



Deutsch / English

Betriebsanleitung

Originalbetriebsanleitung für die Bandschleifmaschine

Operating Instructions

Translation of the original operating instructions for the belt sanding machine

SUPERHUMMEL

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Safety notes and their meaning:

 <p><u>WARNING!</u></p>	<p>Death, severe physical injury or significant property damage can occur if the corresponding cautionary measures are not taken!</p>
 <p><u>CAUTION!</u></p>	<p>Moderate to light physical injury or property damage can occur if the corresponding cautionary measures are not taken!</p>
<p><u>ATTENTION!</u></p>	<p>An undesired event can occur if the corresponding instructions are not followed!</p>

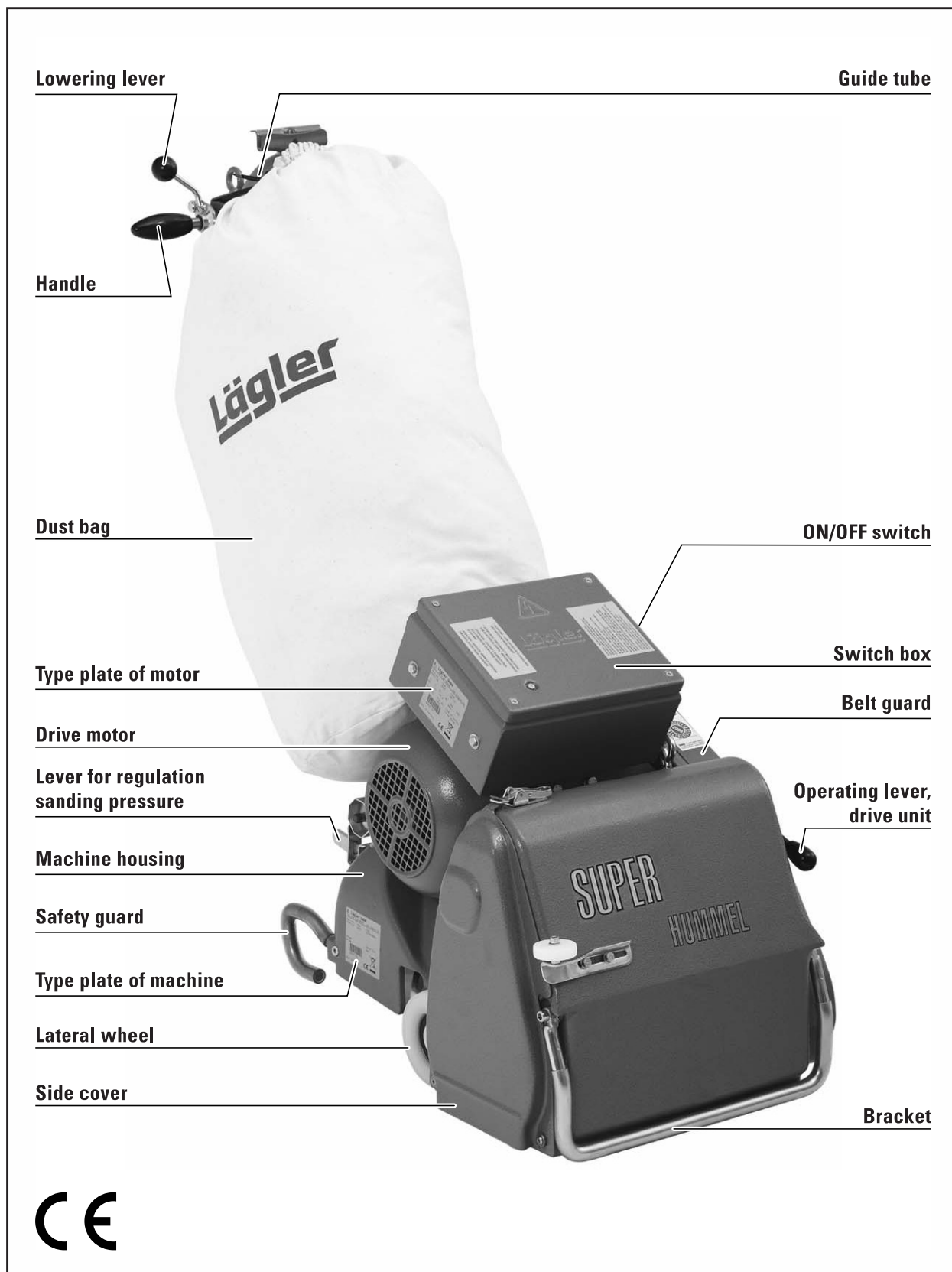


Fig. 1 Important parts and assemblies of the belt sanding machine SUPERHUMMEL.

Introduction

You just bought a high-quality product from LÄGLER®. We wish you a lot of success with your SUPERHUMMEL. The machine was produced with the most modern technologies. All LÄGLER® products are subjected to a thorough control before they leave the factory.

Read this manual carefully before you start working with your SUPERHUMMEL for the first time. Your manual contains important references for industrial safety and will be able to answer any questions so you can work safely and trouble-free with the machine. If you don't find a state of affairs in this manual, check the LÄGLER® sanding manual "Sanding of wooden floors" or please check with your dealer. He is in the best possible way familiar with the SUPERHUMMEL and trained highly qualified.

For more information, please apply to

within the USA free of charge:

- Telephone: 800-848-6635

or

- Telephone: 0049 - 7135 - 98 90-0

- Fax: 0049 - 7135 - 98 90-98

- E-mail: info@laegler.com

- Internet: <http://www.laegler.com>

1.1 FEATURES OF THE MACHINE

The figure 1 shows the most important parts and assemblies which make up the SUPERHUMMEL. We recommend that you take some time to become familiar with the machine.

The SUPERHUMMEL is designed for efficient and economical work on wooden floors in public buildings and institutions. Exceptional sanding quality with high area performance. For easy transport the machine can be dismantled into three parts in a little while.

1.2 DESCRIPTION OF THE MACHINE

The belt sanding machine SUPERHUMMEL works with a contact sanding drum with a specially profiled rubber surface. The drive unit with integrated automatic adjustment of the sanding belt is mounted above the sanding drum. The work zone is protected by the machine housing and the removable side cover.

The motor is attached on the machine housing with a motor bearing bracket. The motor cable with the extension cable leads to the main power source. The motor switch is located at the switch box. The belt drive is found on the left-hand side under the belt guard. The machine moves by two lateral wheels and one steerable rear wheel. The dust bag is attached to the upper front end of the guide tube. The two handles and the lever to lower and lift the drum are at the upper back end of the guide tube. Between the two ends is the mounting for the cable support.

INTRODUCTION

1.3 DETERMINATION APPROPRIATE USE

The belt sanding machine SUPERHUMMEL is characterized for **dry** sanding of wood and cork floors, artificial ice skating rings, tartan running tracks and rubber sport floors. With a special option sanding of sheet metal is possible.

Every other use is not allowed without approval of the manufacturer!

**WARNING!****RISK OF DEATH from electrical shock:**

The machine may never be used for wet processing operations of any kind!

1.4 SAFETY DEVICES

The following parts of the machine are safety devices and accordingly, must always be in perfect state:

Sealing felt	= Dust shield
Side cover	= Dust shield, protection from sanding belt
Machine housing	= Protection from sanding belt
Belt guard	= Protection from V-belts

1.5 MACHINE CONFIGURATION

NOTE:

You will find the part numbers of optional equipment and wearing parts in *Section 13, Spare parts*.

1.5.1 BASIC EQUIPMENT

- 1 Machine ready for operation
- 1 Operating instructions
- 1 Dust bag
- 1 MultiClip for dust bag fixture
- 1 Extension cable 10 m long
- 1 Cable support
- 1 O-ring as a strain relief device
- 1 Tool bag
- 1 Torx-screwdriver size T30
- 1 Closed mouth wrench size 10/13 mm
- 1 Open mouth wrench size 17 mm
- 1 Open mouth wrench size 24 mm

INTRODUCTION

- 1 Hexagonal socket screw wrench size 4 mm
- 1 Hexagonal socket screw wrench size 5 mm
- 1 Hexagonal socket screw wrench size 6 mm
- 1 Box wrench
- 1 Setting fixture
- 1 Short lower rod
- 1 Respiratory protection mask P3
- 1 Safety belt

1.5.2 OPTIONAL EQUIPMENT

- TransCart
- Foldable earmuff

1.5.3 WEARING PARTS

Check the state of the following wearing parts on a regular basis to ensure a consistent quality and efficiency of your work.

Replace after wearing or damage:

- Extension cable
- Motor cable
- O-ring used as a strain relief device
- ON/OFF switch
- Sealing felt
- Dust bag
- MultiClip for dust bag fixture
- V-belts
- V-belt pulleys
- Belt tensioner
- Sanding drum (after daily use exchange every 1-2 years)
- Tensioning roller (after daily use exchange every 1-2 years)
- Guide roller of the drive unit
- Side cover
- Rear wheel
- Lateral wheels

Hazard warnings and safety instructions

2.1 HAZARD WARNINGS



WARNING!

RISK OF DEATH, RISK OF INJURY, RISK OF FIRE:

- **Be certain to read the hazard warnings and safety instructions before using the machine!**
- **Instruct your co-workers and colleagues accordingly! Otherwise, these persons could be exposed to danger or injured!**
- **Keep these hazard warnings and safety instructions in a safe place!**
- **Note the valid regulations and legal conditions in your country!**



WARNING!

RISK OF DEATH from suffocation and RISK OF INJURY:

- **Never** wrap the power cable around your neck or other parts of the body!

RISK OF DEATH from electrical shock:

- The machine may **never** be used for wet processing operations of any kind!
- Do not expose the machine to rain! Do not use the machine in moist or wet environments!
- The machine **must** be switched off and the power plug must be removed from the socket during all maintenance work and work on the electrical equipment!
- Avoid body contact with grounded parts, e.g. pipes, radiators, ovens, refrigerators!
- The quality of the motor cable and the power cables must match the quality of the original LÄGLER® cable!
- The power cables must be protected from mechanical and/or electrical damages in the workplace!
- Do not carry or pull by the machine by the cable! Do not pull on the cable to remove the plug from the socket! Protect the cable against heat, oil and sharp edges!

 HAZARD WARNINGS AND SAFETY INSTRUCTIONS

**WARNING!****RISK OF EXPLOSION due to sparks while sanding or a high dust concentration in the air:**

- Do not use the machine near
 - sources of fires,
 - flammable liquids or gases,
 - potentially explosive areas!
- Do not smoke in a dusty environment, e.g. while sanding or emptying the dust bag!

RISK OF FIRE from spontaneous combustion or from sparks while sanding:

- There is a high risk of fire when sanding woods with a large amount of resin, oiled or waxed floors or metal! Therefore, the machine must **always** be cleaned carefully directly after sanding! **Be certain** to note the warning notices of the manufacturers of paint, oil and wax!
- Cloths, pads, et cetera which have been immersed in oil or wax can spontaneously combust! **Be certain** to note the warning notices of the manufacturers of paint, oil and wax!
- The dustbag must **always** be removed from the machine after sanding and emptied into a **non-combustible** container **outdoors!** Cover this container with a **non-combustible** cover and **be certain** to store it and the dust bag outdoors (→ *Section 5.4, Emptying the dust bag!*)

RISK OF FIRE from the overheating of the cables:

- Only the following motor cables and power cables may be used:
 - machines with **single-phase AC motor** (mains voltage 220 V or 230 V):
3 wires with wire cross-sections of at least 2.5 mm²
 - machines with **three-phase AC motor** (mains voltage 400 V) **up to 4.5 kW:**
5 wires with wire cross-sections of at least 1.5 mm²

HEALTH RISK caused by dust:

- Make sure that the dust bag is properly fastened to the machine!
- If the machine is operated **correctly**, the mandatory dust emission values will not be exceeded! **When emptying the dust bag outdoors**, a respiratory protective mask (at least filter class P2) must be worn!
- A respiratory protective mask (at least filter class P2) must be worn when conducting other work that creates dust, e.g. cleaning of the machine!

HAZARD WARNINGS AND SAFETY INSTRUCTIONS

**CAUTION!****RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating tools and parts of the machine:**

- Before switching on the machine, make sure that all tools and adjustment tools have been removed from the machine!
- The machine **may not be started** when tilted backward or forward!
- The machine **may not be started** if the sanding drum is on the floor!
- Do not reach into rotating tools or parts of the machine!
- Do not let children or other persons touch the machine or cable and keep them out of the work area!
- Do not wear any long articles of clothing or jewelry! These could be caught by moving parts!

RISK OF INJURY and RISK OF PROPERTY DAMAGE from unintentional starting of the machine:

- The power plug **must be** removed from the socket when the machine is switched off!
- Make sure that ON/OFF switch is not set to ON when connecting the machine to the mains supply!

RISK OF INJURY and RISK OF PROPERTY DAMAGE from the rolling away, tipping or falling of the machine:

- The machine must be secured against rolling away, tipping or falling when not in use!
Always ensure that the machine is standing securely!

RISK OF INJURY and RISK OF PROPERTY DAMAGE from unsuitable parts:

- Only use tools, accessories and spare parts from LÄGLER® for the SUPERHUMMEL (→ *Section 13, Spare parts*)! **There is no guarantee for external parts or liability for damage caused by them!**

HEALTH RISK caused by noise:

- Use hearing protection when conducting work that produces noise!

RISK OF PROPERTY DAMAGE:

- Do not store the unused machine on the sanding drum! Otherwise the sanding media can cause scratches on the ground or the sanding drum can be damaged!
- Improper transport will result in damage to the machine!

HAZARD WARNINGS AND SAFETY INSTRUCTIONS

2.2 GENERAL SAFETY INSTRUCTIONS

- **Provide good illumination in the workplace!**
Well lit construction sites reduce the risk of injury and allow you to better evaluate the quality of your work.
- **Keep your work area clean!**
Untidy work area create a risk of accidents.
- **Use the proper machines!**
Do not use low-performance machines or additional devices for heavy jobs. Do not use the machine for purposes and work that it is not intended for.
- **Do not overload the machines!**
It works better and more safely in the power range noted.
- **Do not bend too far over the machines!**
Avoid unnatural postures. Make sure that you stay in a stable position and keep your balance at all times.
- **Be attentive!**
Pay attention to your work. Work carefully and do not use the machines if you are not concentrating.
- **Maintain your machines with care!**
Keep your machines clean so that you can work better and more safely. Follow the maintenance guidelines and the instructions for replacing tools. Regularly inspect the cable and have it replaced by a qualified electrician if it is damaged. Inspect the extension cable regularly and replace it if it is damaged. Keep the handles dry and free of oil and grease.
- **Check your machines for damage!**
Before using the machines, you must inspect the safety devices or damaged parts carefully to ensure that they are working perfectly and as intended. Check whether the moving parts are working properly, that they are not sticking, that no parts are broken, whether all parts are in perfect condition and installed properly and whether all other conditions which could influence the operation of the machine are in order.
Damaged safety devices and parts must be properly repaired or replaced by an authorized service shop insofar as nothing to the contrary is indicated in the operating instructions. Damaged switches must be replaced by a qualified electrician. Do not use the machine if it cannot be started or switched off by using its switch.
- **Store your machines safely!**
Store your unused machines in a dry, closed location out of the reach of children!

Technical Data

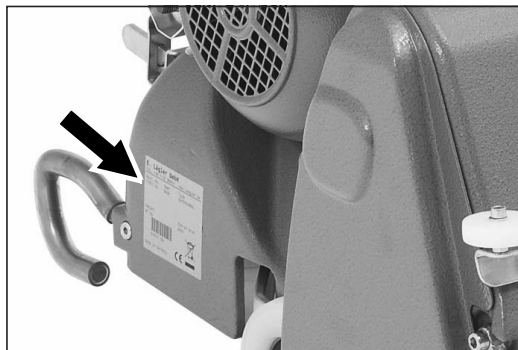


Fig. 2 Machine type plate on machine housing.

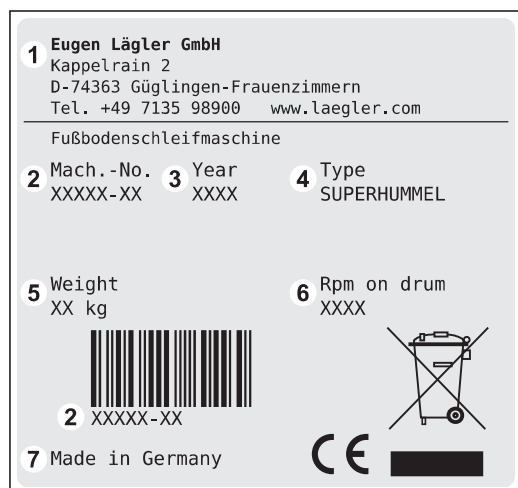


Fig. 3 Data on machine type plate.

3.1 DATA ON TYPE PLATE

ATTENTION!

In order to receive the correct spare parts from us, please specify in inquiries and spare part orders always the serial numbers of your machines!

3.1.1 MACHINE TYPE PLATE

The machine type plate of SUPERHUMMEL is located on the machine housing (fig. 2).

The following technical data are specified on the machine type plate (fig. 3):

- 1 Manufacturer
- 2 **Serial number of machine (Mach.-No.)**
- 3 Year of manufacture (Year)
- 4 Machine name (Type)
- 5 Weight of machine in kilogram (Weight)
- 6 Speed of sanding drum in 1/min (Rpm on drum)
- 7 Country of manufacture

 TECHNICAL DATA

 3.1.2 TYPE PLATE ON MOTOR

The motor type plate of SUPERHUMMEL is located on the switch box of motor (fig. 4).

The following technical data are specified on the motor type plate (fig. 5):

- 1 Manufacturer
- 2 **Serial number of machine (Mach.-No.)**
- 3 Year of manufacture (Year)
- 4 Motor size (Type)
- 5 Required mains voltage in volt (V)
- 6 Current consumption in ampere (A)
- 7 Motor frequency in CPS (Hz)
- 8 Motor power in kilowatt (KW)
- 9 Motor speed in 1/min (Rpm)
- 10 Power factor cosine phi (cos)
- 11 Insulation class (Insul. Cl.)
- 12 Protection class (Prot. Cl.)
- 13 Type of current
- 14 Country of manufacture

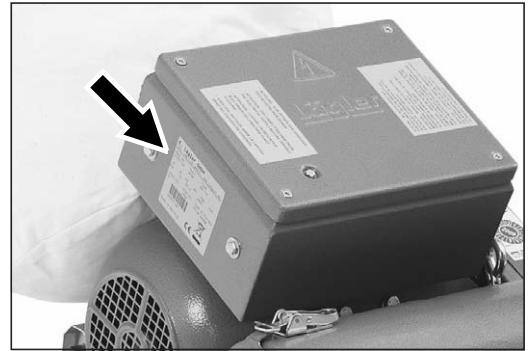


Fig. 4 Motor type plate on switch box.

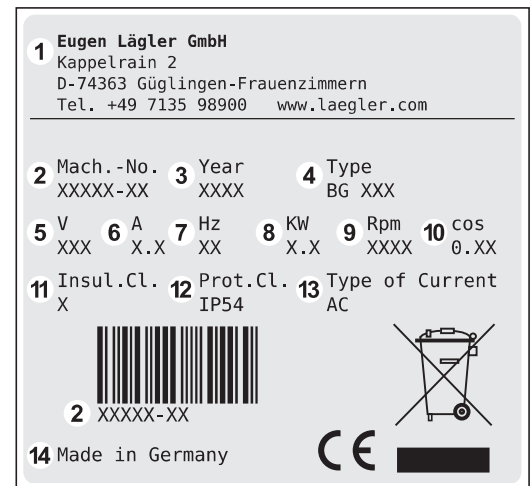


Fig. 5 Data on motor type plate.

TECHNICAL DATA

3.2 MACHINE DATA

Manufacturer	Eugen Lägler GmbH			
Machine model	Belt sanding machine			
Machine name	SUPERHUMMEL			
Serial number	see type plate (fig. 2, fig. 4)			
Year of manufacture	see type plate (fig. 2, fig. 4)			
Motor type	Three-phase AC motor		Single-phase AC motor	
Voltage	---		220 V, 230 V	
Voltage star connection	400 V	460 V	---	
Voltage delta connection	230 V	230 V	---	
Frequency	50 Hz (CPS)	60 Hz (CPS)	60 Hz (CPS)	50 Hz (CPS)
Power output	4 kW	10.5 kW	5.5 kW	4.2 kW
Necessary fuse protection of mains supply	16 A	50 A	32 A	25 A
Insulation class	B		F	
Protection class	IP 54			
Safety devices	No-voltage release, temperature switch as overload protection in the motor			
Starting capacitor	---		130 µF	
Running capacitor	---		40 µF	
Diameter of sanding drum	175.5 mm (6.9")			
Width of sanding drum	300 mm (11.81")			
Speed of sanding drum	2400 1/min (rpm)	3490 1/min (rpm)	2880 1/min (rpm)	2400 1/min (rpm)
Dimension of sanding belt	300 x 800 mm (11.8" x 31.5")			
Total length of machine	1100 mm (43.3")			
Total width of machine	500 mm (19.7")			
Total height of machine	1050 mm (41.3")			
Weight machine housing	47 kg (104 lbs)			
Weight motor	35 kg (77 lbs)	57 kg (126 lbs)	57 kg (126 lbs)	
Weight guide tube complete	5 kg (11 lbs)			
Total weight of machine	87 kg (192 lbs)	109 kg (241 lbs)	109 kg (241 lbs)	
Dust emission in working area	< 2 mg/m ³ (0.024 gr/cu yd)			
Noise emission in working area (measurement taken 1.5 m (5 ft.) above floor at operator's ear) sanding of beech parquetry, sanding belt grain 80	76 dB(A)	80 dB(A)	80 dB(A)	
Tolerance for measurement	4 dB(A)			
Vibration total value a_{hv} (measured at the handle)	< 2.5 m/s ²			

COMMISSIONING

Commissioning

This section describes the procedure for commissioning the SUPERHUMMEL on site. In order to exclude the possibility of damage and malfunctions, it is essential to proceed in the sequence outlined below.

**CAUTION!****RISK OF INJURY and RISK OF PROPERTY DAMAGE:**

Before working with the machine for the first time, operating staff must be adequately instructed!

4.1 PREPARING THE MACHINE

- 1 Unpack the machine cautiously. Pay attention to a nonpolluting disposal of the packing materials.
- 2 Insert the guide tube into the opening at the back of the machine housing (fig. 6, 1) and tighten the wing nut (fig. 6, 2).
- 3 Put the lower rod in the hole of the lifting fixture (fig. 7, 1) and fix them with the closure (fig. 7, 2).
- 4 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 8).
- 5 Mount the cable support to the console at the top of the guide tube (fig. 9).

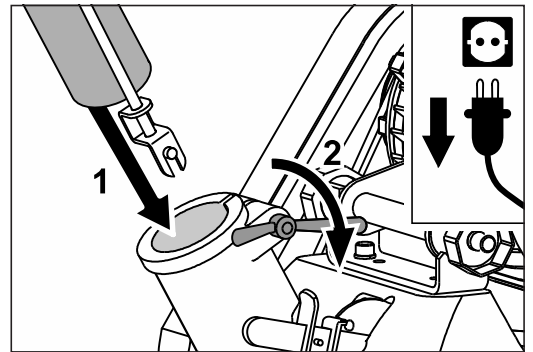


Fig. 6 Insert the guide tube into the opening in the machine housing (1). Tighten the wing nut (2).

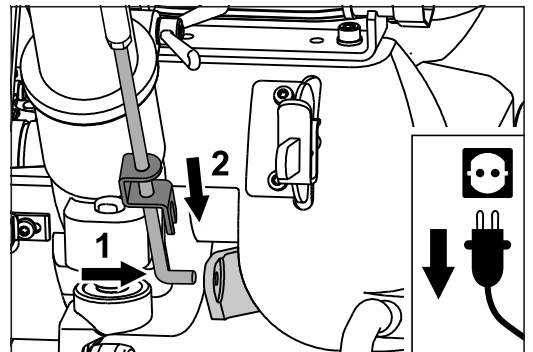


Fig. 7 Put the lower rod in the hole of the lifting fixture (1) and fix them with the closure (2).

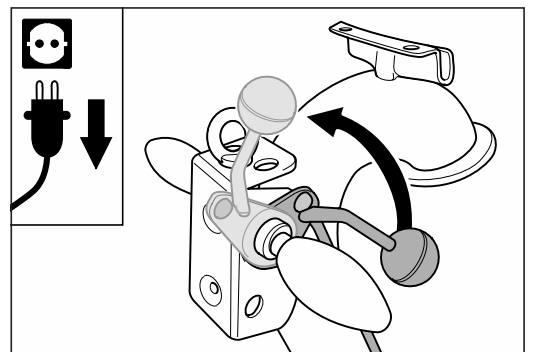


Fig. 8 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards.

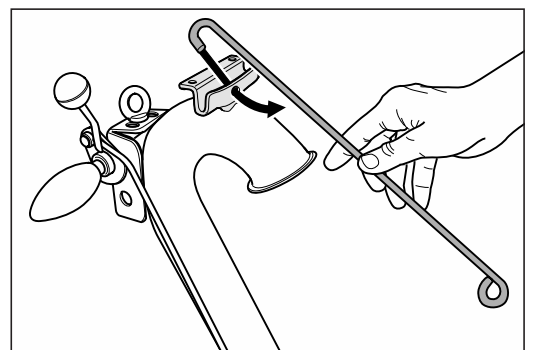


Fig. 9 Mount the cable support to the console at the top of the guide tube.

COMMISSIONING

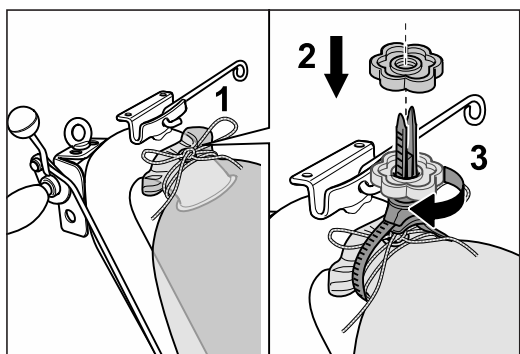


Fig. 10 Mount the dust bag without creasing using the cord (1) and the MultiClip (2 and 3).

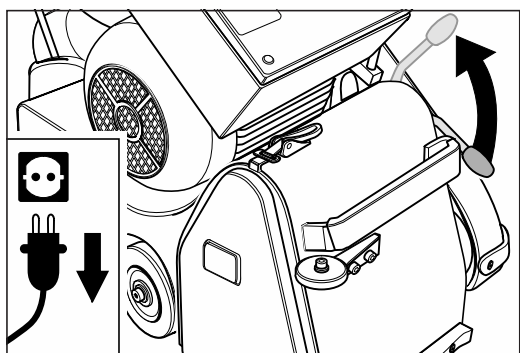


Fig. 11 Pull the operating lever of the drive unit upwards. Similar to figure.

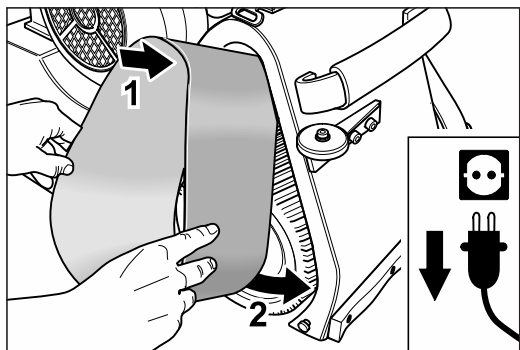


Fig. 12 Position the sanding belt on the tensioning roller of the drive unit. Similar to figure.

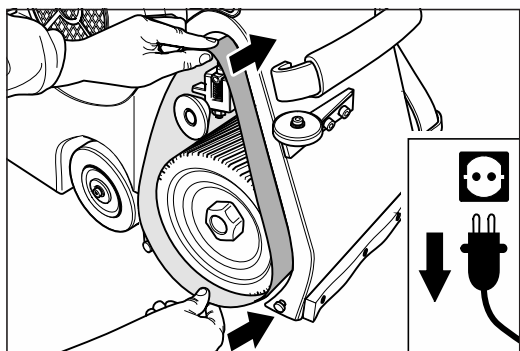



Fig. 13 Push the sanding belt over the tensioning roller and sanding drum. Similar to figure.

- 6 Attach the dust bag with the cord and the MultiClip at the end of the guide tube (fig. 10) and make sure that the opening of the guide tube is not blocked.
- 7 Pull the operating lever of the drive unit upwards to bring the tensioning roller down (fig. 11).
- 8 Take off the side cover at the right-hand side of the machine housing.
- 9 Position the sanding belt on the tensioning roller of the drive unit (fig. 12) and push it over the tensioning roller and the sanding drum (fig. 13).
- 10 Position the sanding belt so that it evenly covers the sanding drum (fig. 14, A).

 **WARNING!**

RISK OF FIRE from the formation of sparks while sanding:
Position B of the sanding belt in fig. 14 provoke sparking during sanding! Avoid this without fail!

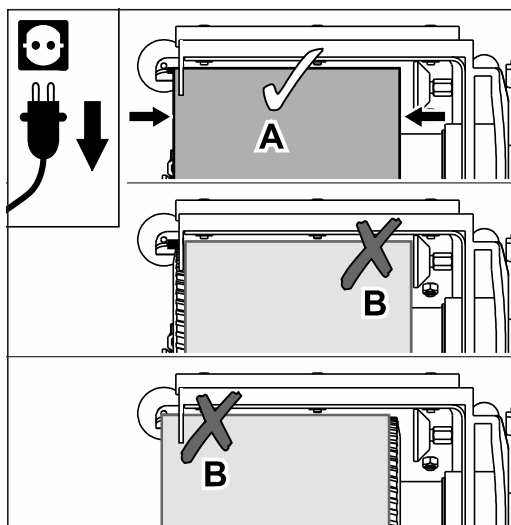


Fig. 14 Position the sanding belt so that it evenly covers the sanding drum (A). Avoid position B without fail (FIRE DANGER)! Similar to figure.

COMMISSIONING

- 11 To tension the sanding belt press the operating lever of the drive unit downwards (fig. 15).
- 12 Connect the machine to the mains supply (→ *Section 4.2, Connecting the mains supply*).

**CAUTION!**

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

- **Always tension the sanding belt before switch on the machine (fig. 15)!**
- **Always lift the sanding drum off the floor before switch on the machine (fig. 16)!**

- 13 Before sanding check the tracking of the sanding belt and adjust it if necessary (→ *Section 7.3, Checking and setting the sanding belt tracking*)!

**CAUTION!**

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

- **Never reach into the area of the sanding belt while it is running!**
- **During the test run, ensure that no objects randomly positioned in the vicinity can be picked up by the sanding belt and no other persons are in the danger area!**

- 14 After checking and setting of the sanding belt tracking put on the side cover.

- 15 Your machine is now ready.

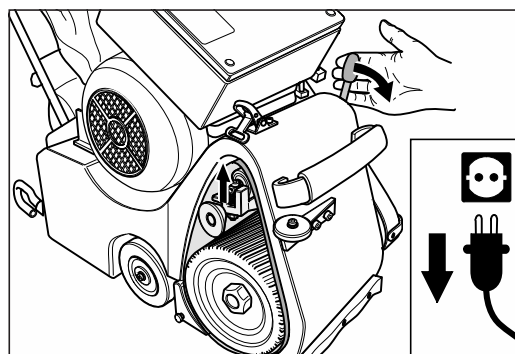


Fig. 15 To tension the sanding belt press the operating lever of the drive unit downwards. **Similar to figure.**

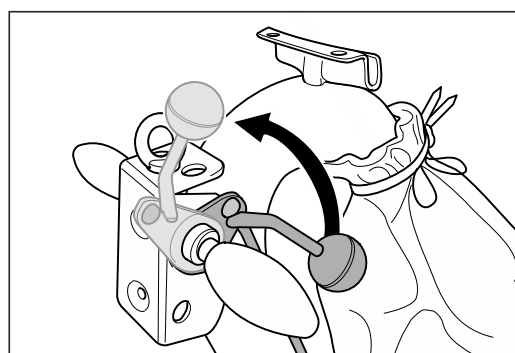


Fig. 16 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards.

COMMISSIONING

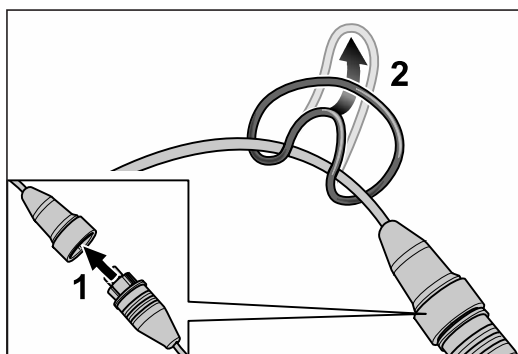


Fig. 17 Combine the motor cable with the extension cable (1). Fasten the strain relief ring on the extension cable (2).

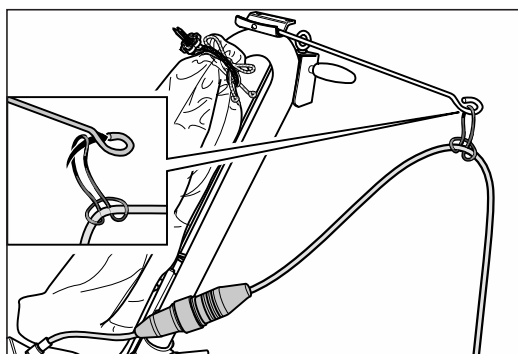


Fig. 18 Mount the strain relief ring on the cable support.

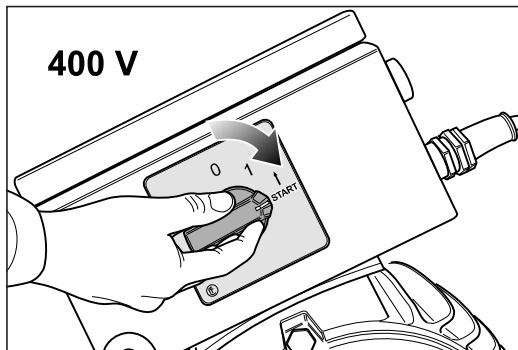


Fig. 19 To switch on the machine turn the switch button at the motor to position -START-.

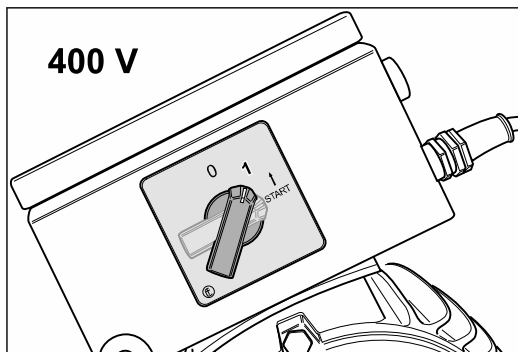


Fig. 20 Release the switch button. The button turns automatically in position -1-.

4.2 CONNECTING THE MAINS SUPPLY

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 Combine the motor cable with the extension cable (fig. 17, 1).
- 3 Fasten the strain relief ring on the extension cable (fig. 17, 2). Mount the strain relief ring on the cable support (fig. 18).
- 4 Plug in the extension cable to a adequately fused mains socket with PE contacts.
Observe the applicable regulations and legal requirements for your country!

4.3 SWITCHING ON THE MACHINE

**CAUTION!**

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

- **Always tension the sanding belt before switch on the machine (fig. 15)!**
- **Always lift the sanding drum off the floor before switch on the machine (fig. 16)!**
- **Never allow the machine to run unattended!**

COMMISSIONING

4.3.1 MACHINES WITH THREE-PHASE AC MOTOR
(MAINS VOLTAGE 400 V)

- 1 **Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16)!**
- 2 To switch on the machine turn the switch button at the motor to position -START- (fig. 19) and release the switch button after the motor has reached its full speed. The switch button will then automatically move to position -1- (fig. 20).

If the motor do not start in the switch position -START- (fig. 21, 1) and the light on the switch box shines (fig. 21, 2), the rotation direction of the motor is wrong.

To change the rotation direction of the motor using the following procedure:

- 1 **Disconnect the motor cable from extension cable!**
- 2 Original LÄGLER® plug with red nut at the cable outlet (fig. 22, A):

- Put a screwdriver in the slit of the phase changing switch in the plug of the motor cable (fig. 23, 1).
- To unlock the phase changing switch press the screwdriver in the slit and at the same time turn the screwdriver 180° (fig. 23, 2).

Original LÄGLER® plug with yellow nut at the cable outlet (fig. 22, B):

- Put a screwdriver in the slit of the phase changing switch in the plug of the motor cable (fig. 23, 1).
- To unlock the phase changing switch turn the screwdriver 180° against a small resistance (fig. 23, 2).

ATTENTION!

The phase changing switch can only be turned in one direction!

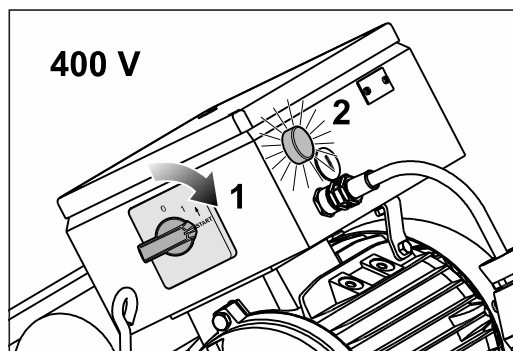


Fig. 21 The motor do not start in switch position -START- (1) and the light on the switch box shines (2).

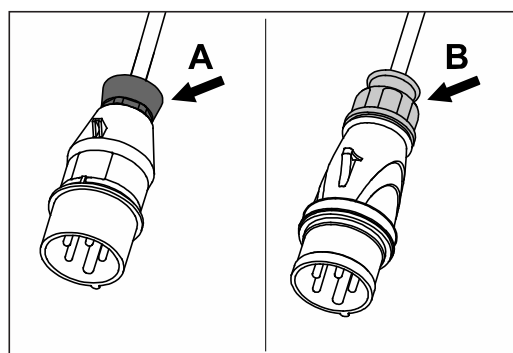


Fig. 22 Original LÄGLER® plug with red nut (A) or yellow nut (B).

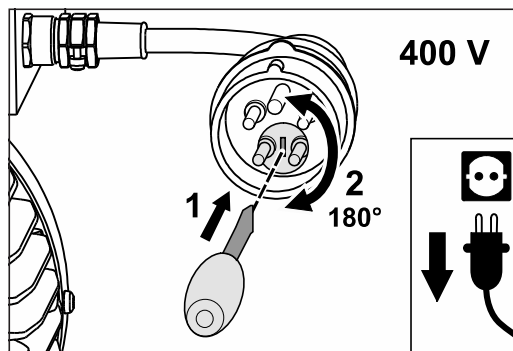


Fig. 23 Change the rotation direction of the motor by turning the phase changing switch at 180°.

COMMISSIONING

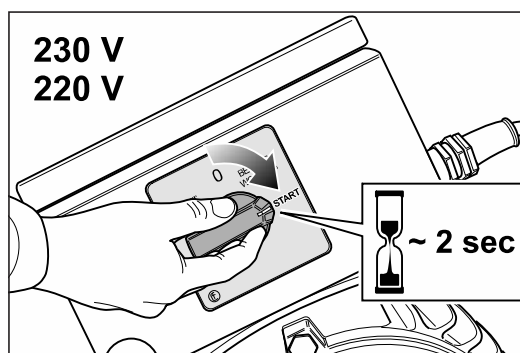


Fig. 24 To switch on the machine turn the switch button at the motor to position -start- and hold the switch button for around 2 seconds in this position.
Similar to figure.

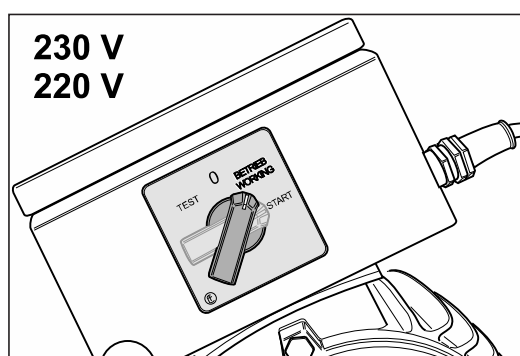


Fig. 25 Once the motor has reached its full speed, release the switch button. The switch button will then automatically move to position -BETRIEB (WORKING)-.
Similar to figure.

4.3.2 MACHINES WITH SINGLE-PHASE AC MOTOR (MAINS VOLTAGE 230 V / 220 V)

- 1 **Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16)!**
- 2 To switch on the machine turn the switch button at the motor to position -START- and hold the switch button for around 2 seconds in this position (fig. 24).
- 3 Once the motor has reached its full speed, release the switch button. The switch button will then automatically move to position -BETRIEB (WORKING)- (fig. 25).

ATTENTION!

Remaining for too long in the switch position -START- shortens the service life of the starting capacitor!

4.3.3 GENERAL

If the motor should ever be difficult to start in extremely cold conditions proceed as follows:

- 1 Switch off the machine (➔ *Section 4.4, Switching off the machine*) and remove the V-belts (➔ *Section 7.10, Replacement of V-belts*).
- 2 Switch on the machine **without V-belts** (➔ *Section 4.3.1, Section 4.3.2*).
- 3 Once the motor is up to operating temperature, switch off the machine (➔ *Section 4.4, Switching off the machine*).
- 4 Mount the V-belts and tension the belts using the eye bolt or cross grip respectively (➔ *Section 7.10, Replacement of V-belts*).

COMMISSIONING

4.4 SWITCHING OFF THE MACHINE

- 1 Before switch off the machine lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 Turn the switch button to position -0- (fig. 26).
- 3 **Wait until the sanding drum comes to a standstill before replacing the machine down onto the sanding drum!**

**CAUTION!****RISK OF INJURY and RISK OF PROPERTY DAMAGE:**

- **Always remove the power plug from the socket after you have switched off the machine!**
- **Secure the machine against sliding! For example, place a flat piece of wood between the floor surface and machine housing!**

ATTENTION!

Do not store the unused machine on the sanding drum! Otherwise the sanding media can cause scratches on the ground or the sanding drum can be damaged!

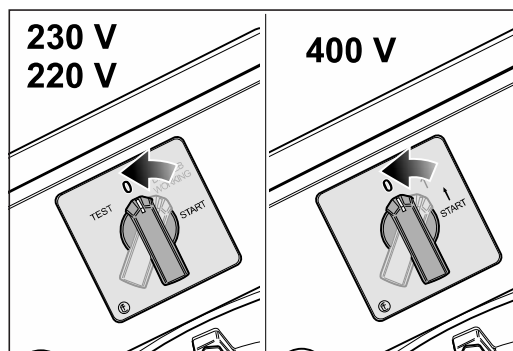


Fig. 26 To switch off the machine turn the switch button to position -0-.
Similar to figure.

Working with the SUPERHUMMEL

5.1 APPLICATION TIPS



WARNING!

RISK OF DEATH from electrical shock:

The machine may never be used for wet processing operations of any kind!

ATTENTION!

- Always sand from left to right! This ensures that the left-hand lateral wheel always runs over the newly sanded surface, making the surface more even with each sanding pass and preventing waviness!
 - One sanding track comprises a forward and reverse movement over the same lane without offset!
 - We advise a sanding track offset of 50%!
-
- It is possible to avoid leaving deep sanding tracks caused by excessively coarse grit grade by initially selecting a fine grit grade for the first sanding process.
 - Carry out a test sanding process using a 50 or 60 grit grade (a few test strokes). If this test is satisfactory and you envisage a good sanding result within a reasonable period, it is more efficient to start the sanding work off with these finer grit grades.
 - You can avoid creating deep sanding tracks with the mentioned grit grade by adhering to the grit grade sequence and not skipping more than one grit grade at a time.
 - Before the first and after each sanding pass, vacuum the floor thoroughly.
 - Clean the machine's wheels before starting each new sanding operation.
 - In order to avoid chatter marks, use sanding belts with bud joints and tape.
 - When changing to a new sanding belt, always start work in a less well lit area of the room until the sanding belt loses its initial aggressive sanding behavior.
 - For other informative and important application tips, please refer to the LÄGLER® application technology brochure „Sanding of wooden floors“.

WORKING WITH THE SUPERHUMMEL

For more information, please apply to

within the USA free of charge:

- Telephone: 800-848-6635

or

- Telephone: 0049 - 7135 - 98 90-0

- e-mail: info@laegler.com

- Fax: 0049 - 7135 - 98 90-98

- Internet: <http://www.laegler.com>

5.2 CHANGING THE SANDING BELT

Depending on your work you have to use different grits. To change the sanding belts proceed as follows:

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Pull the operating lever of the drive unit upwards to bring the tensioning roller down (fig. 11).
- 4 Take off the side cover at the right-hand side of the machine housing.
- 5 Remove the worn sanding belt from the tensioning roller and the sanding drum.
- 6 Position the new sanding belt on the tensioning roller of the drive unit (fig. 12) and push it over the tensioning roller and the sanding drum (fig. 13).
- 7 Position the sanding belt so that it evenly covers the sanding drum (fig. 14, **A**).

**WARNING!**

RISK OF FIRE from the formation of sparks while sanding:

Position B of the sanding belt in fig. 14 provoke sparking during sanding! Avoid this without fail!

- 8 To tension the sanding belt press the operating lever of the drive unit downwards (fig. 15).
- 9 Connect the machine to the mains supply (➔ *Section 4.2, Connecting the mains supply*).

**CAUTION!**

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

- **Always tension the sanding belt before switch on the machine (fig. 15)!**
- **Always lift the sanding drum off the floor before switch on the machine (fig. 16)!**

- 10 Before sanding check the tracking of the sanding belt and adjust it if necessary (→ *Section 7.3, Checking and setting the sanding belt tracking*)!

**CAUTION!**

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

- **Never reach into the area of the sanding belt while it is running!**
- **During the test run, ensure that no objects randomly positioned in the vicinity can be picked up by the sanding belt and no other persons are in the danger area!**

- 11 After checking and setting of the sanding belt tracking put on the side cover.
- 12 Now you may continue.

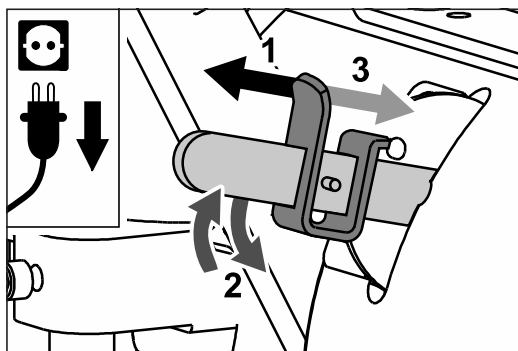


Fig. 27 Regulation of the sanding pressure.

5.3 REGULATION OF THE SANDING PRESSURE

The lever for regulation of the sanding pressure (fig. 27) can be used to set three different drum pressure stages:

- Lever in upper position: high sanding pressure
- Lever in middle position: middle sanding pressure
- Lever in lower position: low sanding pressure

The sanding pressure should be adjusted in line with the grit grade sequence and reduced as the fineness of the grit grade increases. This setting facility permits you to adjust the drum pressure to the prevailing circumstances.

In order to avoid dish-outs when sanding soft wood floors, the sanding pressure should be reduced and the sanding speed increased.

 WORKING WITH THE SUPERHUMMEL

5.4 EMPTYING THE DUST BAG

**WARNING!****RISK OF FIRE from the formation of sparks while sanding:**

- The dust bag must always be removed from the machine after sanding and emptied into a non-combustible container outdoors!
- Cover this container with a non-combustible cover and be certain to store it and the dust bag outdoors!
- Note the warning on the guide tube!

HEALTH RISK caused by dust:

In order to ensure that the dust values in the air do not exceed the prescribed threshold levels, please note:

- The dust bag must be emptied when it is one-third full at the very latest in order to prevent a deterioration of the suction performance due to the lack of filtering surface area!
- Do not work with an overfilled dust bag!
- The dust bag must be emptied outdoors!
- When emptying the dust bag, wear a respiratory protective mask (at least filter class P2)!
- Do not wash, patch or repair the dust bag in any other manner!
- Damaged dust bags must be replaced with new ones!

Use exclusively original LÄGLER® dust bags for the SUPERHUMMEL (Part number in *Section 13, Spare parts*)!

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 **Wear the respiratory protective mask (at least filter class P2)!**
- 4 Remove the MultiClip and open the cord at the dust bag.
- 5 Take the dust bag away and close it with the cord.
- 6 **Empty the dust bag into a non-combustible container outdoors! Cover this container with a non-combustible cover and be certain to store it and the dust bag outdoors (RISK OF FIRE)!**
- 7 Fasten the empty dust bag firmly using the cord and the MultiClip at the end of the guide tube. Ensuring when mounting that the opening of the guide tube is not closed. Wear the respiratory protective mask!

Transport and storage



WARNING!

RISK OF INJURY and RISK OF PROPERTY DAMAGE:

In the event of transport in an automobile or similar machine, all parts must be secured against sliding!

RISK OF FIRE from spontaneous combustion or the formation of sparks while sanding:

- **Oil or wax can lead to spontaneous combustion! Therefore, the machine must always be cleaned carefully before transport or storage!**
- **Always transport and store the machine without the dust bag! Store the used dust bag in a closed non-combustible container!**

ATTENTION!

- **During transport or storage, place a flat piece of wood between the floor surface and machine housing! This prevents the machine housing from slipping and stops the drum being in direct contact with the floor!**
- **During transport or storage, the machine can also be firmly lashed to the bottom part of the supplied transport crate using two belts! This will prevent damage to the sanding drum and stop the wheels becoming out of round!**

6.1 DISMANTLING THE MACHINE BEFORE TRANSPORTATION

For transportation, the machine can be dismantled into three parts: Guide tube, motor and machine housing. During manual transport over roads and pavements, to protect the wheels and sanding drum, use the TransCart (Part number in *Section 13, Spare parts*).

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Empty the dust bag (➔ *Section 5.4, Emptying the dust bag*).

TRANSPORT AND STORAGE

- 4 Remove the belt guard.
- 5 Loosen the two motor nuts at the motor bearing bracket (fig. 28).
The motor nut must only be backed out from the fitting between the motor nut and motor bearing bracket, and not completely removed (fig. 29).
- 6 Release the tension of the V-belts by turning the tensioning bolt at the motor counterclockwise (fig. 30).

**CAUTION!****RISK OF INJURY:**

During dismantling and mounting the V-belts, take care of your fingers → danger of crushing!

- 7 Turn the motor pulley and allow the fan V-belt to run off the motor pulley (fig. 31).
- 8 Turn the lower pulley and allow the drive belt to run off the lower pulley (fig. 32).
If necessary, use the box wrench (see tool kit) to turn the lower pulley **exclusively clockwise!**

ATTENTION!

Only turn the nut with the box wrench at the lower pulley **clockwise**, as otherwise the nut will work loose (**left-hand thread!**)

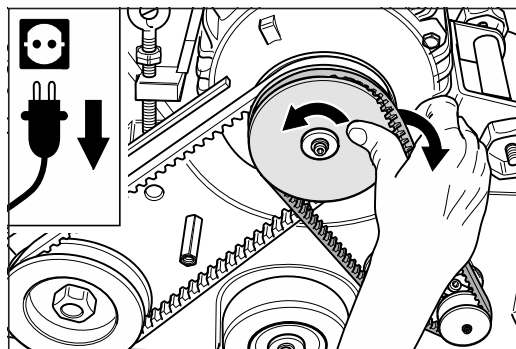


Fig. 31 Remove the fan V-belt.
Similar to figure.

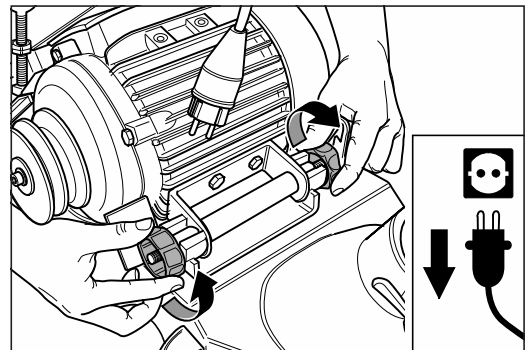


Fig. 28 Loosen the two motor nuts ...
Similar to figure.

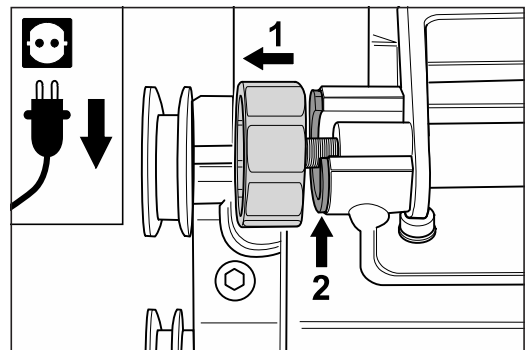


Fig. 29 ... until the two nuts used to fit into the motor bearing bracket are exposed.
Similar to figure.

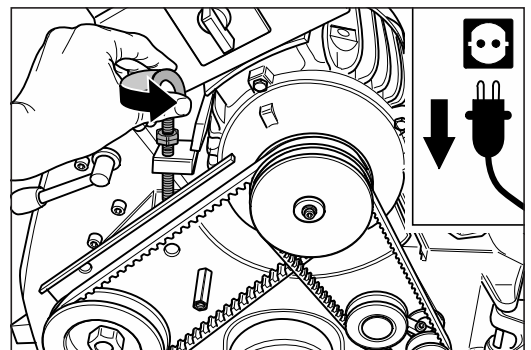


Fig. 30 Release the V-belt tension by loosening the tensioning bolt at the motor.
Similar to figure.

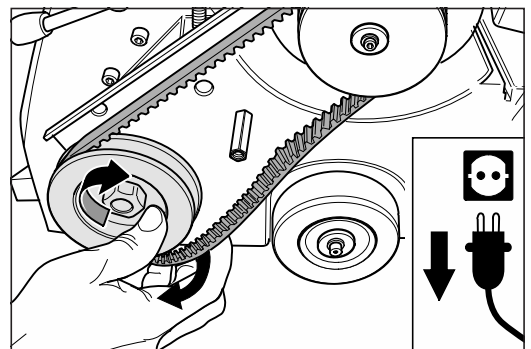


Fig. 32 Allow the drive belt to run off the lower pulley. If necessary use the box wrench (see tool bag) to help you, but turn the box wrench **exclusively in the clockwise direction** in order not to loosen the nut of the lower pulley.
Similar to figure.

TRANSPORT AND STORAGE

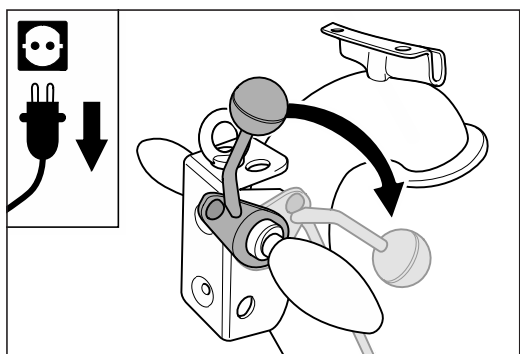


Fig. 33 Press the lowering lever at the handle downwards.

- 9 Press the lowering lever at the handle downwards (fig. 33) to lower the sanding drum onto the floor.
- 10 Remove the motor from the machine housing (fig. 34) and secure it during transport against slipping and damage!
- 11 Dismount the lower rod from the lifting fixture (fig. 35).
- 12 Open the wing nut at the machine housing (fig. 36, 1) and pull the guide tube out of the machine housing (fig. 36, 2).

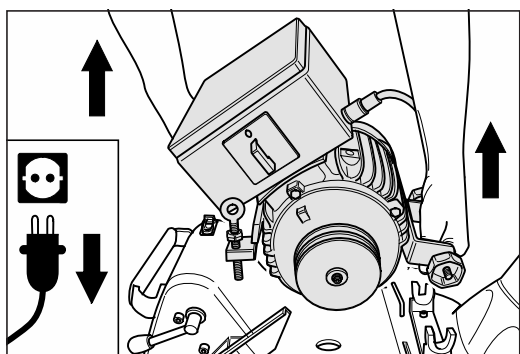


Fig. 34 Remove the motor from the machine housing. Similar to figure.

ATTENTION!

Do not tighten the wing nut at the machine housing while the guide tube is removed (fig. 37)! Otherwise the machine housing could break!

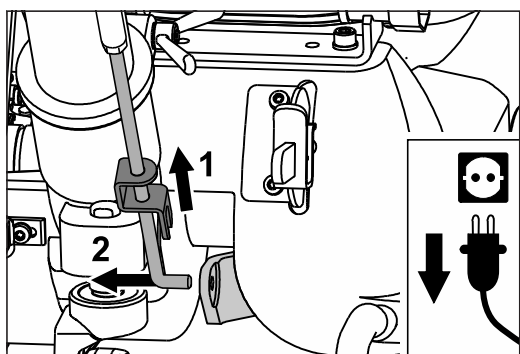


Fig. 35 Dismount the lower rod from the lifting fixture.

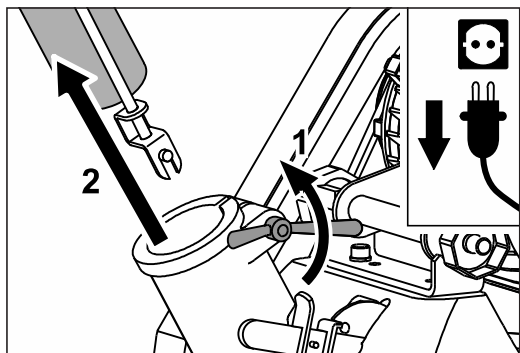


Fig. 36 Open the wing nut (1) and pull the guide tube out of the machine housing (2).

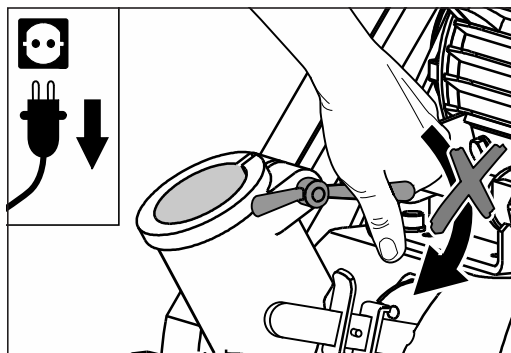


Fig. 37 While the guide tube is removed do not tighten the wing nut at the machine housing!

TRANSPORT AND STORAGE

6.2 ASSEMBLY AFTER TRANSPORTATION

When assembling the SUPERHUMMEL after transport, adhere to the following sequence of work steps:

- 1 Press the lowering lever at the handle downwards (fig. 33).
- 2 Insert the guide tube into the opening at the back of the machine housing (fig. 6, 1) and tighten the wing nut (fig. 6, 2).
- 3 Put the lower rod in the hole of the lifting fixture (fig. 7, 1) and fix them with the closure (fig. 7, 2).
- 4 Place the motor in the motor bearing bracket (fig. 38).
- 5 Tighten the two motor nuts (fig. 39) **slightly**.
- 6 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 7 Mount the V-belts and tension them by turning the eye bolt at the motor clockwise (fig. 40).
- 8 Tighten the two motor nuts (fig. 39).
- 9 Replace the belt guard.
- 10 Attach the dust bag with the cord and the MultiClip at the end of the guide tube (fig. 10).
- 11 Connect the machine to the mains supply (→ *Section 4.2, Connecting the mains supply*).
- 12 The machine is now ready for use.

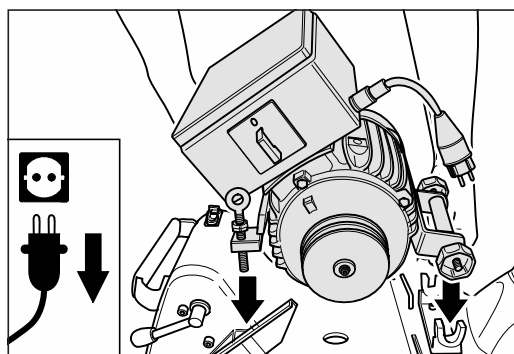


Fig. 38 Put the motor into the motor bearing bracket.
Similar to figure.

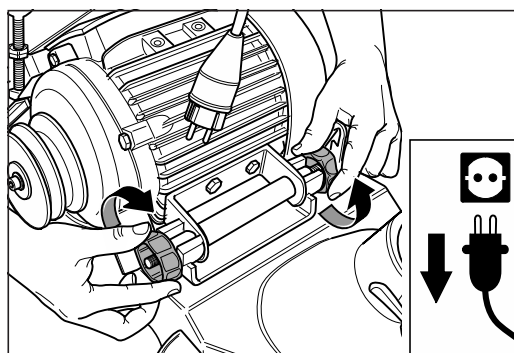


Fig. 39 Tighten the two motor nuts.
Similar to figure.

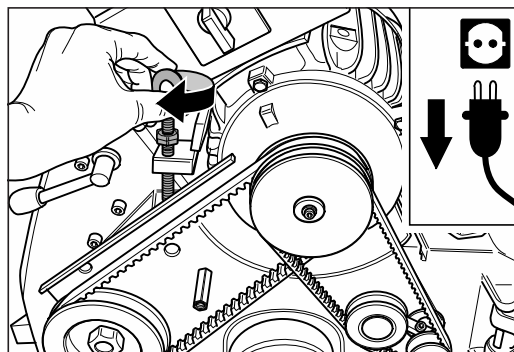


Fig. 40 Put the V-belts back on and tighten them with the tensioning bolt at the motor.
Similar to figure.

6.3 STORAGE

**WARNING!****RISK OF FIRE from the formation of sparks while sanding:**

- Always transport and store the machine without the dust bag!
- Store the emptied dust bag in a closed non-combustible container!

If you wish to keep the machine in storage for a protracted period, ensure that it is kept dry and free of the influence of frost in a location without excessive temperature fluctuations.

Store your unused machine in a dry, closed location out of the reach of children!

ATTENTION!

When storing for long periods, place the machine on the bottom part of the supplied transport crate! This will prevent damage to the sanding drum and stop the wheels becoming out of round!

Maintenance work and replacement of wearing parts



WARNING!

RISK OF DEATH from electrical shock and RISK OF INJURY from rotating parts of the machine:

- **All extensive maintenance work, especially on the electrical equipment, must be conducted by a qualified expert for safety reasons!**
- **All maintenance work must be conducted with the machine switched off and with the power plug removed from the socket!**

ATTENTION!

- **Only use original spare parts from LÄGLER®! This is the only way to ensure that your machine continues to perform! Warranty claims for third-party parts will not be honoured!**
- **Never conduct the maintenance work and replacement of wearing parts on the newly sanded wooden floor! You could cause scratches or other damage to the floor!**
- **Never use any cleaning products which contain solvents!**

Periodically but at the latest when you notice that damage has occurred, a variety of maintenance procedures have to be performed. **Use exclusively original spare parts from LÄGLER®!** Work in a clean, well lit location and proceed in accordance with these operating instructions. In the tool kit, you will find all the tools required to carry out the work described below.

It takes only a minimal amount of time to inspect the machine, but this precautionary measure can save subsequent complaints brought about by minor damage to the machine. Performing regular maintenance work will help to retain the value of the machine and is also in the interests of your own safety.

 MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

7.1 CLEANING AND CARE INSTRUCTIONS

**WARNING!****RISK OF FIRE from spontaneous combustion and the formation of sparks while sanding:**

- **There is a high risk of fire when sanding woods with a large amount of resin, oiled or waxed floors or metal!**
- **Therefore, the machine must always be cleaned carefully directly after sanding!**
- **Be certain to note the warning notices of the manufacturers of paint, oil and wax!**

Before starting work, you should perform the following care procedure in order to ensure that the machine is in full working order and produces the customary high-quality sanding finish:

- Check the tensioning roller and the sanding drum for damage. Clean the parts carefully and ensure that the rubber coating on the rollers is not damaged! **Never use any cleaning products which contain solvents!**
- Check the sanding belt tracking and adjust it if necessary using a grit grade 120 sanding belt (➔ *Section 7.3, Checking and setting the sanding belt tracking*).
- Check if the guide rollers at the drive unit and inside the machine housing are rotatable easily!
Guide rollers which are not rotatable easily provoke sparking during sanding and must be replaced without fail (Part number in *Section 13, Spare parts*)!
- Clean the wheels of the machine.
- Check the tension of the V-belts and correct it if necessary with the aid of the eye bolt and cross grip respectively (➔ *Section 7.10, Replacement of V-belts*).
- Check the easy movement of the whole lifting mechanism of sanding drum.
- Check the dust suction system and the dust bag for leaks and damages.
- Carry out a visual inspection of the electrical equipment (cables, plug, couplings).

7.1.1 DISMANTLING AND CLEANING OF DRIVE UNIT

The drive unit should be removed and cleaned at least once a week if the machine is used every day.

ATTENTION!

A dirty drive unit avoids an ideal sanding belt adjustment! This cause negative effects to the sanding result!

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

The drive unit is removed using the following procedure:

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Remove the belt guard.
- 4 Remove the side cover.
- 5 Pull the operating lever of the drive unit upwards (fig. 11). This will lower the tensioning roller.
- 6 Remove the sanding belt from the tensioning roller and the sanding drum.
- 7 Remove the operating lever of the drive unit by unscrewing (fig. 41).
- 8 Hold on the drive unit and remove the three fixing screws of the drive unit **at the same time** (hexagonal socket screw wrench size 6 mm; fig. 42). Therefore the drive unit cannot fall on the sanding drum.
- 9 Carefully remove the drive unit and clean it. **Never use any cleaning products which contain solvents!**



WARNING!

RISK OF FIRE from the formation of sparks while sanding:

- **The two guide rollers at the drive unit must be rotatable easily (fig. 43)!**
- **Guide rollers which are not rotatable easily provoke sparking during sanding and must be replaced without fail (Part number in *Section 13, Spare parts*)!**

- 10 Reassemble in reverse order.
- 11 **After mounting the drive unit, check the precise tracking of the sanding belt and adjust it if necessary (→ *Section 7.3, Checking and setting the sanding belt tracking*)!**

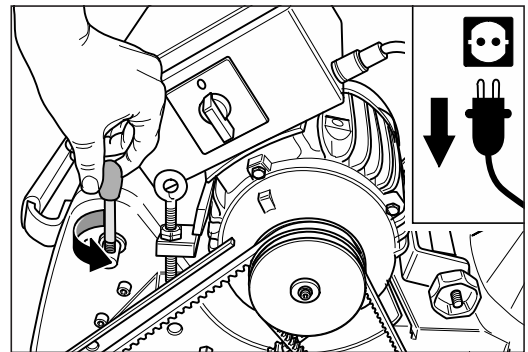


Fig. 41 Unscrew the operating lever of the drive unit. **Similar to figure.**

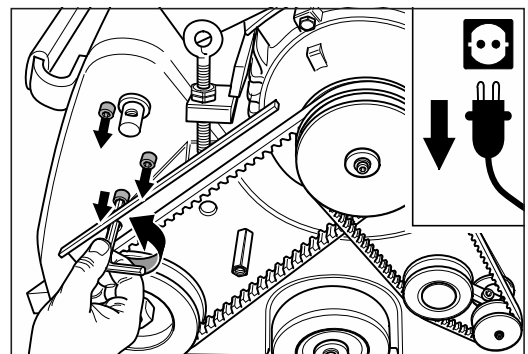


Fig. 42 Release and remove the three fixing screws of the drive unit. **Similar to figure.**

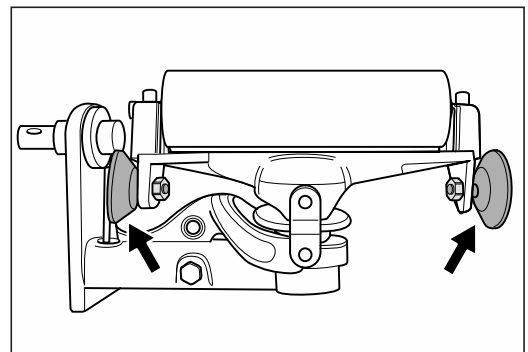


Fig. 43 **The two guide rollers must be rotatable easily! Otherwise they must be replaced! Similar to figure.**

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

Regular exchange of the sanding drum and tensioning roller guarantees a constant degree of operating quality and performance. When working every day with the machine, they must be exchanged every 1 - 2 years, otherwise every 3 - 4 years (→ Section 7.6, Replacement of sanding drum and Section 7.7, Replacement of tensioning roller).

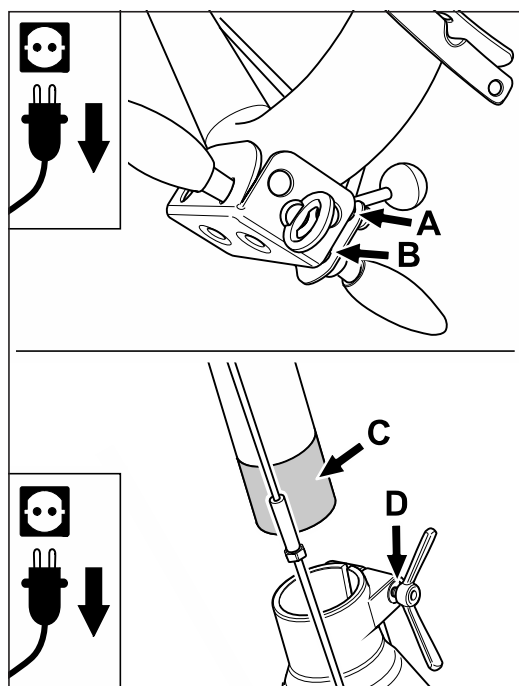


Fig. 44 Lubrication points which should be regularly oiled.

7.2 LUBRICATION

Machines up to year of manufacture 1997:

For general upkeep of the machine, after around 100 operating hours we recommend sparing lubrication of the two lubrication nipples at the wheel bearings using a manual grease gun (tool kit) using ball bearing grease.

ATTENTION!

In machines from year of manufacture 1998, the lubrication points at the wheel bearings has been replaced by self-lubricating plastic bushings. This bushings does not require lubrication! Never use sprays such as WD 40 or similar!

In order to guarantee lasting easy running of the moving parts, lubricate with oil at regular intervals at the following lubrication points (fig. 44):

- A** Top part of the rod linkage at the lever plate
- B** Lever plate on the handle shaft

To do this, tilt the machine slightly to one side and allow a small amount of oil to run into the lubrication points.

- C** Guide tube in the machine housing
- D** Wing nut at the machine housing

**Use customary lubricating oil for these lubrication points!
Never use grease or sprays such as WD 40 or similar!**

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

7.3 CHECKING AND SETTING THE SANDING BELT TRACKING

The sanding belt tracking must be checked every time the sanding belt is exchanged, but at least once a day!



CAUTION!

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

- **Always tension the sanding belt before switch on the machine (fig. 15)!**
- **Always lift the sanding drum off the floor before switch on the machine (fig. 16)!**

7.3.1 CHECKING THE SANDING BELT TRACKING

- 1 **Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).**
- 2 **Switch off the machine!**
- 3 Remove the side cover.



CAUTION!

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

- **Never reach into the area of the sanding belt while it is running!**
- **During the test run, ensure that no objects randomly positioned in the vicinity can be picked up by the sanding belt and no other persons are in the danger area!**

- 4 **Machines with three-phase AC motor**
(mains voltage 400 V):

Turn the switch button in position -START- and hold the switch button for around 2 seconds in this position (fig. 45).

At the same time control the sanding belt tracking. After this turn the switch button to position -0-.

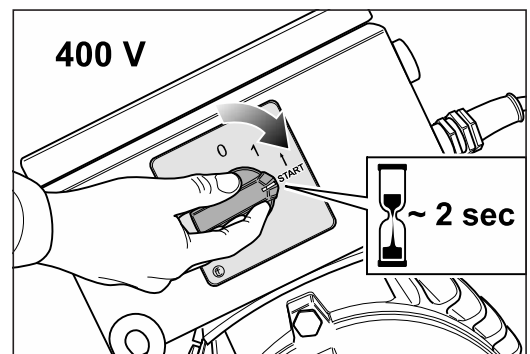


Fig. 45 Three-phase AC motor:

Hold the switch button for around 2 seconds in -Start- position and control the sanding belt tracking **at the same time**. After this turn the switch button in position -0-.

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

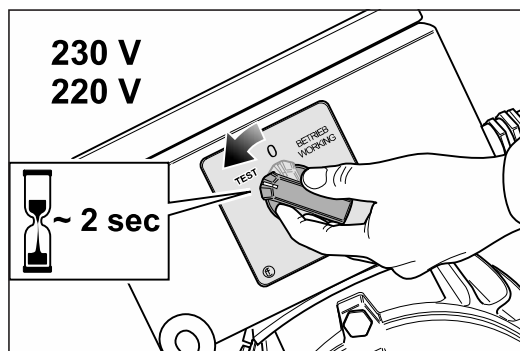


Fig. 46 Single-phase AC motor:

Hold the switch button for around 2 seconds in -TEST- position and control the sanding belt tracking **at the same time**. After this release the switch button.

Similar to figure.

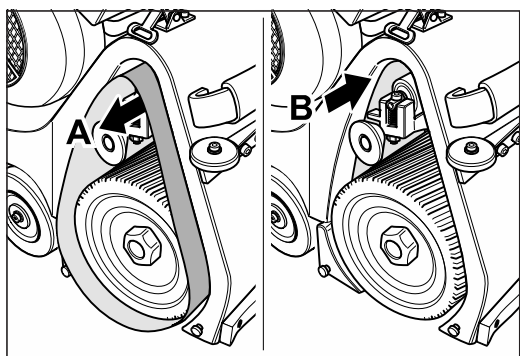


Fig. 47 If the sanding belt runs in direction of **A** or **B**, the setting of the sanding belt tracking is necessary. **Similar to figure.**

Machines with single-phase AC motor
(mains voltage 230 V and 220 V):

Turn the switch button in position -TEST- and hold the switch button for around 2 seconds in this position (fig. 46).

At the same time control the sanding belt tracking. After this release the switch button.

- 5 If the sanding belt runs to the front (in direction of **A** in fig. 47) or to the back (in direction of **B** in fig. 47) the setting of the sanding belt tracking is necessary (→ *Section 7.3.2, Setting the sanding belt tracking*). If the sanding belt tracking is alright, mount the side cover.

7.3.2 SETTING THE SANDING BELT TRACKING

Should the setting of the sanding belt tracking be necessary, proceed as follows:

- 1 **Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).**
- 2 **Switch off the machine!**
- 3 Remove the side cover.
- 4 Check whether any soiling at the tensioning roller calls for readjustment. If so, the tensioning roller must be cleaned (→ *Section 7.1.1, Dismantling and cleaning of drive unit*) and the sanding belt tracking must be checked again (→ *Section 7.3.1, Checking the sanding belt tracking*).

- 5 Always set the sanding belt tracking using a sanding belt with as fine a grit grade as possible (= flexible sanding belt). This is because the more flexible the sanding belt, the precisely it is possible to set the tensioning roller.

Mount the sanding belt (→ *Section 5.2, Changing the sanding belt*) and carry out a test run (→ *Section 7.3.1, Checking the sanding belt tracking*).

If the sanding belt is running out of true (in direction of **A** or **B** in fig. 47), it must be turned around and another test performed.

If the sanding belt runs to the front (in direction of **A** in fig. 47) and after turning over runs to the back (in direction of **B** in fig. 47) or vice versa, the sanding belt is of poor quality and is not usable (conical sleeve)!

If the sanding belt runs in the same direction both times, the tensioning roller requires readjustment.

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

- 6 If readjustment of the tensioning roller is necessary, release the lock nut at the drive unit (fig. 48, 1) and adjust the tensioning roller with the screw (fig. 48, 2):
- A** Rotation **clockwise**:
sanding belt runs **to the front**
- B** Rotation **counter clockwise**:
sanding belt runs **to the back**
- 7 If the sanding belt tracking is seen to be correct after adjusting once, **tighten the lock nut again** (fig. 48, 3).

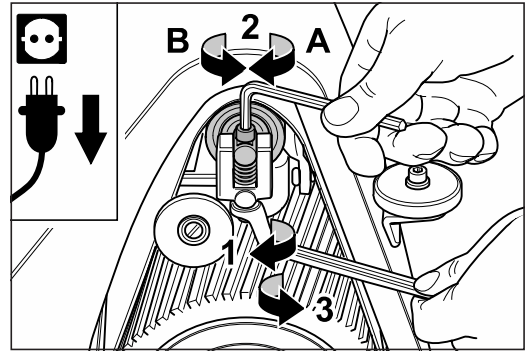


Fig. 48 Adjust the sanding belt tracking at the setting screw of the drive unit (see description in the main text).
Similar to figure.



CAUTION!

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

If the lock nut at the upper part of the drive unit is not tightened,

- **the lock nut will loosen during operation of the machine and falls on rotating parts!**
- **the tensioning roller can move out of place and the sanding belt can damage the machine housing or the side cover!**

- 8 If the sanding belt tracking is seen to be not correct after adjusting once, repeat the process.
- 9 After successful setting of the sanding belt tracking mount the side cover.

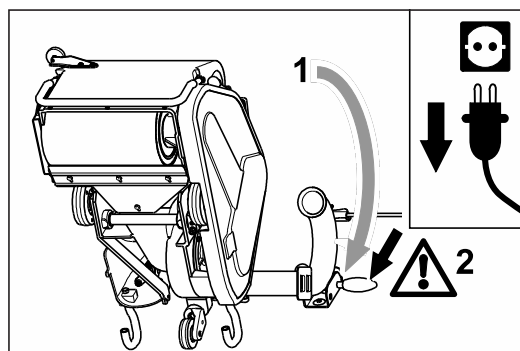


Fig. 49 Tilt the machine backwards (1). Ensure that the machine is standing securely (2)!

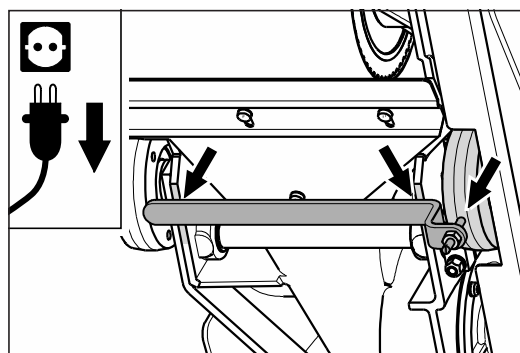


Fig. 50 Remove the current setting fixture from the right-hand wheel (seen from below).

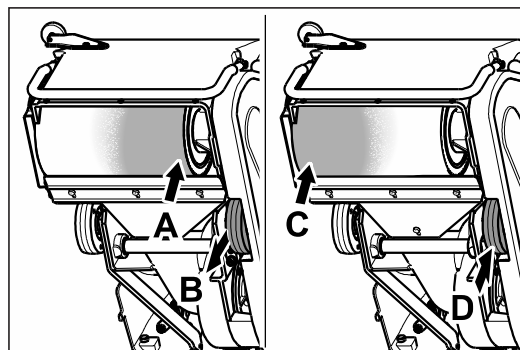


Fig. 51 If the machine is sanding more heavily on side A, the wheel must be adjusted in the direction of B. If the machine is sanding more heavily on side C, the wheel must be adjusted in the direction of D.

7.4 CHECKING THE MACHINE SETTING

ATTENTION!

The best working result is achieved when the sanding drum sands centrally! Only with this setting is it possible to avoid the belt from sanding too deep on one side, resulting in unwanted sanding tracks!

From time to time, or as a result of incorrect transportation, it is possible for the machine to become incorrectly adjusted. Incorrect adjustment is indicated by one-sided sanding of the sanding drum, which can lead to sanding tracks and complaints. Correction of machine settings is performed as follows:

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Tilt the machine backwards over the safety guards so that you can see the wheel bearings (fig. 49, 1). **Ensure that the machine is standing securely (fig. 49, 2)!**
- 4 The wheel on the belt guard side can be adjusted by releasing the tension nut. The other wheel is firmly fixed.
- 5 For setting, first take the actual position of the adjustable wheel using the setting fixture (see tool bag). Position the fixture against the machine housing in such a way that it rests not only against the machine housing on both sides, but also at the adjustable wheel (fig. 50). If necessary, turn the threaded pin of the setting fixture. To do this, release the nut of the setting fixture.
- 6 If the machine is sanding more heavily on the belt guard side (A in fig. 51), the wheel must be adjusted away from the belt guard (direction of B in fig. 51).

If the machine is sanding more heavily on the side cover side (C in fig. 51), the wheel must be adjusted towards the belt guard (direction of D in fig. 51).

Now adjust the threaded pin of the setting fixture in the relevant direction by the required amount.

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

- 7 Release the tension nut at the wheel clamp of the adjustable wheel (fig. 52, 1) and place the setting fixture against the machine housing again (fig. 50).
- 8 Set the wheel in the required position by means of the setting fixture (fig. 52, 2) so that the wheel lining just still makes contact with the threaded pin when turning. Tighten the tension nut again.
- 9 Carry out a sanding test to check whether the machine is now correctly adjusted. If not, the process will have to be repeated.

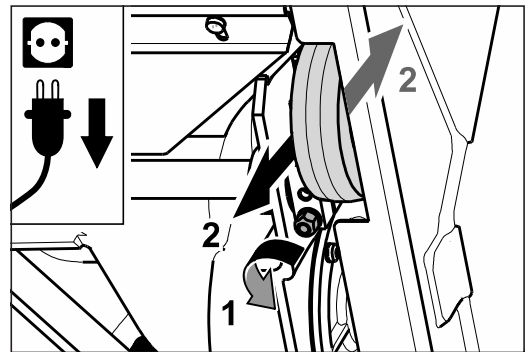


Fig. 52 Release the screw on the right-hand wheel clamp (1) and adjust the wheel (2).

7.5 CHECKING THE DUST PICK-UP

In order to guarantee optimum dust pick-up for your safety and that of others, the following points must be observed:

- Always use original LÄGLER® dust bags (part number in *Section 13, Spare parts*)!
- Never use damaged, washed, patched or in any other way repaired dust bags!
- Ensure that the sealing felt is not worn or damaged (fig. 53)!
- Check the suction system for blockages or deposits.
- Check the V-belt from the dust suction.

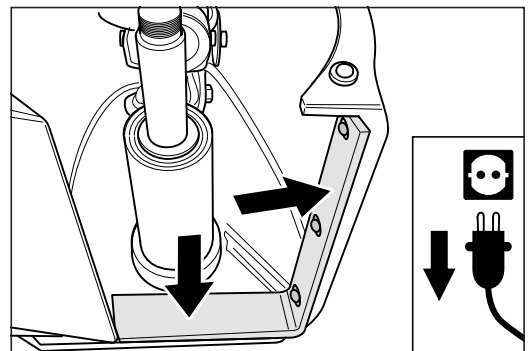


Fig. 53 Ensure that the sealing felt is not worn or damaged!
Similar to figure.

7.6 REPLACEMENT OF SANDING DRUM

Use exclusively original LÄGLER® sanding drums (part number in *Section 13, Spare parts*)!

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Remove the side cover on the right side of the machine housing.

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

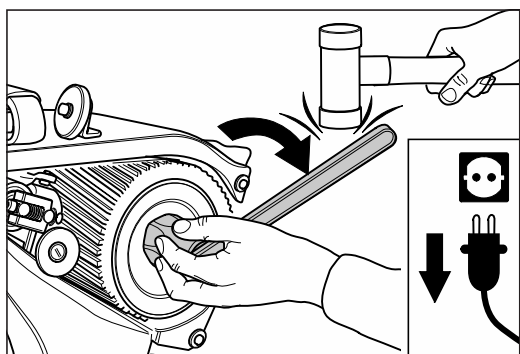


Fig. 54 Release the box nut (**left-hand thread**), if necessary by knocking gently with a soft hammer. **Never use a steel hammer!**
Similar to figure.

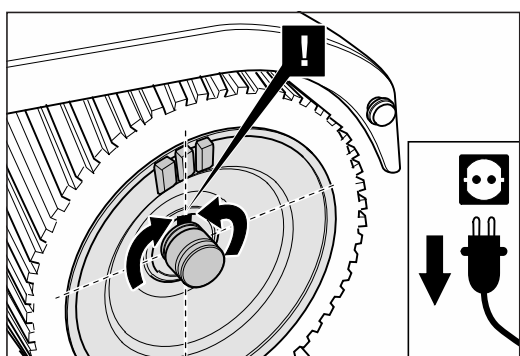


Fig. 55 Turn the sanding drum in such a way that the groove is pointing upwards, to ensure that the parallel key is not lost.
Similar to figure.

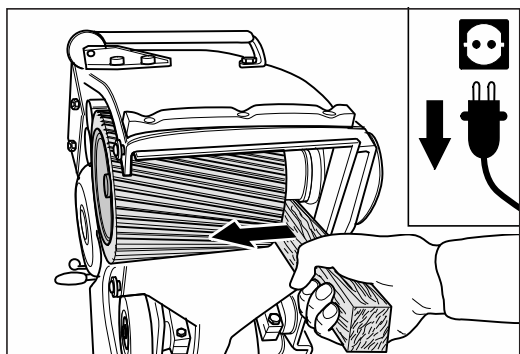


Fig. 56 If the sanding drum is too stiff to be removed, carefully lever it away with a wooden lathe. **Never use brute force!**
Similar to figure.

- 4 Pull the operating lever of the drive unit upwards (fig. 11). This will lower the tensioning roller.
- 5 Remove the sanding belt from the tensioning roller and the sanding drum.
- 6 Tilt the machine backwards over the safety guards (fig. 49, 1). **Ensure that the machine is standing securely (fig. 49, 2)!**
- 7 Remove the rubber disc from the sanding drum.
- 8 Open the drum nut using the box wrench (see tool bag). Note that the drum nut has a **left-hand thread** (fig. 54)! If necessary, take a soft hammer to help you loosen the nut. **Never use a steel hammer!**
Attention: Left-hand thread!
- 9 Turn the sanding drum in such a way that the parallel key is pointing upwards to ensure that the parallel key is not lost (fig. 55). Now pull the sanding drum out sideways out of the housing.

If the sanding drum is too stiff to move, use a wooden lever to dislodge it (fig. 56), so as not to damage the machine! Never attempt to loosen the sanding drum by hitting with a hammer!
- 10 Clean the shaft stump and oil it slightly.
- 11 Push on the new sanding drum, **paying attention to the parallel key!**
- 12 Fit the drum nut and observe the following:
 - the drum nut must be turned **counterclockwise (left-hand thread)**
 - the side of the drum nut **with thread undercut** (= side without internal thread) must be in contact **with the sanding drum.**

ATTENTION!

If the drum nut is mounted incorrectly, the sanding drum cannot be fastened and remains moveable on the sanding shaft!

- 13 Perform the remaining assembly steps in reverse order.

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

7.7 REPLACEMENT OF TENSIONING ROLLER

Use exclusively original LÄGLER® tensioning rollers (part number in *Section 13, Spare parts*)!

- 1 Remove the drive unit (→ *Section 7.1.1, Dismantling and cleaning of drive unit*).
- 2 Clamp the drive unit in a vise. If you are unable to reach the lock nuts with the closed-mouth wrench, screw the lever into the crank again and turn it downwards (fig. 57, 1) so that the top of the drive unit is lifted up.
- 3 Unscrew the two screws in the tensioning roller while holding on to the lock nuts with a closed mouth wrench (fig. 57, 2).
- 4 Remove the tensioning roller and check the compression spring. Should this be deformed, the compression spring (part number in *Section 13, Spare parts*) must be renewed.
- 5 Clean the drive unit. **Never use chemical cleaner!**
- 6 Insert the compression spring and the tensioning roller. Ensure that the surfaces on the shaft ends of the tensioning roller are pointing upwards (fig. 58)!
- 7 Tighten the screw of the unsprung bearing pedestal side (fig. 59, 1).
- 8 Turn the screw on the sprung side of the tensioning roller (fig. 59, 2) far enough so that the tensioning roller is positioned parallel to the upper part of the drive unit (fig. 60).
- 9 **Tighten the lock nuts of the fixing screws!**

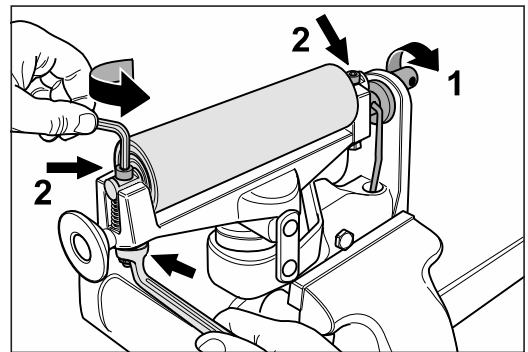


Fig. 57 Turn the crank in the indicated direction (1). Unscrew the two screws in the tensioning roller while holding on to the lock nuts with a closed mouth wrench (2).
Similar to figure.

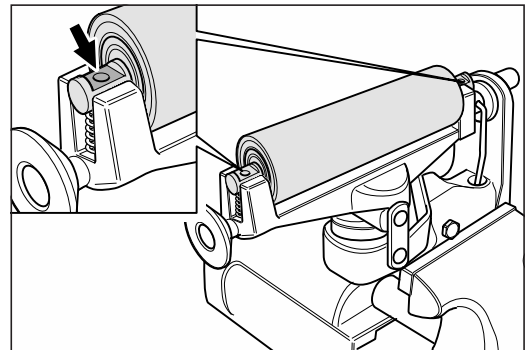


Fig. 58 Insert the new tensioning roller, ensuring that the surfaces on the shaft ends are pointing upwards.
Similar to figure.

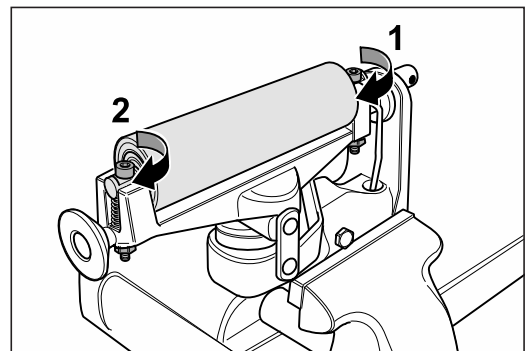


Fig. 59 Tighten the side without spring (1) and then the side with spring (2), so that ...
Similar to figure.

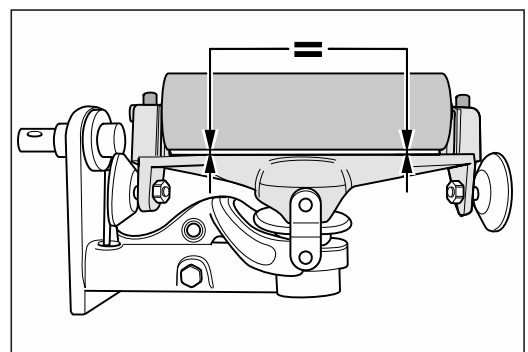


Fig. 60 ... the tensioning roller is positioned parallel to the top of the drive unit.
Similar to figure.

**CAUTION!**

RISK OF INJURY and RISK OF PROPERTY DAMAGE from rotating parts of the machine:

If the lock nuts of the fixing screws are not tightened,

- **the lock nuts will loosen during operation of the machine and fall on rotating parts!**
- **the tensioning roller can move out of place and the sanding belt can damage the machine housing or the side cover!**

- 10 Remount the drive unit (➔ *Section 7.1.1, Dismantling and cleaning of drive unit*).
- 11 Check the sanding belt tracking (➔ *Section 7.3, Checking and setting the sanding belt tracking*).

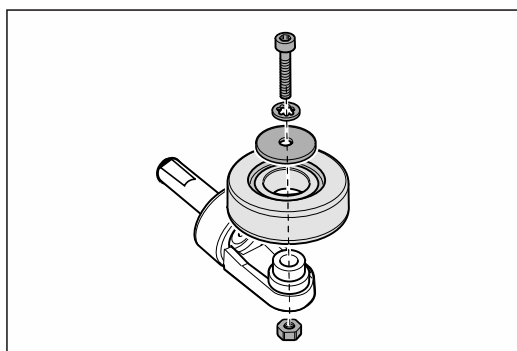


Fig. 61 Remove the screw with the washers and nut in the center of the wheel and take off the rear wheel. Assemble in reverse sequence.

7.8 REPLACEMENT OF REAR WHEEL

Use exclusively original LÄGLER® rear wheels (part number in *Section 13, Spare parts*)!

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Release the screw which fastens the tail axle of the rear wheel in the machine housing.
- 4 Lift on the rear part of the machine and pull the complete rear wheel out of the borehole in the machine housing.
- 5 Put the machine down on the safety guards.
- 6 Release the screw in the center of the wheel and remove the screw, washers and nut (fig. 61). Ensure that you do not lose the nut.
- 7 Pull the rear wheel off the tail axle housing.
- 8 Clean the tail axle housing.

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

- 9 Push the new rear wheel onto the tail axle housing.
- 10 Insert the nut in the hexagonal recess of the tail axle housing and hold onto the nut. Mount the washers and the screw.
- 11 Mount the complete rear wheel in reverse sequence and fasten it again in the machine housing, aligning the tensioning surface of the tail axle (fig. 62) towards the screw in the machine housing.

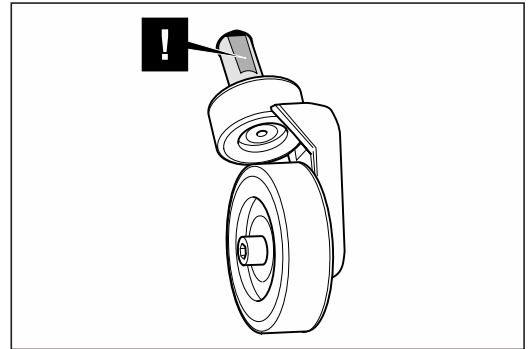


Fig. 62 When mounting the complete rear wheel, align the tensioning surface of the tail axle towards the screw in the machine housing.

7.9 REPLACEMENT OF LATERAL WHEELS

Use exclusively original LÄGLER® lateral wheels (part number in *Section 13, Spare parts*)!

The lateral wheels must always be exchanged in pairs!

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Remove the belt guard.
- 4 Tilt the machine back over the safety guards (fig. 63, 1). **Ensure that the machine is standing securely (fig. 63, 2)!**
- 5 Release the screw in the center of the lateral wheel and remove the screw and the washers (fig. 64).
- 6 Pull the lateral wheel off the wheel lever.
- 7 Clean the wheel lever and push the new lateral wheel onto the wheel lever.
- 8 Mount the washers and the screw.
- 9 Tighten the screw again.
- 10 Check the machine setting (➔ *Section 7.4, Checking the machine setting*).

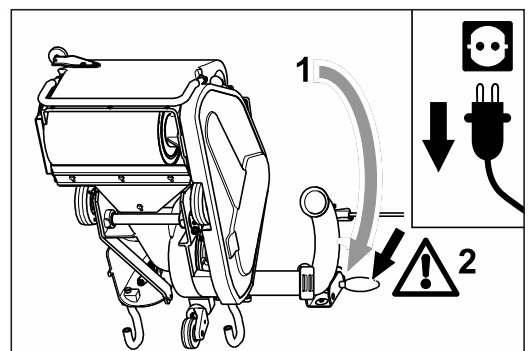


Fig. 63 Tilt the machine backwards (1). **Ensure that the machine is standing securely (2)!**

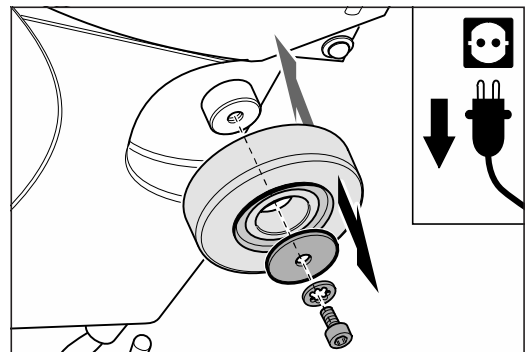


Fig. 64 Remove the screw with the washers in the center of the wheel and remove the lateral wheel. Replace in reverse sequence. **Similar to figure.**

NOTE:

As it is so easy and quick to exchange the lateral wheels and the rear wheel, it is advisable to use a second set of wheels when performing rough work.

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

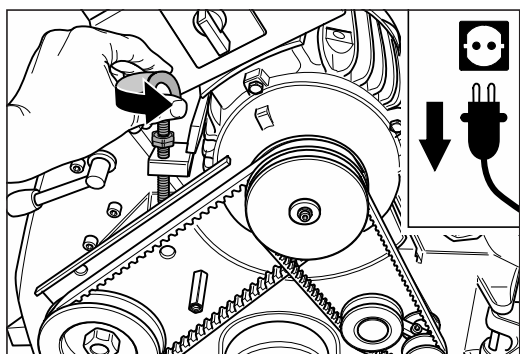


Fig. 65 Release the V-belt tension by loosening the tensioning bolt at the motor.
Similar to figure.

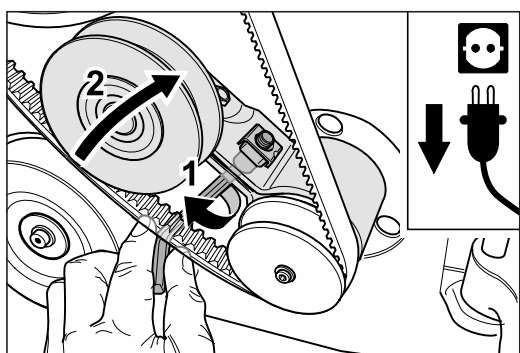


Fig. 66 Open the clamping screw (1) and release the tension of the V-belt (2).
Similar to figure.

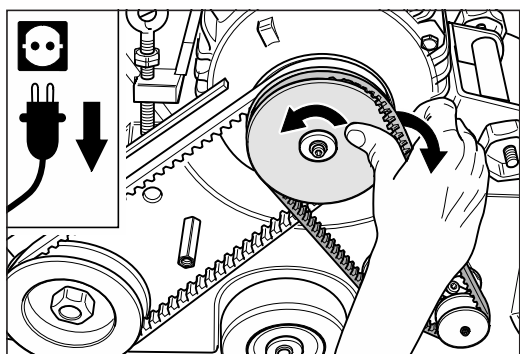


Fig. 67 Remove the fan V-belt.
Similar to figure.

7.10 REPLACEMENT OF V-BELTS

Use exclusively original LÄGLER® V-belts (part numbers in *Section 13, Spare parts*)!

Please note that bad quality V-belts will cause vibrations that may show on your finished floor as fine ripples!

- 1 Lift the sanding drum off the floor by turning the lowering lever at the handle upwards (fig. 16).
- 2 **Switch off the machine and pull the power plug out of the socket!**
- 3 Remove the belt guard.
- 4 Loosen the two motor nuts at the motor bearing bracket (fig. 28).
- 5 Release the tension of the V-belts by turning the tensioning bolt at the motor counterclockwise (fig. 65).
- 6 Open the clamping screw of the belt tensioner for the fan V-belt (fig. 66, 1).
- 7 Turn the belt tensioner clockwise to release the tension of the fan V-belt (fig. 66, 2).

**CAUTION!****RISK OF INJURY:**

During dismantling and mounting the V-belts, take care of your fingers → danger of crushing!

- 8 Turn the motor pulley and allow the fan V-belt to run off the motor pulley (fig. 67).

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

- 9 Turn the lower pulley and allow the drive V-belt to run off the lower pulley (fig. 68).
If necessary, use the box wrench (see tool kit) to turn the lower pulley **exclusively clockwise!**

ATTENTION!

Only turn the nut with the box wrench at the lower pulley clockwise, as otherwise the nut will work loose (left-hand thread)!

- 10 Mount the new V-belts and tension the drive belt using the tensioning bolt at the motor (fig. 69, 1).
The slack on the V-belt should be approx. 1 cm (0.4") if compressed with normal effort (fig. 69, 2).

ATTENTION!

Orient the belt tensioner to the fan pulley! Move the belt tensioner accordingly (fig. 70)! A wrong orientation from belt tensioner to fan pulley (fig. 71) increase the wearing of fan axle, pulleys and V-belt extensive! Then these parts must be replaced significant more often!

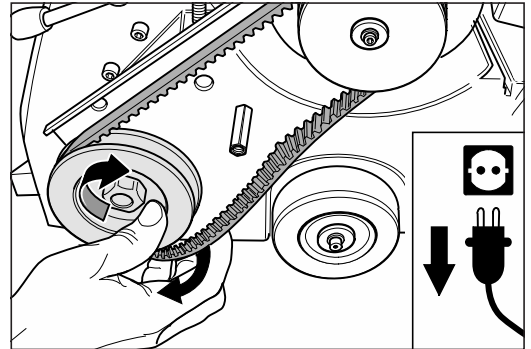


Fig. 68 Allow the drive belt to run off the lower pulley. If necessary use the box wrench (see tool bag) to help you, but turn the box wrench exclusively in the **clockwise** direction in order not to loosen the nut of the lower pulley.
Similar to figure.

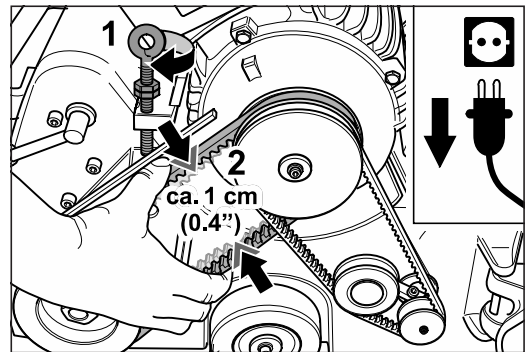


Fig. 69 Tension the drive belt using the tensioning bolt at the motor (1).
The slack on the V-belt should be approx. 1 cm (0.4") if compressed with normal effort (2).
Similar to figure.

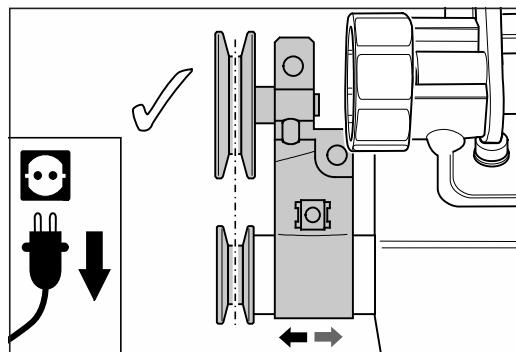


Fig. 70 Orient the belt tensioner to the fan pulley.

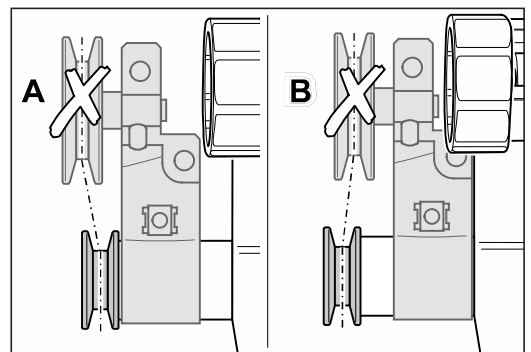


Fig. 71 Avoid position **A** and **B** of the belt tensioner! Otherwise the wearing of the pulleys and the V-belt increase extensive!

MAINTENANCE WORK AND REPLACEMENT OF WEARING PARTS

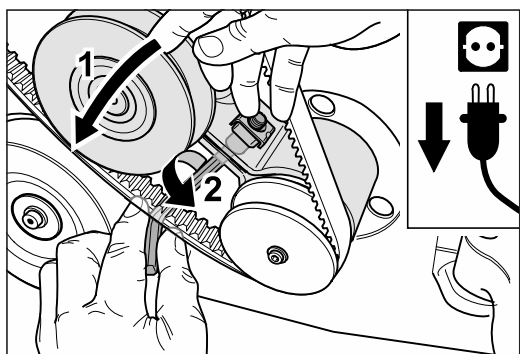


Fig. 72 By turning the tensioner, tighten the smaller V-belt (1) and carefully tighten the clamping screw (2).
Similar to figure.

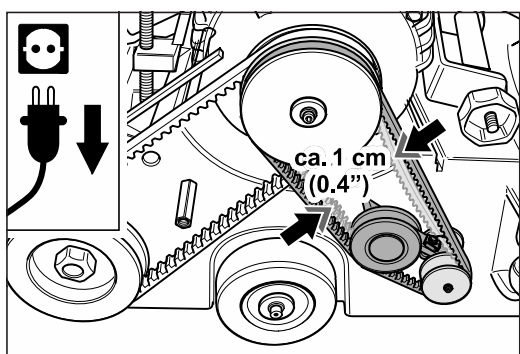


Fig. 73 The slack on the V-belt should be approx. 1 cm (0.4") if compressed with normal effort.
Similar to figure.

- 11 Turn the belt tensioner counterclockwise to tension the fan V-belt (fig. 72, 1). Keep the belt tensioner in position and tighten the clamping screw at the belt tensioner carefully at the same time (fig. 72, 2).
The slack on the V-belt should be approx. 1 cm (0.4") if compressed with normal effort (fig. 73).
- 12 Tighten the two motor nuts (fig. 39).
- 13 Mount the belt guard.

ATTENTION!

- **Never tension the V-belts excessively! This can cause damage to the V-belts and ball bearings!**
- **Check the tension of the V-belts after a while! Retension the V-belts if necessary!**

Regular maintenance and testing in accordance with accident prevention regulations



WARNING!

Tests and testing intervals must comply with and be performed in accordance with the applicable regulations and legal requirements in your country!

The electrical operating equipment and machine components must be checked for their electrical and mechanical safety at least once a year by a specialized staff member, repaired if necessary and then their safety certified by application of a test seal on the machine (fig. 74).

The elements required for dust pick-up must be checked at least once a year by a specialist and also repaired if necessary. They must also be certified as being in good working order.

Ensure that exclusively original LÄGLER® spare parts are used for maintenance work! After-sales servicing should be performed by LÄGLER® or by a LÄGLER®-approved workshop.

The service passport of these operating instructions (*Section 11*) documents when and where you have had your machine serviced.

Enter the serial number and the year of manufacture of your machine (see the type plate) in the space provided below the declaration of conformity (*Section 12*)! Otherwise the service passport will not be valid!

Ensure that maintenance work is recorded in the service passport by completing the relevant box with date, stamp and signature.

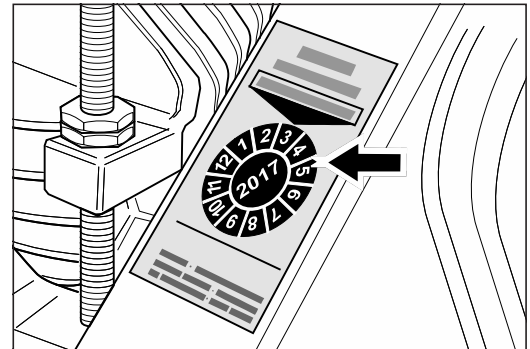


Fig. 74 The inspection label on the belt guard confirms the electrical and mechanical safety of the machine and indicates when the next maintenance check is due.

Causes of faults

This section shows you how to remedy possible malfunctions. If none of the measures listed here are successful, please contact our service department, your retailer or your importer.



WARNING!

RISK OF DEATH from electrical shock:

Work on the electrical equipment is to be conducted exclusively by a qualified electrician! The machine must be switched off and the power plug removed from the socket during this work!

The circuit diagram valid for your machine is located in the motor switch box!

RISK OF INJURY due to unsuitable parts:

Make sure that only original LÄGLER® spare parts and original LÄGLER® accessories are used!

9.1 THE MACHINE DOES NOT RUN

- The machine is not connected to the electrical network. Check the following items:
 - Is the motor cable connected to the extension cable?
 - Is the extension cable inserted into the power socket?
- The power socket is not properly connected. This error must be corrected by a professional.
- The electrical safety device of the electrical network interrupted the electrical circuit, e.g. because
 - too many electricity consumers are connected to the same electrical circuit,
 - improper electrical installation.
 The causes for the error must be repaired by an expert.
- The electrical network is not providing sufficient voltage (undervoltage). Use a transformer if necessary.
- The temperature switch in the motor has switched off the machine because
 - the power cables have a total length of more than 20 m
 - the power cables have wire cross-sections which are too small:
 - at mains voltage 220 V or 230 V are the wire cross-sections smaller than 2.5 mm²
 - at mains voltage 400 V are the wire cross-sections smaller than 1.5 mm²
 - or too much pressure was applied to the sanding drum.
 The motor must cool off and the causes for the problems named above must be remedied.
- An electrical component of the machine (e.g. capacitor, contactor, cable, switch) is defective and must be inspected by a qualified electrician and replaced if necessary.

CAUSES OF FAULTS

9.2 THE MACHINE ATTEMPTS TO START UP BUT IS NOT ABLE TO DO SO

- At low temperatures: The machine is too cold and must be heated up to room temperature in a warm room.
- Cables which are too long or too thin are used for the electrical connection:
 - the power cables have a total length of more than 20 m
 - the power cables have wire cross-sections which are too small:
 - at mains voltage 220 V or 230 V are the wire cross-sections smaller than 2.5 mm²
 - at mains voltage 400 V are the wire cross-sections smaller than 1.5 mm²
 - or too much pressure was applied to the sanding drum.
 This causes of faults lead to a loss of power and are not allowed for safety reasons!
- The electrical network is not providing sufficient voltage (undervoltage). Use a transformer if necessary.
- The V-belts are too tight and must be loosened.
 - ➔ *Section 7.10, Replacement of V-belts*

9.3 THE MACHINE RUNS BUT HAS NO OR VERY LITTLE SANDING POWER CAPACITY

- The sanding belt is incorrect or dull and must be replaced.
 - ➔ *Section 5.2, Changing the sanding belt*
- At low temperatures: The machine is too cold and must be heated up to room temperature in a warm room.
- Cables which are too long or too thin are used for the electrical connection:
 - the power cables have a total length of more than 20 m
 - the power cables have wire cross-sections which are too small:
 - at mains voltage 220 V or 230 V are the wire cross-sections smaller than 2.5 mm²
 - at mains voltage 400 V are the wire cross-sections smaller than 1.5 mm²
 - or too much pressure was applied to the sanding drum.
 This causes of faults lead to a loss of power and are not allowed for safety reasons!
- The electrical network is not providing sufficient voltage (undervoltage). Use a transformer if necessary.
- The V-belts are not tight enough and must be tightened a bit .
 - ➔ *Section 7.10, Replacement of V-belts*
- The sanding pressure do not suit to the grit grade of the sanding belt and must be corrected.
 - ➔ *Section 5.3, Regulation of the sanding pressure*

CAUSES OF FAULTS

9.4 THE MACHINE VIBRATES INTENSELY AND RUNS NOISILY

- The sanding belt does not have the proper tension. The tension must be corrected.
➔ *Section 5.2, Changing the sanding belt*
- The sanding belt is damaged or incorrect and must be replaced.
➔ *Section 5.2, Changing the sanding belt*
- The sanding belt tracking is incorrect and must be adjusted.
➔ *Section 7.3, Checking and setting the sanding belt tracking*
- The sanding drum is dirty or damaged and must be replaced.
➔ *Section 7.6, Replacement of sanding drum*
- The tensioning roller of the drive unit is dirty or damaged and must be replaced.
➔ *Section 7.7, Replacement of tensioning roller*
- A V-belt is dirty, damaged or worn-out and must be replaced.
➔ *Section 7.10, Replacement of V-belts*
- A pulley is dirty or worn-out and must be cleaned or replaced.
- There are clogged materials and deposits in the machine that must be removed.

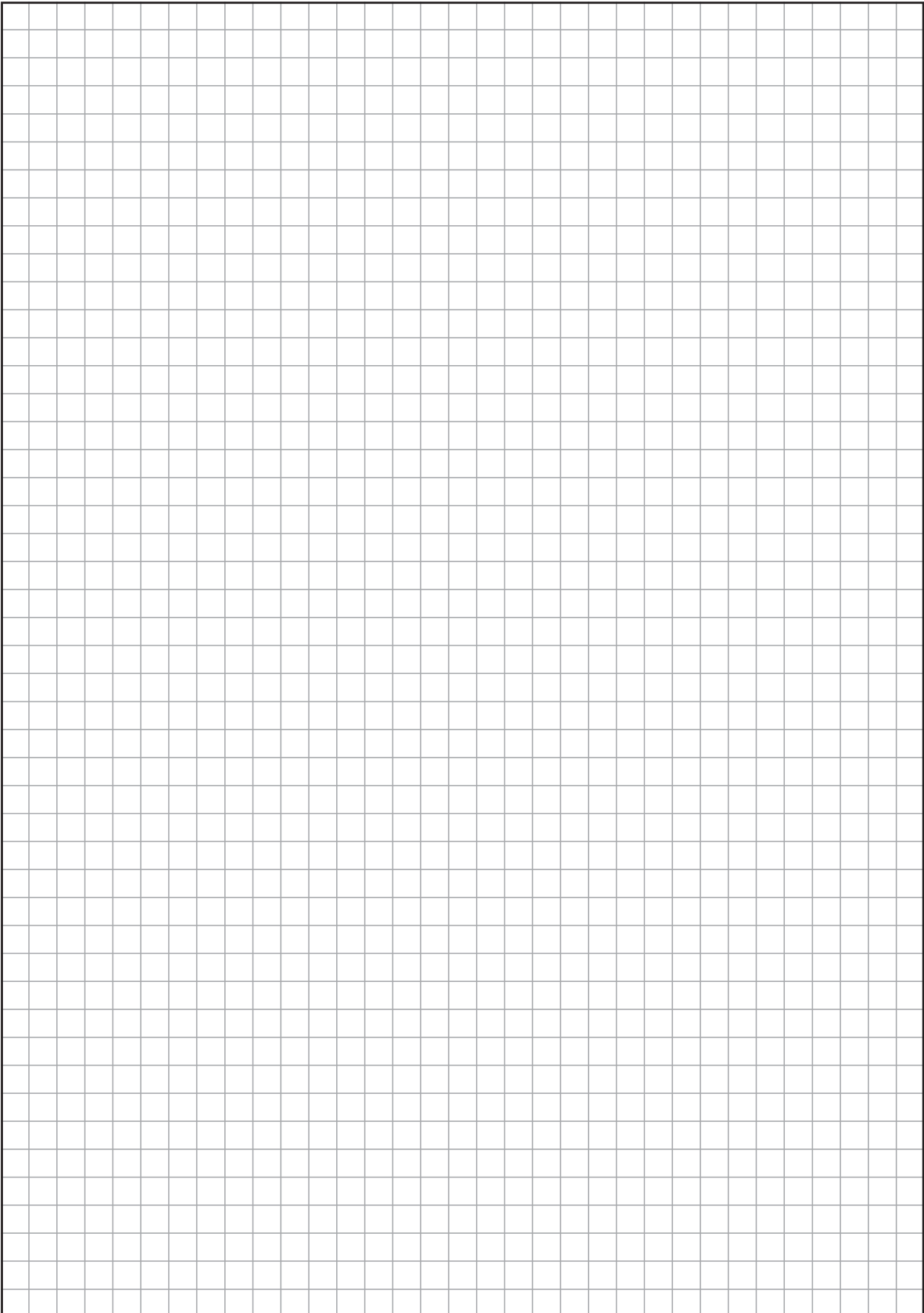
9.5 THE MACHINE RUNS BUT CREATES A GREAT DEAL OF DUST

- The dust bag is more than one third full and must be emptied.
➔ *Section 5.4, Emptying the dust bag*
- The dust bag is not correctly attached or is damaged and must be replaced.
➔ *Section 4.1, Preparing the machine*
- The sealing felt at the machine housing is damaged and must be replaced.
➔ *Section 7.5, Checking the dust pick-up*
- The dust suction system is clogged up and must be cleaned.
- The suction V-belt is not tight enough and must be tightened or damaged and must be replaced.
➔ *Section 7.10, Replacement of V-belts*
- The side cover is not mounted at the machine and must be mounted.

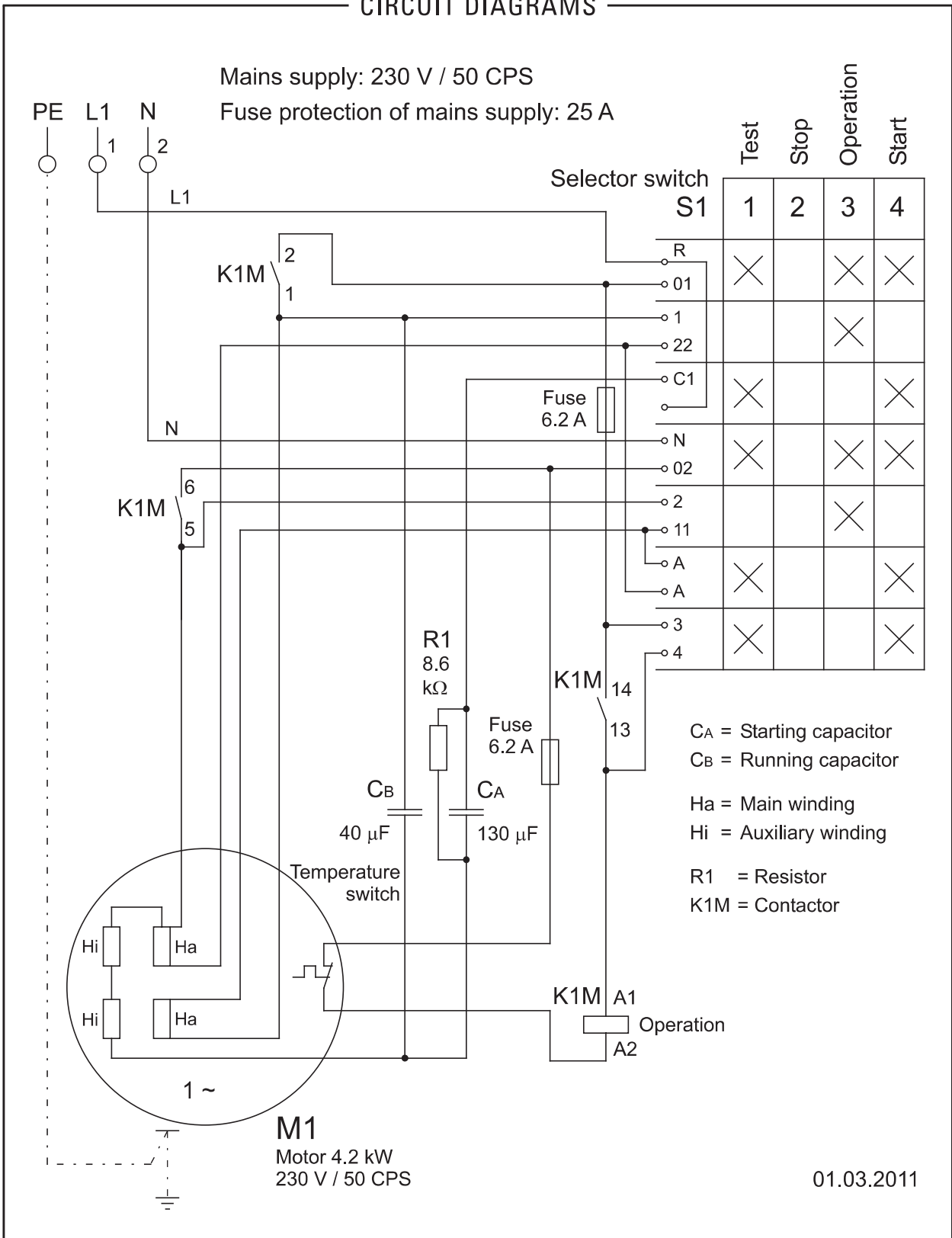
CAUSES OF FAULTS

9.6 SANDING PROBLEMS (WAVES, STRIPS, GROOVES)

- The floor was not vacuumed before sanding. The floor must always be vacuumed thoroughly before each sanding operation.
- The sanding drum was not lifted from the floor while the machine was switched on or off. Always lift the sanding drum off the floor before switching on or off the machine.
➔ *Section 4.3, Switching on the machine and Section 4.4, Switching off the machine*
- The sanding belt does not have the proper tension. The tension must be corrected.
➔ *Section 5.2, Changing the sanding belt*
- The sanding medium is damaged or incorrect and must be replaced.
➔ *Section 5.2, Changing the sanding belt*
- The sanding pressure do not suit to the grit grade of the sanding belt and must be corrected
➔ *Section 5.3, Regulation of the sanding pressure*
- The machine setting is not correct and must be adjusted. The sanding drum must sands centrally.
➔ *Section 7.4, Checking the machine setting*
- The sanding drum is dirty or damaged and must be replaced.
➔ *Section 7.6, Replacement of sanding drum*
- The tensioning roller of the drive unit is dirty or damaged and must be replaced.
➔ *Section 7.7, Replacement of tensioning roller*
- The wheels are dirty or damaged and must be cleaned or replaced.
➔ *Section 7.8, Replacement of rear wheel and Section 7.9, Replacement of lateral wheels*
- A V-belt is dirty, damaged or worn-out and must be replaced.
➔ *Section 7.10, Replacement of V-belts*
- A pulley is dirty or worn-out and must be cleaned or replaced.
- The lowering rod linkage is running poorly, catching on something or getting stuck. Free movement is necessary.
- The machine is being moved too slowly and must be sped up.
- Too much pressure is placed on the sanding drum while sanding.
The following causes must be eliminated:
 - additional weight is on the machine,
 - the rear part of the machine is lifted on with the handle while sanding,
 - the lowering lever at the handle is pressed downwards while sanding.



CIRCUIT DIAGRAMS

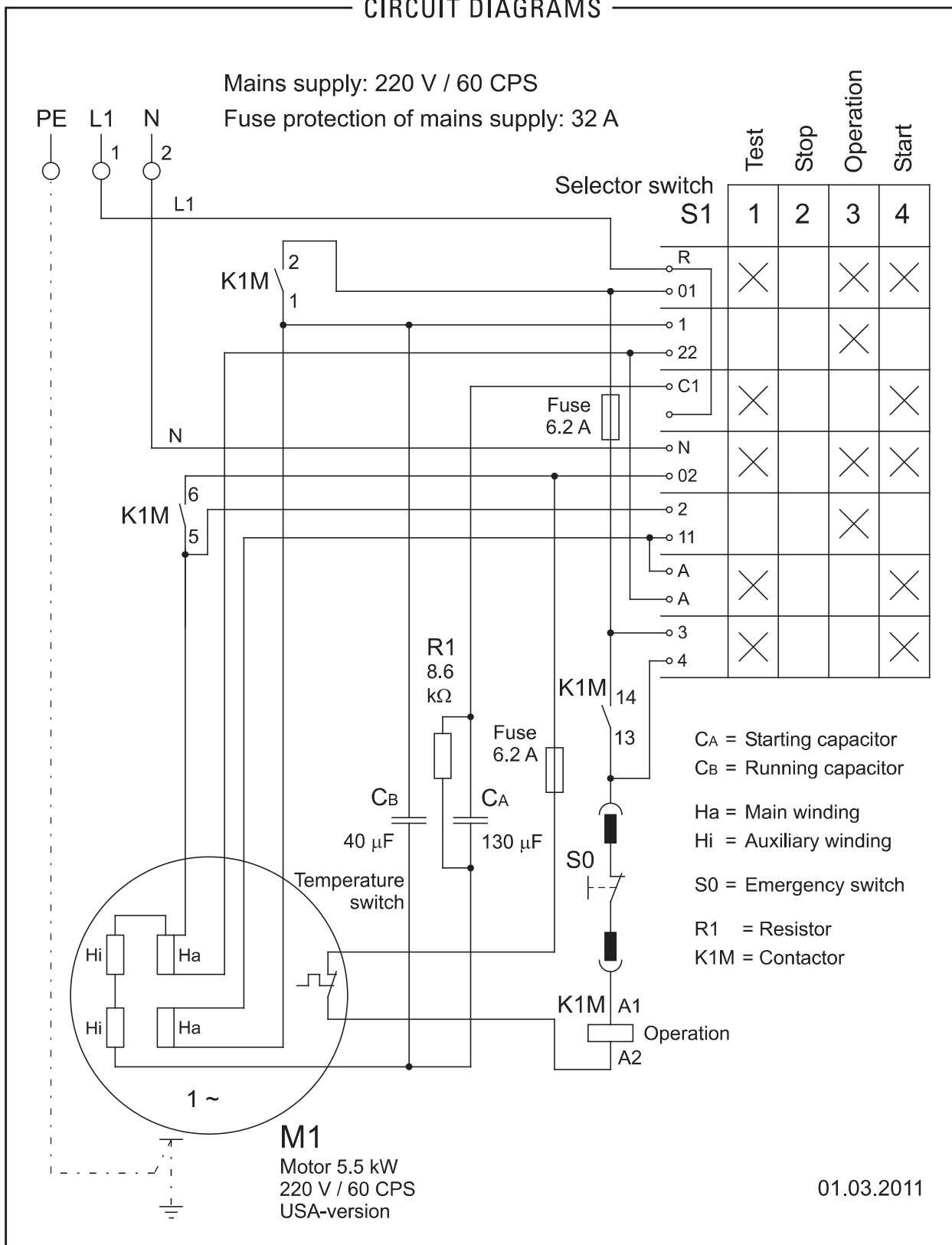


SUPERHUMMEL: Single-phase AC motor 4.2 kW / 230 V / 50 CPS

EUGEN LÄGLER GMBH Kappelrain 2 D-74363 Güglingen-Frauenzimmern	Phone: +49 - 7135 - 98 90 - 0 Fax: +49 - 7135 - 98 90 - 98	e-mail: info@laegler.com Internet: http://www.laegler.com
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The circuit diagram valid for your machine is located in the motor switch box.

CIRCUIT DIAGRAMS



SUPERHUMMEL: Single-phase AC motor

**5.5 kW / 220 V / 60 CPS
USA version**

EUGEN LÄGLER GMBH
Kappelrain 2
D-74363 Güglingen-Frauenzimmern

Phone: +49 - 7135 - 98 90 - 0
Fax: +49 - 7135 - 98 90 - 98

e-mail: info@laegler.com
Internet: http://www.laegler.com

The circuit diagram valid for your machine is located in the motor switch box.

EC Declaration of conformity for machines (EC Directive 2006/42/EC)

The manufacturer **Eugen Lägler GmbH, Kappelrain 2, D-74363 Güglingen-Frauenzimmern, Germany**
 Tel.: 0049 - 7135 - 98 90-0 · Fax: 0049 - 7135 - 98 90-98
 E-Mail: info@laegler.com · http://www.laegler.com

certified herewith,
 that the machine

Generic denomination: **Floor sanding machine**
 Function: **Dry sanding of wooden floors**
 Model: **SUPERHUMMEL**
 Serial number: **See type plate**
 Commercial name: **Belt sanding machine**

fulfils all the relevant provisions of the specified above European Directive.

The machine also fulfils all the relevant provisions of the European Directive
Electromagnetic Compatibility (2014/30/EU).

The following harmonized standards have been applied:

DIN EN ISO 12100: Safety of machinery - General principles for design - Risk assessment and risk reduction

DIN EN 60204-1: Safety of machinery - Electrical equipment of machines - Part 1

DIN EN 55014-1: Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1

DIN EN 55014-2: Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2

DIN EN 61000-3-2: Electromagnetic compatibility (EMC) - Part 3-2: Limits

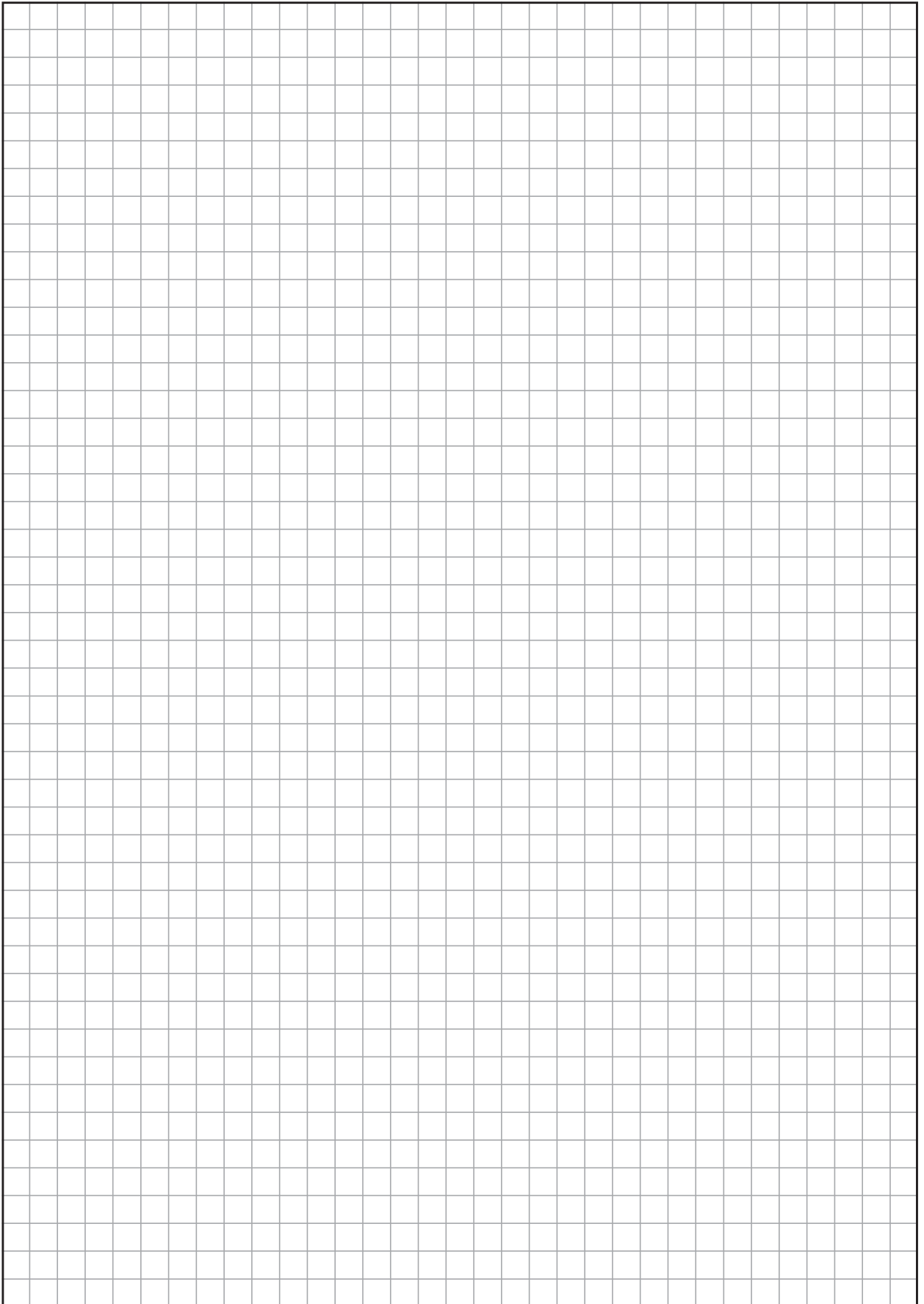
DIN EN 61000-3-3: Electromagnetic compatibility (EMC) - Part 3-3: Limits

Technical file at: Eugen Lägler GmbH, Kappelrain 2
 D-74363 Güglingen-Frauenzimmern
 Germany

SUPERHUMMEL Serial number: _____

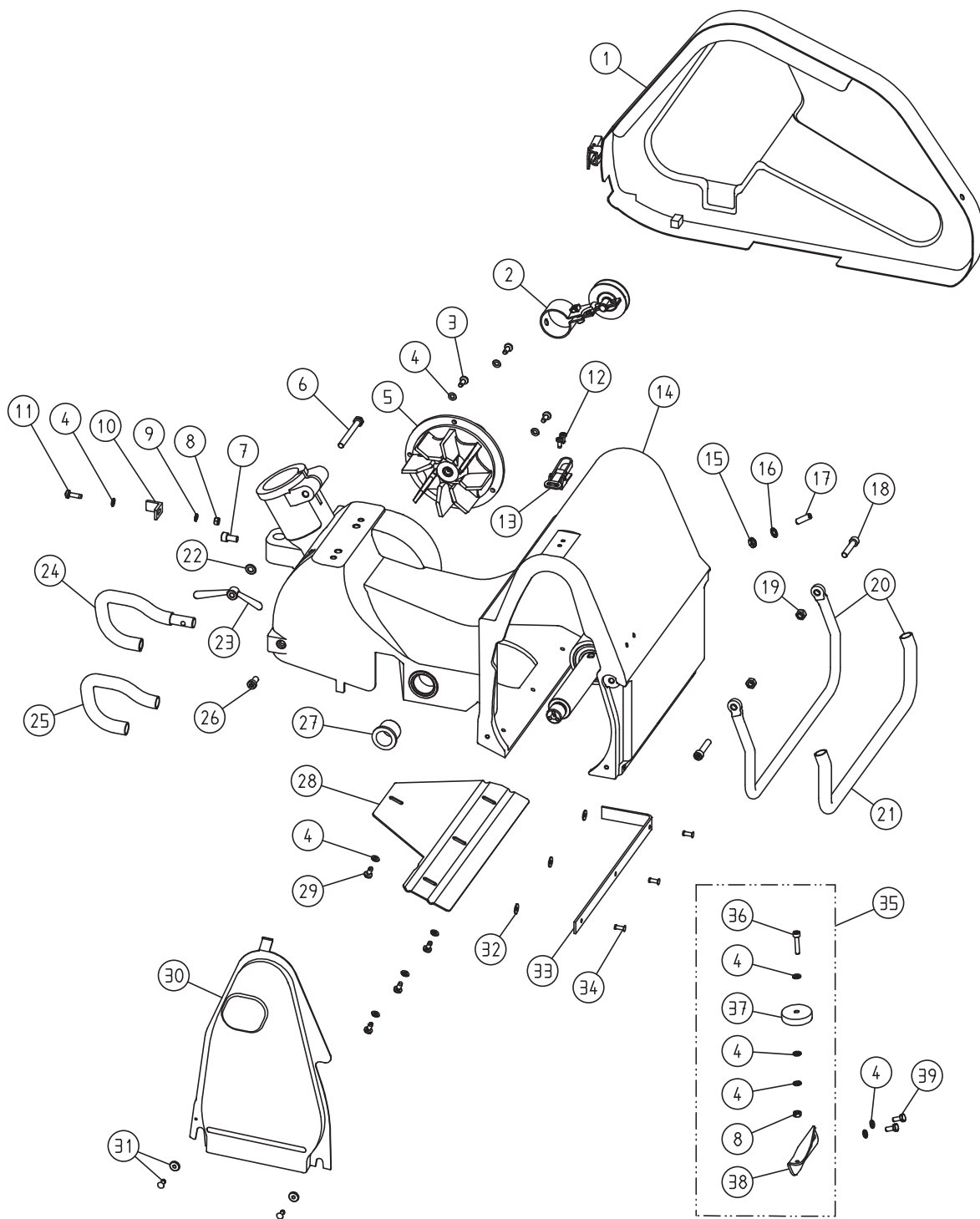
Year of manufacture: _____

NOTIZEN / NOTES



ERSATZTEILE / SPARE PARTS

ACHTUNG: Bitte geben Sie bei Anfragen und Ersatzteilbestellungen immer die Seriennummern Ihrer Maschinen an (→ Abschnitt 3.1)!
 ATTENTION: Please specify in inquiries and spare part orders always the serial numbers of your machines (→ Section 3.1)!



SUPERHUMMEL 1
 01.08.2018

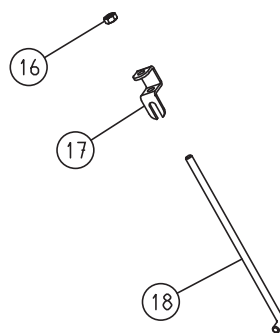
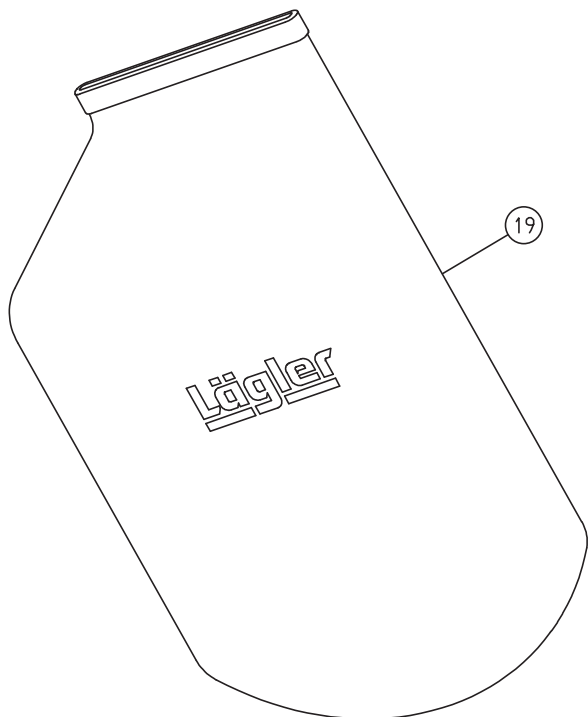
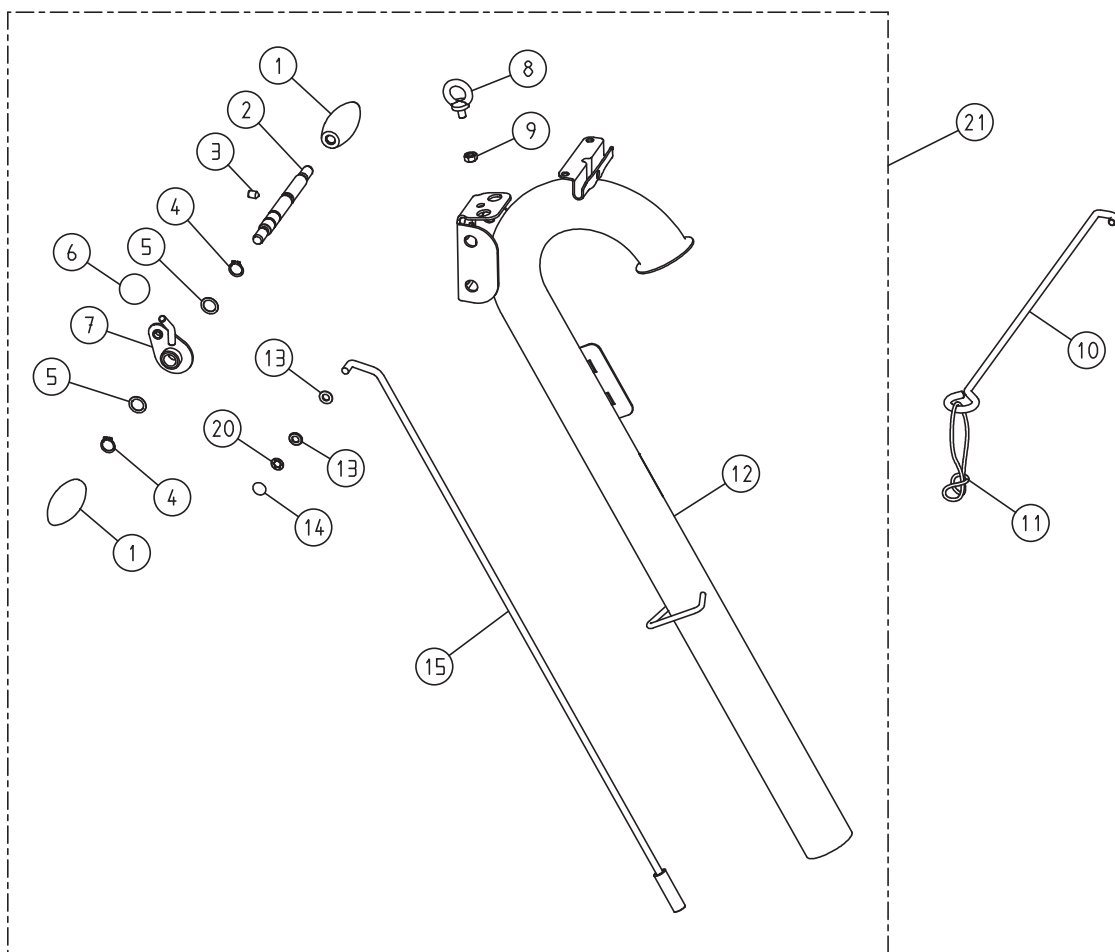
ERSATZTEILE / SPARE PARTS

Pos. Item	Artikel-Nr. Part no.	Bezeichnung	Description
1	550.50.00.100	Riemenschutz, komplett	Belt guard, complete
2	100.58.00.200	Riemenspanner, komplett	Belt tensioner, complete
3	7500.1006.016	Schraube	Screw
4	0125.1006.000	Scheibe	Washer
5	550.10.00.200	Ventilatoreinsatz, komplett	Fan insert, complete
6	0931.1008.075	Schraube	Screw
7	0912.1008.016	Schraube	Screw
8	0934.1006.000	Mutter	Nut
9	6797.1006.900	Scheibe	Washer
10	550.50.05.100	Winkel	Angle
11	7500.1006.020	Schraube	Screw
12	7500.1005.012	Schraube	Screw
13	100.01.05.105	Deckelverschluss	Cover fastener
14	550.01.00.100	Maschinengehäuse mit Schleiflagerung	Machine housing
15	0439.1008.000	Mutter	Nut
16	6797.1008.000	Scheibe	Washer
17	0913.0008.025	Gewindestift	Grub screw
18	0912.1008.040	Schraube	Screw
19	0980.1008.000	Mutter	Nut
20	550.00.55.100	Tragbügel	Bracket
21	550.00.56.100	PVC-Schlauch	PVC tube
22	0125.1008.000	Scheibe	Washer
23	000.20.45.083	Flügelmutter	Wing nut
24	100.44.00.100	Sturzbügel, komplett	Safety guard, complete
25	100.44.01.100	PVC-Schlauch für Sturzbügel	PVC tube
26	7984.1008.016	Schraube	Screw
27	000.43.10.252	Gleitlager	Plastic bushing
28	550.14.01.100	Kanalblech	Cover for intake duct
29	7500.1006.012	Schraube	Screw
30	550.01.03.100	Abdeckblech	Side cover
31	100.01.08.200	Bundmutter + Niete	Collar nut, complete
32	9021.1005.000	Scheibe	Washer
33	550.01.02.100	Dichtfilz	Sealing felt
34	7337.0105.020	Niete	Rivet
35	100.60.00.200	Wandschutzrolle mit Halter	Wall-protecting roller with holder
36	0912.1006.030	Schraube	Screw
37	100.60.02.200	Wandschutzrolle	Wall-protecting roller
38	100.60.01.100	Halter für Wandschutzrolle	Holder for wall-protecting roller
39	0933.1006.014	Schraube	Screw

ACHTUNG: Bitte geben Sie bei Anfragen und Ersatzteilbestellungen immer die Seriennummern Ihrer Maschinen an (→ Abschnitt 3.1)!
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ERSATZTEILE / SPARE PARTS

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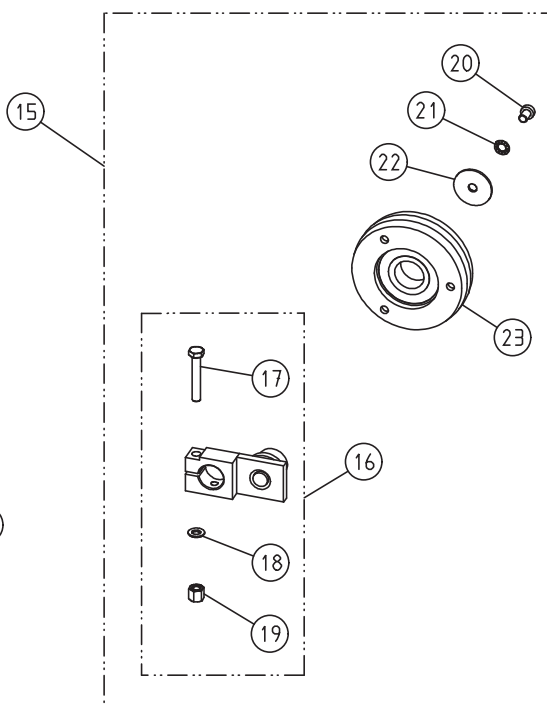
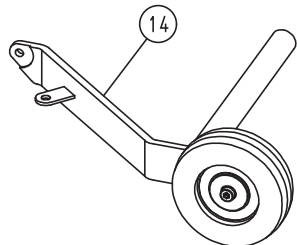
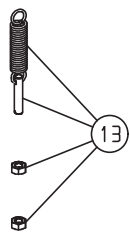
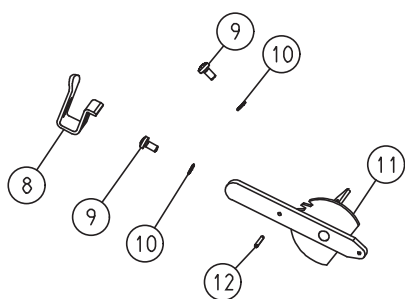
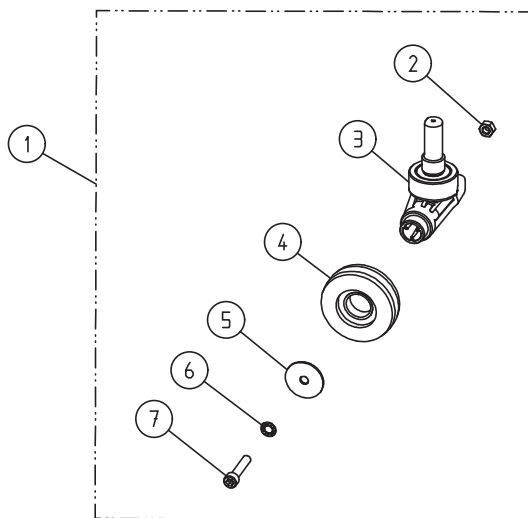
SUPERHUMMEL 2
 01.08.2015

ERSATZTEILE / SPARE PARTS

Pos. Item	Artikel-Nr. Part no.	Bezeichnung	Description
1	000.20.31.351	Handgriff	Handle
2	100.20.17.200	Achse für Handgriff	Axle for handle
3	0914.0008.012	Gewindestift	Grub screw
4	0471.0015.000	Sicherungsring	Circlip
5	0988.0015.005	Scheibe	Washer
6	000.20.56.351	Kugelknopf	Ball knob
7	100.20.18.200	Hebel	Lever
8	0580.1008.000	Ringschraube	Thread eye
9	0980.1008.000	Mutter	Nut
10	100.20.26.100	Kabelstütze mit Zugentlastungsring, komplett	Cable support, complete
11	00.000.41.002	Zugentlastungsring	Strain relief ring
12	550.20.01.200	Führungsrohr	Guide tube
13	0125.1008.000	Scheibe	Washer
14	000.17.21.081	Schnellbefestiger mit Kappe	Fixing cap
15	550.20.25.100	Gestängeoberteil	Upper rod
16	0934.1008.000	Mutter	Nut
17	150.20.24.100	Patentverschluss	Patent closure
18	550.20.34.100	Gestängeunterteil, lang	Lower rod, long
19	100.00.80.105	Staubsack für HUMMEL®, SUPERHUMMEL, ELF	Dust bag for HUMMEL®, SUPERHUMMEL, ELF
20	000.17.20.081	Schnellbefestiger	Quick-fixing-fastener
21	550.20.00.200	Führungsrohr, komplett	Guide tube, complete

ACHTUNG: Bitte geben Sie bei Anfragen und Ersatzteilbestellungen immer die Seriennummern Ihrer Maschinen an (→ Abschnitt 3.1)!
 ATTENTION: Please specify in inquiries and spare part orders always the serial numbers of your machines (→ Section 3.1)!

ERSATZTEILE / SPARE PARTS



SUPERHUMMEL 3
01.07.2005

ACHTUNG: Bitte geben Sie bei Anfragen und Ersatzteilbestellungen immer die Seriennummern Ihrer Maschinen an (→ Abschnitt 3.1)!
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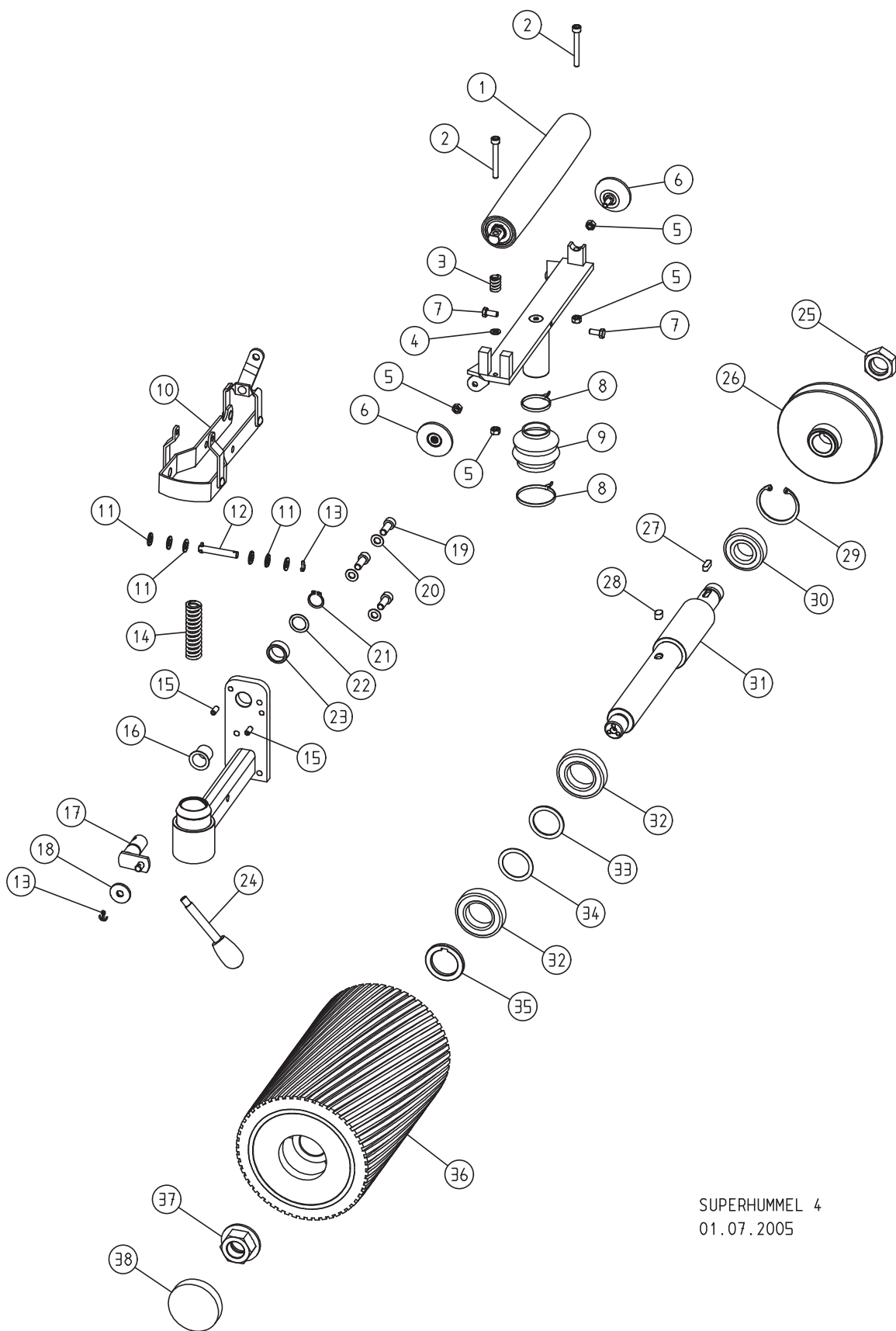
ERSATZTEILE / SPARE PARTS

Pos. Item	Artikel-Nr. Part no.	Bezeichnung	Description
1	100.18.00.300	Hinterrad, komplett	Rear wheel, complete
2	0934.1008.000	Mutter	Nut
3	100.18.18.300	Sporngehäuse, komplett	Tail axle housing, complete
4	100.18.29.105	Hinterrad (ab Baujahr 2002)	Rear wheel (from year of manufacture 2002)
	100.18.09.200	Hinterrad (bis Baujahr 2001)	Rear wheel (up to year of manufacture 2001)
5	000.10.10.085	Scheibe	Washer
6	6797.1008.000	Scheibe	Washer
7	0912.1008.040	Schraube	Screw
8	550.04.12.100	Raste	Fixture
9	7500.1006.016	Schraube	Screw
10	6797.1006.900	Scheibe	Washer
11	550.04.08.100	Rastenblech, komplett	Notch plate, complete
12	1481.0003.018	Spannstift	Spring type straight pin
13	550.04.25.100	Zugfeder mit Federspannschraube (Maschinen mit Motor ab 4,2 kW)	Tension spring with screw (machines with motor from 4.2 kW)
	555.04.25.100	Zugfeder mit Federspannschraube (Maschinen mit Motor bis 4 kW)	Tension spring with screw (machines with motor up to 4 kW)
14	550.04.00.200	Abhebevorrichtung komplett mit Rad	Lifting fixture complete with wheel
15	550.04.15.200	Kipphebel komplett mit Rad	Tilting fixture complete with wheel
16	550.04.06.200	Kipphebel	Tilting fixture
17	0931.1008.050	Schraube	Screw
18	0125.1008.000	Scheibe	Washer
19	6330.1008.000	Mutter	Nut
20	7984.1008.012	Schraube	Screw
21	6797.1008.000	Scheibe	Washer
22	000.10.10.085	Scheibe	Washer
23	100.05.29.100	Seitenrad (ab Baujahr Juni 1999)	Lateral wheel (from year of manufacture June 1999)

ACHTUNG: Bitte geben Sie bei Anfragen und Ersatzteilbestellungen immer die Seriennummern Ihrer Maschinen an (→ Abschnitt 3.1)!
 ATTENTION: Please specify in inquiries and spare part orders always the serial numbers of your machines (→ Section 3.1)!

ERSATZTEILE / SPARE PARTS

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SUPERHUMMEL 4
 01.07.2005

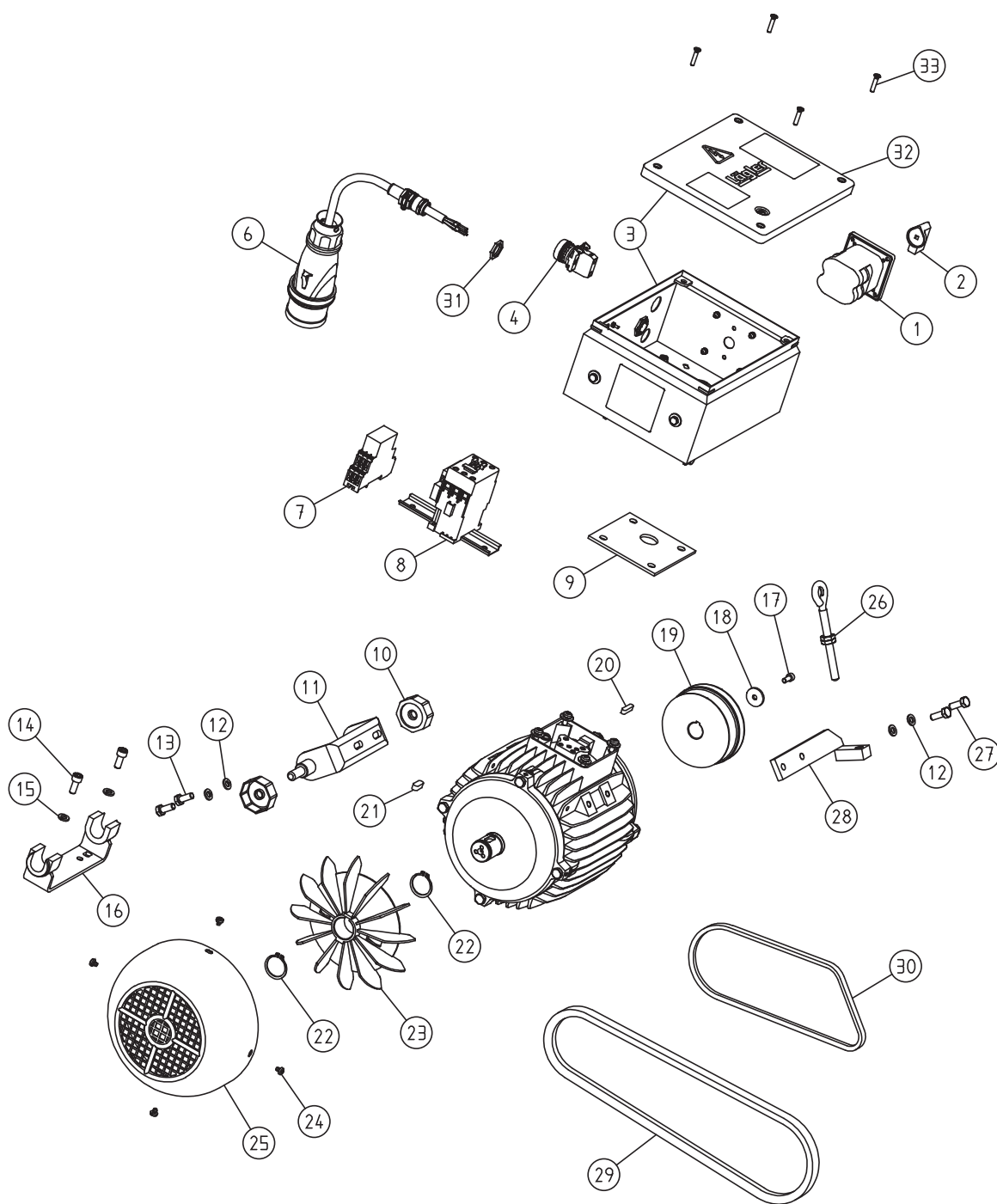
ERSATZTEILE / SPARE PARTS

Pos. Item	Artikel-Nr. Part no.	Bezeichnung	Description
	550.43.00.200	Aggregat, komplett	Drive unit, complete
1	550.43.12.105	Spannwalze	Tensioning roller
2	0912.1006.050	Schraube	Screw
3	000.31.13.021	Druckfeder	Pressure spring
4	0125.1006.000	Scheibe	Washer
5	0980.1006.000	Mutter	Nut
6	100.45.01.105	Leitrolle	Guide roller
7	0933.1006.014	Schraube	Screw
8	000.61.10.363	Kabelbinder	Cable tie
9	100.45.81.105	Faltenbalg	Collar
10	550.43.40.100	Gelenkhebel	Articulation
11	0125.1008.000	Scheibe	Washer
12	550.43.36.105	Gelenkbolzen	Pivot pin
13	0094.1025.016	Splint	Split pin
14	000.31.19.091	Druckfeder	Pressure spring
15	1481.0006.014	Spannstift	Spring type straight pin
16	100.45.24.105	Lagerbuchse	Bearing bush
17	550.43.18.200	Kurbel	Crank
18	000.10.10.081	Scheibe	Washer
19	0912.1008.020	Schraube	Screw
20	0125.1008.000	Scheibe	Washer
21	0471.0018.000	Sicherungsring	Circlip
22	0988.0018.005	Scheibe	Washer
23	550.43.80.105	Distanzring	Spacer ring
24	000.20.32.104	Bedienungshebel	Operating lever
25	100.02.05.100	Mutter, Rechtsgewinde	Nut, right-hand thread
26	100.36.00.100	Keilriemenscheibe	V-belt pulley
27	6885.0606.018	Passfeder	Parallel key
28	6885.0807.012	Passfeder	Parallel key
29	0472.0052.000	Sicherungsring	Circlip
30	6205.0025.205	Kugellager	Ball bearing
31	550.02.01.100	Schleifwelle	Sanding shaft
32	6007.0035.202	Kugellager	Ball bearing
33	0988.0035.020	Scheibe	Washer
34	0988.0035.010	Scheibe	Washer
35	550.02.04.100	Distanzring	Spacer ring
36	550.40.00.100	SUPERHUMMEL-Schleifwalze	Sanding drum SUPERHUMMEL
37	550.02.06.100	Mutter mit Scheibe, Linksgewinde	Nut with washer, left-hand thread
38	550.40.05.100	Gummischeibe	Rubber disc

ACHTUNG: Bitte geben Sie bei Anfragen und Ersatzteilbestellungen immer die Seriennummern Ihrer Maschinen an (→ Abschnitt 3.1)!
 ATTENTION: Please specify in inquiries and spare part orders always the serial numbers of your machines (→ Section 3.1)!

ERSATZTEILE / SPARE PARTS

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 ATTENTION: Please specify in inquiries and spare part orders always the serial numbers of your machines (→ Section 3.1)!



SUPERHUMMEL 5
 01.01.2019

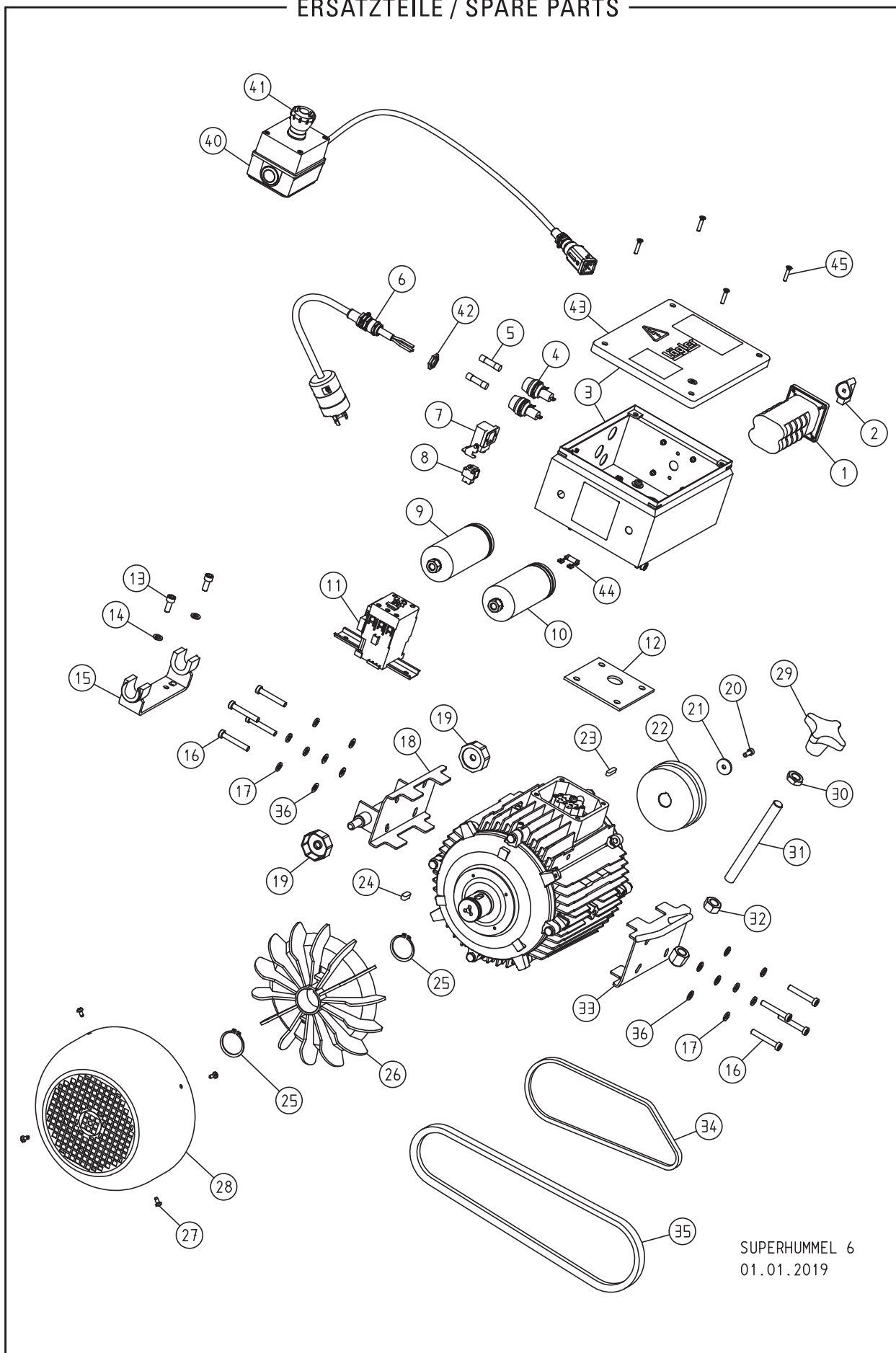
ERSATZTEILE / SPARE PARTS

Pos. Item	Artikel-Nr. Part no.	Bezeichnung	Description
	555.65.00.100	Motor, 400 V / 50 Hz / 4 kW, Drehstrom	Motor, 400 V / 50 CPS / 4 kW, three-phase current
	560.65.00.100	Motor, 230 V / 50+60 Hz / 4 kW, Drehstrom	Motor, 230 V / 50+60 CPS / 4 kW, three-phase current
1	000.65.60.401	Schalter für Drehstrommotor	Switch for three-phase AC motor
2	000.65.62.211	Schalterknopf	Switch button
3	102.65.40.200	Schaltkasten für 220-230 V / 60 Hz + Drehstrom	Switch box for 220-230 V / 60 CPS + three-phase current
4	000.65.25.020	Lampe rot für Drehstrommotor	Lamp red for three-phase AC motor
6	105.65.75.100	Motorkabel 5 x 1,5 mm ² für Drehstrommotor (ab Baujahr 2008)	Motor cable 5 x 1.5 mm ² for three-phase AC motor (from year of manufacture 2008)
	000.65.45.151	Motorkabel 5 x 1,5 mm ² für Drehstrommotor (bis Baujahr 2007)	Motor cable 5 x 1.5 mm ² , for three-phase AC motor (up to year of manufacture 2007)
7	000.65.20.220	Phasenfolgerelais für Drehstrommotor	Relay for three-phase AC motor
8	000.65.20.032	Schütz mit Montageschiene und Hilfskontaktblock für Drehstrommotor	Contacteur complete for three-phase AC motor
9	100.65.14.105	Dichtplatte	Sealing plate
10	100.65.30.100	Motormutter	Motor nut
11	555.65.25.100	Motoraufhängung	Motor mounting
12	0127.1008.000	Federring	Spring washer
13	0933.1008.020	Schraube	Screw
14	0912.1008.020	Schraube	Screw
15	0127.1008.000	Federring	Spring washer
16	100.65.29.200	Motorlagerbock	Motor bearing bracket
17	0912.1006.014	Schraube	Screw
18	000.10.10.061	Scheibe	Washer
19	100.65.06.100	Motorriemenscheibe	Motor pulley
20	6885.0606.025	Passfeder	Parallel key
21	6885.0807.020	Passfeder	Parallel key
22	0471.0030.000	Sicherungsring	Circlip
23	100.65.08.105	Lüfterflügel	Fan wheel
24	7500.1005.006	Schraube	Screw
25	100.65.09.100	Lüfterhaube	Fan cover
26	100.65.80.205	Ringschraube	Eye bolt
27	0933.1008.022	Schraube	Screw
28	555.65.35.100	Motorspanner	Motor tensioner
29	000.70.17.099	Keilriemen	V-belt
30	000.70.10.067	Keilriemen	V-belt
31	000.68.60.207	Mutter (ab Baujahr 2008)	Nut (from year of manufacture 2008)
	000.68.60.163	Mutter (bis Baujahr 2007)	Nut (up to year of manufacture 2007)
32	100.65.47.100	Deckel mit Dichtung	Cover with seal
33	7500.1005.825	Schraube	Screw

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ERSATZTEILE / SPARE PARTS

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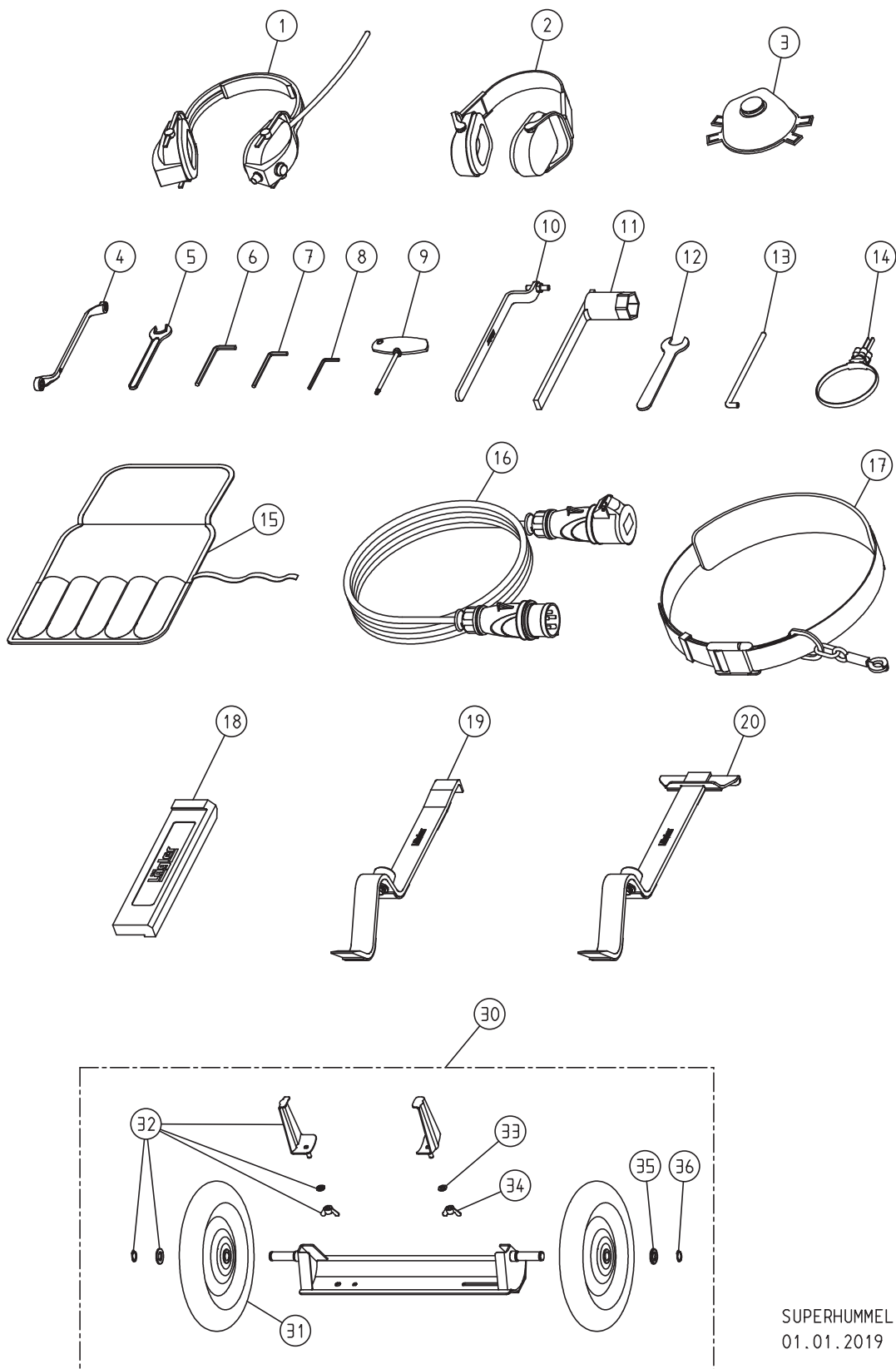
ERSATZTEILE / SPARE PARTS

Pos. Item	Artikel-Nr. Part no.	Bezeichnung	Description
	550.65.00.100	Motor, 230 V / 50 Hz / 4,2 kW	Motor, 230 V / 50 CPS / 4.2 kW
	551.65.00.100	Motor, 230 V / 60 Hz / 5,5 kW	Motor, 230 V / 60 CPS / 5.5 kW
	552.65.00.100	Motor, 220 V / 60 Hz / 5,5 kW, USA	Motor, 220 V / 60 CPS / 5.5 kW, USA
1	000.65.60.253	Schalter	Switch
2	000.65.62.211	Schalterknopf	Switch button
3	102.65.40.200	Schaltkasten für 220-230 V / 60 Hz + Drehstrom	Switch box for 220-230 V / 60 CPS + three-phase current
4	000.65.82.012	Sicherungshalter	Attachment for fuse
5	000.65.80.063	Sicherung	Fuse
6	102.65.75.100	Motorkabel 3 x 2,5 mm ² , USA (ab Baujahr 2008)	Motor cable 3 x 2.5 mm ² , USA (from year of manufacture 2008)
	000.65.43.257	Motorkabel 3 x 2,5 mm ² , USA (bis Baujahr 2007)	Motor cable 3 x 2.5 mm ² , USA (up to year of manufacture 2007)
	100.65.75.100	Motorkabel 3 x 2,5 mm ² (ab Baujahr 2008)	Motor cable 3 x 2.5 mm ² (from year of manufacture 2008)
	000.65.43.251	Motorkabel 3 x 2,5 mm ² (bis Baujahr 2007)	Motor cable 3 x 2.5 mm ² (up to year of manufacture 2007)
7	000.65.71.023	Anbaugehäuse	Mounting case
8	000.65.72.022	Buchseneinsatz	Jack insert
9	000.65.10.041	Betriebskondensator 40 µF	Running capacitor 40 µF
10	000.65.10.131	Anlaufkondensator 130 µF, USA	Starting capacitor 130 µF, USA
11	000.65.20.042	Schütz mit Montageschiene und Hilfskontaktblock	Contactator, complete
12	100.65.14.105	Dichtplatte	Sealing plate
13	0912.1008.020	Schraube	Screw
14	0127.1008.000	Federring	Spring washer
15	100.65.29.200	Motorlagerbock	Motor bearing bracket
16	7984.1008.050	Schraube	Screw
17	0127.1008.000	Federring	Spring washer
18	550.65.25.200	Motoraufhängung	Motor mounting
19	100.65.30.100	Motormutter	Motor nut
20	0912.1006.016	Schraube	Screw
21	000.10.10.061	Scheibe	Washer
22	100.65.06.100	Motorriemenscheibe	Motor pulley
23	6885.0606.025	Passfeder	Parallel key
24	6885.0807.020	Passfeder	Parallel key
25	0471.0040.000	Sicherungsring	Circlip
26	550.65.08.105	Lüfterflügel	Fan wheel
27	7500.1005.010	Schraube	Screw
28	550.65.09.100	Lüfterhaube	Fan cover
29	000.20.20.161	Kreuzgriff	Cross grip
30	0439.1016.000	Mutter	Nut
31	550.65.15.100	Motorspannerbolzen	Motor tensioning bolt
32	0934.1016.000	Mutter	Nut
33	550.65.35.200	Motorspanner	Motor tensioner
34	000.70.10.069	Keilriemen	V-belt
35	000.70.17.101	Keilriemen	V-belt
36	0125.1008.000	Scheibe	Washer
40	102.65.60.200	Not-Aus-Schalter USA, komplett	Emergency switch USA, complete
41	000.65.62.221	Roter Knopf für Not-Aus-Schalter USA	Red button for emergency switch USA
42	000.68.60.207	Mutter (ab Baujahr 2008)	Nut (from year of manufacture 2008)
	000.68.60.163	Mutter (bis Baujahr 2007)	Nut (up to year of manufacture 2007)
43	100.65.47.100	Deckel mit Dichtung	Cover with seal
44	000.65.12.091	Entladewiderstand	Discharging resistor
45	7500.1005.825	Schraube	Screw

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ERSATZTEILE / SPARE PARTS

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ERSATZTEILE / SPARE PARTS

Pos. Item	Artikel-Nr. Part no.	Bezeichnung	Description
1	000.01.10.011	Kapselgehörschützer MUSIMUFF mit UKW-Radio	Foldable earmuff type MUSIMUFF with FM radio
2	000.01.10.021	Kapselgehörschützer POCKET mit Tasche	Foldable earmuff type POCKET
3	000.01.20.010	Atemschutzmaske P3	Respiratory protection mask P3
4	000.95.21.103	Ringschlüssel 10/13 mm	Closed mouth wrench 10/13 mm
5	000.95.11.171	Einmaulschlüssel 17 mm	Open mouth wrench 17 mm
6	000.93.11.061	Sechskantschlüssel 6 mm	Hexagonal socket screw wrench 6 mm
7	000.93.11.051	Sechskantschlüssel 5 mm	Hexagonal socket screw wrench 5 mm
8	000.93.11.041	Sechskantschlüssel 4 mm	Hexagonal socket screw wrench 4 mm
9	000.91.40.301	Torx-Schraubendreher T30	Torx screwdriver T30
10	550.00.50.100	Einstellvorrichtung	Setting fixture
11	100.00.45.105	Walzenschlüssel	Box wrench
12	550.90.11.100	Einmaulschlüssel 24 mm	Open mouth wrench 24 mm
13	550.20.33.100	Gestängeunterteil, kurz	Lower rod, short
14	000.01.40.110	MultiClip	MultiClip
15	000.01.30.011	Werkzeugtasche, leer	Tool bag, empty
16	000.65.55.151	Verlängerungskabel 5 x 1,5 mm ² , 10 m lang, für Drehstrommotor	Extension cable 5 x 1.5 mm ² , 10 m long, for three-phase AC motor
	000.65.53.251	Verlängerungskabel 3 x 2,5 mm ² , 10 m lang	Extension cable 3 x 2.5 mm ² , 10 m long
17	000.01.50.010	Sicherheitsgurt	Safety belt
18	701.10.00.100	Schlagklotz	Impact tool
19	702.00.00.200	Parkettverlegewerkzeug ZUGEISEN, schmal	Parquet layer tool ZUGEISEN, small
20	703.00.00.200	Parkettverlegewerkzeug ZUGEISEN, breit	Parquet layer tool ZUGEISEN, broad
30	720.00.00.200	Transportwagen TRANSCART, komplett	Trolley TRANSCART, complete
31	720.05.00.205	Rad TRANSCART	Wheel TRANSCART
32	720.10.00.200	Zubehör TRANSCART	Accessories TRANSCART
33	0125.1008.000	Scheibe	Washer
34	0315.1008.000	Flügelmutter	Wing nut
35	0125.1016.000	Scheibe	Washer
36	0471.0017.000	Sicherungsring	Circlip

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