Operating instruction - Motor drive PXD compact

to control and drive hydraulic lifting systems made by Ergoswiss AG

It is essential to read this operating instruction thoroughly before commissioning the system. This operating instruction has to be stored in the immediate vicinity of the system.

Motor drive PXD compact

1. Power cable
2. Control box PXD compact
3. Manual control switch D / Memory
4. Motor cable PXD compact
5. Motor PXD with front plate and PXD housing
6. Cable strain relief
7. PXD coupling for connection to the Ergoswiss hydraulic pumps type PA and PB (with Woodruff key)

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This operating instruction applies to:

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<td>112.00088</td>
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<td>230 compact IT</td>
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<tr>
<td>230 compact EU - 5 m</td>
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<tr>
<td>230 compact CH / without KF</td>
<td>112.00094</td>
</tr>
<tr>
<td>230 compact EU / without KF</td>
<td>112.00096</td>
</tr>
<tr>
<td>230 compact IT / without KF</td>
<td>112.00098</td>
</tr>
<tr>
<td>230 compact CH - Front</td>
<td>112.00102</td>
</tr>
<tr>
<td>110 compact US / without KF</td>
<td>112.00104</td>
</tr>
</tbody>
</table>

standard item
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1 Product description

1.1 General

The basic functionality of a hydraulic lifting system by Ergoswiss AG ("motor drive → pump → tubing → cylinder") is the lifting, lowering and tilting of work surfaces, machine parts, profile systems etc.

All Ergoswiss hydraulic lifting systems with the pump types PA-W and PB-W (W = woodruff key) can be driven by the motor drive PXD compact. The motor drive PXD compact consists of a motor PXD, a control box PXD compact, a manual control switch D / Memory, different connection cables and a plastic housing.

The intelligent control box PXD compact is equipped with a highly efficient switched-mode power supply (SMPS) and a monitoring software. Due to the optimised driving comfort, the end positions are gently approached as low-speed zones up to the standstill. Additional functions, such as the synchronisation of two to four drives, ISP collision protection (Intelligent System Protection), or the connection of safety strips (squeezing protection) can be used.

With the manual control switch D / Memory the hydraulic system can be operated comfortably, the work surface will be adjusted steplessly in its height. The current height of the work surface is continuously shown on the display of the manual control switch (cm or inches). Up to four different memory positions can be stored and approached individually.

1.2 Specified normal operation

The motor drive PXD compact is exclusively intended to control and drive Ergoswiss AG hydraulic lifting systems. To do so the specified normal operation of the entire system is to be complied with.

The system is only to be installed and used indoors in dry conditions. The operating temperature range is at 0° C to +40° C.

The motor drive PXD compact must not be overloaded. Do not exceed the given maximum lifting loads of the hydraulic lifting systems.

The motor drive PXD compact can be continuously operated for a maximum of 2 minutes. Afterwards a pause of at least 18 minutes needs to be observed before the system can be operated again. To avoid overheating of the system a duty cycle of 2/18 (ON/OFF) should be maintained in general.

1.3 Target group and prior knowledge

This operating instruction addresses the following groups of people:

The commissioning staff, who install and commission the motor drive PXD compact and the Ergoswiss AG hydraulic system as an incomplete assembly into a work station, a machine, etc. For commissioning activities, mechanical and electrical knowledge is prerequisite. Before using the system for the first time the operating instruction must be read.

The end user controls the complete system via manual control switch and adjusts its height. Before using the system for the first time the operating instruction must be read.
1.4 Performance characteristics

### 1.4.1 Control box PXD compact

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>EU: 207 - 254.4V / 50Hz  US: 90 – 127V / 50-60Hz</td>
</tr>
<tr>
<td>Primary standby power</td>
<td>&lt;0.6W</td>
</tr>
<tr>
<td>Performance rate</td>
<td>83% @ 300W input power</td>
</tr>
<tr>
<td>Hall sensor supply voltage</td>
<td>5VDC +/- 10%; 250mA</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 – 40°C</td>
</tr>
<tr>
<td>Humidity (operating)</td>
<td>5 – 85% (non-condensing)</td>
</tr>
<tr>
<td>Humidity (when stored)</td>
<td>5 – 90% (non-condensing)</td>
</tr>
<tr>
<td>Protection class (DIN EN 60529)</td>
<td>IP 20</td>
</tr>
<tr>
<td>Performance Level (DIN EN 13849-1)</td>
<td>PL b</td>
</tr>
<tr>
<td>Power supply cable (length)</td>
<td>3m</td>
</tr>
<tr>
<td>Dimensions (L, W, H)</td>
<td>264 x 103 x 37mm</td>
</tr>
<tr>
<td>Weight</td>
<td>418g</td>
</tr>
</tbody>
</table>

### 1.4.2 Manual control switch D / Memory

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>5VDC ± 10%</td>
</tr>
<tr>
<td>Power consumption (average)</td>
<td>75mA</td>
</tr>
<tr>
<td>Service life (cycles of operation)</td>
<td>10'000</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 – 40°C</td>
</tr>
<tr>
<td>Cable length</td>
<td>1.9m</td>
</tr>
<tr>
<td>Dimensions (L, W, H)</td>
<td>126 x 70 x 25mm (without mounting plate)</td>
</tr>
<tr>
<td>Weight</td>
<td>300g (incl. cable)</td>
</tr>
</tbody>
</table>

### 1.4.3 PXD motor

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructional data</td>
<td>Brush type commutation, worm gear</td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>24V</td>
</tr>
<tr>
<td>Nominal torque</td>
<td>2Nm</td>
</tr>
<tr>
<td>Idle speed</td>
<td>160min⁻¹</td>
</tr>
<tr>
<td>Nominal power</td>
<td>92W</td>
</tr>
<tr>
<td>Nominal current</td>
<td>4A (no-load current 3A)</td>
</tr>
<tr>
<td>Protection class (DIN EN 60529)</td>
<td>IP 30</td>
</tr>
<tr>
<td>Gear ratio</td>
<td>2 : 53</td>
</tr>
<tr>
<td>Dimensions (L, W, H)</td>
<td>166 x 70 x 60mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1'210g</td>
</tr>
</tbody>
</table>
2 Safety requirements

2.1 Explanations of the symbols and notes

Please pay attention to the following explanations of the symbols and notes. They are classified according to ISO 3864-2.

**DANGER**

Indicates an immediate threatening danger.
Non-compliance with this information can result in death or serious personal injuries (invalidity).

**WARNING**

Indicates a possible dangerous situation.
Non-compliance with this information can result in death or serious personal injuries (invalidity).

**ATTENTION**

Indicates a possible dangerous situation.
Non-compliance with this information can result in damage to property or light to medium personal injuries.

**NOTE**

Indicates general notes, useful operator advice and operating recommendations which do not affect safety and health of the user.
2.2 Basic safety instructions

The safety instructions must be paid attention to. If the system is operated improperly, it can cause danger to people and objects!

It is essential to read this operating instruction thoroughly before commissioning the system. This operating instruction has to be stored in the immediate vicinity of the system.

→ In no case the control box may be opened! There is the risk of an electrical shock.

→ Modifications or changes to the control box, the manual control switch, the motor and any connection cables are forbidden!

→ The control box must only be operated with mains voltage indicated on the name plate!

→ The supplied power cable must be used. It is forbidden to operate the control box with a damaged power cable!

→ Electrical cables must not be exposed to crushing hazard or to bending and tensile loads.

→ Before connecting/disconnecting the manual control switch the power cable has to be disconnected from the mains!

→ The control box must not be operated in a potentially explosive atmosphere!

→ The control box must be protected from moisture, dripping water as well as spray water!

→ The control box is not suitable for continuous use. The operation/hold ratio must not exceed 2/18.

→ If there is a failure (for example, if the control drives on its own, or if a push button is stuck) the power cable is to be separated from the mains immediately! The power cable must be freely accessible at any time.

→ While using the height adjustment of the work surface there is a danger of squeezing. It is important to make sure that no objects or people are within the danger zone and no one is reaching into the danger zone.

→ This device is not intended to be used by people (including children under 8) with restricted physical, sensory or mental abilities or with a lack of experience and/or knowledge, unless they are supervised by a person responsible for safety or they have received instructions by this very person on how to operate the device.

→ Children under 8 should be supervised to ensure that they do not play with the device.

→ If the power cable of the drive is damaged it must be replaced by the manufacturer, the manufacturer’s customer service or by a similar qualified person.

→ Only use a dry or a damp cloth to clean the control box! Before cleaning, the power cable has to be separated from the mains!
3 Installation information

Before commissioning the motor drive PXD compact, the whole hydraulic lifting system must be assembled correctly according to the assembly instructions.

The control box must be mounted in the close distance of the motor (motor is connected to the pump). The motor cable PXD, connecting the control box to the motor, has a length of 950mm. If needed, up to 5 motor extension cables can be connected. They have a length of 1'200mm.

→ 124.00137: PXD compact motor extension cable 1'200mm

The manual control switch D / Memory must be mounted close to the control box and be easily accessible. The cable of the manual control switch has a length of 1'900mm, and if needed it can be expanded with up to 3 extension cables. They have a length of 1'000mm.

→ 124.00071: PXD manual control switch extension cable 1'000mm

3.1 Mounting instruction of the control box

Mounting of the control box PXD compact underneath a table top:

ATTENTION

During mounting of the control box PXD compact the power cable needs to be disconnected from the mains!

1. Place the control box to the desired location and mark the drill holes with a pen.

2. Pre-drill two holes (Ø 3mm).
   Be careful not to drill through the table top!
3. The control box is mounted with two screws (cap screws DIN7981C 4.8xL, cap-Ø 9.5mm).

NOTE
When tightening the screws do not exceed a maximum torque of 2Nm!
3.2 Mounting instructions of the manual control switch

Mounting of the manual control switch D / Memory underneath a table top:

1. Position the manual control switch at the desired location underneath the table top. The front edge of the manual control switch should not stick out of the edge of the table.

2. Fasten the manual control switch using the mounting plate. Be careful not to drill through the table top!

The manual control switch can now slip into the mounting plate and be pushed under the edge of the table.

3.3 Installation of the PXD housing

The plastic PXD housing can be snapped on the motor after wiring the motor and mounting the cable strain relief. Snap-fits integrated in the housing clasp the cylinder of the motor.
4 Initial operation

4.1 Cable connections

ATTENTION

The power cable must not be connected to the mains while connecting all motor cables and the manual control switch cable!

The control box PXD compact is equipped with the following connectors:

1 Motor socket 1 (M1)
2 Motor socket 2 (M2)
(S) Socket for manual control switch
(D) Connection for safety strip or sync cable
(P) Power socket
(F) Connection for grounding the table frame

ATTENTION

Connecting homemade products to the control box is prohibited!
Only supplied components are to be used, otherwise the danger of damage or destruction of the device can arise.
1. Connect plugs A and B of the motor cable PXD to the motor.

![PXD motor cable](image)

**NOTE**
Plug A must be connected to the motor in a way its cable shows in the direction of the gear shaft (in the direction of the arrow).

2. Place both lines of the motor cable into the cable strain relief. The bendable tab of the cable strain relief should point towards the motor. The distance between cable strain relief and the connectors A+B should be approx. 140mm.

![Cable strain relief](image)

3. Firmly compress the cable strain relief while inserting it into the slot of the motor front panel.
4. Connect the motor cable to the control box. The continuous cable must be plugged into the motor socket **M1**, the split cable must be plugged into the motor socket **M2**.

5. Connect the manual control switch D / Memory to the control box.

![Image of control box with M1 and M2 sockets]

**NOTE**
The drive does not work, if the motor cable plugs are connected to the wrong socket.

6. Connect optional components (sync cable, safety strip, etc.)
   → exact descriptions can be found in the following chapters!

7. Fasten all slack cables to avoid cables from entanglement.

8. Connect the power cable to the control box.

![Image of power cable connected to control box]

9. Connect the power cable to the mains.
   (Clicking sound of the control box → ready for initial operation)

**NOTE**
Before connecting the power cable to the mains the following must be verified:
   → Does the mains voltage correspond to the value on the name plate of the control box?
   → Are the plugs of the motor cable connected to the correct sockets (M1, M2)?
   → Is the entire hydraulic lifting system assembled according to the assembly instructions?
4.2 Initial operation

The following steps are necessary for the initial operation:

*On the display “068” is flashing (US – 110 V version “027”)*

1. Press the button \( \downarrow \) to drive to the desired lower end position (or down to the block position). The system moves downwards at half speed. Upward movement is disabled.

2. Press the buttons \( + \) (plus) and \( - \) (minus) to set the current height of the work surface on the display.
   (in cm, US - 110 V version in inch)
   Movement is disabled in both directions.

3. To confirm, press \( \mathrm{S} \).
   After confirmation the display changes to “088” (US - 110 V version “035”) (still flashing).

4. Press the button \( \uparrow \) to drive to the desired upper end position (or up to the block position).

5. Press the buttons \( + \) (plus) and \( - \) (minus) to set the current height of the work surface on the display.
   (in cm, US - 110 V version in inch)

6. To confirm, press \( \mathrm{S} \).
   After confirmation the height is displayed (no more flashing) and the initial operation is completed.

**ATTENTION**

While using the height adjustment of the work surface there is a danger of squeezing. It is important to make sure that no objects or people are within the danger zone and no one is reaching into the danger zone.

**NOTE**

The control box automatically offsets the end positions by one motor turn, so that the system won't drive through the block position within a loss of signal.
Depending on the combination of systems (hydraulic transmission ratio), the system stops its movement 3 mm, 5 mm or 10.5 mm before the defined end position.
5 Operation with the manual control switch D / Memory

5.1 Drive up/down

This function is used for easy height adjustment of the system.

→ Press the button \( \Delta \) or \( \nabla \). Keep the button pressed until the desired working height is reached.

On the display the current height is always shown. (in cm, US – 110 V Version in inch)

Example: \( 073 \)

5.2 Setting the shown height on the display

The displayed height can be adjusted with this feature.

1. Drive to any desired height and press the button \( S \).

Display: \( 088 \)

2. Keep the button \( \nabla \) impressed for about 5 seconds, until the display starts flashing.

Example: \( 073 \)

3. Now the button \( \Delta \) (plus) or \( \nabla \) (minus) can be used to set the current height. While doing so, the system does not move!

4. With the correctly set value the new height is saved by pressing \( S \).
5.3 Saving a memory position

With this function it is possible to memorise a certain position/height and approach it at a later time by pushing one button. With the four memory buttons up to four different positions can be stored and approached.

1. Drive to the desired position and press the button S.

   Display: 💡

2. Press one of the buttons 💡感应.

After pressing a memory button the display shows "S" and the number of the pressed button.

   Example: 💡感应

After saving there is a double click sound, and after approx. 2 seconds the current height is displayed again.

   Example: 💡感应

This operation can be repeated as often as you like and on any position.

5.4 Approaching a stored position

This function is designed to approach a stored position. Saving a position, see chapter 5.3.

→ Press one of the buttons 💡感应. The system approaches and stops at the stored position.

The system stops moving when releasing the button.
Pressing any other button while approaching the position will stop the system!
5.5 Reset of the control box

When resetting the control box all saved memory- and end positions will be deleted. After reset the initial operation must be redone according to chapter 4.2.

1. Press the buttons \(1\), \(2\) and \(\triangle\) simultaneously, until "S 5" or "S 7" is displayed. The control is now set to initial operation mode.

2. Press the button \(\triangle\) until "S 7" appears on the display.

3. Press the button \(S\).
   
   On the display "068" is flashing → carry out initial operation according to chapter 4.2.

5.6 Duty cycle monitoring

The duty cycle monitoring checks for the operation/hold ratio. To avoid overheating of the system a duty cycle of 2/18 (ON/OFF) should be maintained.

The maximum continuous operating time is 2 minutes. Afterwards a pause of at least 18 minutes needs to be observed before the system can be operated again.
6 Operation with other manual control switches

Alternatively to the manual control switch D / Memory, the motor drive PXD compact can also be operated with the following up/down manual control switches.

<table>
<thead>
<tr>
<th>Manual control switch D / up-down</th>
<th>Manual control switch D / Front</th>
<th>Manual control switch D / A+B</th>
</tr>
</thead>
<tbody>
<tr>
<td>124.00052</td>
<td>124.00059</td>
<td>124.00063</td>
</tr>
</tbody>
</table>

6.1 Initial operation

The following steps are necessary for the initial operation:

1. Press the button to drive to the desired lower end position (or down to the block position). The system moves downwards at half speed. Upward movement is disabled.

2. Press the button and simultaneously. Hold the buttons for about 5 seconds.

3. Press the button to drive to the desired upper end position (or up to the block position).

4. Press the button and simultaneously. Hold the buttons for about 5 seconds.

**NOTE**

A reset of the control box cannot be carried out using the above mentioned manual control switches. To do so, the manual control switch D / Memory must be used, or the software must be reloaded onto the control box.

6.2 Drive up/down

This function is used for simple height adjustment of the system.

→ Press the button or . Hold the button down until the desired working height is reached.
7 Synchronous operation of 2, 3 or 4 control boxes

7.1 Cable connections

By cascading multiple drives they can be operated by one manual control switch at the same time. The drives can be interconnected with the SYNC-2 (124.00088) or with the SYNC-4 (124.00089) cable.

<table>
<thead>
<tr>
<th>PXD SYNC-2 cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>With the SYNC-2 cable two control boxes PXD compact can be connected and synchronised.</td>
</tr>
<tr>
<td>→ The length of the SYNC-2 cable is 550mm.</td>
</tr>
<tr>
<td>The SYNC cable cannot be extended. If necessary, the motor cables can be extended!</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PXD SYNC-4 cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>With the SYNC-4 cable 2, 3 or 4 control boxes PXD compact can be connected and synchronised.</td>
</tr>
<tr>
<td>→ The length of SYNC-4 cable is 1800mm.</td>
</tr>
<tr>
<td>→ Two connected SYNC-4 cables have a length of 2000mm.</td>
</tr>
<tr>
<td>Each control box needs one SYNC-4 cable.</td>
</tr>
<tr>
<td>The SYNC cable cannot be extended. If necessary, the motor cables can be extended!</td>
</tr>
<tr>
<td>The SYNC-4 cables of each control box are to be connected.</td>
</tr>
<tr>
<td>→ The loose ends do not have to be connected. However, connecting the loose ends will not have any influence to the system.</td>
</tr>
</tbody>
</table>
7.2 Commissioning the synchronized systems

1. Wire the drives according to chapter 4.1.

2. Connect the control boxes using the PXD SYNC-2 cable for two control boxes, or the PXD SYNC-4 cable for 2, 3 or 4 control boxes.

3. Only one manual control switch is necessary. The control box with the manual control switch is the master control box. All other control boxes are subordinated.

4. Connect the control boxes to the mains.
   (Clicking sound of the control box → ready for initial operation)

5. Carry out the initial operation according to chapter 4.2.

---

**ATTENTION**

The SYNC cable must be connected to the control box before the control box is connected to the mains. If the SYNC cables are connected afterwards, they will not be recognised by the control box and only one drive will move, which can lead to jamming of the entire system.
7.3 Operation scenarios - FAQ

Scenario: connecting the manual control switch to another control box
- Display blinks (- - -)
- Manual control switch doesn’t work
- Manual control switch ONLY works on the the master control box

Scenario: disconnecting or reconnecting the synchronisation cable
- Display blinks (000)
- Then display blinks (E93)
- Do a „S 0“ (all control boxes will be set to default setting)

1. Press the buttons 1, 2 and 3 simultaneously, until "S 5" or "S 7" is displayed. The control is now set to initial operation mode.
2. Press the button 4 until "S 0" appears on the display.
3. Press the button 5.

On the display "068" is flashing → carry out initial operation according to chapter 4.2.

Scenario: power cut
- Control box saves all stored positions
- Synchronisation is stored
- Getting back the power, the system can be used as usual. No initial operation necessary.

Scenario: power cut on only one control box
- Display blinks (000)
- Then display blinks (E93)
- Do a „S 0“ (all control boxes will be set to default setting)

1. Press the buttons 1, 2 and 3 simultaneously, until "S 5" or "S 7" is displayed. The control is now set to initial operation mode.
2. Press the button 4 until "S 0" appears on the display.
3. Press the button 5.

On the display "068" is flashing → carry out initial operation according to chapter 4.2.

NOTE
Putting the control boxes into default setting “S 0” can be done at any time. After doing a “S 0” all control boxes are equal – there is no master control box anymore.
After doing a “S 0” all synchronisation cables and manual control switches can be disconnected and reconnected as wished.
Are all cables connected there must be done an initial operation.
Safety strip - Squeezing protection

With hydraulic lifting systems of Ergoswiss AG it is important to make sure that no objects or people are trapped during a stroke. -> **Danger of squeezing**

Attach the safety strip to an assumed squeeze zone. If the safety strip gets squeezed while the system is doing a downward movement, the motor will stop instantly and turn back for one motor turn.

Depending on the combination of systems (hydraulic transmission ratio), the system stops its movement 3mm, 5mm or 10.5mm before the defined end position.

**NOTE**
The standard control box software V200 detects the safety strip function only when driving the system downwards. The control box can be specifically programmed for a safety strip function in an upward movement, or in both directions of travel.

The safety strip 124.00105 consists of:

- Adapter cable safety strip comp. 124.00106
- End piece with cable / RJ45 124.00107
- Contact tube 124.00101
- End piece with resistor 2.2kΩ 124.00118

185mm 2500mm variable 10mm

---

### 7.4 Technical Data

**Functional properties of the contact tube**
- Contact angle: < 80°
- Switching pressure: < 25 N at 23 °C
- Switching travel: < 2mm at 23 °C
- Bending radii minimal: B₁ 120mm / B₂ 150mm / B₃ 20mm / B₄ 20mm
- Max. tensile load: 20 N

**Electrical properties**
- Terminal resistance: 2.2 kΩ
- Max. switching capacity: 250 mW
- Max. Voltage: DC 24 V
- Current min/max: 1mA / 10mA
7.5 Connecting the safety strip

The safety strip is compatible with the control box PXD compact. When installing the system up to two safety strips can be mounted and operated at a potential squeeze zone. The length of the contact tube can be freely selected from 0 to 5'000mm of length.

**Single version**

**Double version**

For this the split cable 124.00084 is needed.

**NOTE**

If it is necessary to attach a PXD SYNC cable to the control box in addition to the safety strip, both can also be connected with the split cable.

<table>
<thead>
<tr>
<th>Gluing the contact tube in the squeeze zone</th>
<th>Connecting the safety strip</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clean and degrease the contact face</td>
<td>1. Wire the drive according to chapter 4.1.</td>
</tr>
<tr>
<td>2. Pull off a liner of acrylic foam of 10 to 15 cm</td>
<td>2. Run the cable 124.00107 orderly to avoid entanglement</td>
</tr>
<tr>
<td>3. Place it on the contact face and press on well</td>
<td>3. Connect the adapter plug to the control box</td>
</tr>
<tr>
<td>4. Repeat steps 2 and 3 until the contact tube is completely glued on</td>
<td>4. The safety strip must be connected to the control box before the control box is connected to the mains.</td>
</tr>
<tr>
<td>5. Maximum adhesion is reached after 24 h</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**

The safety strip must be connected to the control box before the control box is connected to the mains. If the safety strip is connected afterwards, it will not be recognised by the control box.
8 Maintenance and disposal

8.1 Maintenance and cleaning

The motor drive PXD compact is maintenance-free for up 10'000 cycles while observing the specified normal operation. Therefore, servicing is not necessary.

**ATTENTION**

⚠️ The control box and the manual control switch must only be cleaned with a dry or damp cloth. Before cleaning the power cable has to be separated from the mains!

**ATTENTION**

⚠️ No liquid is allowed to enter the plug connections.
## 8.2 Error messages on the display

<table>
<thead>
<tr>
<th>Display</th>
<th>Cause</th>
<th>Rectification</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOT</td>
<td>The control box PXD compact is equipped with an overheating protection. This overheating protection will activate due to too high temperatures.</td>
<td>Wait until the control box has cooled down and the message HOT is no longer displayed. Then the control box is ready for operation again.</td>
</tr>
<tr>
<td>E00</td>
<td>There is an internal error at the PXD compact control.</td>
<td>Proceed according to the following error list.</td>
</tr>
<tr>
<td>00</td>
<td>Internal error channel 1</td>
<td>Disconnect the power cable from the mains and contact the customer service.</td>
</tr>
<tr>
<td>01</td>
<td>Internal error channel 2</td>
<td>The motor cable is not plugged-in correctly.</td>
</tr>
<tr>
<td>12</td>
<td>Defective channel 1</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Defective channel 2</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Excess current motor M1</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Excess current motor M2</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Excess current motor group 1</td>
<td>System overloaded → Remove load from the system</td>
</tr>
<tr>
<td>49</td>
<td>Excess current motor group 2</td>
<td>System jammed → remove clamped object</td>
</tr>
<tr>
<td>60</td>
<td>Collision protection</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Excess current control</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Plug detection at motor socket M1</td>
<td>Plug in the motor cable correctly at the respective socket.</td>
</tr>
<tr>
<td>37</td>
<td>Plug detection at motor socket M2</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Motor replaced</td>
<td>Reset the system.</td>
</tr>
<tr>
<td>55</td>
<td>Synchronising of the motor group 1 impossible</td>
<td>Remove load from the system. Reset the system. Contact the customer service if the error remains displayed.</td>
</tr>
<tr>
<td>56</td>
<td>Synchronising of the motor group 2 impossible</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Too high voltage</td>
<td>Disconnect the power cable from the mains. Contact the customer service.</td>
</tr>
<tr>
<td>70</td>
<td>Change of the drive configuration</td>
<td>Disconnect the power cable from the mains and wait at least for 5 seconds. Reconnect the power cable and reset the system.</td>
</tr>
<tr>
<td>81</td>
<td>Internal error</td>
<td>Disconnect the power cable from the mains and wait at least for 5 seconds. Reconnect the power cable and reset the system. Contact the customer service if the error remains displayed.</td>
</tr>
<tr>
<td>93</td>
<td>Connection error while synchronising</td>
<td>Disconnect the power cable from the mains and wait at least for 5 seconds. Reconnect the power cable and reset the system.</td>
</tr>
<tr>
<td></td>
<td>The error is displayed for 15 seconds, then the control box changes to the reset mode with a flashing display of 000.</td>
<td></td>
</tr>
</tbody>
</table>
8.3 Click codes

As soon as the motor drive PXD compact is supplied with current the control utilises the integrated relays to acoustically indicate the system state as well as the reason of the last shut down to the user.

<table>
<thead>
<tr>
<th>Number of clicks</th>
<th>Status information</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x</td>
<td><strong>Normal operation:</strong> The system works flawlessly.</td>
</tr>
<tr>
<td>1x</td>
<td><strong>Emergency operation:</strong> The system is in emergency mode; the motors cannot be operated. There is an error code to be checked on the display.</td>
</tr>
<tr>
<td>3x – 6x</td>
<td><strong>Last shut down incomplete / forced reset:</strong> There is an error code to be checked on the display.</td>
</tr>
</tbody>
</table>

8.4 Trouble-shooting

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>Rectification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive does not work</td>
<td>Control box not connected</td>
<td>Connect power cable</td>
</tr>
<tr>
<td></td>
<td>Motor not connected</td>
<td>Connect motor cable</td>
</tr>
<tr>
<td></td>
<td>Motor defective</td>
<td>Contact the customer service</td>
</tr>
<tr>
<td></td>
<td>Control box defective</td>
<td>Contact the customer service</td>
</tr>
<tr>
<td></td>
<td>Manual control switch defective</td>
<td>Replace the manual control switch</td>
</tr>
<tr>
<td></td>
<td>Bad connector contact</td>
<td>Plug in all plugs correctly</td>
</tr>
<tr>
<td>Drive only move to one direction</td>
<td>Control box defective</td>
<td>Contact the customer service</td>
</tr>
<tr>
<td></td>
<td>Manual control switch defective</td>
<td>Replace the manual control switch</td>
</tr>
<tr>
<td>Drive only moves downwards</td>
<td>System overload</td>
<td>Remove weight from the system</td>
</tr>
</tbody>
</table>

8.5 Repairs and spare parts

Repairs must only be conducted by specialists. Only original replacement parts may be used. For all repair work the system must always be unloaded and voltage-free.

**ATTENTION**

In no case may the control box be opened! There is the risk of an electrical shock.

8.6 Disassembly and disposal

When decommissioning and disposing of the motor drive PXD compact the electronic parts must be disposed of separately. The system consists of components that can be fully recycled and thus they are quite safe from an environmental protection perspective. The electronic parts comply with the RoHs directive.