switch is activated, the LED goes on. If it does not, then the limit-switch is damaged.	aktivated	not activated

Special Functions



DIP-Switch Settings

DIP-Switch	Function	ON	OFF
1	Automatic Force Measurement Standard setting: ON <i>ATTENTION! In countries of the European Union the operator must be run with automatic force measurement - running it on manual force is illegal by law!</i> In non-European countries the manual force may be used. Please pay attention to the fact, that the learning-cycles (chapter „Limit-Switch Settings and Force Adjustment“) must also be done when manual force is chosen!	Yes	No
2	Additional Force Standard setting: ON For very light garage doors we recommend to set the switch to OFF	Yes	No
3	Pre-Warning light before every movement Standard setting: OFF When choosing ON a pre-warning of approx. 4 sec. will be made before each movement of the garage door.	Yes	No
4	Full reversion in OPENING direction Standard setting: ON The operator reverses approx. 20 cm when an obstacle in CLOSING direction is recognized. If the switch is set to ON the operator will reverse completely in OPENING direction until the OPENING limit-switch is reached.	Yes	No
5	No reversion on Security-Beam when door closed Standard setting: OFF This function is only needed when a security-beam is connected. In garages with an uneven floor the security-beam might lead to unwanted reversion when the garage door is almost closed. If the switch is set to ON the reversion in SOFT-STOP will be prevented - the operator simply stops and the door remains closed. HINT! Using this function might lead to problems programming new hand-transmitters via an existing hand-transmitter. For that programming the operator needs to hit the CLOSING limit-switch. Please also refer to chapter „Remote Control“	Yes	No
6	Side Hinged Doors Standard setting: OFF For use with a side hinged door the OPENING and CLOSING directions need to be swapped - setting this switch to ON will do that automatically.	Yes	No

Programming the hand-transmitters

Basics

As a standard the operator is equipped with a 433 MHz AM remote-control set. The coding is done via rolling code - the code is changed after each impuls; receiver and transmitter agree completely automatic about the next code to be used. New codes will be chosen out of a pool of billions of possible codes.

Your operator is equipped with our standard remote-control set when you hand-transmitters looks like the one shown on the right hand side. The 4-channel MIDI-transmitter is standard equipment, the 2-channel MINI-transmitter is available as an optional.

If your operator is equipped with another remote-control set, please refer to the manufacturers instructions for programming.

Programming Transmitter and Receiver

To use a hand-transmitter it must first be registered (programmed) by the receiver. Only one hand-transmitter button can be used for one receiver.

Registering the first hand-transmitter

The first hand-transmitter (e.g. no hand-transmitter has been registered for the receiver, yet) must be learned directly via the operators' main electronic:

1. Press the LERN/LEARN button on the main electronic for approx. 3 seconds until the LED „Diag“ starts blinking (the operators lighting will also start blinking) and release the LERN/LEARN button.
2. Press the hand-transmitter button you want to register to the receiver - the LED „Diag“ stops blinking (so does the operators' lighting). The transmitter is now registered.

You register further hand-transmitters as to the above mentioned procedure. (A maximum of 256 transmitters is possible). Alternatively you can register additional hand-transmitters from a distance as described below.

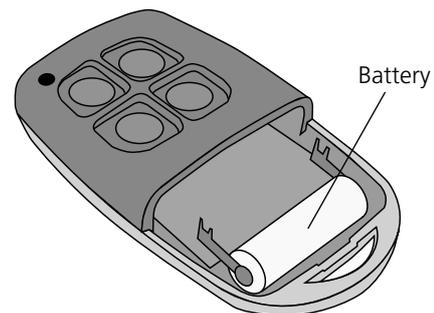
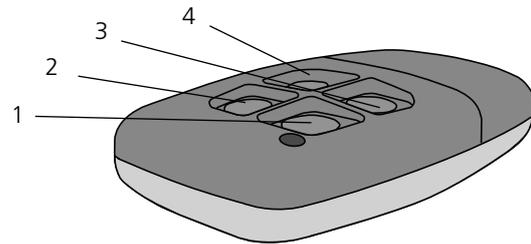
Registering additional hand-transmitters

Once at least one hand-transmitter was registered by the receiver you may program additional hand-transmitters from a distance:

1. The garage door must be closed
2. Open the garage door approx. 30 cm and close it again.
3. After the garage door is closed you have got 10 seconds to press the buttons 1+2 simultaneously on the registered hand-transmitter - the operators' lighting then starts blinking.
4. The lighting will keep blinking for another 10 seconds - during that period of time you must press the button on the new hand-transmitter which you want to use with the operator. Once the new transmitter is registered the operators' lighting stops blinking.

The procedure must be repeated for each new hand-transmitter.

4-channel MIDI-transmitter,
433 MHz, rolling code

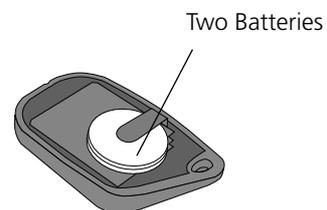


Usable types of batteries: A23, 23A, 23L, EL12, VR 22 and MN 21

Voltage: 12V

Used batteries must be disposed according to national laws!

2-channel MINI-transmitter (optional extra),
433 MHz, rolling code



Two batteries, type CR1616 or DL1616 are required.

Voltage: 2* 3V (=6V)

Used batteries must be disposed according to national laws!

Technical Data

	TS 75	TS 100
Maximum Pulling Force (adjustable)	70 kg (+/- 4%)	100 kg (+/- 4%)
Maximale Anzahl		
Force-Setting for Operation	automatic	automatic
Motor	24V DC, low-noise	24 V DC, low-noise
Running Speed	14,5 cm/sec.	14,5 cm/sec.
Speed in Soft Mode	8 cm/sec.	8 cm/sec.
Lighting	230V AC, max. 40 watts	230V AC, max. 40 watts
Lighting Durance (adjustable)	80 to 240 seconds	80 to 240 seconds
Duty Cycle	80%	80%
Power Consumption in Stand By	2,3 watts	2,3 watts
Power Supply	190-250V AC	190-250V AC
Transformer	230V AC, 24V DC	230V AC, 24V DC
Pre-Warning Light	adjustable	adjustable
Stop on Security Beam in Closing Dir.	adjustable	adjustable
Automation of Side Hinged Doors	adjustable	adjustable
Nett Running Length	2.640 mm	2.640 mm
Max. Running Length with Extension	4.150 mm	4.150 mm
Overall Length	3.215 mm	3.215 mm
Hight Motor Head	170 mm	170 mm
Length Motor Head	370 mm	370 mm
Width Motor Head	260 mm	260 mm
Minimum Space above the door	35 mm	35 mm
Weight including packaging	22 kg	

Optional Special Functions

For the TS-series operators we provide plug-on module cards for advanced functions:

Module „Automatic Closing“ (AZ)

For automatic closing of the garage after an adjustable time from 80 to 240 seconds.

The card is also equipped with a connector giving an impuls for one second when the garage door is opened - an automatic external lighting can be connected here.

Special functions as „fast closing“ (the garage door will be closed as soon as the car passed the photo-cell) and „additional photo-cell in opening direction“ are adjustable on the module-card.

Module „Separated Impuls“

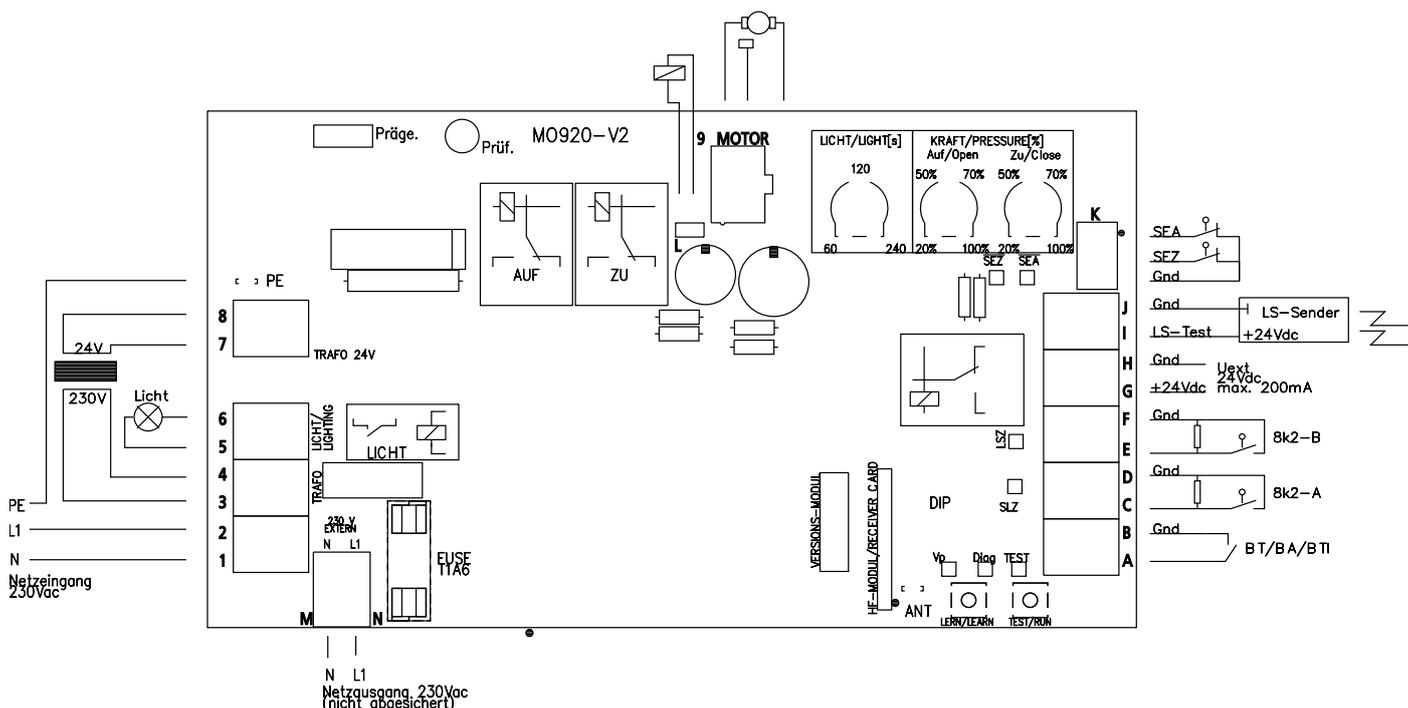
The impulses for OPENING and CLOSING direction are given separately - one button will allways OPEN the door and the other will allways CLOSE it. It can be adjusted whether either direction shall work on impulse or steady press of the button (e.g. the button needs to be pressed for the whole OPENING or CLOSING cycle - when the button is released the door stops)

Module „One Way Traffic Control“

A traffic control for narrow access to/from a garage. Red and green traffic lights can be connected.

Installation and User manuals are enclosed to the modules.

Wiring



Internal Wiring

1	Blue, mains supply, 230V
2	Brown, mains supply, 230V
3	Black, transformer, 230V
4	Black, transformer, 230V
5	Brown, Lighting, 230V
6	Blue, Lighting, 230V
7	White, transformer, 24V
8	Red, transformer, 24V
9 MOTOR	Connector for the plug from the motor
K	Connector for the plug from the limit-switches
PE	Earthing from the printed circuit board to the base plate
Earthing of the mains supply	The earthing of the mains supply (green/yellow) is connected to the base plate with a screw (the screw is marked with an earthing symbol)

External connections

(Explained on pages 12 + 13)

A + B	Floating connector for push-button, key-switch and the impuls-cables of an external receiver
C + D	Floating connector with a 8,2kOhm resistor for impuls-cables from a photo-cell receiver
E + F	Floating connector with a 8,2 kOhm resistor for security beam and hatch-door switch
G + H	24V DC supply for external components (max. 200 mAmp.)
I + J	24V DC for a photo-cell transmitter when a self-test before every movement of the door is required
L	Connector for a cycle counter (24V) - all openings will be counted
M + N	230V AC for external components - not secured by the electronics. Shortcuts will blow the house fuse.

Devices for adjustments

Potentiometer „Licht/Light“	Adjustment of the time for the internal lighting (60-240 Sek)
Potentiometer „Force Open“	Adjustment of the maximum force for the opening direction
Potentiometer „Force Close“	Adjustment of the maximum force for the closing direction
Button „Test/Run“	Runs the operator - OPEN-STOP-CLOSE
Button „Lern/Learn“	For automatic force setting and registration of hand-transmitters

Other

HF-Modul/Receiver Card	Plug for receiver-module, 433 MHz
Versions-Modul	Plug for modules for special functions
FUSE	Fuse T1,6, 250V

Spare Parts

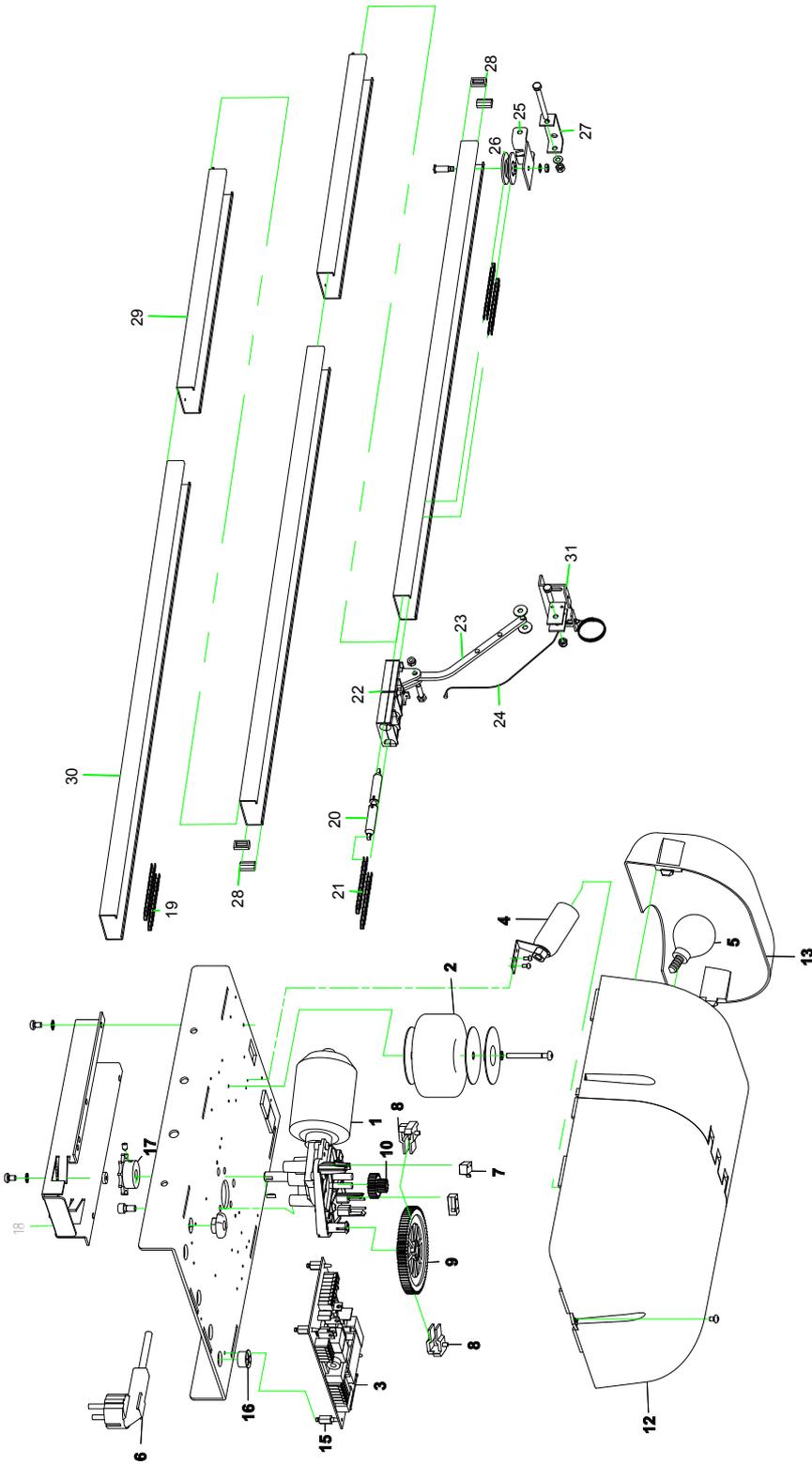


Abb.-Nr.	Teilebezeichnung	Art.-Nr.	Abb.-Nr.	Teilebezeichnung	Art.-Nr.
			19	Kette	PM0301
			19a	Verschlussglied	PM0310
			20	Kettenspanner	PH2200
			21	Transportschlitten	PH2600
			22	Torarm	PH2403
			23	Bowdenzugkabel	M07000
			24	Umlenkrollenhalter	PM12002
			25	Umlenkrolle	PI0120
			26	Sturzbefestigungswinkel	PM04003
			27	Kettenführungsblock	PI0502
			28	Überwurf-C	PM1400
			29	C-Schienestück, 1m	PH3000

EC Declaration of Conformity

Low-Voltage Directive 73/23/EEC

and amendments

Electro-Magnetical Compatibility 98/336/EEC

and amendments



We,
Wir,

Seip Antriebstechnik
Grombacher Straße 83, 75045 Walzbachtal-Jöhlingen, Deutschland

hereby declare, that the following products comply to the mentioned EC-regulations.
*erklären hiermit, daß die nachfolgenden genannten Produkte den unten angegebenen
EG-Richtlinien entsprechen.*

Type of Product <i>Produktart</i>	Model <i>Modell</i>
Garage-Door-Operator/ <i>Torantrieb</i>	TS 75
Garage-Door-Operator/ <i>Torantrieb</i>	TS 100

Approved according to 89336 EWG and 73/23 EWG
Geprüft nach 89336 EWG und 79/23 EWG

Referring EC-regulations:
Angewandte harmonisierte Normen:

Low-Voltage Directive
Niederspannungsrichtlinie
- **EN 60335-1:94+A11:95+A12:96**

Electromagnetic Compatibility
Elektromagnetische Verträglichkeit
- **EN 55014-1:1993/A1:97**
- **EN 55014-2:1997**
- **EN 61000-3-2:95+A1:98+A2:98**
- **EN 61000-3-3:95**

Safety in use of power operated doors, Requirements
Nutzungssicherheit kraftbetätigter Tore, Anforderungen
- **EN 12453:2000**

Safety in use of power operated doors, Test methods
Nutzungssicherheit kraftbetätigter Tore, Prüfverfahren
- **EN 12445:2000**



Grombacher Straße 83
75045 Walzbachtal-Jöhlingen
Germany
www.seip.com

EC Declaration of Conformity

in accordance with the Radio and Telecommunications
Terminal Equipment Act (FTEG) and Directive 1999/5/EC
(R&TTE Directive)

EG-Konformitätserklärung
gemäß dem Gesetz über Funkanlagen und Telekomm
unikationsendeinrichtungen (FTEG) und der Richtlinie
1999/5/EG (R&TTE)



We,
Wir,

Seip Antriebstechnik
Grombacher Straße 83, 75045 Walzbachtal-Jöhlingen, Deutschland

declare that the product
erklären, daß das Produkt

SKR 433

Code B43A023004

Hand-Transmitter as remote-control for garage door operators
Handsender als Fernbedienung für Garagentorantriebe
(Short Range Device)
(Funkgerät geringer Reichweite (SRD))

complies with the essential requirements of §3 and the other relevant provisions of the FTEG (Article 3 of the R&TTE Directive), when used for its intended purpose.
bei bestimmungsgemäßer Verwendung den grundlegenden Anforderungen des §3 und den übrigen einschlägigen Bestimmungen des FTEG (Artikel 3 der R&TTE) entspricht.

§3(1)1, (Article 3(1)a) does not refer to this type of product.
§3(1)1, Artikel 3(1)a bezieht sich nicht auf diesen Produkttyp, es gibt hierzu keine Norm

Protection requirement concerning electromagnetic compatibility §3(1)(2), (Article 3(1)(b))
Schutzanforderungen in Bezug auf die elektromagnetische Verträglichkeit §3(1)2, Artikel 3(1)b)

EN 300 220-1/1997
EN 300 683/1997
EN 60950:2000
NSR / Low Voltage Directive 73/23/EEC;93/68/EEC
EMV / EMC Directive 89/336/EEC;92/31/EEC;93/68/EEC



Grombacher Straße 83
75045 Walzbachtal-Jöhlingen
Germany
www.seip.com

