



Motor unit for hinged gates

Comfort 516



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DANGER!

IMPORTANT SAFETY INSTRUCTIONS:

ATTENTION! IT IS VITALLY IMPORTANT FOR THE SAFETY OF PERSONS THAT YOU FOLLOW ALL THE INSTRUCTIONS. KEEP THESE INSTRUCTIONS IN A SAFE PLACE.

IMPORTANT INSTRUCTIONS FOR SAFE INSTALLATION:

ATTENTION! SERIOUS INJURIES CAN BE CAUSED IF THE EQUIPMENT IS NOT INSTALLED CORRECTLY – BE SURE TO FOLLOW ALL THE INSTALLATION INSTRUCTIONS.

Regarding this document

- Original instruction manual.
- Part of the product.
- Read these instructions carefully before use and keep them in a safe place for future reference.
- Protected by copyright.
- No part of this manual may be reproduced without our prior approval.
- Subject to alterations in the interest of technical progress.
- All dimensions are given in millimetres.
- The drawings are not true to scale.

Meaning of symbols

DANGER!

Safety notice indicating a danger that will directly result in death or severe injury.

WARNING!

Safety notice indicating a danger that could result in death or severe injury.

CAUTION!

Safety notice indicating a danger that could result in slight or moderate injuries.

NOTICE


Safety notice indicating a danger that could result in damage to property or in irreparable damage to the product.

CHECK

Reference to a check that needs to be carried out.

REFERENCE

Reference to separate documents that must be observed.

- Instruction requiring action
- List, itemisation
- Reference to other sections of this document
-  Factory settings

1. General safety instructions

DANGER!

Failure to comply with the documentation could result in life-threatening danger!

- Be sure to follow all the safety instructions in this document.

1.1 Intended use

- The operator system is to be used only for opening and closing gates.
- Never use the gate system to help move persons or objects.

The following applies for the product Comfort 516:

- The following values must be observed:
 - maximum tensile force
 - maximum compressive force
 - maximum gate size
 - maximum gate weight
- „11.1 Technical data“
- The product is intended for private use.
- The product is suitable for operating hinged gates only.
- The motor unit requires a suitable control unit.

1.2 Target group

- Installation, connection, setting in operation and servicing: qualified, trained specialist personnel.
- Operation, inspection and servicing:
The operator of the gate system.

Requirements to be met by qualified and trained specialist staff:

- Knowledge of the general and specific safety and accident-prevention regulations.
- they have knowledge of the relevant electrical regulation,
- Training in the use and care of appropriate safety equipment.
- Adequate instruction and supervision by qualified electricians.
- The ability to recognise hazards that can be caused by electricity.
- Knowledge of the application of the following standards
 - EN 12635 (“Doors and gates - Installation and use”),
 - EN 12453 (“Safety in use of power operated doors - Requirements”),
 - EN 12445 (“Safety in use of power operated doors - Test methods”),
 - EN 13241-1 (“Industrial, commercial and garage doors and gates - Part 1: Products without fire resistance or smoke control characteristics”)

Requirements to be met by the operator of the door system:

- Knowledge and safekeeping of the instruction manual.
- Safe and proper keeping of the inspection logbook.
- Knowledge of general safety and accident-prevention regulations.
- Instruction of all persons who use the door system.
- Ensure that the door system is serviced and maintained periodically by qualified and trained professionals.

Special requirements apply to the following users:

- Children aged eight and above.
 - Persons with reduced physical, sensory or mental capabilities.
 - Persons with a lack of experience and knowledge.
- These users are only authorised to operate the device.
- Special requirements:
- The users must be supervised.
 - The users must have been briefed on how to use the device.
 - The users must understand the dangers involved in handling the device.
 - Children are not allowed to play with the device.

1.3 Warranty

The product is manufactured in accordance with the directives and standards listed in the manufacturer’s declaration and in the declaration of conformity. The product left the factory in perfect working order.

In the following cases, the manufacturer will accept no liability for damage. The warranty on the product and accessory components becomes void in the event of:

- Failure to observe these operating instructions.
- Incorrect handling and use of the product for anything other than its intended purpose.
- Work being carried out by unqualified personnel.
- Changes or modifications to the product.
- The use of replacement parts that have not been approved or were not manufactured by the manufacturer.

The warranty does not cover batteries, rechargeable batteries, fuses or bulbs.

Further safety instructions are given in the relevant sections of the document.

- „4. Installation“
- „6. Care and cleaning“
- „8. Disassembly“

2. Supply package

The Comfort 516 can be supplied in the following versions, as required:

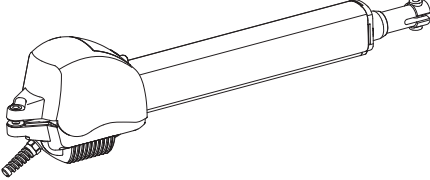
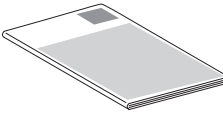
Single wing gate system:

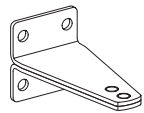









- Comfort 516 - short version
- Comfort 516 L - long version

Double wing gate system:

- Comfort 516 - short version
2x motor unit with short cable (1.5 m)
- Comfort 516 L - long version
2x motor unit with short cable (1.5 m)

The scope of supply is doubled in the case of double wing gate versions.

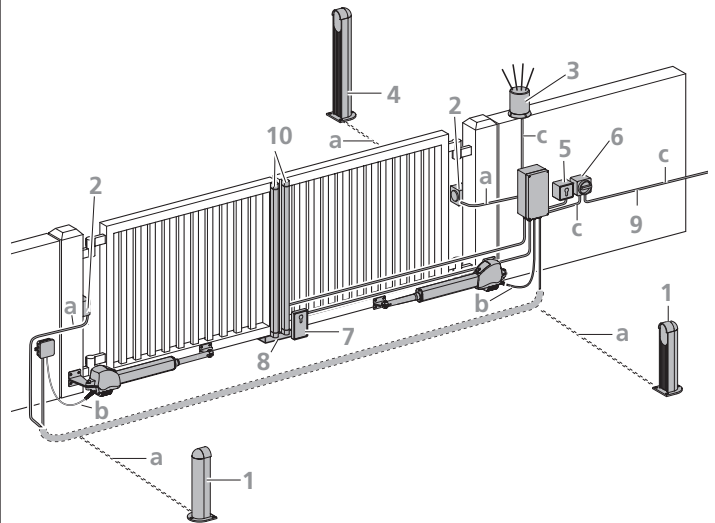
Item	Operator	
1		1x
2		1x

Item	Accessories	
3		1x
4		1x
5		1x
6		8x
7		4x
8		8x
9		2x
10		2x
11		1x
12		1x

3. Gate system

Overview

3 / 1



This is just an example of a gate system and can vary according to the type of gate and the associated equipment. The gate system shown comprises the following components:

- 1 Photocell
- 2 Photocell
- 3 Signal light
- 4 Key switch post (for code button, transponder, ...)
- 5 Wrench
- 6 Main switch (mains isolator switch)
- 7 Electric lock
- 8 Floor bumper
- 9 Mains cable
- 10 Closing edge safety device (CESD/8K2)

Cable cross-sections:

- a 2 x 0.5 mm²
- b 6 x 0,75 mm²
- c 3 x 1.5 mm²
- d 2 x 0.75 mm²

➡ REFERENCE

For the installation and cabling of the gate sensors, control elements and safety equipment, the relevant installation instructions must be observed.

4. Installation

DANGER!

Life-threatening danger due to electric shock!

- It is vital that you disconnect the operator system from the power supply before commencing cabling work. Take measures to ensure that the power supply remains disconnected for the duration of the work.
- Observe the local safety regulations.
- It is imperative that you lay power cables separately from control cables. The control voltage is 24V DC.

NOTICE

Material damage resulting from incorrect installation of the operator!

To avoid installation errors and damage to the gate or operator system, the following installation instructions must be observed at all costs.

- Ensure that the gate is in good mechanical order:
 - The gate can be moved easily.
 - The gate opens and closes properly.
- When installing the operator system, the gate must be in the closed position.
- Only use fixing materials that are suitable for the foundation material in question.

NOTICE

Material damage may result from improper care of drive!

Grease and oil can attack the plastic materials of the drive system and lead to the plastic becoming cracked and fractured. To prevent damage, the drive system must **not** be oiled or greased.

4.1 Preparing for installation

Before commencing installation, the following works must be carried out without fail.

Supply package

- Check that all the parts are present.
- Check that all the necessary accessory parts for your installation situation are present.

Gate system

- Ensure that a suitable mains connection and a mains isolator switch are available for your gate system. The minimum cross-section of the earth cable is 3 x 1.5 mm².
- Ensure that all cables are suitable for outdoor use with respect to UV resistance and cold resistance.
- Ensure that a suitable control unit is available for your gate system.
- Ensure that in the case of double wing gate systems a line from the operator to the controls is available on-site.
The minimum cross-section of the cable must be 6 x 0.75 mm².
- Ensure that your gate system has a gate stop in the CLOSE direction.
- Disassemble the gate latches or render them inoperable.
- Ensure that the gate can be easily moved by hand.
- Please note the gate requirements:
→ „11.1 Technical data“

For gate wing widths of 2 metres or more, the use of an electric lock is recommended.

REFERENCE

When using and installing accessory equipment, observe the corresponding documentation.

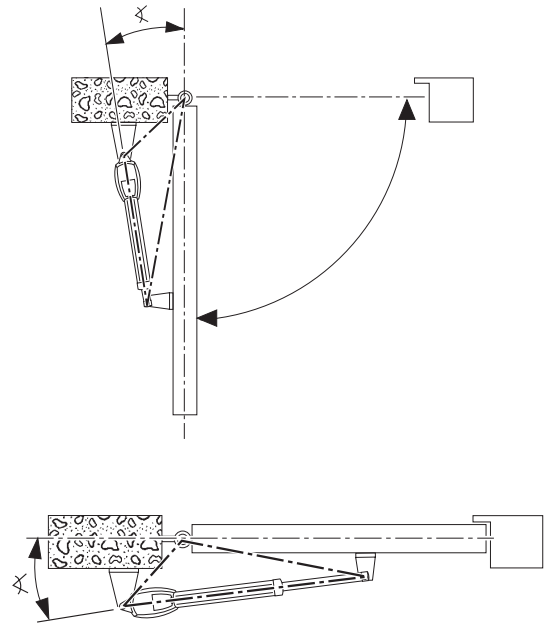
NOTICE

Possible malfunction of the operator system!

- Ensure that the following conditions are met:
 - The motor unit must be located in a triangle of forces and should not be parallel to the gate at the OPEN and CLOSED gate positions.
 - The movement stroke must be as large as possible.

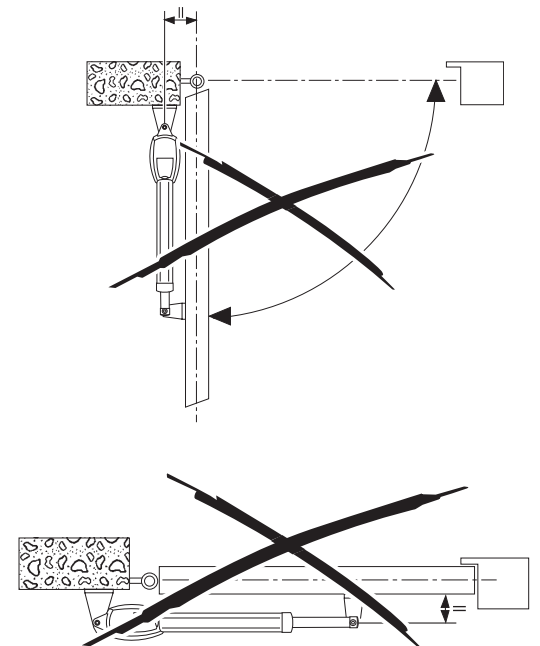
Right: Motor unit is in triangle of forces

4.1 / 1



Wrong: Motor unit is parallel to the gate

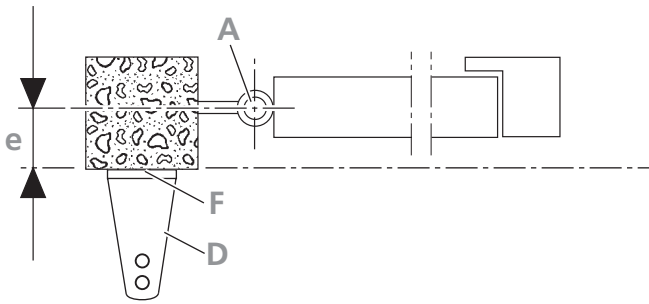
4.1 / 2



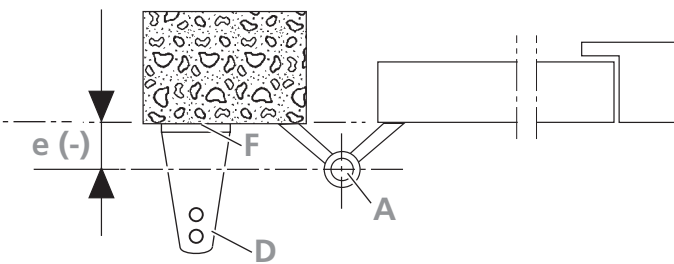
4.2 Installation dimensions

Find dimension e

4.2 / 1



4.2 / 2



The required post bracket is calculated from dimension e.

- e Distance between post angle screw plate and the gate pivot.
- A Gate pivot
- F Screw plate of the post angle

Positive e value (Fig. „4.2 / 1“)

The pivot (A) lies behind the screw plate (F) of the post bracket (D). Installation can be carried out using the components in the standard package.

Negative e value (Fig. „4.2 / 2“)

The pivot (A) lies in front of the screw plate (F) of the post bracket (D). Before installing, let your specialist dealer check the on-site situation.

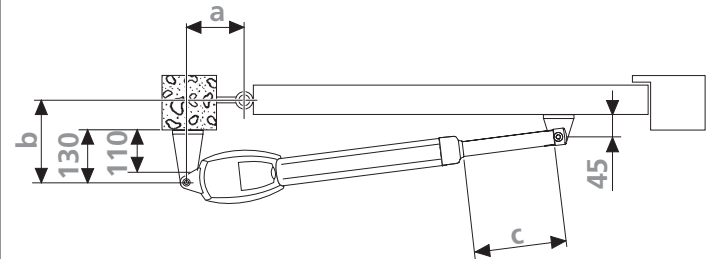
To ensure that the hinged gate runs smoothly, dimension (a) and dimension (b) must be as large as possible.

The possible combinations are shown in the table of dimensions below:

- Measure the existing dimension (b).
- Determine the opening angle (d).
- Calculate the corresponding dimension (a) and the movement stroke (c) using the dimension table.

Gate in CLOSED position (installation position)

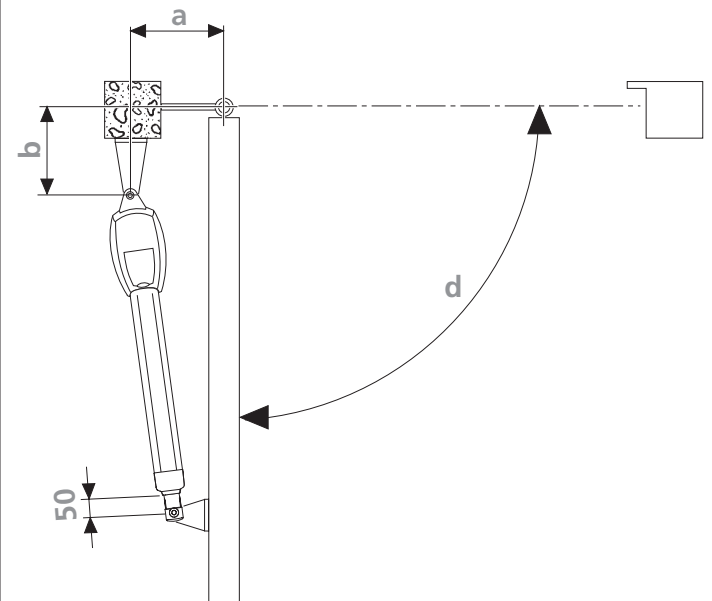
4.2 / 3



- c min. 380, max. 420 (Comfort 516)
- min. 580, max. 620 (Comfort 516 L)

Gate in OPEN position / opening angle

4.2 / 4



Dimension table for Comfort 516

(b)	(a)				
	80	100	140	160	200
110	d = 95°	d = 105°	d = 114°	d = 124°	d = 115°
130	d = 95°	d = 105°	d = 110°	d = 120°	d = 110°
150	d = 95°	d = 102°	d = 110°	d = 116°	d = 103°
170	d = 95°	d = 100°	d = 108°	d = 110°	d = 95°
190	d = 93°	d = 98°	d = 106°	d = 102°	d = 92°
210	d = 92°	d = 97°	d = 101°	d = 95°	d = 87°
230	d = 92°	d = 97°	d = 93°	d = 88°	
250	d = 92°	d = 95°	d = 87°		
270	d = 91°	d = 90°			

Dimension table for Comfort 516

(b)	(a)				
	220	240	260	280	300
110	d = 108°	d = 103°	d = 97°	d = 96°	d = 90°
130	d = 104°	d = 98°	d = 93°	d = 92°	d = 87°
150	d = 98°	d = 92°	d = 90°	d = 90°	
170	d = 90°	d = 90°	d = 87°		
190	d = 88°	d = 86°			

The preferred dimensions are shaded in grey in the table (for gate wings up to 2.5 m wide and weighing up to 200 kg).

The dimension tables apply for standard hinges only.

Dimension table for Comfort 516 L					
(b)	(a)				
	80	100	140	160	200
110			d = 112°	d = 123°	d = 125°
130			d = 110°	d = 120°	d = 125°
150		d = 95°	d = 105°	d = 115°	d = 120°
170	d = 90°	d = 95°	d = 102°	d = 108°	d = 115°
190	d = 90°	d = 95°	d = 100°	d = 105°	d = 110°
210	d = 90°	d = 95°	d = 100°	d = 100°	d = 105°
230	d = 90°	d = 95°	d = 100°	d = 100°	d = 102°
250	d = 90°	d = 95°	d = 97°	d = 97°	d = 97°
270	d = 90°	d = 95°	d = 97°	d = 97°	d = 97°
290	d = 90°	d = 95°	d = 95°	d = 95°	d = 95°
310	d = 90°	d = 95°	d = 95°	d = 95°	d = 95°
330	d = 90°	d = 95°	d = 95°	d = 95°	d = 95°
350	d = 90°	d = 95°	d = 95°	d = 95°	
370	d = 90°	d = 95°	d = 95°	d = 95°	
390	d = 90°	d = 95°	d = 95°		
410	d = 90°	d = 95°			
430	d = 90°	d = 93°			
450	d = 90°				

Dimension table for Comfort 516 L					
(b)	(a)				
	220	240	260	280	300
110	d = 125°	d = 125°	d = 125°	d = 130°	d = 135°
130	d = 125°	d = 125°	d = 125°	d = 125°	d = 125°
150	d = 120°	d = 117°	d = 120°	d = 120°	d = 120°
170	d = 115°	d = 110°	d = 110°	d = 110°	d = 115°
190	d = 110°	d = 107°	d = 105°	d = 105°	d = 110°
210	d = 105°	d = 105°	d = 102°	d = 102°	d = 105°
230	d = 102°	d = 102°	d = 100°	d = 100°	d = 100°
250	d = 97°	d = 97°	d = 97°	d = 97°	
270	d = 97°	d = 97°	d = 96°		
290	d = 95°	d = 95°			
310	d = 95°				

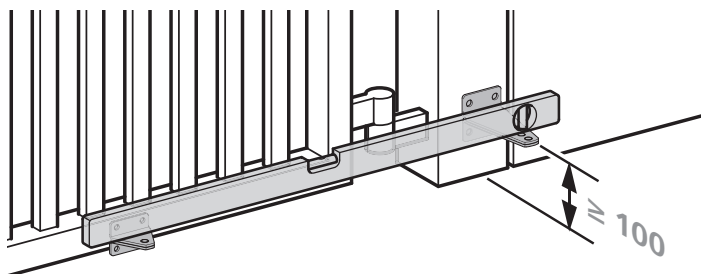
The preferred dimensions are shaded in grey in the table (for gate wings up to 3.5 m wide and weighing up to 200 kg).

The dimension tables apply for standard hinges only.

4.3 Installation of support brackets

- Release the operator.
- „5.2 Emergency operation / Release mechanism“
- Move the piston rod manually to dimension c.
- „4.2 / 3“
- Lock the operator.
- Use the dimension table to determine the position of the support brackets.

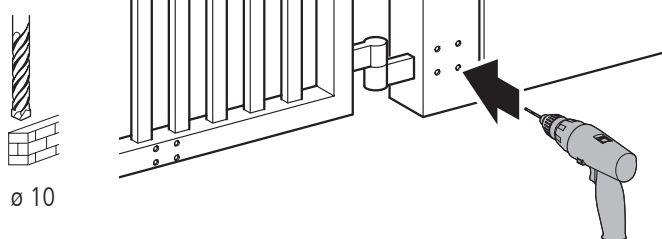
4.3 / 1



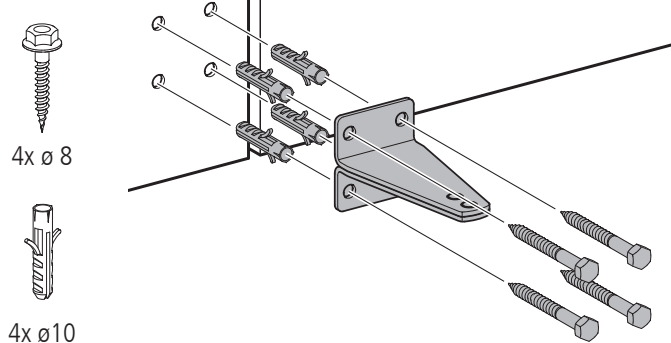
The support brackets can alternatively be fixed in place with screw clamps until a successful trial run has been completed.

Concrete and stone pillars

4.3 / 2

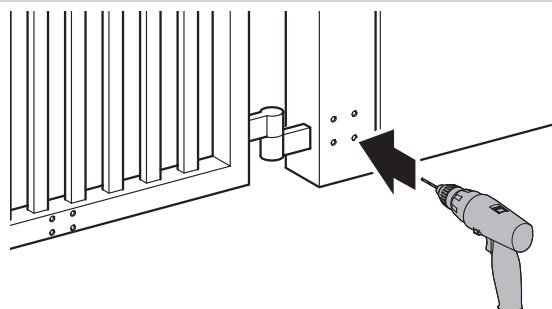


4.3 / 3



Metal pillar

4.3 / 4

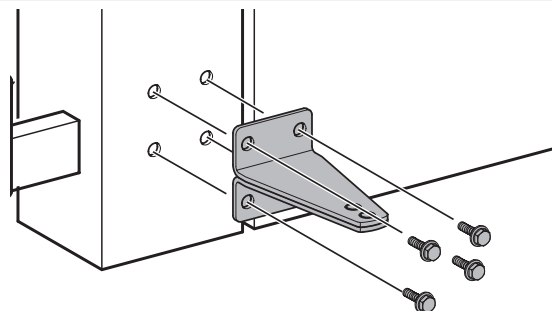


4.3 / 5



4x

M8 x 25



Metal gate

4.3 / 6

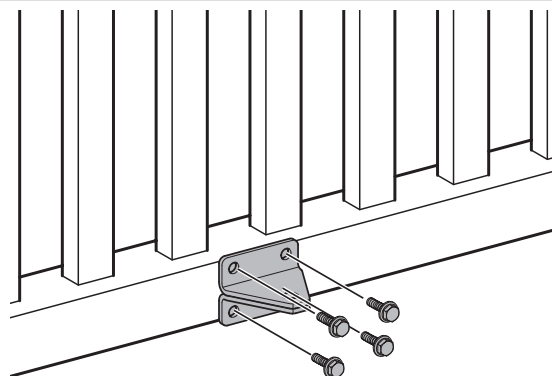


ø 6,8



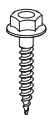
4x

M8 x 25

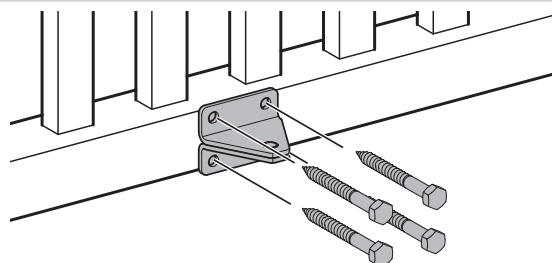


Wooden gate

4.3 / 7



4x ø 8



4.4 Installing the motor unit

CAUTION!

Risk of injury due to shearing forces!

- The drill hole in the post angle that is not required must be fitted with the cover cap.

NOTICE

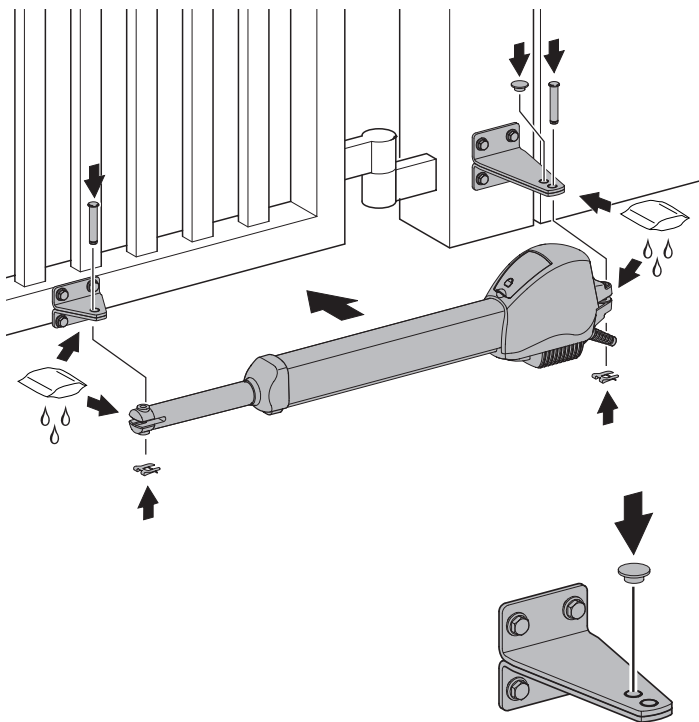
Material damage resulting from incorrect installation of the gate operator!

If the motor unit screw connection is tight, this can result in faulty operation or irreparable damage to the motor unit. There should still be slight play in both screw joints after assembly. Too much play in the joints will result in noise or knocking when starting up and increase wear in the motor unit.

- Ensure that the fastening screws for connecting the brackets and motor unit are fitted correctly.

Before installation, the motor unit and the connecting components must be greased with the lubricating pad supplied.

4.4 / 1



CHECK

To ensure that installation is correct, the following tests must be carried out:

- Release the operator.
- „5.2 Emergency operation / Release mechanism“
- Move the gate slowly by hand into the OPEN and CLOSED end positions.

4.5 Connection to the control unit

To operate the motor unit, it must be connected to a suitable control unit (not included in supply package).

REFERENCE

Follow the instructions in the relevant documentation when connecting the operator to the control unit.

5. Operation

5.1 Hand transmitter

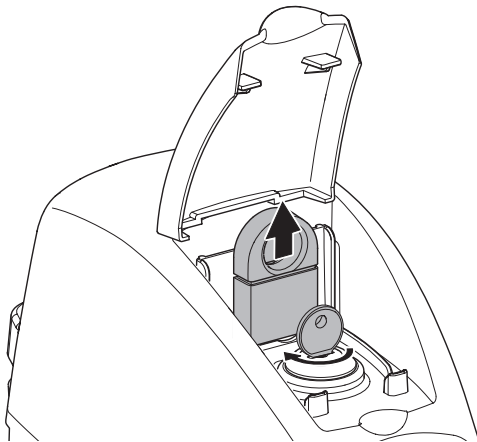
REFERENCE

Follow the instructions in the relevant documentation when operating the hand transmitter.

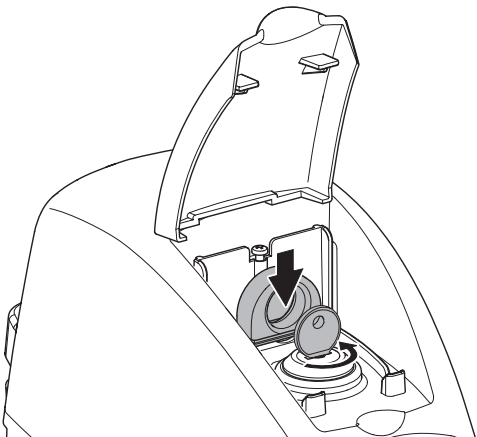
5.2 Emergency operation / Release mechanism

To ensure that it functions correctly, the operator must be locked in the same position where it has been released.

5.2 / 1



5.2 / 2



6. Care and cleaning

DANGER!

Life-threatening danger due to electric shock!

- It is vital that you disconnect the operator system from the power supply before cleaning. Take measures to ensure that the power supply remains disconnected for the duration of the cleaning operation.

NOTICE

Material damage may result from improper care of drive!

Grease and oil can attack the plastic materials of the drive system and lead to the plastic becoming cracked and fractured. To prevent damage, the drive system must **not** be oiled or greased.

NOTICE

Damage resulting from incorrect operation!

When cleaning the operator system, never use: direct water jets, high pressure cleaners, acids or alkaline solutions.

- Clean the outside of the housing using a damp, soft cloth that does not shed fibres.

If particularly dirty, the housing can be cleaned using a mild detergent.

7. Maintenance

7.1 Maintenance work by the operator

Damage or wear to a door system must only be rectified by qualified and trained professionals.

To ensure fault-free operation, the gate system must be inspected regularly and, if necessary, be repaired. Before starting work on the gate system, the operator system must always be disconnected from the power supply.

- Check once a month that the operator system reverses when the gate touches an obstacle. Place an obstacle in the path of the gate to check this.
- Check all the moving parts of the gate system and gate operator system.
- Check the gate system for signs of damage or wear and tear.
- Move the gate manually to check that the gate travels easily and smoothly.
- Check that the photocell functions properly.
- Check that the closing edge safety device functions properly.
- Check the power supply cable for signs of damage.

For safety reasons, if the power supply cable is damaged it must be replaced by the manufacturer or his customer service department, or by a similarly qualified person.

7.2 Maintenance work by qualified and trained professionals

Power-operated windows, doors and gates must be inspected by qualified and trained professionals whenever necessary, but at least once a year (written inspection records must be kept).

- Test the driving power with a force tester designed for this purpose.
- Replace any damaged or worn parts.

8. Disassembly

⚠ DANGER!

Life-threatening danger due to electric shock!

- It is vital that you disconnect the operator system from the power supply before disassembly. Take measures to ensure that the power supply remains disconnected during disassembly.

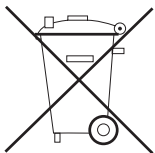
⚠ WARNING!

Possibility of serious injury if disassembled incorrectly!

- Observe all the applicable health and safety regulations.

The system must be dismantled by qualified and trained professionals, following the installation instructions in reverse order.

9. Disposal



Do not dispose of old equipment or batteries with the normal household waste!

- Dispose of old devices at a waste collection centre for electronic waste or via your specialist dealer.
- Dispose of old batteries in a battery recycling container or via a specialist dealer.
- Dispose of the packaging material in the special waste collection containers for paper, cardboard and plastic.

10. Rectifying faults

📄 REFERENCE

To rectify faults, follow the instructions in the control unit documentation.

11. Appendix

11.1 Technical data

Electrical data

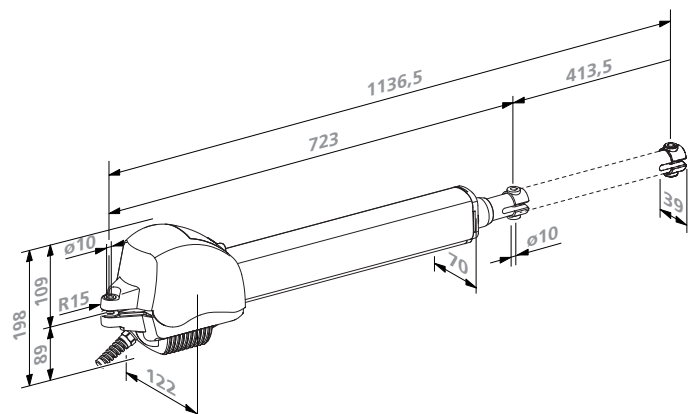
Duty cycle	min.	short-term 5
Control voltage	V DC	24
Protection category of motor unit		IP 44
Protection class		II

Mechanical data

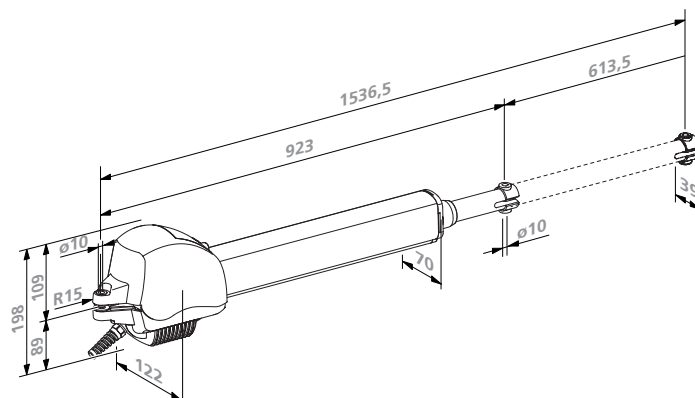
Max. push and pull force	N	1,000
Travel speed	mm/s	15-20
Opening time, dependent on gate type	s	15-25

Environmental data

Dimensions of motor unit, Short version


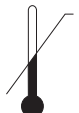


Dimensions of motor unit, Long version



Weight (single wing gate)	kg	11.20
Weight (double wing gate)	kg	18.00
Sound pressure level	dB(A)	< 70

Environmental data

Temperature range		°C	-20
		°C	+60

* without any additional equipment connected

Areas of application

	Comfort		
		516	516 L
Hinged gates			
– Max. width of gate leaf	mm	2,500	3,500
– Max. gate height	mm	2,000	2,000
– Max. weight of gate leaf	kg	200	200

11.2 Declaration for the incorporation of a partly completed machine

(Declaration of Incorporation in line with EC Machinery Directive 2006/42/EC in accordance with Annex II, Part 1 B)

Manufacturer:

Marantec Antriebs und Steuerungstechnik GmbH & Co. KG
Remser Brook 11, 33428 Marienfeld, Germany

The partly completed machine (product):

Comfort 516 hinged gate operator
Revision status: R01

has been developed, designed and manufactured in accordance with the:

- EU Machinery Directive 2006/42/EC
- EU RoHS Directive 2011/65/EU
- EU Low Voltage Directive 2014/35/EU
- EU Electromagnetic Compatibility Directive 2014/30/EU
- Radio Equipment Directive (RED) 2014/53/EU

Applied and referenced standards and specifications:

- EN ISO 13849-1, PL "c", Cat. 2
Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
- EN 60335-2-103
Household and similar electrical appliances – Safety – Part 2-103: Particular requirements for drives for gates, doors and windows.
- EN 61000-6-3/2
Electromagnetic compatibility – Emitted interference and immunity

The following requirements of EC Directive 2006/42/EC were complied with:

General principles, No. 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.2.1, 1.2.2, 1.2.3, 1.2.6, 1.3.1, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.4.1, 1.4.3, 1.5.1, 1.5.4, 1.5.6, 1.5.8, 1.5.14, 1.7

Furthermore, we declare that the special technical documentation for this partly completed machine was prepared in accordance with Annex VII Part B and we undertake to supply these documents, in electronic form, to the national authorities in response to a duly reasoned request.

This partly completed machine is intended only for installation in a door system, in order to create a complete machine pursuant to Machinery Directive 2006/42/EC. The door system may not be set in operation until it has been ascertained that the complete system complies with the requirements of the above-mentioned EC directives.

This declaration shall no longer be valid if changes are made to the product without our authorisation.

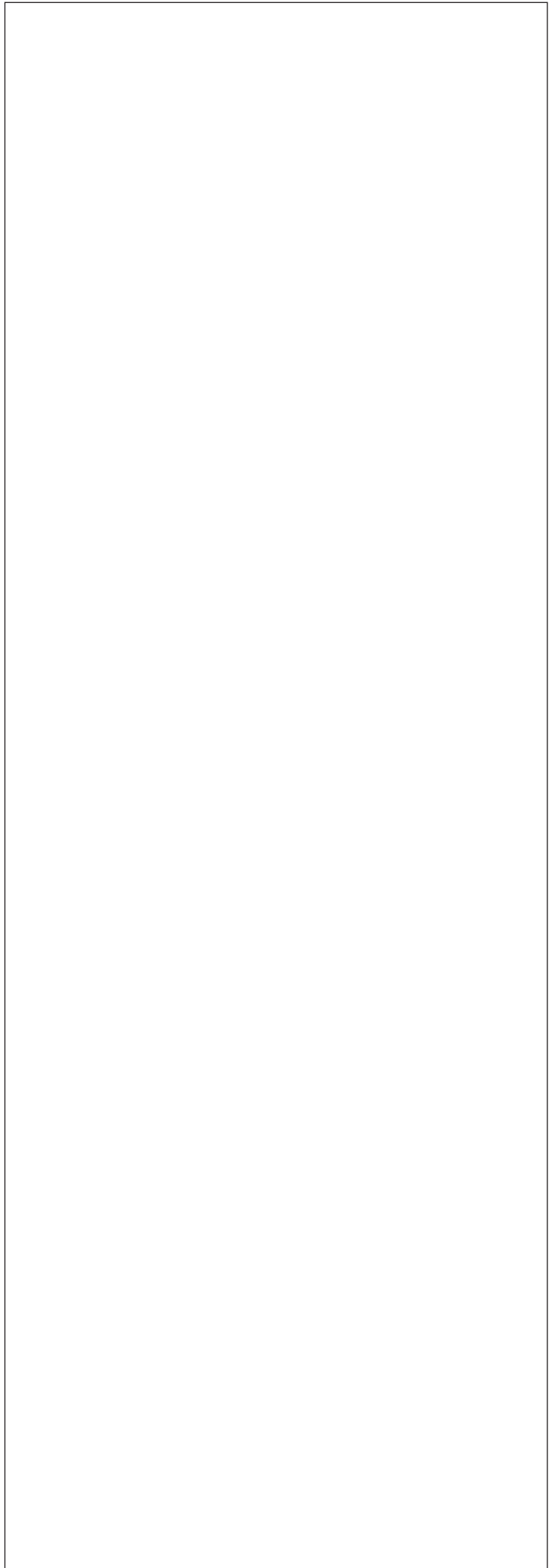
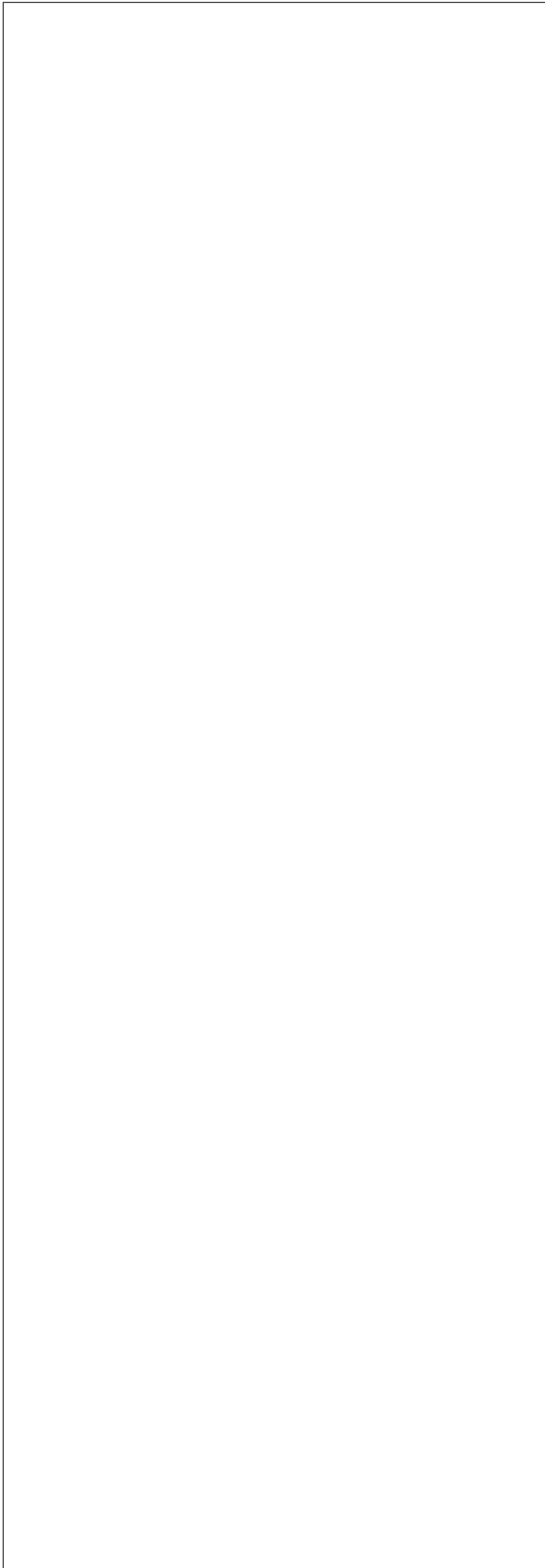
Authorised agent for the preparation of the technical documentation:
Marantec Antriebs- und Steuerungstechnik GmbH & Co. KG,
Remser Brook 11 · 33428 Marienfeld · Germany
Fon +49 (5247) 705-0



Marienfeld, 1 February 2016

M. Hörmann
Director





Identification plate, motor unit 1

Type A	_____
Rev (B)	_____
Art. No. (C)	_____
Prod. No. (GB)	_____

Identification plate, motor unit 2 (only double wing)

Type A	_____
Rev (B)	_____
Art. No. (C)	_____
Prod. No. (GB)	_____

