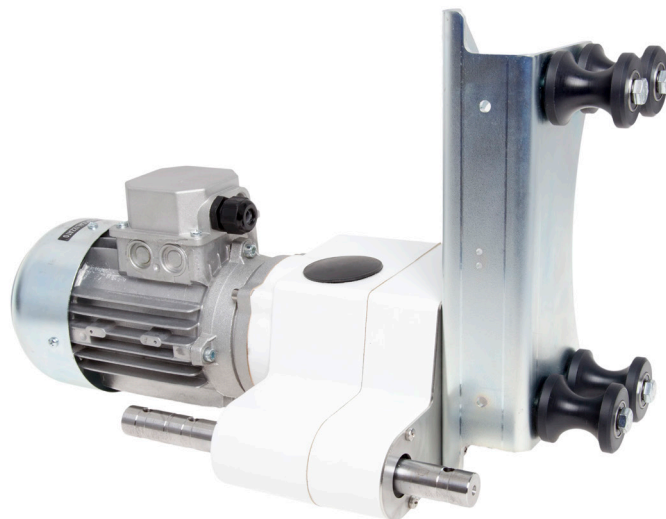


Installation instruction GXP10



Declaration of incorporation

Declaration or incorporation conform European Machine Directive 2006/42/EG, appendix II, no. 1B
DE GIER B.V.
WESTLANDSEWEG 9
NL-2291 PG WATERINGEN
THE NETHERLANDS

We hereby declare that the following partly completed machines, in conformity with article 2G, are intended exclusively to be integrated or assembled into another machine or other equipment:

Motor gearboxes: GXP10

The specific technical documents, conform appendix VII B, were drawn up and will be sent by mail to the national authorities on request.

This partly completed machinery is in accordance with the provisions of the following European Directives:

European Machine Directive 2006/42/EG
European EMC Directive 2004/108/EG

The following harmonised standards (or parts of these standards) were applied:

NEN EN ISO 12100-1, -2: 04/2004

Safety of machinery: Basic terms, general design principles

NEN EN ISO 14121-1:12/2007

Safety of machinery: Risk assessments

NEN EN 60204-1:06/2007

Safety of machinery: Electrical equipment of machines

NEN EN 60034-5:09/2007

Rotating electrical machines (only electric motors)

This partly completed machinery may be commissioned only when it is established that the machine in which this partly completed machinery must be integrated, complies with the provisions of the Machine Directive.

Authorised compiler of the technical documents:

Wouter Heezen
General Manager De Gier B.V.

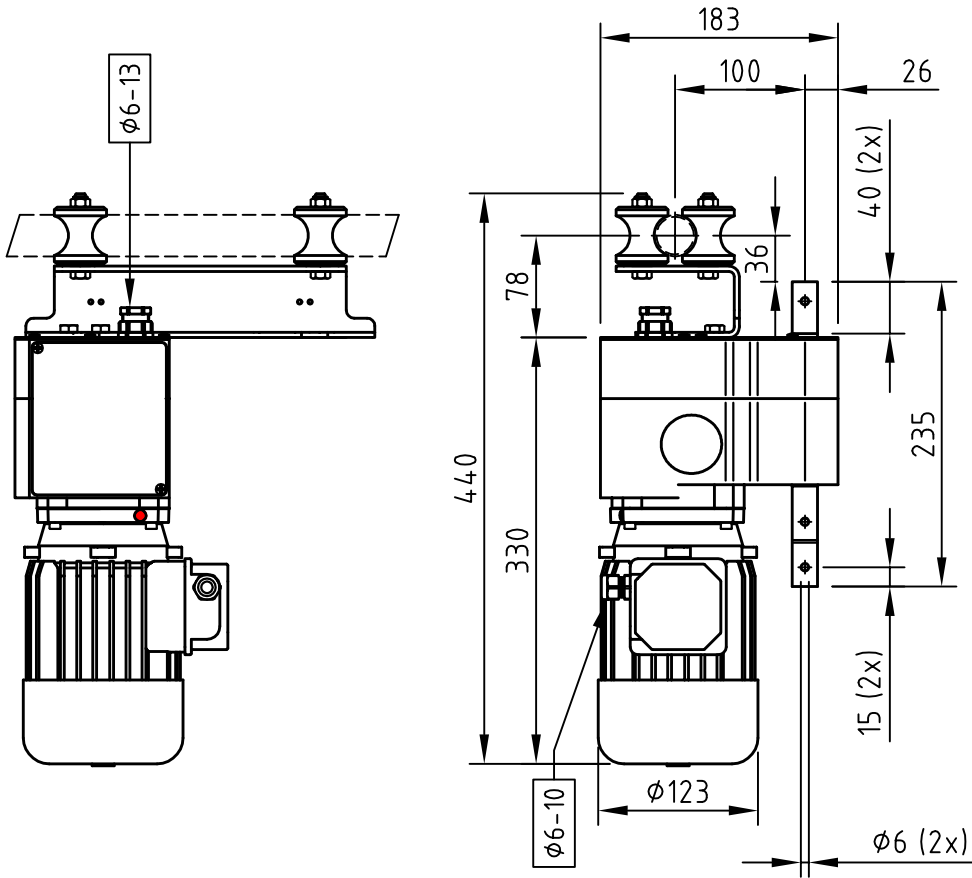
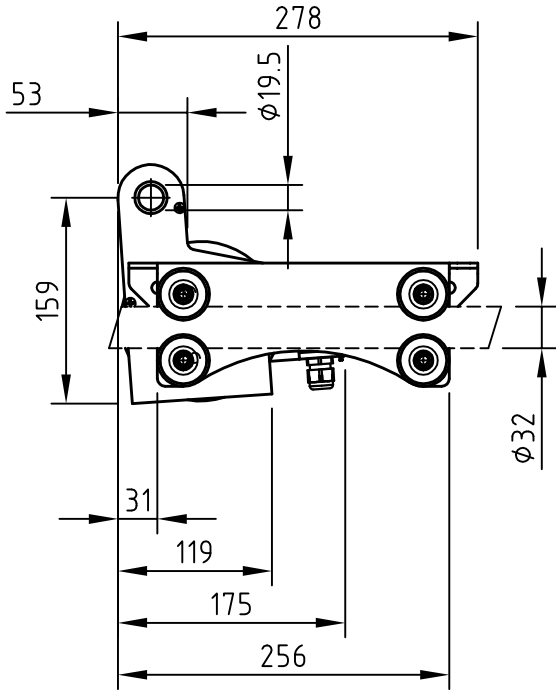


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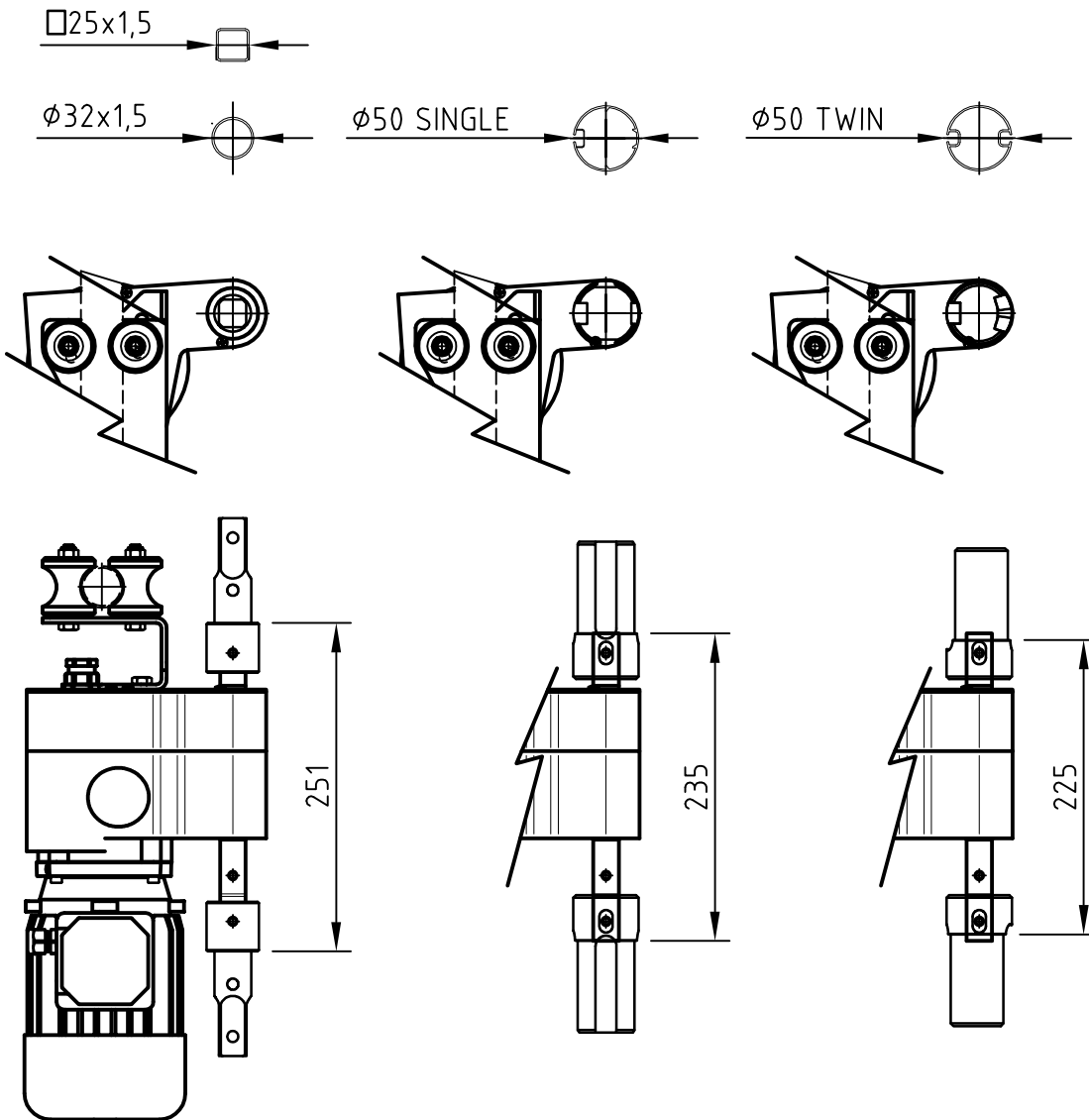
Dimensions



Technical specifications

Description	50 Hz					60Hz					
	T [Nm]	n [rpm]	P [kW]	U [V]	I [A]	n [rpm]	P [kW]	U [V]	I [A]	L [mm]	m [kg]
P.GXP10.230.40.KBS.T	100	4,0	0,22	230 (~1)	1,8					11	20
P.GXP10.230.40.KBS32.T	100	4,0	0,22	230 (~1)	1,8					12	23
P.GXP10.230.40.KBS50.T	100	4,0	0,22	230 (~1)	1,8					12	23
P.GXP10.230.40.KBS50.02.T	100	4,0	0,22	230 (~1)	1,8					12	20
P.GXP10.400.40.KBS.T	100	4,0	0,18	230/400 (~3)	1,2/0,7	4,8	0,22	277/480 (3~)	1,2/0,7	11	20
P.GXP10.400.40.KBS32.T	100	4,0	0,18	230/400 (~3)	1,2/0,7	4,8	0,22	277/480 (3~)	1,2/0,7	12	23
P.GXP10.400.40.KBS50.T	100	4,0	0,18	230/400 (~3)	1,2/0,7	4,8	0,22	277/480 (3~)	1,2/0,7	12	34
P.GXP10.400.40.KBS50.02.T	100	4,0	0,18	230/400 (~3)	1,2/0,7	4,8	0,22	277/480 (3~)	1,2/0,7	12	34

*1) Ask for the extensive possibilities of 60 Hz motors and Dual Voltage motors







1. Explanation of symbols

This installation instruction is part of the delivery of the motor gearbox and must be kept near the motor gearbox.

1.1 Explanation of symbols and instructions






In this installation instruction important actions are emphasised in a separate text box with a header in bold. Underneath you will find an explanation of the various symbols and instructions you will encounter in this manual.

Symbol	Meaning	Unity	Symbol	Meaning	Unity
T	Torque	Nm	n	Rotational speed	rpm
P	Pwer	kW	L	Length	mm
U	Voltage	V	m	Mass	kg
I	Current	A			
	Tip	-		Danger	-
	Remark	-		Electrical hazard	-

Instruction	Explanatory note
Tip	Provides the user with suggestions and recommendations to carry out certain tasks easier or more practical.
Please note!	Remarks with supplementary information for the user. A remark points out possible problems.
Caution! Warning!	Material damage may occur when the procedures are not being followed diligently. DThe user could seriously injure himself or severely damage the product if the user does not follow the procedures diligently. dures niet zorgvuldig uitvoert.
Mortal danger!	The life of the user is in immediate danger.

1.2 Explanation of symbols on motor gearbox

The following symbols are shown on the motor gearbox.

Symbol	Meaning	Symbol	Meaning
	Do not hose down		Remove the red venting screw
	Live parts		PE connection point (earthing)
	Read the documentation		

1. Safety instructions

1.3 General safety instructions

- Read the installation instruction carefully and entirely;
- Prior to starting the installation of the motor gearbox, you should check if it was delivered complete;
- Strictly adhere to the order of action, as stated in the installation instruction;
- Observe all information in the installation instruction, in particular the information with regard to safety, usage, maintenance and conservation;
- Keep the installation instruction during the entire lifecycle of the product;
- Interrupt the supply voltage of the motor gearbox, before you start working on the motor gearbox or in the direct vicinity;
- Clean up the hazard area and get out of it before switching the power back on;
- The high torque of the motor gearbox may cause personal injury and/or material damage as a result of incorrect assembly, commissioning, maintenance work, etc.;
- Avoid exceeding the electrical connection values. This could lead to damage to the electric motor, power train and other parts of the construction;
- Do not allow people to be present under or near suspended loads;
- Under no circumstance screws, couplings or parts may be loosened when the driven system is under load;
- In addition, you should observe national legislation and directives with regard to working conditions and safety.

1.4 General safety instructions

- Interrupt the power supply before working on the motor gearbox or the installation and protect the power supply (for instance with a padlock) to prevent the power from being switched back on again. This also applies to auxiliary circuits, such as limit switch or stationary heating. Switching off the control using 'stop' or '0' will not suffice. Due to hierarchically higher functions, such as wind or rain signals, the motor gearbox could also start running in 'stop' or 'null' position;
- Connected or driven parts could have a shorter technical lifespan than the motor gearbox itself;
- In case of a three-phase power supply, swapping two out of the three phases will result in a reversed rotation direction of the motor gearbox, which might also affect the functioning of the limit switch system;
- De Gier supplies motor gearboxes that are self-locking. Under certain circumstances the self-locking may not work. Therefore, in case of lifting applications, we strongly recommend the use of a motor gearbox equipped with an electric motor that is fitted with a mechanical brake and to apply a fall-stop protection to the driven shaft;
- Due to connected or driven parts, there is a risk that you get entrapped and injured. Observe the safety distances in accordance with NEN EN 349 and NEN EN 13857 and take suitable precautions., Ensure safety provisions for instance or a dead-man's vigilance system;
- The housing of the motor gearbox could reach temperatures in excess of 60°C/140°F. Apply a protective cover, depending on the positioning of the motor gearbox;
- Despite meticulous planning and observation of all regulations, not all risks can be prevented.

1.5 Qualified staff

All work described hereafter must be performed by qualified staff. Qualified staff means persons who, based on their education, experience and/or training, have gained sufficient knowledge of the applicable standards, provisions, accident prevention regulations and operational circumstances, and are able, as such, to recognise possible hazards during the work, as well as avoid them (e.g. installers recommended by De Gier B.V.).

At all times permission from the person responsible for the safety of the total installation is required before commencing the work.



2. Product name and user instructions

2.1 Manufacturer

Please find the address details of De Gier B.V. underneath;

De Gier B.V. Westlandseweg 9 NL-2291 PG Wateringen The Netherlands	I : www.degierdrivesystems.com E : sales@degierdrivesystems.com T : +31 174 292 089
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2.2 Identification sticker

The identification sticker contains the following information:

- 1. Article no. : P.GXP10.400.40.KBS40.T
- 2. Motor no. : 1433593 / 012279
- 3. Date : 10/03/2020
- 4. Production date
- 5. Serial number
- 6. Barcode De Gier B.V.
- 7. Address details De Gier B.V.

Additional information on the sticker includes the DEGIER logo, company name (DRIVESYSTEMS), and contact details: Westlandseweg 9, 2291 PG WATERINGEN, T: 0031(0)174-292089, www.degierdrivesystems.com.

Voorbeeld van een identificatiesticker

2.3 Description

The composition of the article number on the identification sticker shown above you will find underneath, with an explanatory note on the possible designs.

CODE	SERIE	Torque [x 10 Nm]	Voltage [V]	Speed (revolutions) [x 10 ⁻¹ rpm]	version	tropical isulation
P	GXP	10	400	40	KBS50	T

Possible designs

K *	Suitable for coupling sleeves
KBS32	Including two coupling sleeves for tube Ø32x1.5 and sleeve 25x25x1,5
KBS50	Including two coupling sleeves for roll tube Ø50 single groove
KBS50.02	Including two coupling sleeves for roll tube Ø50 double groove

*Ask for the comprehensive series of specific coupling sleeves



3. Instructions for use

3.1 Intended use

GXP motor gearboxes are intended for driving vertical screens or side ventilation, for instance in stables, greenhouses, halls and façades. The GXP motor gearboxes are directly connected to the roll-up tubes and are led into the right direction by means of a guidance bracket attached to the motor that rolls along a tube which is fixed to the greenhouse. If the motor gearbox is applied in a lifting application, this is permitted only if a fall-stop protection is being used.

3.2 Special versions

The following special versions are (among others) available in consultation with the manufacturer (not for all systems): 24 VDC;

- Versions suited for different voltages and/or frequency;
- Versions for use in areas with high relative humidity (RV >60%);
- Versions for use in roof slope roller screen installations;
- Versions with specially certified electric motors.

3.3 Conditions of use

When using the motor gearbox, the following conditions should be met:

- Ambient temperature range for usage: 0°C to +60°C [32°F to 140°F].
- The lifting of free-hanging loads (no persons), such as growing tube-, chrysanthemums (hoist)heating or assimilation lighting is permitted only with fall-stop protection.
- The motor gearboxes are suitable for S3-30% operation.
- The maximum running time is 10 minutes.
- The maximum allowed number of starts per minute for the motor gearbox is 3.
- Low loads and fewer switching cycles, whereby the motor gearbox can cool off in between, will significantly increase the lifespan of the motor gearbox.

3.4 Restrictions on the use

It is not permitted to make constructional changes to the motor gearbox. Any such modifications render the manufacturer's warranty null and void and relieve the manufacturer of liability for any consequences. Additionally, the following restrictions apply to the use of the motor gearbox:

- Do not use the motor gearbox/power train with a torque exceeding the indicated maximum torque.
- Do not use the motor gearbox for operating parts that are in the direct vicinity (within easy reach) of persons. Observe safety distances in conformity with NEN EN ISO 13857.
- Do not expose the motor gearbox to direct irrigation or precipitation (rain/snow).
- Do not use the motor gearbox for operating smoke and heat extraction installations, according to NEN 6093 or DIN 18232.
- Do not use the motor gearbox for operating automatic doors or gates that are being used by persons.
- Do not use the motor gearbox in an explosion hazardous area, unless express permission was given to do so.

3.4 Unintended use (misuse)

We express our explicit warning against the following unintended use:

- Do not use the motor gearbox for the lifting of hanging loads in populated areas;
- Do not use the motor gearbox for the transportation of people (for instance as a passenger lift and the like).

3.5 Storage

In order to assure the life cycle and the correct functioning of the motor gearboxes, the following regulations must be adhered to:

- Ensure that the motor gearboxes are stored in a dust-free and moisture-free environment
- The relative air humidity of the storage location must be less than 50%.
- Store the motor gearboxes at a temperature between -15 and +60°C [5°F to 140°F].
- Prevent sudden temperature fluctuations to avoid condensation.
- If you wish to store the motor gearboxes for a longer period of time, you can make use of protective agents to protect unvarnished surfaces, such as threaded holes and the assembly surfaces for coupling sleeves, against corrosion.



4. Mounting instructions

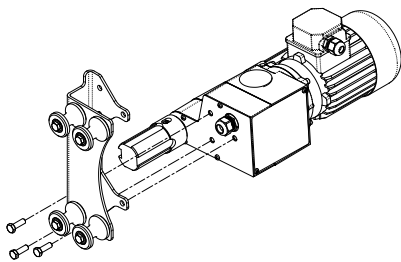
The installation of the motor gearbox and adjustment of the limit switch may only be done by qualified staff (see paragraph 1.5).

4.1 Mounting positions & venting screw

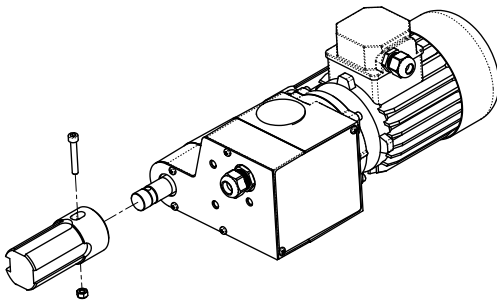
When determining the mounting position, the following points should be taken into account:

- To connect the guidance bracket to the GXP motor gearbox three M8 bolts of property class 8.8 or higher should be used. The screw-in length should be between 10 and 15 mm.
- Keep approximately 500mm free in the front for the adjustment of the limit switch system.
- If the motor gearbox is installed in a dusty or damp room it must be housed in a decent enclosure.
- Keep about 300 mm free behind the electric motor to be able to drive the motor gearbox manually or with a drill (maximum speed 250 RPM) via the internal hexagonal at the end of the shaft of the electric motor, in case of a power failure.

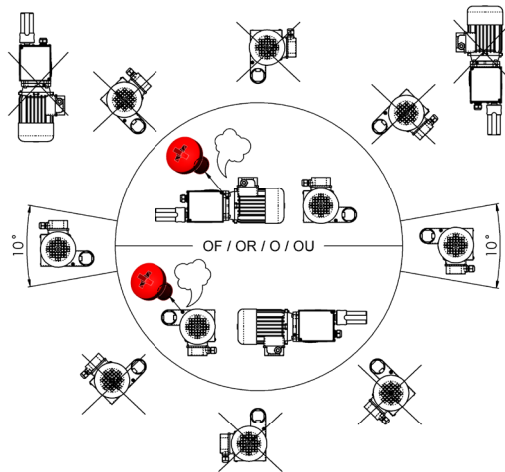
The motor gearbox was filled with the correct amount and type of oil during production. Every motor gearbox is fitted with two red venting screws. After installing the motor gearbox, the highest positioned of the two red venting screws has to be removed. A few drops of oil may run out of the vent hole during commissioning. Hold on to the removed red screw and keep it with this manual.



Assembly; 3 M8 bolts for roll bar



Assembly ; M6 bolt and locknut for coupling sleeve



Assembly positions motor gearbox and vent plug

4.2 Installation of the motor gearbox

De motorreductor wordt normaliter gekoppeld middels koppelbussen aan de rolluis.

Warning!



- The maximum allowed torque for the coupling sleeves and accessories may not be exceeded.
- The load must be divided evenly across both shaft ends. Ideally, the drive unit is mounted in the middle of the roll-up tube.

4.2.1 Transport

Mortal danger! Falling objects may form a risk to persons!



- Transport the motor gearbox carefully, avoid bumps.
- Careless handling will cause damage to the motor gearbox.
- Use a cherry picker, or hoist the motor gearbox upwards by use of a hoisting device and suitable straps which should be placed around the outgoing shafts.

4. Mounting

4.2.2 Installation sequence

For easy installation, 4 main steps should be followed, as shown below;

1. Connect the coupling sleeves to the roll-up tubes. Slide the outgoing shaft of the GXP10 into the right-hand coupling sleeve.
2. Position the GXP10 in line with the left-hand coupling sleeve.
3. Slide the outgoing shaft of the GXP10 into the left-hand coupling sleeve.
4. Attach the guidance bracket to the motor gearbox using the 3 included M8 bolts. Use a tightening torque of 10 Nm.
5. Attach the coupling sleeves to the output shaft using the included M6 bolts and nuts. Use a tightening torque of 10 Nm.

Please note! The outgoing shaft and the roll-up tubes must be aligned.

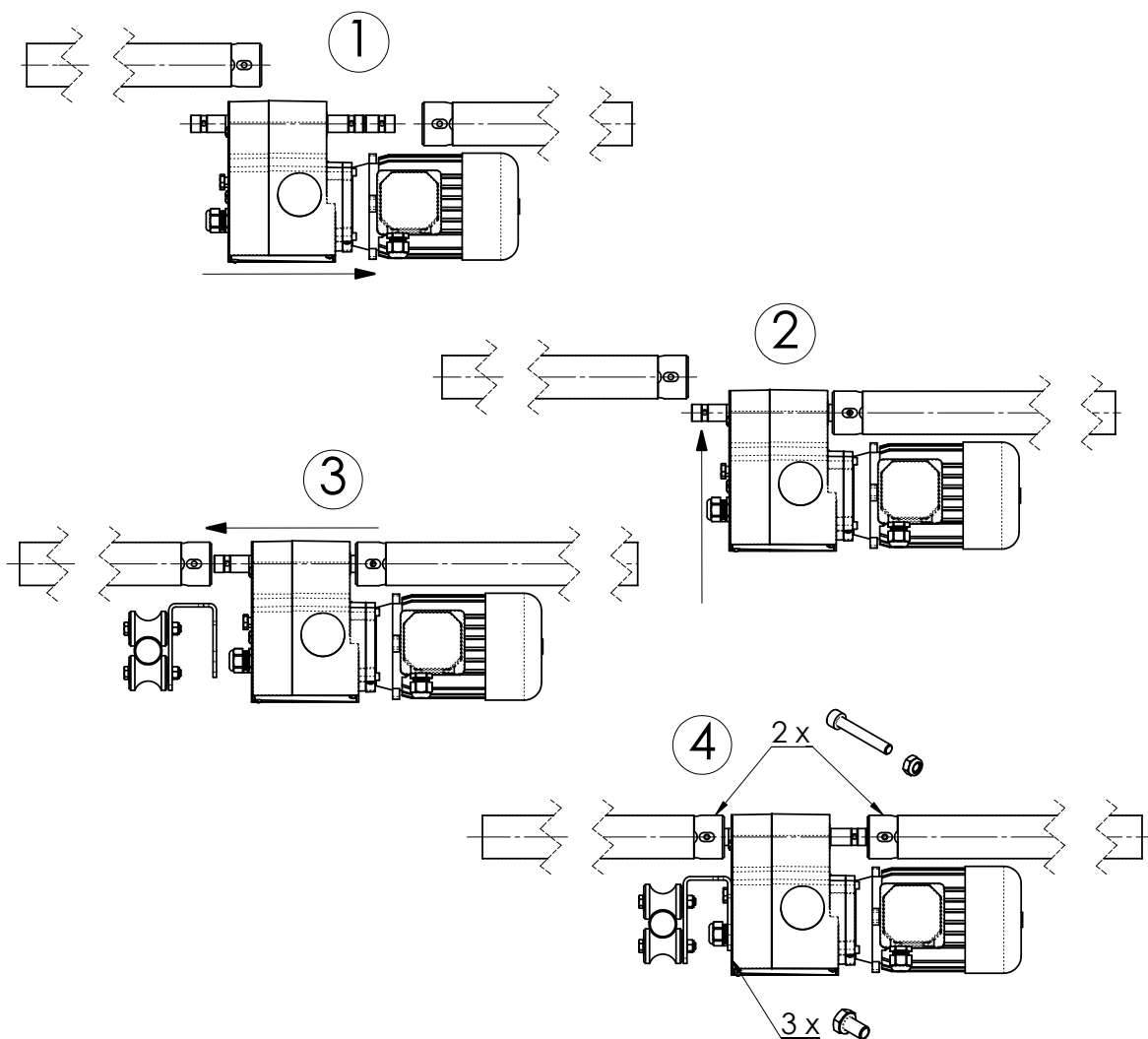


- A flexible coupling is required in case of alignment errors that cannot be solved.
- Chain couplings 08B.Z12 can compensate an alignment error of 1° maximum.
- In case of larger angles a cardan coupling can be applied.

Tip



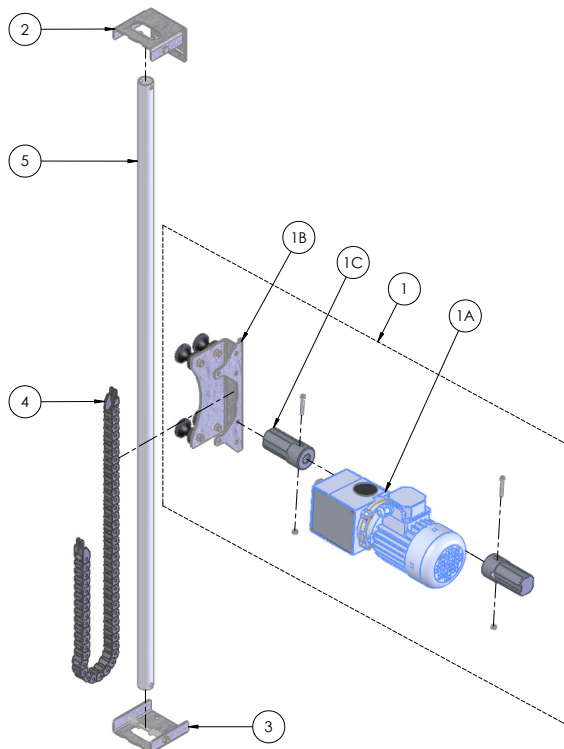
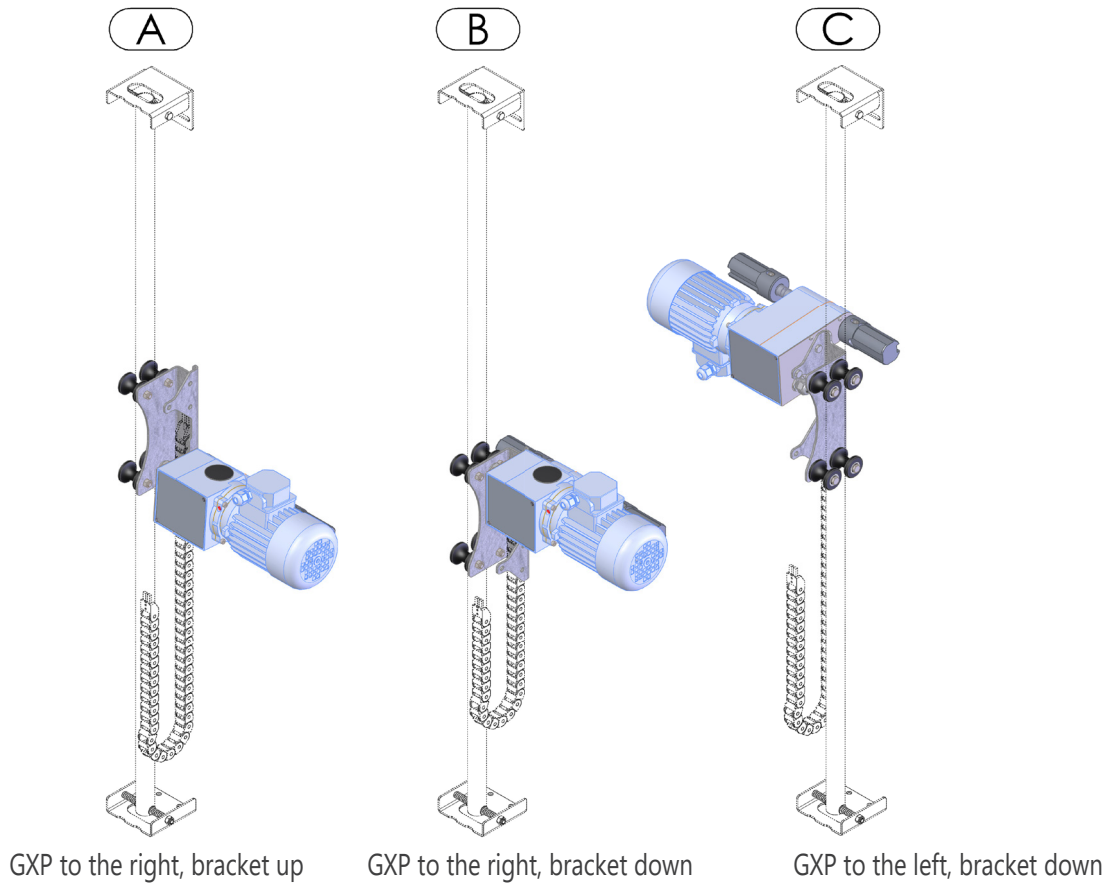
Applying a lubricant (for instance Copper Anti-Seize) on the connection between the outgoing shaft and the coupling sleeves will make future disassembly easier.



4. Mounting configurations

4.2.3 Mounting configurations

The GXP10 motor gearbox can be mounted to the guidance tube in three different ways as shown in the Illustration below.



	ARTICLE CODE	DESCRIPTION
1	P.GXP10.40.xxx.KBS.xx.T	Complete GXP10 + rol-brack + coupl. sleeves
1A	P.GXP10.40.xxx.xx.T	GXP10 motorgearbox
1B	P.BL.10.GXP10	Guidance bracket
1C	P.KBSxxx.xx.D19	Coupling sleeve
2	P.BL.04.GXP10	Mount. clamp top
3	P.BL.02.GXP10	Mount. clamp bottom
4	P.KRP.15.16.xx	Cable chain
5	Tube Ø32 mm	Guid tube

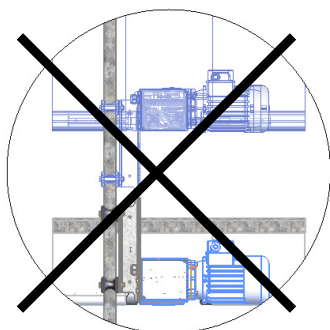
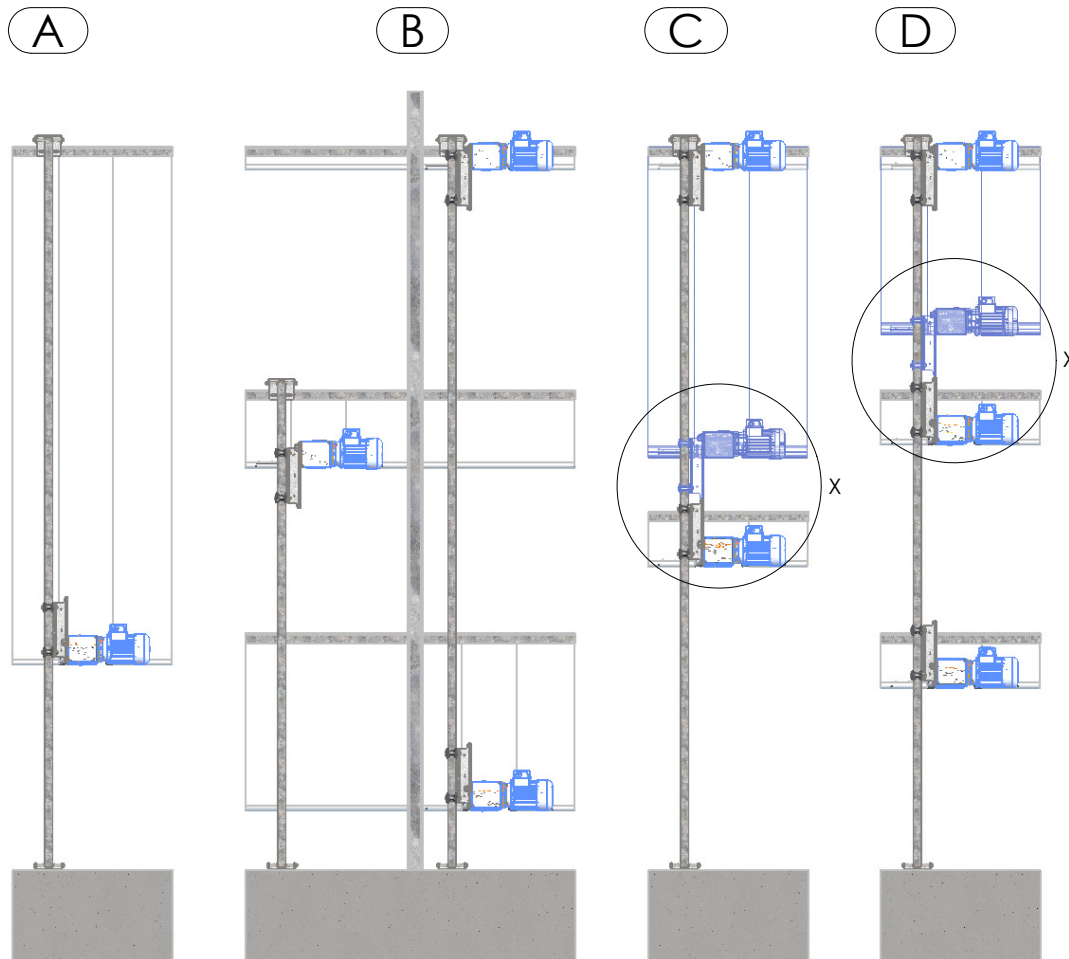


4. Façade configurations

4.2.4 Façade configurations

If multiple screens are driven on one façade the configurations shown below are possible.

- In configuration B, all screens can be driven independently.
- In the configurations C and D, the motor gearboxes are installed onto 1 guide tube, as a result of which they can run into each other (see detail X). These configurations are therefore only permitted when the screens are controlled simultaneously.



DETAIL X

4. Setting the limit switches

4.5 Limit switch setting

Use the following procedure and the figures on page 15 to set the integrated limit switches.

Functioning

- The switch axle (A) of the limit switch system is driven by the motor gearbox via a toothed belt transmission.
- On the switch axle (A) there are two switch nuts (E) consisting of a knurled nut (D) and an adjustment ring (C). The adjustment ring can be secured to the knurled nut (D) by means of a short (G) and a long set screw (H).
- Depending on the rotation direction of the motor gearbox, the switch nuts (E) will move linearly across the switch axle (A) into direction I or II. When the switch nut reaches the stop nut (B) at the end of the switch axle and is unable to run any further, the switch nut (E) will start rotating with the switch axle (A).
- The limit switch is fitted with two switch springs (F) each of which actuates a working switch and an emergency switch; either working switch S11 and emergency switch S21 for rotation direction I or working switch S12 and emergency switch S22 in case of rotation direction II.
- The emergency switch (S21 or S22) is a safety provision and will be actuated only if the working switch (S11 or S12) does not stop the motor gearbox on time.
- The long set screw (H) of each switch nut (E) is placed inside the switch spring. If one of both switch nuts reaches its stop nut, the switch nut will rotate with the shaft and the long set screw will actuate the working limit switch corresponding with the rotation direction. In the unlikely case that the activation of the working limit switch does not stop the motor gearbox the emergency limit switch corresponding to that direction will be activated.
- rotating along of the gear nut ensures that maintenance- and emergency switches under the switch spring (F), corresponding with the rotation direction, are operated via the long set screw (H) the corresponding.

Installing the limit switch (as a standard pre-installed ex-factory)

1. Remove the stainless-steel protective plate of the motor gearbox;
2. Place the complete limit switch unit in the designated position;
3. Ensure that both of the long set screws (H) are located between the switch springs (F), so the switch spring loosens the end and emergency switch when the switch nut starts rotating along with the shaft;
4. Secure the limit switch unit above the switch axle (A) by screwing both Phillips head screws hand-tight.



4. Setting the limit switches

Adjustment procedure

1. Remove the stainless-steel protective plate. The limit switch mechanism is now visible.
2. Check whether the adjustment rings (C) are loosely on the knurled nuts (D) by manually moving the nuts across the switch axle (A). If this is not the case, unscrew the set screws one turn (do not remove them).
3. Use a hexagonal tool to drive the motor gearbox via the rear of the electric motor to determine which working switch (S11 or S12) marks the start and end position in your application.
4. Move the motor gearbox to the start position by using the hexagonal tool. See the image on the next page.

Caution



When driving the electric motor by means of a hexagonal tool, a maximum speed of 250 RPM should be observed to protect the hexagonal socket on the rear of the electric motor shaft.

5. Hand-tighten the associated knurled nut (D) against its stop nut (B).
6. Place the included hexagonal wrench (X) into the long set screw (H) and turn the adjustment ring (C) across the knurled nut (D), so the switch spring is being pulled away from the plastic housing, until you hear one soft click. Subsequently tighten the long adjusting screw onto the knurled nut using a torque of 2 Nm.
7. Tighten the short set screw (G) of the previously adjusted knurled nut (E), also applying a torque of 2 Nm.
8. Move the motor gearbox to the other end position by use of a hexagonal tool.
9. Repeat steps 5 to 7 to adjust the other working switch.
10. Place the stainless-steel protective plate back onto the motor gearbox and re-tighten the two screws.
11. Keep this manual with adjustment instruction in a suitable location.

Tip



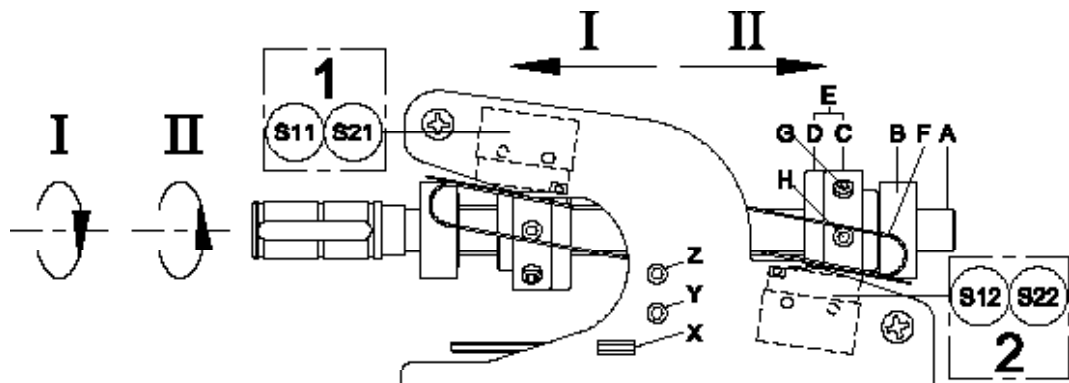
To avoid future errors, mark which working limit switch corresponds to the start and end position!

Please note!



Do not keep loose parts or documents underneath the stainless-steel protective plate. This could impede the functioning of the limit switch system!

4. Images of adjusting limit switch

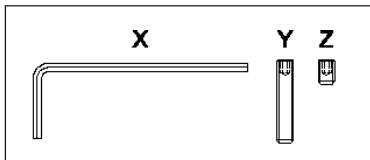


Parts

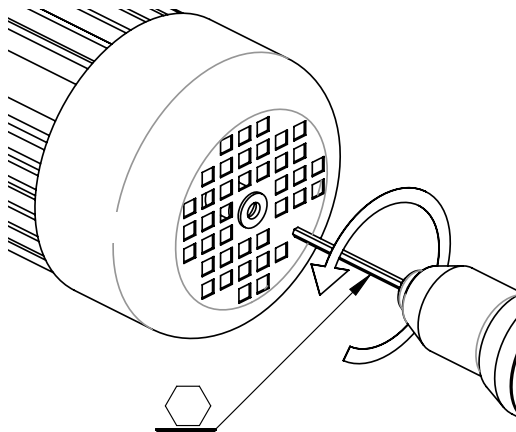
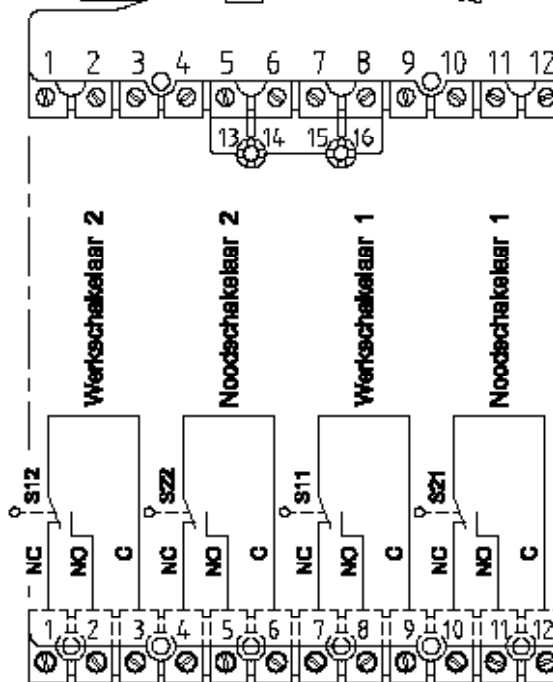
A	Switch axle	(1x)
B	Stop nut	(2x)
C	Adjustment ring	(2x)
D	Knurled nut	(2x)
E	Switch nut	(2x)
F	Switch spring	(2x)
G	Short set screw	(2x)
H	Long set screw	(2x)

Available tools and spare parts

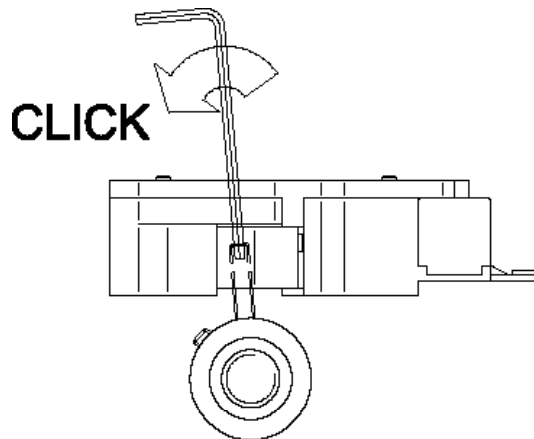
X	Hexagonal wrench	2 mm
Y	Spare set screw	M4x20
Z	Spare set screw	M4x6



Hexagonal wrench and spare set screws



Driving motor gearbox using hexagonal tool



Adjustment of the limit switch

5. Electrical connection

Connecting and commissioning may only be performed by qualified staff..

Mortal danger! Mortal danger due to electrical or mechanical forces!



Before starting to work on the motor gearbox and associated parts, always disconnect the power supply by means of the main or isolation switch and secure it against re-activation by using a padlock.

5.1 Mains connection for AC-motors with 1 phase

Caution



Mains voltage may differ 5% at most from the voltage mentioned on the electric motor's type plate.

The electrical diagram can be found in the appendix on page 24.

1. Remove the protective cover of the terminal strip of the electric motor.
2. Insert the cable through the cable gland and rubber gasket.
3. Connect the green/yellow lead to the PE terminal (earth).
4. Connect the neutral lead (N) to terminal U1 and connect the live lead (L) to terminal V1 or W1 as shown in the electrical diagram, depending on the desired direction of rotation.
5. Move the motor gearbox in a position between both limit switches by use of a hexagonal tool.
6. Check the rotation direction of the output shaft, relative to the limit switch and the control box. Swap the live lead between V1 and W1 if necessary (see image).
7. Fit the protective cover and gasket of the terminal strip back onto the electric motor and tighten the cable gland.
8. Ensure that the cables are clear of any moving parts.

5.2 Mains connection for AC-motors with 3 phases

Caution



Mains voltage may differ 10% at most from the voltage mentioned on the electric motor's type plate.

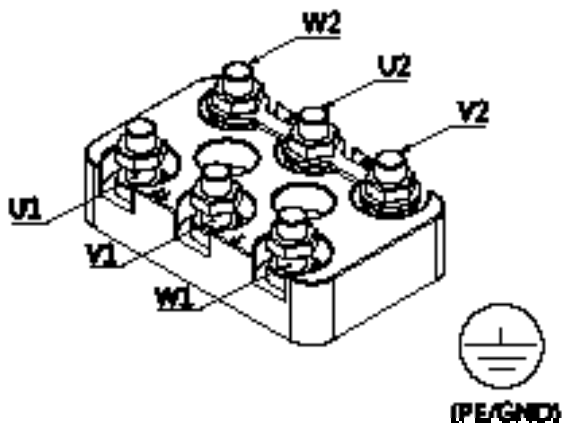
Please note!



Swapping the supply voltage phase connections changes the direction of rotation of the drive. Switching phases will affect the functioning of the limit switch system.

The wiring diagram can be found in the appendix on page 23.

1. Remove the protective cover of the terminal strip of the electric motor;
2. Insert the cable through the cable gland and rubber gasket.
3. Connect the green/yellow lead to the PE terminal (earth).
4. Connect phase L1 to terminal U1, phase L2 to terminal V1 and phase L3 to terminal W1 (see image).
5. Move the motor gearbox to a position between both limit switches by use of a hexagonal tool.
6. Check the rotation direction of the output shaft relative to the limit switch and the control box. Swap two phases, if necessary.
7. Fit the protective cover and gasket of the terminal strip back onto the electric motor and tighten the cable gland.
8. Ensure that the cables are clear of any moving parts.



Aansluitklemmen elektromotor (3 fase)

5. Electrical connection

5.3 Mains connection for DC-motors

Caution



Mains voltage may differ 10% at most from the voltage mentioned on the electric motor's type plate.

The electrical diagram is available on request.

1. Remove the protective cover of the terminal strip of the electric motor.
2. Insert the cable through the cable gland.
3. Connect the green/yellow lead to the PE terminal (earth).
4. Connect the 24 VDC lead to terminal A1 and the neutral lead to terminal A2.
5. Move the motor gearbox to a position between both limit switches using a hexagonal tool.
6. Check the rotation direction of the output shaft relative to the limit switch and the control box. Swap the leads on A1 and A2 if necessary.
7. Fit the protective cover and gasket of the terminal strip back onto the electric motor and tighten the cable gland.
8. Ensure that the cables are clear of any moving parts.

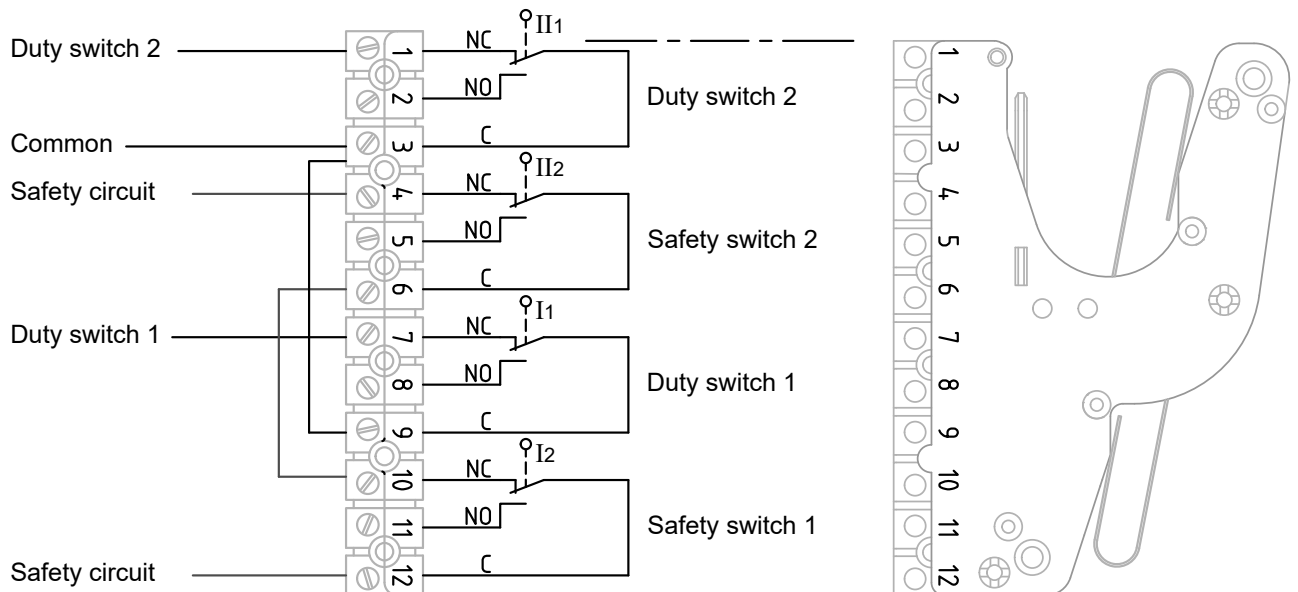
5.4 Connecting the limit switch

Please note!



Take account of the maximum (peak) switching current rating of 6 A at 250 VAC

1. Remove the stainless-steel protective plate of the motor gearbox
2. Insert the cable through the cable gland
3. Connect the working and emergency switches, as shown in the diagram below
4. Fit a jumper between contacts 3 and 9
5. Fit a jumper between contacts 6 and 10
6. Ensure that the cables are free and tighten the cable glands.
7. Fit the stainless-steel protective plate back onto the motor gearbox.
- 8.



Wiring diagram work- and emergency switches

5. Commissioning, use and maintenance

5.5 Commissioning

Caution!



Do not start the drive in the automatic mode, but use the manual operation setting on the climate computer.

After completion of the installation-, connection- and adjustment work on the motor gearbox, test-runs must be performed on the installation. When doing the test-runs, pay attention to the following points:

1. Ensure that the work area of the motor gearbox plus coupled components is free of people and objects.
2. Check whether the correct venting screw has been removed (see paragraph 4.1).
3. Check the functioning of the installation in manual mode. The movement direction must match the indication on the control panel.
4. Check the setting of the limit switches, and adjust them if required. (see paragraph 4.5)

Tip



Install an operating hours counter.

6. Use

6.1 Noise level

The noise level (sound pressure level) at one meter distance is below 60 dB(A).

6.2 Warming

- The motor gearbox is not suitable for continuous operation.
- The motor gearboxes are suitable for S3-30% operation.
- The maximum allowed continuous running duration is 10 minutes.
- The motor gearbox may not be started more than 3 times per minute.

Warning! Risk of burns! The exterior of the drive can reach a temperature exceeding 60 °C.



We recommend the fitting of a protective cover if the unit is within easy reach.

7. Inspection and maintenance

Inspection and maintenance work may only be performed by qualified staff (see paragraph 1.3).

7.1 Maintenance intervals

Mortal danger! Mortal danger due to electrical or mechanical forces!



Before starting to work on the motor gearbox and associated parts, always disconnect the power supply by means of the main or isolation switch and secure it against re-activation by using a padlock..

Every 6 months

Check on increased noise production

Every 12 months

- Check mounting bolts and tighten if necessary
- Check couplings for wear and corrosion
- Check the limit switch system for corrosion
- Check the set screws of the limit switch system and tighten if necessary
- Check the electrical connection of the electric motor and the limit switch system
- Check the play on the output shaft

7. Maintenance and disassembly

7.2 Maintenance steps

The motor gearbox has lifetime lubrication. Normally it is not necessary to change the oil in the gearbox.

Caution!



In order to perform the following tasks, it must be guaranteed that the load cannot start moving autonomously after detaching it from the drive.

7.2.1 Checking worm gear wear and shaft play

1. Put the motor gearbox in an unloaded position, for instance with the roll-up tube resting entirely on the greenhouse floor.
2. Interrupt the power supply.
3. Detach the motor gearbox from the roll-up tube, so the output shaft could rotate freely.
4. Check, by turning the output shaft of the drive, how much 'play' there is in the gear unit. In case there is clearly noticeable play, the drive should be dismantled and the manufacturer should be contacted for advice.

8 Dismounting

Dismounting may only be performed by qualified staff (see paragraph 1.3).

Mortal danger! Mortal danger due to electrical or mechanical forces!



Before starting to work on the motor gearbox and associated parts, always disconnect the power supply by means of the main or isolation switch and secure it against re-activation by using a padlock.



Mortal danger! Mortal danger as a result of falling objects!



- Cordon of the hazard area using barrier tape.
- Use a cherry picker, or bring the motor gearbox down by use of a hoisting device and suitable straps, placed around the output shaft.

Please note!



Gear parts may only be replaced or repaired by an authorised service of De Gier B.V.

8.1 Dismounting the motor gearbox from the roll-up tube

1. Put the motor gearbox in an unloaded position, for instance with the roll-up tube resting entirely on the greenhouse floor.
2. Disconnect all electrical connections
3. Disconnect the output shaft of the motor gearbox from the driven system (coupling sleeves). See image on page 11.
4. Put back the red venting screw including gasket.
5. Dismount the entire motor gearbox from the system.

9. Troubleshooting

Troubleshooting may only be performed by qualified staff (see paragraph 1.3).

Mortal danger! Mortal danger due to electrical or mechanical forces!



Before starting to work on the motor gearbox and associated parts, always disconnect the power supply by means of the main or isolation switch and secure it against re-activation by using a padlock.



9.1 Malfunction: power failure

- Interrupt the power supply to prevent unintentional starting of the motor gearbox during work activities.
- In emergencies the motor gearbox can be moved to the desired position using an electric drill and a hexagonal bit inserted in the hex socket on the electric motor shaft.

Caution!



When driving the electric motor by means of a hexagonal tool, a maximum speed of 250 RPM should be observed to protect the hexagonal socket on the rear of the electric motor shaft.

9.2 Malfunction: drive does not start

- Check the motor protection switch and its settings. If the malfunction occurs again, this may indicate overload.
- Check whether one of emergency limit switches of the motor gearbox is actuated.
- Check the electrical connections, including the connection of the limit switch.
- For motor gearboxes with 3-phase mains supply check whether rotation direction "I"/"II" corresponds with limit switches "S11" and "S12".
- If the thermal protection (bi-metal switch) of the motor gearbox has tripped, the motor gearbox must be left to cool down for approximately 20 minutes. After this time the motor gearbox can be used again. If this protection trips repeatedly, contact your installer to resolve this problem.

9.3 Malfunction: end-position passed

- Check whether all the set screws in the limit switch system are tight and check the setting of the limit switches.
- Re-adjust the limit switch if necessary (see chapter 4.5).
- Check the operation of the working limit switches "S11" and "S12" and emergency limit switches "S21" and "S22". The switches must be wired and monitored as normally closed (NC) contacts.
- Check the operation of the relay and replace it if necessary.

9.4 Malfunction: loss of oil

- Check whether the correct venting screw has been removed, see chapter 4.1.
- Check whether a correct installation position is being applied.
- Contact your installer in case of oil loss.

9.5 Malfunction: buzzing noise from electric motor

- Check the voltage over all three phases, these must be equal and correspond with the value on the type plate of the electric motor.
- Check whether all nuts on the terminal strip of the electric motor have been properly tightened.
- Contact the installer if the malfunction remains.

9.6 Screen cloth does not roll up evenly (excessive folding of cloth or foil)

If the screen cloth (or foil) does not roll up evenly, it is possible that the weight of the motor gearbox causes the cloth to sag. This can be resolved by applying a counter-weight or mounting a strip of Dacron tape right next to the GXP10. This non-stretching tape will then carry the weight of the motor gearbox and is rolled up simultaneously with the screen cloth.

10. Replacing and removing parts

Parts may only be replaced by qualified staff. Only use original spare parts and original lubricants. For product safety reasons, De Gier B.V. will supply only complete motor gearboxes, limit switches and potentiometers as replacement parts. Gear unit parts may only be replaced or repaired by an authorised service provider of De Gier B.V.

11. Disposal

Caution!



Improper disposal of waste oil is a hazard to the health and the environment. Used oil must be taken to a collection point for waste oil. Avoid prolonged skin contact.

Drain used oil from the motor gearbox. The used oil must be collected, temporarily stored, transported and replaced professionally. Observe national legislation.

Collect waste oil and remove it in accordance with the regulations. Remove any spilled oil immediately using a suitable emulsifier or absorbent material.

Dispose of the gears, shafts and rolling bearings of the motor gearbox as steel scrap. This also applies to the stainless-steel cover plates unless there are provisions for separate collection. The worm wheels are partly made of heavy non-ferro-metal alloys. The lightweight metal gearbox housing is made of aluminium. Dispose of these accordingly. Dispose of the packaging material in accordance with the regulations or take it to a recycling point.

Motor gearbox parts	Material
Gear wheels, shafts, bearings, retaining rings	Steel
Cover plates	Stainless steel
Gearbox housing	Aluminium
Worm gears	Bronze
Shaft seals, sealing caps	Elastomer (with steel)
Flat gaskets	Elastomer, asbestos-free sealing material
Gear oil	Enriched mineral oil

12. Warranty

We only provide warranty on original parts supplied by us. The warranty period and -terms can be found in the "Terms and Conditions of the Metaalunie" . On request a copy of these terms can be sent to you free of charge. For the Blue-line range a warranty period of 3 years is applicable.

Subject to modifications.

Glossary

Benaming	Verklaring
S3-30%	Load cycle as defined in IEC 60034-1, Intermittent periodic operation with the motor operational during 30% of the time as a max.
AC	Alternating Current (“wisselstroom”).
Afschermkap	Cover used to prevent direct contact between persons, rain, dust and the motor gearbox.
Axiaal	In the longitudinal direction of the shaft.
Aanhaalmoment [Nm]	Torque to which a bolted joint has to be tightened, expressed in Newton meter.
dB(A)	Intensity of sound, expressed in decibel.
Bedrijfsurenteller	A counter that keeps the actual number of operating hours of the drive.
Bimetaal	Temperatuur beveiligingsschakelaar.
Compensatiekoppeling	A coupling that is able to compensate alignment errors, for instance a chain coupling, universal joint or cardan shaft.
DC	Direct Current (“gelijkstroom”).
Dodemanssysteem	Emergency switch operated by a pull cord along the entire length of the installation.
Elektrische aansluitwaarden	The voltage, current and power values that the electric motor was designed for. These can be found on the rating plate of the electric motor.
Gevarenzone	The area below or in the direct vicinity of the driven/moving parts.
Hangende lasten	Machinery or machine parts which are hanging from steel cables or lifting straps and are not supported otherwise.
Hiërarchisch hogere functie	An overriding or governing switch condition, depending on the structure of the system. For example, a rain detection that can cause the motor gearbox to start automatically.
Koppel [Nm]	Measure for rotation-effect of a force. The magnitude of the torque is equal to the force times the arm and is expressed in Newton meter.
Lineair	Straight line.
Mechanische rem	Electro-magnetically operated brake on the rear of the electric motor. Loss of the power causes the brake to be engaged. When the power comes back the brake will be disengaged again.
Motorreductor	An (electric) motor with gear unit to reduce the shaft speed.
Radiaal	A force perpendicular to the shaft.
Relais	A switch operated by an electro-magnet.



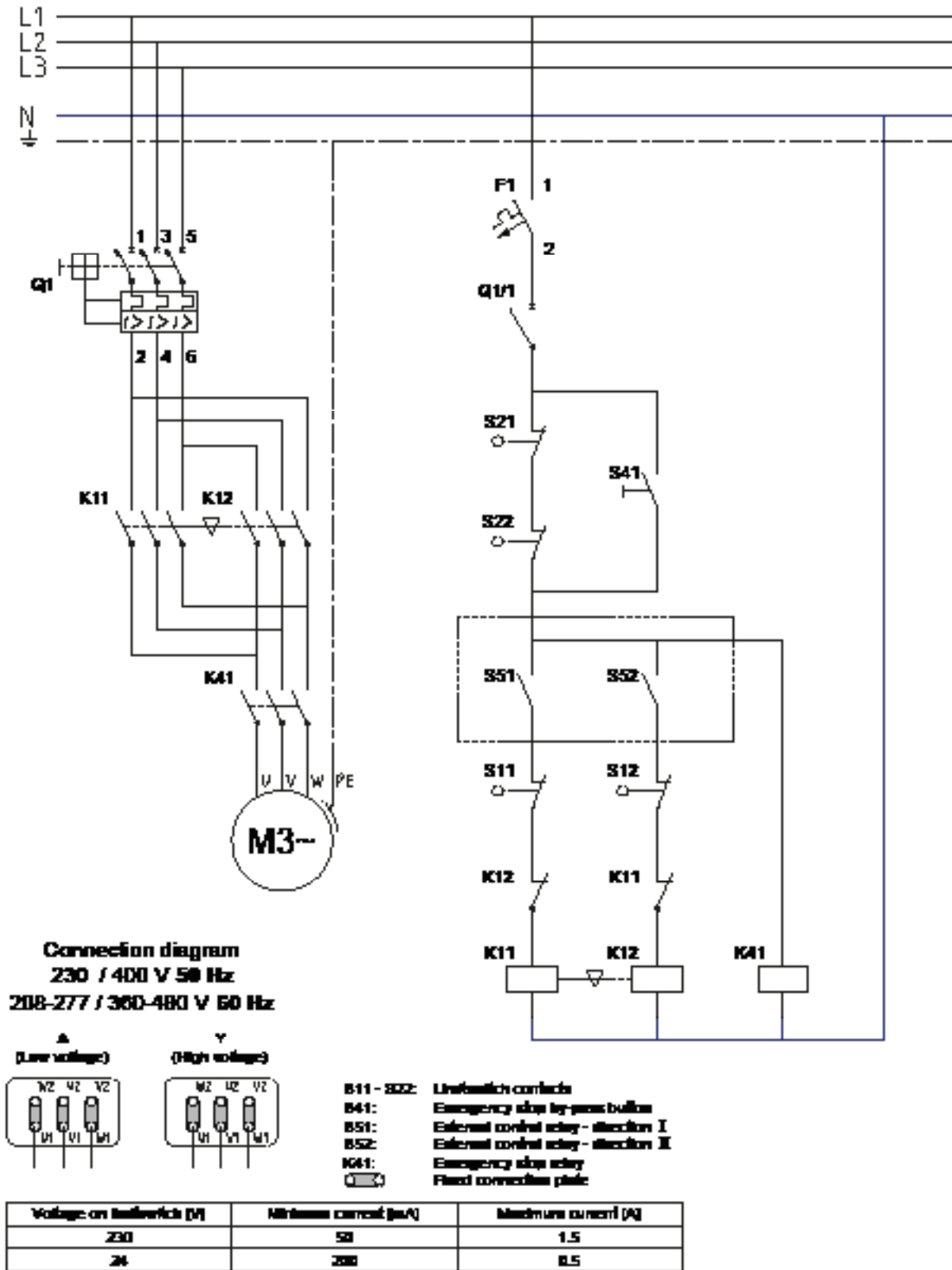
Glossary

Benaming	Verklaring
Restrisico's	Risks that cannot reasonably be prevented (inherent in the product).
Strop	Hoisting device.
TPM	Revolutions Per Minute.
VAC	Alternating current..
VDC	Direct current.
Valrembeveiliging	A protection ensuring that loads can be stopped when dropping at too high a speed.
Verbreek contact	An electrical contact (NC) that opens when the switch is actuated.
Viscositeit	Fluidity or thickness of a liquid.
Zelfremmendheid	The gear unit can only be driven by the electric motor, the output shaft cannot be moved (by the load).

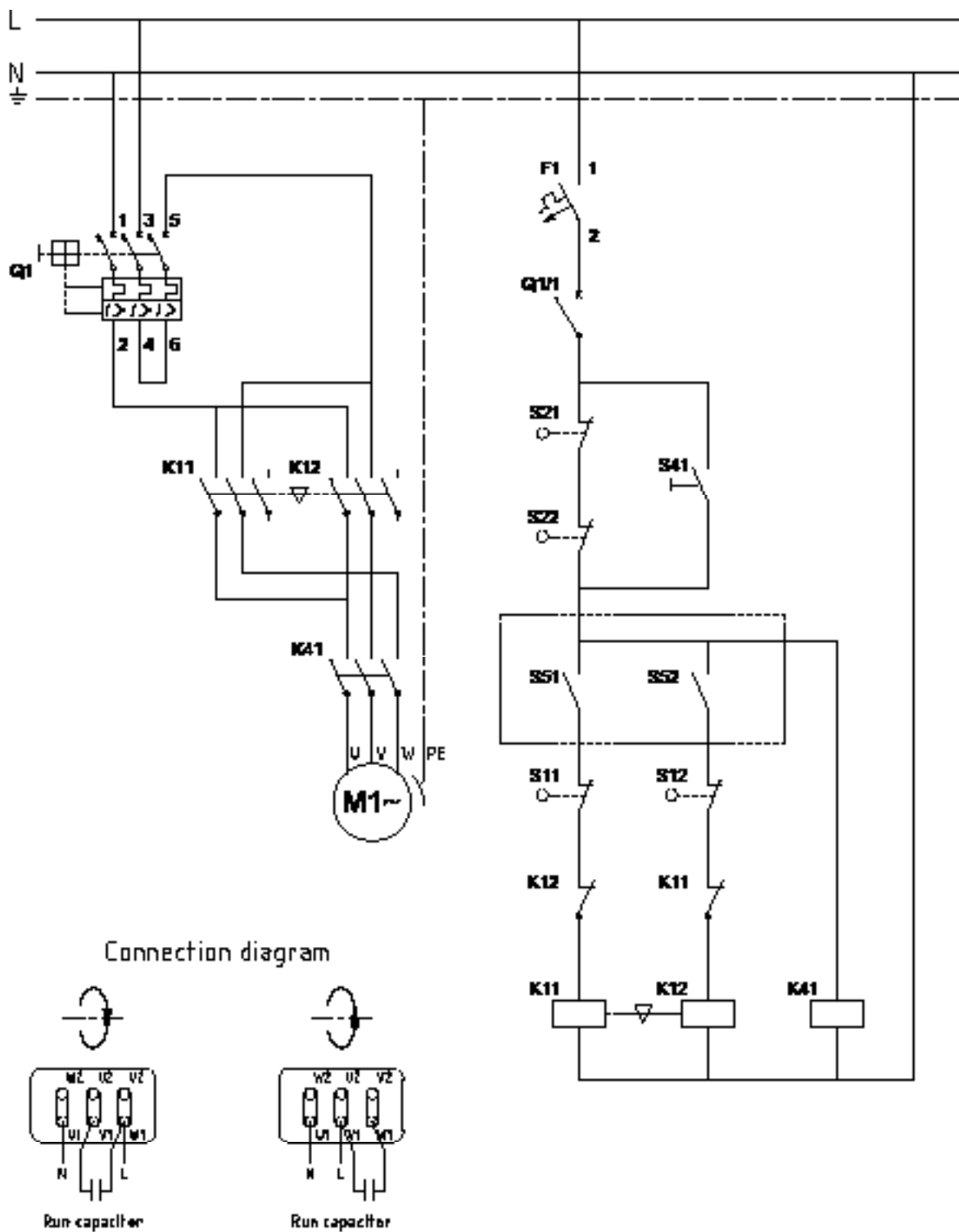


13. Wiring diagram 400 V 3~

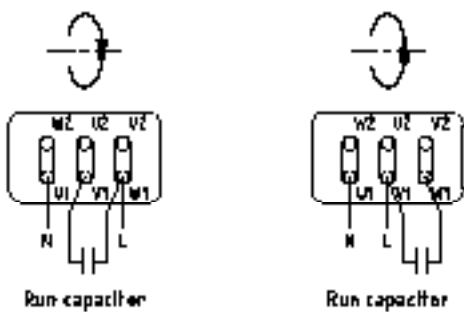
THREE PHASE MOTOR 400 V 50 Hz / 360-480 V 60 Hz



14. Wiring diagram 230V 1~



Connection diagram



Voltage on limitswitch [V]	Minimum current [mA]	Maximum current [A]
230	50	1,5
24	200	0,5