

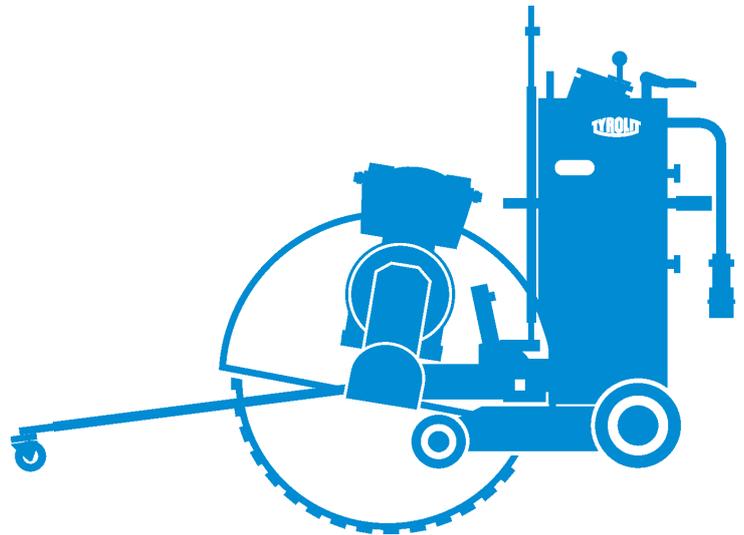


★★★
PREMIUM

OPERATING MANUAL

FSE1022

Index 000



Congratulations!

You have decided to purchase a tried-and-tested TYROLIT Hydrostress unit and have thus acquired a highly sophisticated and reliable state-of-the-art device. Only genuine TYROLIT Hydrostress replacement parts can guarantee quality and interchangeability. If maintenance work is neglected or carried out inexpertly, we will be unable to honour our warranty obligations. All repairs must be carried out by trained personnel only.

Our after-sales service is available to help ensure that your TYROLIT Hydrostress units remain in perfect working order.

We hope that working with your TYROLIT unit will be a satisfying and fault-free experience.

TYROLIT Hydrostress

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TYROLIT Hydrostress AG
Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland
Telefon 0041 (0) 44 952 18 18
Telefax 0041 (0) 44 952 18 00

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1 Safety

1.1 General safety notes

1.1.1 Warning notices and symbols in this manual

 Signal word



Type and source of the hazard
Consequence of non-compliance.
▶ Action to avert the danger.

The signal word after the hazard symbol indicates the level of danger:



DANGER

This signal word indicates an extremely dangerous situation. If the situation is not avoided, it will result in fatal injuries. The hazard may be specified on the danger symbol..



WARNING

This signal word indicates a potentially dangerous situation. If the situation is not avoided, fatal or serious injuries could result. The hazard may be specified on the danger symbol.



CAUTION

This signal word indicates a dangerous situation. If the situation is not avoided, medium and minor injuries result. The hazard may be specified on the danger symbol.

NOTICE

This signal word indicates a situation, which contains dangers to physical objects. If the situation is not avoided, damages to property result. The signal word is given without a danger symbol.



Important information is marked with an “i”.

Request for operator action:

The specified sequence of actions facilitates orderly and safe handling of the machine.

- Instructions to the operator



Die enthaltenen Warnhinweise stellen keinen Anspruch auf universelle Vollständigkeit.

TYROLIT cannot foresee every potential hazard.

Appropriate safety rules and precautions with respect to working methods and operation must be implemented, as with any other machine.

1.1.2 Warning and safety notices:

	Read the operating manual
	Wear hearing protection
	Wear safety goggles
	Wear gloves
	Wear a protective helmet
	Wear suitable work clothes and wash dusty clothes
	Remove the power plug before working on the machine
	Risk of cuts on rotating tool
	Wait for all parts to stop moving.
	Do not relocate the machine while the tool is rotating
	Danger due to ejected parts
	Danger of high electrical voltage
	Risk of being pulled in by open belt drive
	Danger of cuts and amputation through rotary cutting tools
	Warning of electric shock due to damaged power lines.
	Lifting point for crane transport
	Do not use high-pressure cleaners
	No use by unauthorized persons
	Do not perform maintenance while the engine is running



Disconnect from mains before performing maintenance work



Parking brake



Clutch for traction drive



Running direction of saw blade



Instructions for avoiding damages



Only store and transport the unit in an upright position



Sound power level of the machine



Visual inspection



Spray-on grease



Grease gun

1.1.3 Operating manual

Preface

This operating manual makes it easier to become acquainted with the machine and make full use of it as intended.

The operating manual contains important information on how to operate the machine safely, properly and economically. Following it will help to prevent hazards, avoid repair costs and downtimes, and increase the reliability and service life of the machine.

The operating manual should be supplemented by instructions based on existing national accident prevention and environmental protection provisions.

The operating manual must be constantly available at the place of use of the machine.

The operating manual must be read by every person who works with or on the machine and the provided instructions must be followed, e.g.:

- operation, including set-up, rectification of faults during the work routine, removal of production waste, maintenance, disposal of operating and auxiliary materials.
- Maintenance (servicing, inspection, repair) and/or Transportation.

In addition to the operating manual and the binding accident prevention regulations applicable in the user's country and at the place of use, the acknowledged rules for safe and correct working practices must also be observed.

Required tool:

A tool in the form of a saw blade is required to operate the floor saw. These tools can be purchased from the manufacturer.

Further documents

TYROLIT does not assume responsibility or liability regarding the completeness of further documentation.

Changes and reservations

We strive to keep this operating manual correct and up to date. In order to maintain our technological advance, it may be necessary to make changes to the product and its operation without advance notice. We assume no liability for disruptions, downtime and damages that thereby result..

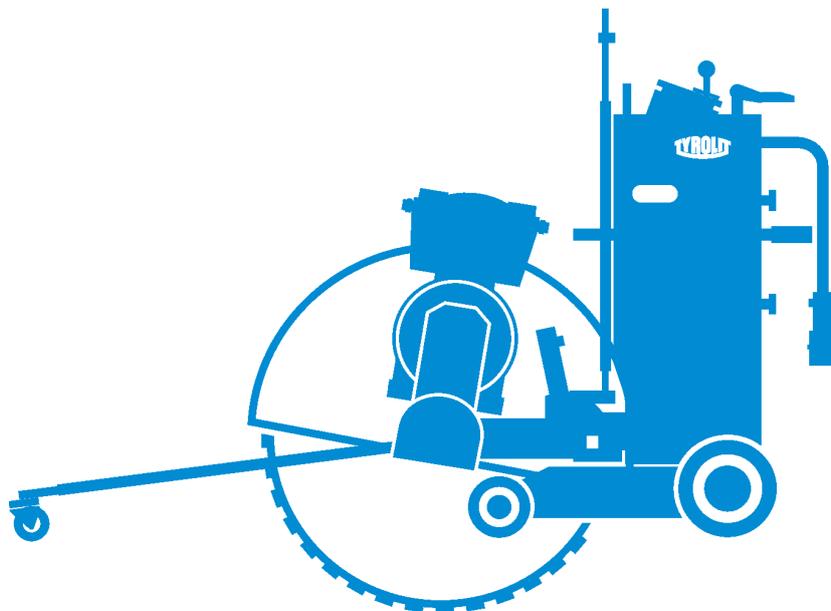
Target group

These operating instructions are aimed at semi-skilled and trained personnel in the fields of structural mechanics, concrete cutting technology, road construction, and civil engineering.

2 Properties & advantages

Thanks to the optimum weight distribution of the COMPACTCUT 601 E, the 22 kW/400 V electrical engine provides for excellent cutting power.

- Due to the compact, easy-to-handle design, every corner of the construction site can be reached
- The TYROLIT electrical floor saws are low-noise and therefore particularly suited for work on and in buildings
- The saw blade is continuously lowered via a throttle with a cutting depth indicator which prevents damage to the saw blade
- Optimum saw blade shaft speed controllable via stepless potentiometer
- As a standard, the front segment of the saw blade guard can be flipped up for overcuts
- Flush wall cuts can be executed in compliance with norms
- Handle bars can be individually attached in two different heights
- Can be easily converted from left-hand to right-hand cutting
- Stable H tracking pointer
- The rear bogie wheel is outside the saw cut. This makes it easy to deepen cuts in a second pass
- Due to the optimum weight distribution on the front wheels, a high level of tracking and saw precision is achieved



3 General safety information

3.1 Intended use policy

Intended use	<p>The manufacturer and supplier assume no liability for inappropriate use or usage other than the intended use. No alterations may be made to the machine unless carried out by the manufacturer. Changes resulting from extensions or conversions to the floor saw may only be executed with written permission of the manufacturer.</p> <p>The machine is designed and built to the state-of-the-art and the acknowledged safety regulations. Nevertheless, there may be dangers to life and limb for the user or third parties, damages to the machine or other property items.</p> <p>The machine may only be used when it is error-free, in the intended manner, in a safety-conscious and risk-aware manner and in accordance with the operating manual. In particular, faults which can affect safety must be corrected immediately.</p> <p>The TYROLIT floor saw is a floor angle grinder and is exclusively for cutting joints in concrete or asphalt with water. Cutting requires a tool in the form of a diamond saw blade. The floor saw may only be operated by one person. The operator must remain behind the handles while the machine is running. Any use other than this will be deemed unintended. Intended use also includes compliance with the operating manual and compliance with the inspection and maintenance manual.</p>
Non-intended use	<p>Foreseeable misapplications / non-intended use::</p> <ul style="list-style-type: none"> • Cutting without the saw blade guard • Cutting without water • Cutting steeply sloped areas • Cutting tight radii • Cutting loose material • Cutting wood, plastic or metal (other than reinforcement or armoring in concrete) • Structural modifications which alter the floor saw safety or design

3.2 Organizational measures



This operating manual must be kept within easy reach for everybody at the place of use. It is to be kept for future reference or resale of the machine.

Supplements to the operating manual include general statutory and other binding regulations for preventing accidents and protecting the environment and must be obeyed.

Similar obligations may also arise in relation to e.g. handling hazardous substances, wearing personal protective equipment, road traffic regulations.

The personnel contracted to carry out tasks involving the machine must have read and understood the operating manual before starting work, in particular the section Safety Notices. This particularly applies to personnel who only work on the machine occasionally, for example commissioning or maintenance personnel.

Regularly check that the personnel is working in a safety and danger-conscious manner while observing the operating manual.

Always use the required and prescribed, personal protection equipment.

Observe all safety and danger notices on the floor saw and keep them in a legible state. Replace damaged or illegible safety and hazard signs immediately.

In the event of safety-relevant changes to the machine or in its operational behavior, shut the machine down immediately with and label it accordingly. Report the fault to the responsible place/individual.

Do not implement any extensions or modifications to the cutter without written permission from the manufacturer. The tool manufacturer's instructions must be observed.

Only use tested original spare parts from the manufacturer.

Adhere to inspection periods as prescribed or indicated in the manual.

To carry out maintenance activities, it is essential to have an appropriately equipped workshop.

Before cutting, always obtain detailed information regarding hidden cabling in the cutting area, and take the appropriate cautionary measures.

3.3 Choice of personnel and qualifications; fundamental obligations



Operators must be at least 18 years of age and mentally and physically capable of operating the floor saw. All persons must be instructed in the operation and be expressly assigned, in writing by the employer, to operate the floor saw.

Specify the responsibilities of the personnel for operation, set-up, maintenance and repair.

Ensure that only the expressly assigned personnel work on the machine.

The operator must wear personal protective equipment such as safety shoes, gloves, goggles and hearing protection that comply with the safety regulations.

Ensure persons not working with the machine are vacated from the work area. If necessary, close off the working area.

If the floor saw is in motion, the operator must ensure he does not endanger himself and other persons. All obstructions at the place of work which hinder the work procedure or the use of the machine must be removed.

Work on the machine's electrical equipment may only be carried out by a qualified electrician or by trained personnel under the management and supervision of a qualified electrician and in compliance with the electronic regulations.

The operator must be specified as the responsible party with respect to traffic regulations, and must be authorized to refuse to execute third-party instructions that violate safety regulations.

Only allow personnel being trained, instructed or those completing an apprenticeship to work on the machine under the constant supervision of an experienced person.

3.4 Safety notices regarding the operating phases

3.4.1 Transport, assembly and installation



Transport, assembly and installation of the floor saw may only be executed when the engine has been switched off and the power supply has been disconnected.

The machine may only be transported when all parts have been tightened and individual parts cannot fall off.

3.4.2 Commissioning



Protect hands from sharp edges when fitting the saw blade.

Ensure that the ground/floor has adequate load-bearing capacity. All obstacles must be removed from the cutting area and good lighting must be provided.

Visually check the floor saw for damage and defects. Check the safety set-up in particular.

Provide a water supply to cool the saw blade.

The power supply must be equipped with a correctly dimensioned, functioning ground fault circuit interrupter/RCD

The connection cables and plugs must be adequately dimensioned and in good condition.

Defective or cracked tools must be replaced immediately.

3.4.3 Operation



Refrain from any unsafe working procedures.

Implement measures to ensure the floor saw is only used if it is safe and functional.

Check the floor saw for outwardly recognizable damage and defects prior to every shift! Notify the responsible place/person immediately of any changes (including the operational behavior)! Switch off the machine immediately if necessary and secure it against restarting.

In the event of malfunctions, shut down and secure the floor saw immediately! Have faults repaired immediately. Electrical work may only be carried out by trained electrical personnel.

Only use appropriate, tested tools.

To protect against acceleration, the saw blade depth feed must be driven into the substrate slowly and in steps. Avoid any contact with the rotating tool. Maintain a safety distance of 1.5m from the saw blade.

Do not cut without a saw blade guard.

The operator must be protected from rotating parts.

3.4.4 Relocating the floor saw



The floor saw may only be relocated when the saw blade is stopped.

Before leaving the floor saw's operating position, the motor must be turned off and the saw blade must stop. A rotating saw blade poses a high risk of injury.

The parking brake must always be activated when the machine is not in use.

3.4.5 Special work in the context of using the machine



Comply with the dates and activities for configuration, maintenance and inspection as prescribed in this operating manual, including the details regarding replacement of parts/partial equipment. These activities may be only be carried out by authorized expert personnel.

If the floor saw has been shut down for maintenance and repair work, it must be secured to prevent it being switched on again unexpectedly.

Before cleaning, all openings into which cleaning products must not ingress for safety and/or functional reasons, must be covered and sealed. Electric motors, switches and plug cords are particularly at risk. Remove covers/tape completely after finishing the cleaning work.

Always tighten loosened screw connections during maintenance and repair work.

If it is necessary to disassemble safety features for start-up, maintenance or repair, these devices must be reassembled and checked immediately after the conclusion of maintenance and repair work!

Rotary tools with a maximum speed less than the nominal speed of the machine may not be used.

3.5 Note relating to special types of danger

3.5.1 Risks to the operator from the machine



Before leaving the floor saw's operating position, the motor must be turned off and the saw blade must stop.

The motor on the floor saw may only be operated for the intended use:

3.5.2 Electrical energy



Only use original fuses with the specified amperage. The floor saw must be immediately shut off in the event of malfunctions. Electrical work may only be carried out by certified qualified experts.

The machine's electrical equipment must be inspected and tested at regular intervals. Defects, such as loose connections or damaged cables, must be corrected immediately. The machine must be marked to ensure that it will not be started by others.

3.5.3 Dust



When working in narrow spaces observe any existing national regulations.

To prevent dust accumulation while cutting, the saw blade must be continuously sprayed with water. Do not eat, drink or smoke in the work area.

3.5.4 Noise



See Section 4.3

3.6 Transport

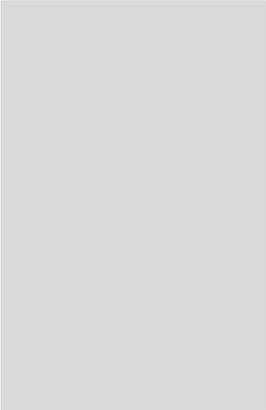


Only use a suitable transport vehicle with an adequate load capacity.

Secure the load properly in compliance with the regulations.

Even when only moving the unit a short distance, the blade drive must be decoupled or the saw motor must be switched off.

3.7 Packaging and storage

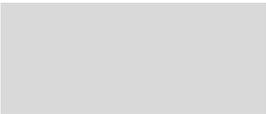


In order to ensure sufficient protection during dispatch and transport, the machine and its components have been carefully packed. On receipt of the machine, it should be checked for damage. The device packaging consists of recyclable materials. Please place these into the appropriate collection containers, so that they can go for recycling.

If there is any damage, the machine must not be operated. Damaged cables and plug connections also present a danger and may not be used. Inform the manufacturer in this case.

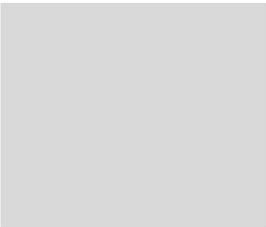
If the machine is not operated immediately after unpacking, it must be protected from humidity and dirt.

3.8 Environmental protection



Packing material, cleaning agents, used or residual operating materials, and unpacked wear parts such as drive belts or motor oils must be sent for recycling in line with the applicable environmental protection provisions for the place of use.

3.9 Disposal

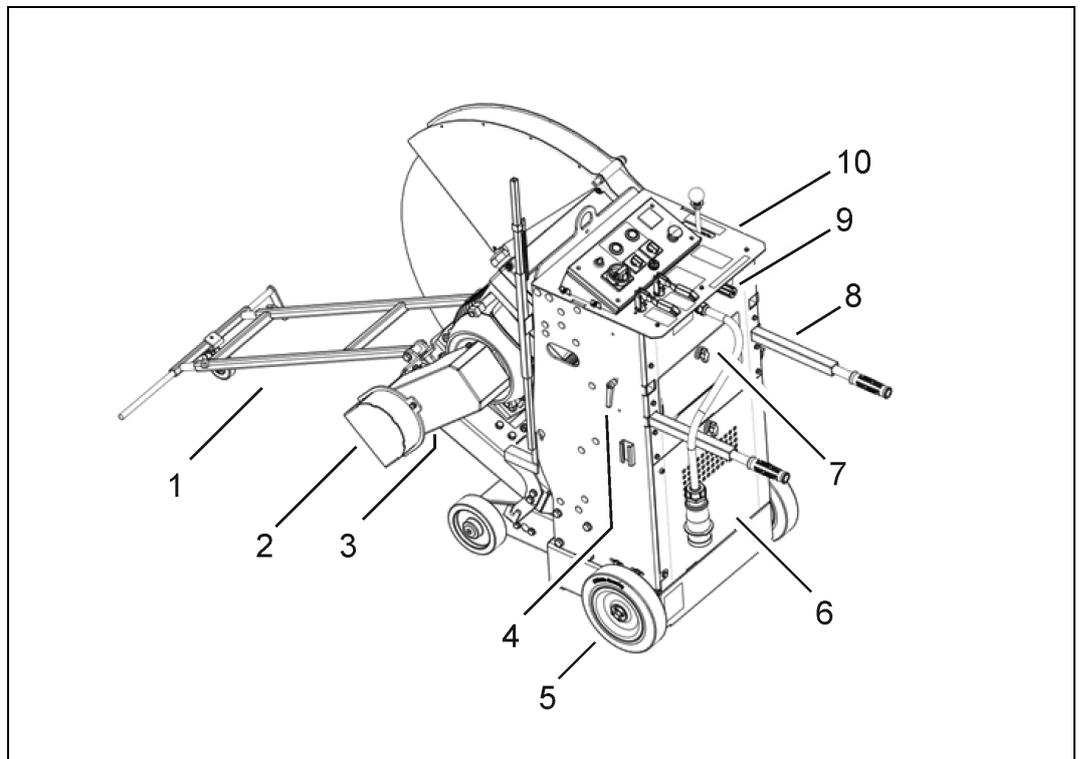


When the device reaches the end of its service life, in particular if malfunctions occur, ensure the worn-out device has been disabled.

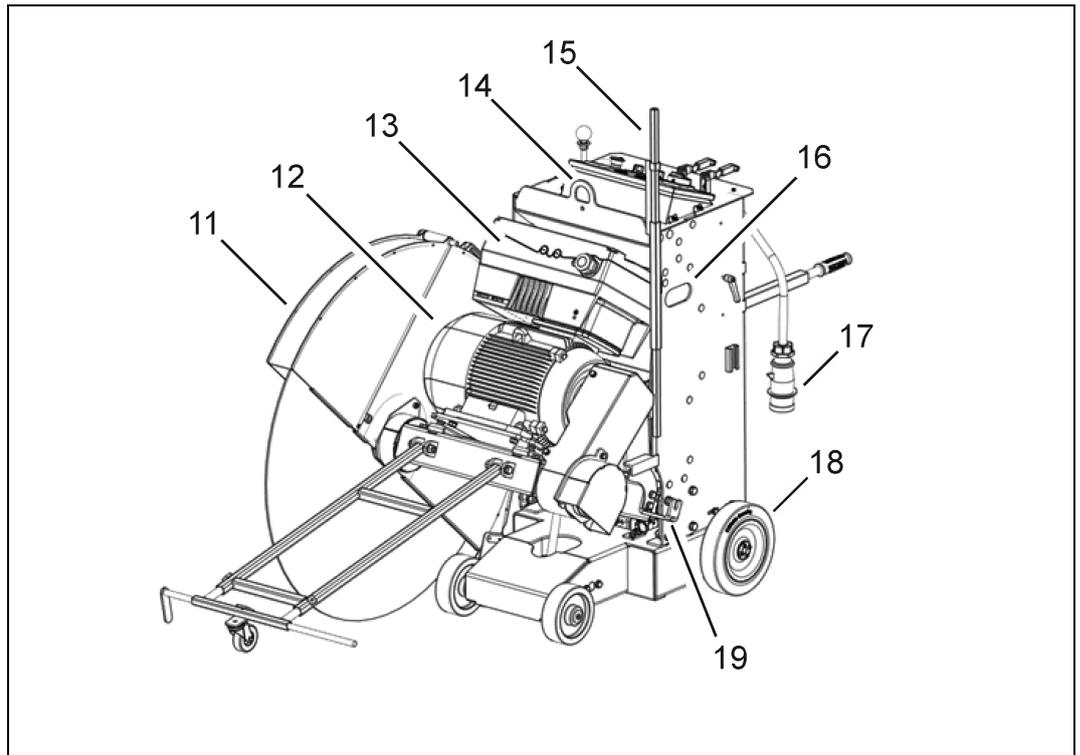
Dispose of the device according to the environmental provisions valid in your country. Electrical waste may not be disposed of with household waste. Take the expired device to a central collection point.

4 Device description

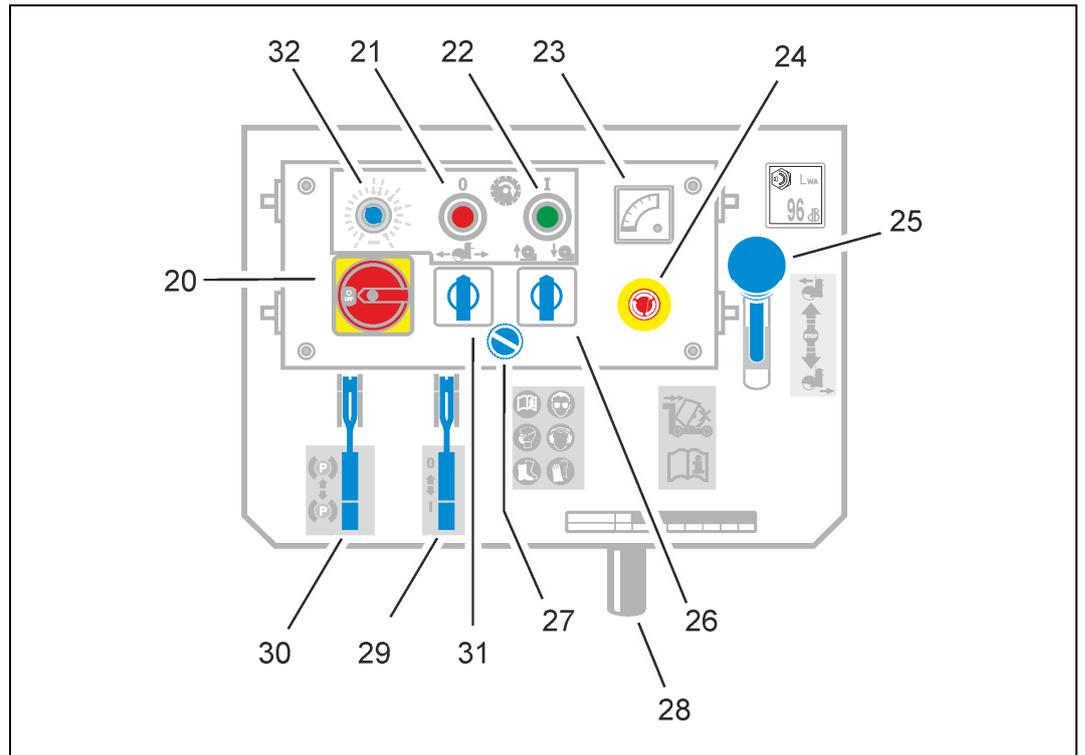
4.1 Machine part names



Pos. 1	Tracking pointer	Pos. 6	Maintenance hatch
Pos. 2	Flange cover	Pos. 7	Tool compartment
Pos. 3	V-belt guard	Pos. 8	Handlebar
Pos. 4	Clamp lever for handlebar	Pos. 9	Throttle lowering speed of saw blade
Pos. 5	Drive wheel	Pos. 10	Control panel



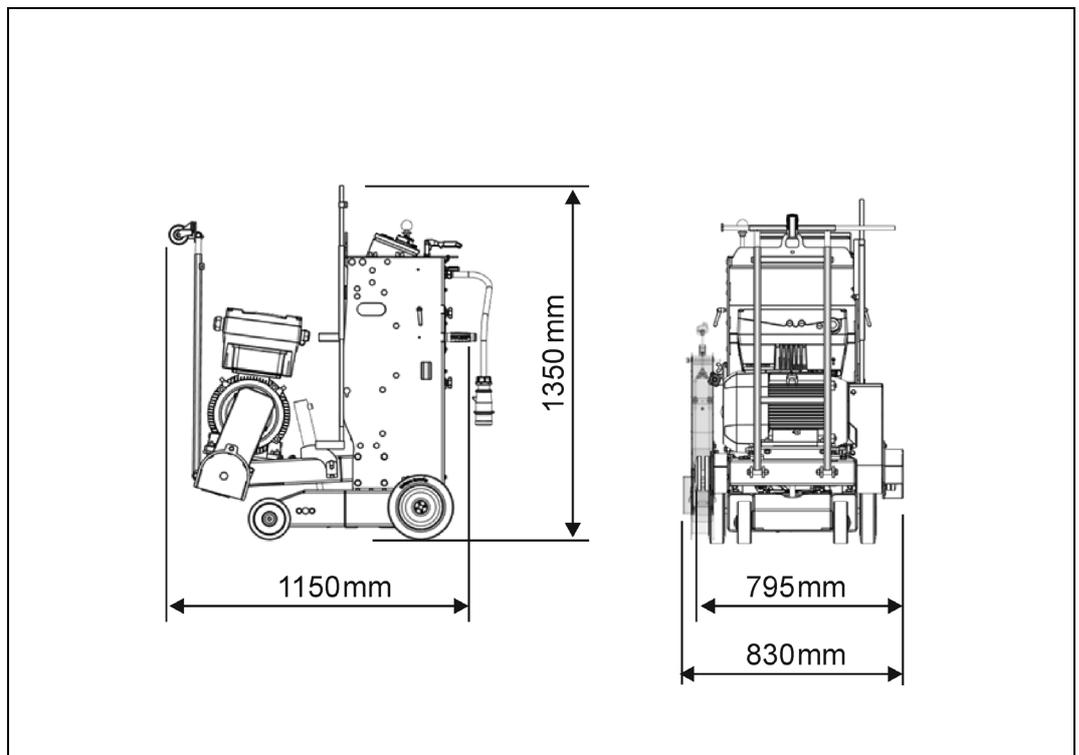
- | | | | |
|---------|---------------------------------|---------|--------------------------|
| Pos. 11 | Segmented blade guard | Pos. 16 | Lashing point |
| Pos. 12 | Electric motor | Pos. 17 | Mains plug |
| Pos. 13 | Frequency inverter | Pos. 18 | Bracket for water supply |
| Pos. 14 | Lifting eye for crane transport | Pos. 19 | Blade guard support |
| Pos. 15 | Cutting depth indicator | | |



Pos. 20	Main switch	Pos. 26	Saw blade lift control
Pos. 21	Stop-button sawblade drive	Pos. 27	Fuse
Pos. 22	Start-button sawblade drive	Pos. 28	Throttle for blade lowering speed
Pos. 23	Ampere meter	Pos. 29	Lever for drive clutch
Pos. 24	Emergency Stop button	Pos. 30	Lever for parking brake
Pos. 25	Drive Throttle	Pos. 31	Traction drive on/off
		Pos. 32	Blade shaft speed potentiometer

4.2 Technical data

	FSE1022
max. cutting depth	420 mm (16.5")
max. saw blade diameter	1000 mm (39")
Saw blade arbor	25,4 mm (10")
Saw blade rpm	Stepless 860 - 1720 1/min
Left/right-hand cut	ja
Drive motor	Electric motor with frequency inverter
Power (kW/HP)	22 kW (29.5 HP)
Power consumption	400 V / 32 A
Connector	3PH + N + PE
Operating weight	388 kg incl. blade guard
Dimensions (min.) L/W/H	1150 / 795 / ~1350 mm



4.3 Sound power level



WARNING



Danger of hearing damage

As from a sound power level of 85 dB (A), wearing ear protectors is mandatory.

- ▶ Where your personal hearing protection.

This specification defines the volume of the noise relative to the operator's workplace and the sound power level of the floor saw.

The measured sound power level is L_{wA} 95 dB(A)

The emissions sound pressure at the workplace is L_{pA} 96 dB(A)

The guaranteed sound power level is:

FSE1022 / 96 dB(A)

The values are found by measuring the sound emissions.

The test was performed with a load using the largest permissible saw blade in the floor saw.

Measurement tolerances:

2.5 dB for the evaluated sound power level

4 dB for the evaluated emission sound pressure level

The emissions sound pressure level was determined in accordance with the EN ISO 3744 and EN 13862 standards and EC Directive 2000/14/EC.

4.4 Hand-arm vibration



WARNING



Danger due to vibration

Vibrations can cause damage to bones or joints and circulation problems.

- ▶ Take regular breaks when working with the machine.

The specified value was determined using the maximum saw blade diameter.

The effects can be inversely proportional to the weight of the operator.

Vibration total value:

FSE1022 / less than 2,5 m/s²

Bei den Messungen wurden folgende Normen berücksichtigt:

EN ISO 5349, VD 2057 Blatt 2, Richtlinie 2002/42/EG.

The specified values were measured while cutting concrete at a cutting depth of 5 cm. In practice, this value is affected by the following conditions:

Quality of the saw blade / Operator's weight / Aggregate properties /
Feed speed / Condition of the machine

4.5 Electrical voltage

 **WARNING**



Electric Shock Hazard

The machine works with high voltages and currents. The user may suffer fatal electric shocks due to damaged cables or defective electrical components.

- ▶ Replace defective cables or components immediately
- ▶ Do not use if the machine cannot be switched on or off via the switch
- ▶ Always unroll cable drums completely.
- ▶ Lay the cable without tripping hazards and do not lead it through puddles or over sharp edges
- ▶ Do not cut into the cable
- ▶ Always pull the plug before switching off the machine

Connection requirements:

An adequate power supply is an important basic requirement for working at maximum capacity with electric floor saws.

1. length and cross section of the cable between power supply and machine
2. type of voltage source (building power distributor, industrial plant, power generator)

	Operatig current	Maximum permissible cable and conductor lengths lmax in m Nominal conductor cross section in mm ² at 400 V				
		1,5 mm ²	2,5 mm ²	4 mm ²	6 mm ²	10 mm ²
	20 A	28 m	45 m	70 m	106 m	
	25 A		36 m	56 m	85 m	142 m
FSE1022	35 A			40 m	60 m	101 m
	40 A				53 m	89 m

Conductor cross section:

We recommend using supply lines with a minimum conductor cross-section of **6 mm²**.

-
- Power source:
- When connecting to site power distribution systems, care must be taken to ensure that the individual phases evenly.
 - The socket must be fused with a universal current-sensitive **RCD type B**.
 - If power generators are used, they must deliver three times the power of the device to be operated. The operation of a CC601 therefore requires a generator power of **38kVA**.
- Arbeitsweise:
- Deep cuts must be made in steps. Do not cut more than 5-7 cm per pass.
 - **ATTENTION:** In case of small cutting depths, a large blade may pull the floor cutter forward.
 - The cut should generally be made with **20A** in order to have reserves for reinforcement. The ammeter shows the actual current consumption.
 - **Do not permanently exceed 25 A load during operation!**
- Motor protection:
- The inverter protects the motor in case of overcurrent and switches it off.

5 Transport

5.1 Transport position



WARNUNG



Crush hazard by an unsecured machine

Injuries due to the machine unintentionally changing position or falling parts.

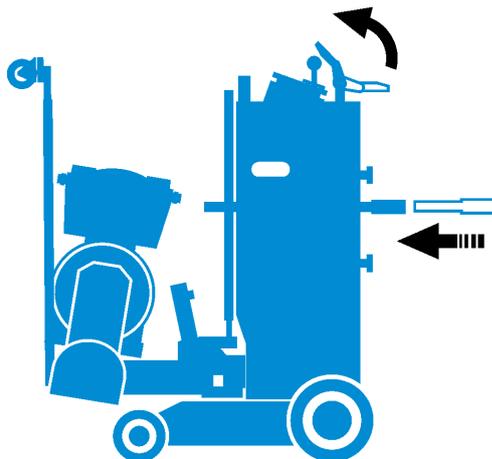
- ▶ Only transport the floor saw in the transport position
- ▶ Secure the machine via suitable attachment points.
- ▶ Use suitable lashing equipment.
- ▶ Do not exceed the total permissible weight of the transport vehicle

NOTICE



Transporting the machine

All moving parts that might fall off or swing during transport must be removed.



Transport position

- Shut off the drive motor.
- Activate the parking brake
- Unplug the machine.
- Retract the handle bars.
- Remove the blade guard.
- Remove the saw blade.
- Fold the tracking pointer against the machine and secure it with a rope.
- Secure or remove loose parts.

5.2 Lifting by crane

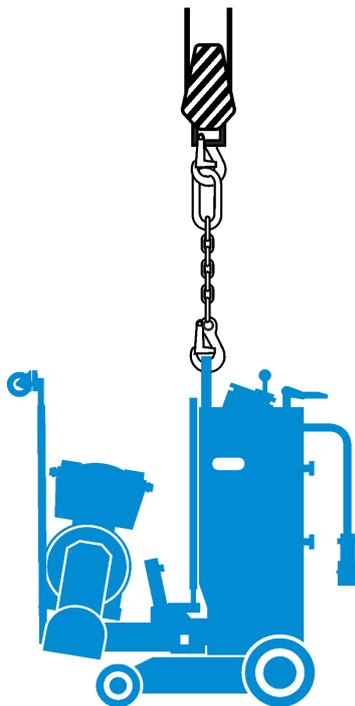


WARNING



Suspended loads
Crush hazard from falling parts.

- ▶ Do not step under raised machines or parts
- ▶ Only use undamaged lifting devices with sufficient load capacity and length
- ▶ The machine may only be moved in the transport position



Sequence



- Establish the transport position
- Hang the floor saw into the crane lug with a slinging means with sufficient load capacity
- Appoint a competent signalperson for the lifting process
- Use only a suitable transport vehicle with sufficient load capacity
- Lift carefully and observe the center of gravity
- Always keep an eye on the floor saw
- For recommissioning proceed in accordance with the operating manual

5.3 Tie down for transport



WARNUNG

Crush hazard due to slipping or tilting of the machine



Unintentional changes in the position of the machine can crush people.

- ▶ Only transport the floor saw in transport position.
- ▶ Secure the floor saw over the attachment points.
- ▶ Use suitable lifting and lashing straps.
- ▶ Observe maximum payload of the transport vehicle.

Tie down points



Sequence

- Establish transport position
- Use suitable and sufficient lashing equipment and tie-down points

6 Commissioning

6.1 Consumables

Lubricant	The grease used on the floor saw is called "Energrease LS2 BP". (Lithium-saponified multi-purpose grease from NLGI Grade 2 in accordance with DIN 51818 / NLGI GC – LB Grade 2)
Hydraulic oil	The hydraulic fluid used must be of HVLP (High Volume Low Pressure) quality (according to DIN 51524-3 / ISO 6743/4) in the ISO viscosity class 48.
Hydraulic oil transaxle	The transaxle is factory-filled with: SAE 10W-30
Water	The water pressure in the supply line must not exceed 5 bar. If necessary, use a pressure reducer.
V-belt	Use full sets (5 pcs.) model XPA 857.
Electrical connection	Stable power source, three-phase alternating current with the operating voltage of 400 V / 32 A as specified on the type plate and the corresponding protection with a fault current circuit breaker (ground fault circuit interrupter/RCD).

6.2 Tools (saw blade)

NOTICE



Selecting the tool

Rotary tools with a maximum speed less than the nominal speed of the machine may not be used.

Defective or cracked tools must be replaced immediately.

Storing tools

The tools used must be protected from moisture. The segments installed around the saw band must be protected from damage.

Saw blade speeds

To achieve the optimum cutting performance, the saw blade speed must be adjusted to the material to be cut.

6.3 Establish power connection

Procedure

- ▶ Fully unroll the cable and lay it safely
- ▶ Check the plug and extension cable for damage
- ▶ Establish power connection
- ▶ Check the functionality of the ground fault current interrupterFI/RCD in the switch cabinet

6.4 Parking brake

WARNING

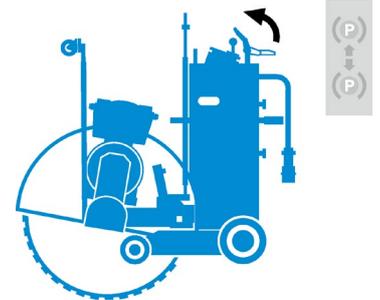


Crush hazard by an unsecured machine
Injuries due to the machine unintentionally changing position.

- ▶ Always secure the floor saw with the parking brake when the machine is not in use.

Procedure

The parking brake is engaged and released at the control panel.



6.5 Establish water supply

WARNING



Ejected parts hazard
If the saw blade is not supplied with a sufficient amount of cooling water, the blade can overheat and cutting segments may break off. Grinding dust is not bound effectively.

- ▶ Always ensure a sufficient supply of cooling water for the diamond blade
- ▶ Wear personal protection equipment
- ▶ Connect a water supply with max. 5 bar to the GEKA coupling.
- ▶ Only use clean water to prevent the spray nozzles from clogging.
- ▶ Use the hand lever to regulate the water supply and water quantity during operation.



6.6 Adjusting the lowering speed of the saw blade



The throttle valve should be fully closed first. Then gradually open the throttle as you perform test runs to set the right lowering speed.



lower faster

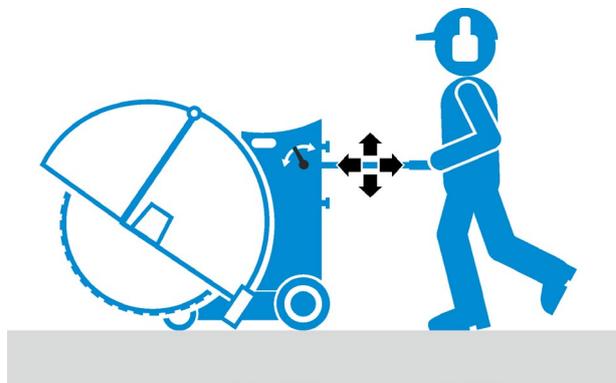
+



lower slower

-

6.7 Handle bar adjustment



Adjust the handle bars to the personal preference of the user.

- Loosen lever and insert or retract handle bars.
- Tighten handlebars securely in desired position.

6.8 Installing/replacing the saw blade (tool)



WARNING



Cut and Crush hazard

The rotating saw blade or flange can catch hold of clothing or body parts and sever them

- ▶ Pull the mains plug
- ▶ All parts must have stopped moving before working on the machine may begin.
- ▶ Secure the machine against being switched back on



Always check saw blades before installing!

- ▶ Blade for wet cutting?
- ▶ Is the blade approved and suitable for the cutting work?
- ▶ Do blade and mounting have the correct dimensions?
- ▶ Does it comply with the approved cutting speed?
- ▶ Direction of rotation?
- ▶ Are all segments available?
- ▶ The segments aren't undercut?
- ▶ Did the blade overheat?
((bare steel tarnished blue = do not use!))
- ▶ No cracks in the blade?
 - Check: tap with a piece of wood
 - Blade echoes = OK
 - Blade sounds hollow = do not use! (exception: so-called silent blades)

NOTICE



Installing the saw blade

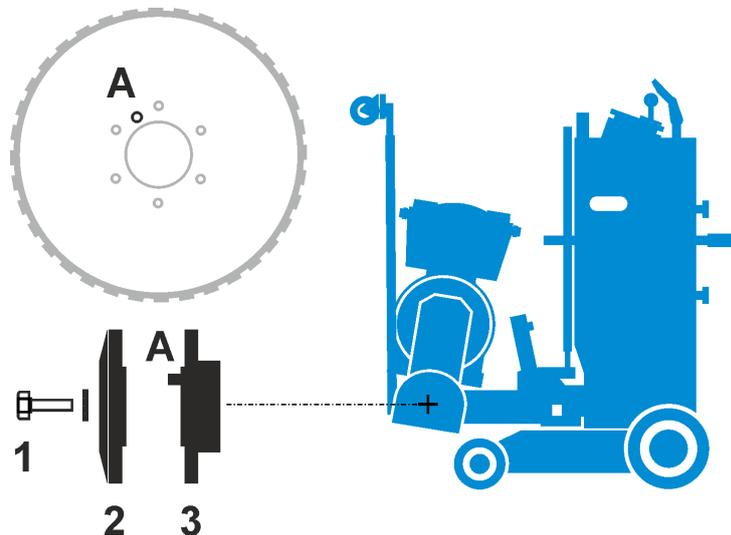
When installing the saw blade, make sure the surface of the blade is clean.

The saw blade must lie directly against the flange. Match the rotational direction of the saw blade to the rotational direction arrow (down-cutting).

Procedure

To install/replace the saw blade, perform the following steps:

- Activate the parking brake
- Disconnect the power supply
- Remove the blade guard/flange guard
- Loosen the hexagon screw (Pos. 1) and remove the pressure disc (Pos. 2)
- Clean all contact surfaces
- Place the blade on the flange (Pos. 3) (pay attention to the rotational direction – down-cutting!)
- Install the pressure disc and tighten it with the hexagonal screw
- Install the saw blade guard and secure it to the holder with the screw
- Attach the flange cover on the opposite side
- Install the blade guard
- Align the tracking pointer with the saw blade



- Loosen / remove bolts to detach blade guard.
- Remove flange and insert/remove the saw blade.

6.9 Switching from right-hand to left-hand cutting



WARNING

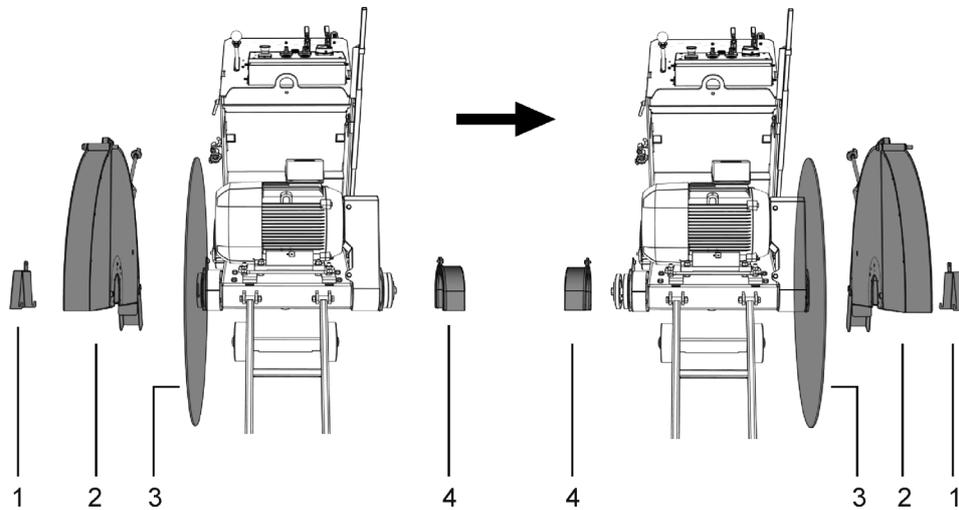


Cut and Crush hazard

The rotating saw blade or flange can catch hold of clothing or body parts and sever them.



- ▶ Pull the mains plug
- ▶ All parts must have stopped moving before working on the machine may begin.
- ▶ Secure the machine against being switched back on



Procedure

To switch from right-hand to left-hand cutting, perform the following steps:

- ▶ Activate the parking brake and disconnect the power supply
- ▶ Remove flange covers (Pos. 1 and 4))
- ▶ Remove the blade guard (Pos. 2)
- ▶ Remove the saw blade and install in on opposite side
(Mind the running direction of the saw blade – Dow-Cut)
- ▶ Install blade guard
- ▶ Install flange cover (Pos. 1 and 4)

7 Operation

7.1 Safety



- The floor saw may only be operated by one person. Banish other persons from the work area or create a barrier.
- The operator is not permitted to leave the machine while the motor is running.



- Never start the machine if the saw blade is in contact with the floor. This overloads the drive unit.
- Do not correct cutting errors with “brute force”. This will only result in damage to the saw blade and machine.
- Never turn the machine off within the cut. Always remove the blade from the joint first.
- Do not operate the machine when suffering from fatigue or exhaustion, or under the influence of alcohol, drugs or medication.
- Only use saw blades with suitable type and dimensions.
- NEVER use damaged saw blades.
- Keep the machine clean and only operate it in a technically perfect condition.
- Ensure a stable water supply.
- Remove all obstacles from the cutting area.
- Ensure good lighting at night.
- Only make straight cuts.
- Make sure cables are laid cleanly.
- Do not create any tripping hazards, do not cut cables, do not lay cables in puddles.



DANGER



Danger due to underground supply lines
 Danger due to cutting into water, power, gas or telecommunications lines.
 Electric shock, burns, explosion and the interruption of emergency call devices are possible.



- ▶ BEFORE cutting, obtain detailed information about cables and cable routing in the work area from the relevant authority
- ▶ Create an emergency plan. Keep the contact number of the supply contractor
- ▶ Inform the competent supply company
- ▶ Wear personal protection equipment


WARNING


Cut hazard

Contact with the rotating blade may cause lacerations including dismemberment.

- ▶ Only cut with the blade guard closed.
- ▶ Maintain a safe distance.
- ▶ Never touch the rotating saw blade.
- ▶ Wear personal protection equipment


WARNING


Fall hazard

Operator may suffer fall injury if the substrate cannot bear the load or cutting mistakes are made.

- ▶ Ensure the substrate on which you are cutting has a sufficient load-bearing capacity.
- ▶ When cutting, make sure the floor saw and personnel are not on the side to be cut off.


CAUTION


Burn hazard

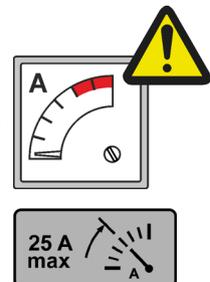
Motor parts and tools become hot during operation and can cause burns

- ▶ Avoid contact with the skin
- ▶ Wear personal protection equipment
- ▶ Leave the motor to cool down before work on the device

NOTICE


The advance speed has to be adjusted in a way that the power consumption indicator stays below the red zone.

If the floor saw is operated continuously in overload, the fuses will blow or the internal overload protection device will be triggered.



7.2 Pre-cut preparations

NOTICE

Cutting without obstacles

Damage to objects in the cutting area or the saw blade.

- ▶ All obstacles must be removed from the cutting area
- ▶ Ensure good lighting in the work area.



Make sure the cut is straight to prevent the saw blade from jamming.

Execute all steering and control commands slowly, evenly and in a controlled manner.

If deep cuts have to be made, this must be done in several steps.

The joint should be pre-cut using a smaller (and wider) saw blade and then deepened using a larger (and narrower) saw blade.

Preparing for start-up

The following prerequisites must be met to safely and properly use the floor saw:

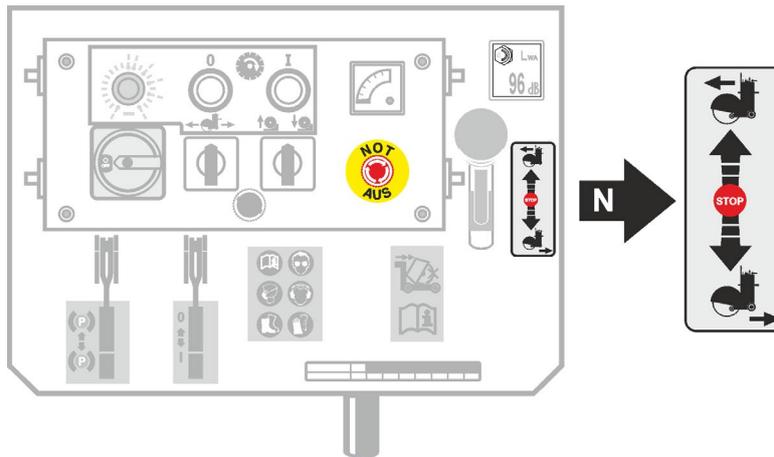
- Check the floor saw for damage, loose screw connections and the completeness of attached parts
- Connect a reliable water supply.
- Install a suitable saw blade.
- The water cooling system is functional
- There are no objects or persons in the immediate vicinity of the saw blade.
- Align the tracking pointer flush with the saw blade.
- Lift up the saw blade – **no ground contact!**

7.3 Switching the machine on and off

NOTICE



In the event of unexpected machine behavior and in the event of an emergency, immediately activate the EMERGENCY STOP switch. To avoid any unexpected movement, the machine can only be started, with the drive throttle in the neutral position.



Conditions

- CEE plug is connected to an active power supply
- Drive throttle is in the neutral position
- Emergency Stop button is released
- Saw blade is lifted off the ground

Switch on

1.  Activate parking brake
2.  Set main switch I/ON

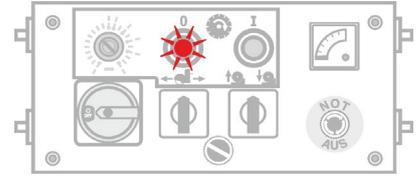
Switch off

1.  Lift saw blade fully out of the kerf
Activate parking brake
2.  Motor 1 min. to cool down.
3.  Set main switch O/OFF
4.  Pull mains plug before leaving the machine.

7.4 Phase inverter

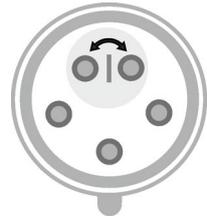


If the red button "O" lights up when the emergency stop is unlocked and the power supply is active, there is an incorrect phase sequence.



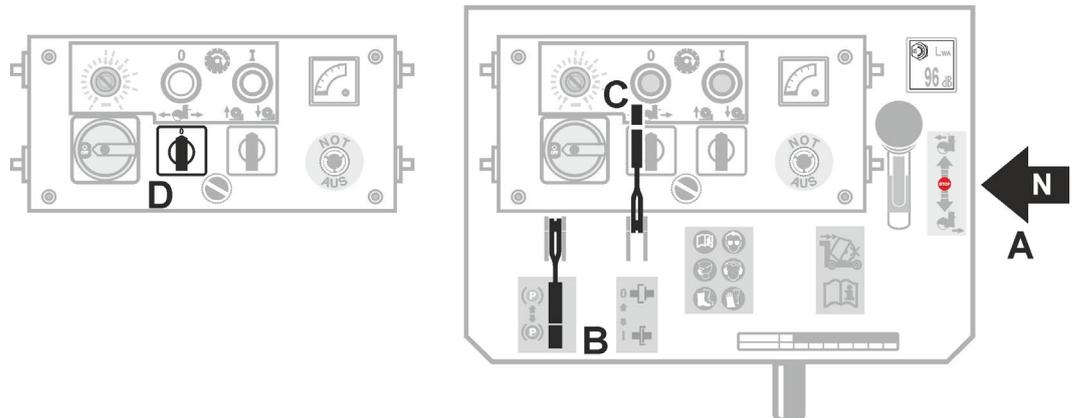
The machine has a phase sequence relay. This ensures the correct direction of rotation.

If it is necessary to adapt the rotating field, the phases in the plug can be inverted using a screwdriver.



7.5 Relocate by hand

The floor saw can be moved by hand.



Settings

- Set drive lever to neutral position (A)
- Deactivate traction drive „0“ (D)
- Release parking brake (B)
- Disengage clutch (C)

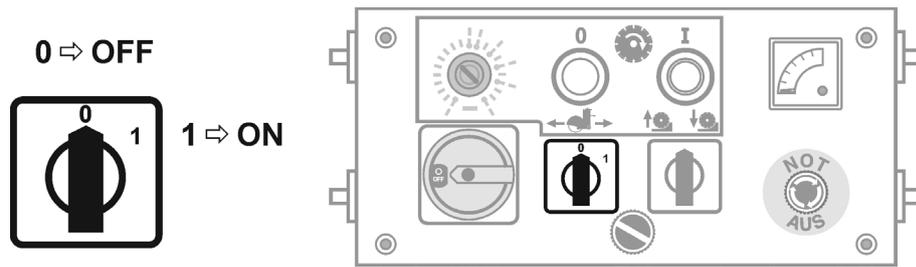
7.6 Traction drive

NOTICE



Always operate with adjusted drive speed in order to avoid damages. Execute all drive and operation commands slowly, controlled and evenly.

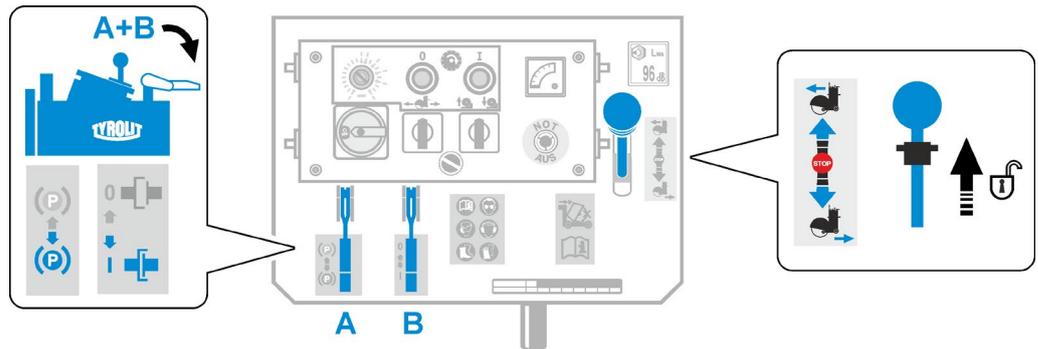
- The traction drive is activated the via knob switch (Pos. 31).



Controls

The drive lever controls the advance speed forward and backward.

- The drive lever locks itself in the neutral position.
- It is released by pulling the collar upwards.
- Disengage the parking brake and engage the traction drive before initiating movement.



7.7 Lower/raise the saw blade and set the cutting depth

WARNING



Ejected parts hazard

The saw blade may be damaged if it is lowered too quickly. Segments can break out and be ejected in an uncontrolled manner.

- ▶ Slowly lower the saw blade into the cutting surface
- ▶ Cord off a safety zone around the cutting site
- ▶ Wear personal protection equipment

NOTICE



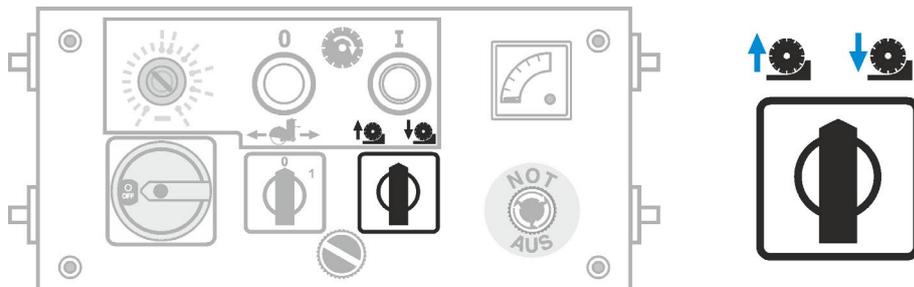
Always lower the blade slowly to avoid damage.

Always perform straight cuts and be careful not to cant or jam the saw blade in the kerf. Perform all steering and control commands in a smooth and controlled fashion.

Deep cuts shall be made in several passes. Pre-cut with a small blade first and then deepen the cut with a larger-diameter blade. Each larger blade always has to be thinner than the preceding one in order not to get stuck in the kerf.

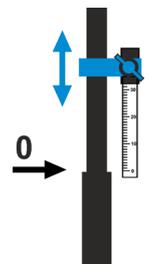
Lowering and raising

- The saw blade is raised or lowered using the knob switch (Pos. 26).

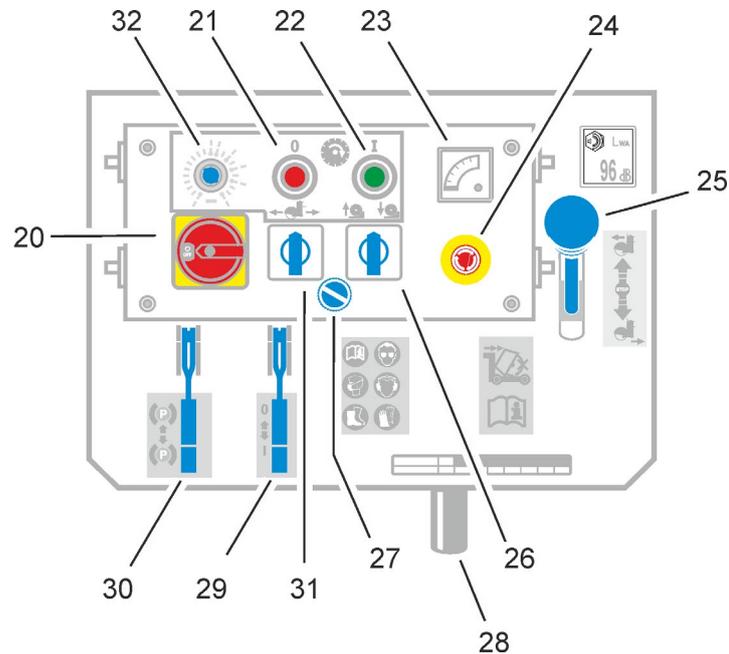


Depth adjustment

- Lower the saw blade until it barely touches the surface.
- Set the depth indicator to "0".
- The achieved cutting depth can now be checked on the scale.



7.8 Cutting with the floor saw



Cutting

1. Set drive lever (Pos. 25) in neutral position.
2. Activate machine with main switch (Pos. 20).
3. Release parking brake (Pos. 30) and engage clutch if required (Pos. 29).
4. Activate traction drive with selector switch (Pos 31)
5. Unlock drive lever (Pos. 25) and position floor saw.
6. Activate saw blade drive (Pos. 22) and preset the blade shaft RPM at the Potentiometer (Pos. 32).
7. Open ball valve for water supply.
8. Lower saw blade using selector switch (Pos. 26) until saw blade slightly touches the surface and set depth indicator to zero.
9. Lower saw blade to desired cutting depth.
10. Initiate advance movement slowly via the drive lever (Pos. 25).
11. Adjust advance speed to cutting conditions.
12. Monitor the current consumption with the Ampere meter (Pos. 23).

7.9 Relocating the floor saw

WARNING



Cut hazard at rotating saw blade

When touching the rotating saw blade, clothing and limbs can be pulled in and severed.

- ▶ The machine may not be maneuvered while the blade is spinning.
- ▶ During relocation, the operator may not leave the intended working position behind the handle bars.

WARNING

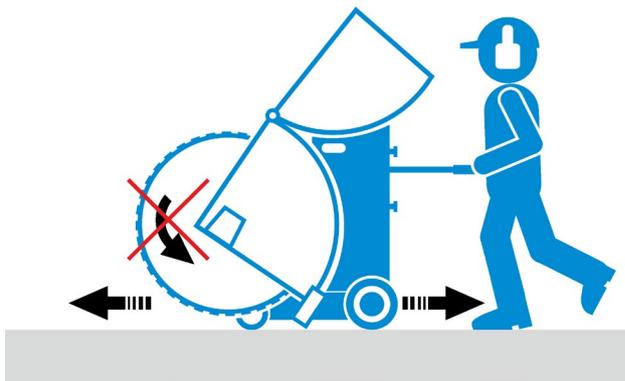


Danger in the work zone

When running, the machine poses a high risk of injury if it is not operated and used responsibly and in accordance with the specifications.



- ▶ The operator must remain behind the handle bars while cutting.
- ▶ The floor saw may only be operated by one person; ensure all other personnel vacate the cutting area, or close off the area.
- ▶ When interrupting the cutting process, always switch the motor off via the main switch.



Relocating the floor saw

- Completely lift the saw blade out of the kerf using the hand wheel.
- Close the water supply valve.
- Let the saw blade run until it stops!
- Move the floor saw to the desired position.
- Align the saw blade with the cutting line and start the machine

7.10 Cutting with the saw blade guard open

WARNING



Lacerations and ejected parts hazard

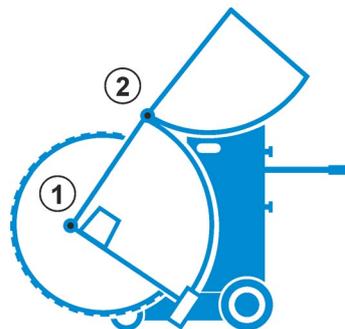
Severe injuries when coming into contact with the rotating saw blade or from ejected material when cutting without the saw blade guard.



- ▶ Keep the machine's cutting area free
- ▶ Never touch the rotating saw blade
- ▶ Wear a safety helmet, work shoes and safety goggles
- ▶ Stop the motor and wait for all parts to stop moving before working on the blade guard



Procedure



The saw blade guard on the floor saw can be flipped up at the front. This function is required when free cutting corners on a wall.

- Shut off the drive motor and wait for all parts to come to a stop
- Loosen the screws (Pos. 1) and flip the guard up
- Tighten the screw (Pos. 2) in the upper position if necessary
- Clear or cordon off the area
- Start the drive motor and start cutting

After the cutting process

- Shut off the motor, activate the parking brake and wait for all parts to come to a stop
- Immediately close the guard and secure it with screws (Pos. 1).

7.11 Flush cutting

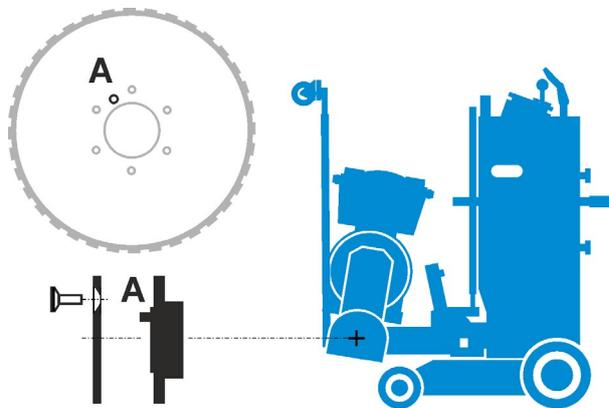


WARNING

Flush-cutting
Flush-cutting flange

A separately available blade guard for sawing flush with a wall can be attached to the floor saw.

- Shut off the drive motor and wait for all parts to come to a stop
- Remove the guard and blade
- Install the spacer disc
- Mount the flush-cutting blade on the flange using countersunk screws (Pitch circle 92 or 120mm)



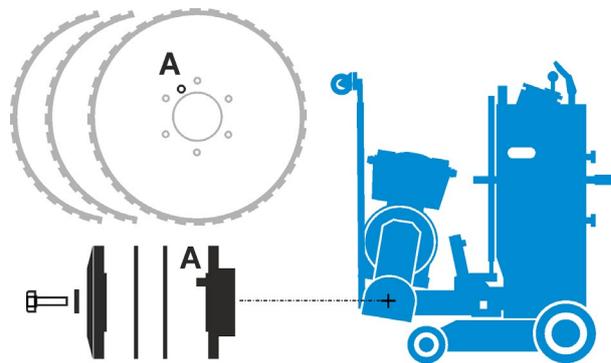
7.12 Multi-blade cutting

Multi-blade

Special purpose flange required!

Several blades, up to a total thickness of 15mm can be clamped onto the floor saw.

- Shut off the drive motor and wait for all parts to come to a stop
- Remove the guard and blade
- Install the spacer discs and saw blades as required up to 15mm combined width
- Tighten the saw blade with the pressure plate



7.13 Parking the floor saw

WARNING

Crush hazard

Personal and property damage can result from uncontrolled machine movement.

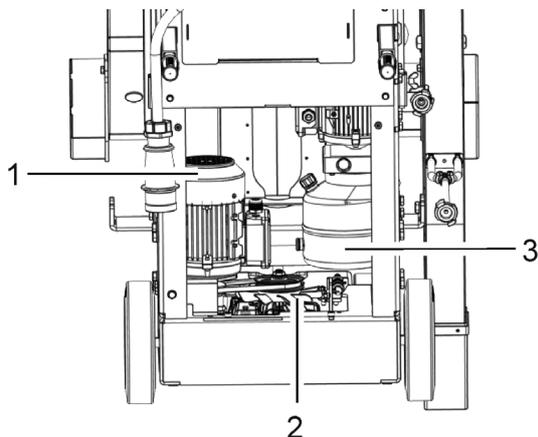


- ▶ When work has been complete, always secure the floor saw using the parking brake.



1. Park the machine on a level, stable surface
2. Secure via the parking brake
3. Pull the mains plug

7.14 Service compartment



- Pos. 1 Electric motor for traction drive
- Pos. 2 Transaxle
- Pos. 3 Surge tank for hydraulic pump for lifting mechanism (HV68)



The correct level of hydraulic oil HV 68 can only be checked if the machine is lowered completely.

7.15 Fuses

NOTICE



Only replace with same type and amperage.
T 2A 250V micro fuse 5 x 20mm

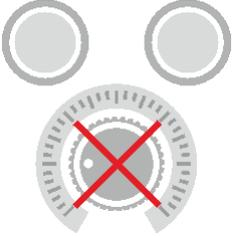


Fuse	Amperage	Characteristic	Function
F1	2 A	T (slow-blow)	Control circuit 24V DC

7.16 Frequency inverter

LED signaling

The frequency inverter has 2 LEDs that display the operating state and faults.
For further blink-codes refer to the frequency inverter manual.

Red	Green	State	
○	●	Operation / Ready	
☼	●	Warning	
●		Fault	
<p>The potentiometer of the unit is deactivated. Blade speed is controlled exclusively from the control desk.</p>			

Controls

8 Servicing

8.1 Maintenance

 **WARNING**



Cut and Crush hazard
 Serious injuries when coming into contact with a rotating saw blade or belt drive..



- ▶ Maintenance and repairs may only take place when the machine is switched off
- ▶ Maintenance and repairs may only be carried out by trained personnel.
- ▶ The machine must be secured against anyone else switching it on

Cleaning To protect the paint surface, no aggressive or abrasive cleaning agents may be used. Do not use a high-pressure cleaner on the motor and switching elements.

Spare parts Only original spare parts from the manufacturer may be used

Warning signs Regularly check machine for damaged or missing safety signs and stickers. Replace illegible or damaged safety signs immediately.

Material See 6.1 Consumables

	before each use	daily	weekly	monthly
Visual inspection for recognizable damages and defects	•			
Thoroughly clean the floor saw (depending on use)		•		
Lubricate the cutting shaft bearing		•		
Lubricate the lubrication points	every 40 operating hours			
Inspect the safety equipment				•
Retighten the drive belt (for the first time after 2 operating hours)		•		
Hydraulic oil for transaxle	Initially after 50, the every 200 operating hours			
Screw connections	Tighten all screw connections after 20 hours of service.			

The maintenance specifications are based on the standard, proper intended use. When using the machine under extreme climate conditions or in continuous operation, the service intervals must be adjusted accordingly.

8.2 Lubrication points

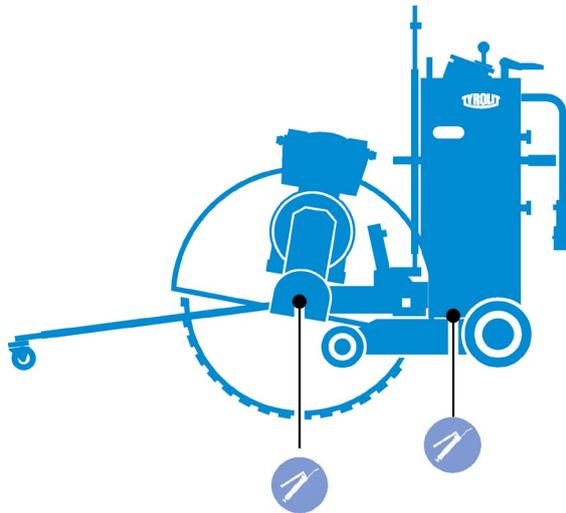


The motor must be switched off before maintenance or repair work.

Secure the machine against being unintentionally reactivated.

Maintenance and service work may only be carried out by qualified technical personnel.

Secure the machine with a crane.



8.3 Check the saw shaft drive belt tension

WARNING

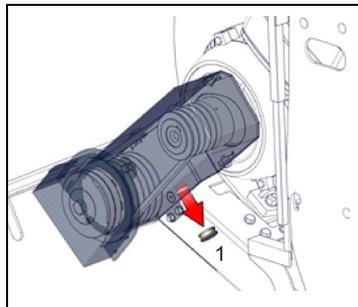


Cut and crush hazard

Body parts and clothing can be pulled in if they come into contact with the belt drive. Risk of cuts and crushing injuries through to amputations.

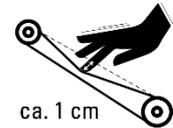


- ▶ Removing or opening the belt cover or reaching into the rotating belt drive is prohibited
- ▶ This work may only be carried out when the belt pulley is at a standstill and the power supply has been disconnected.



Inspection

The drive belts can be inspected by pressing on them with your thumb.

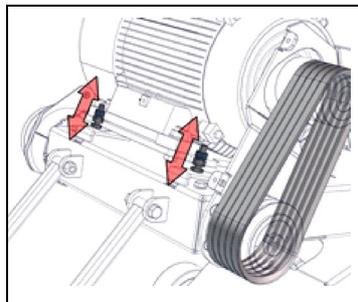


- Remove the cover (Pos. 1)
- Inspect by pressing down with your finger. The belt should have approx. one belt thickness of play.

Effects of incorrectly tightened drive belts:

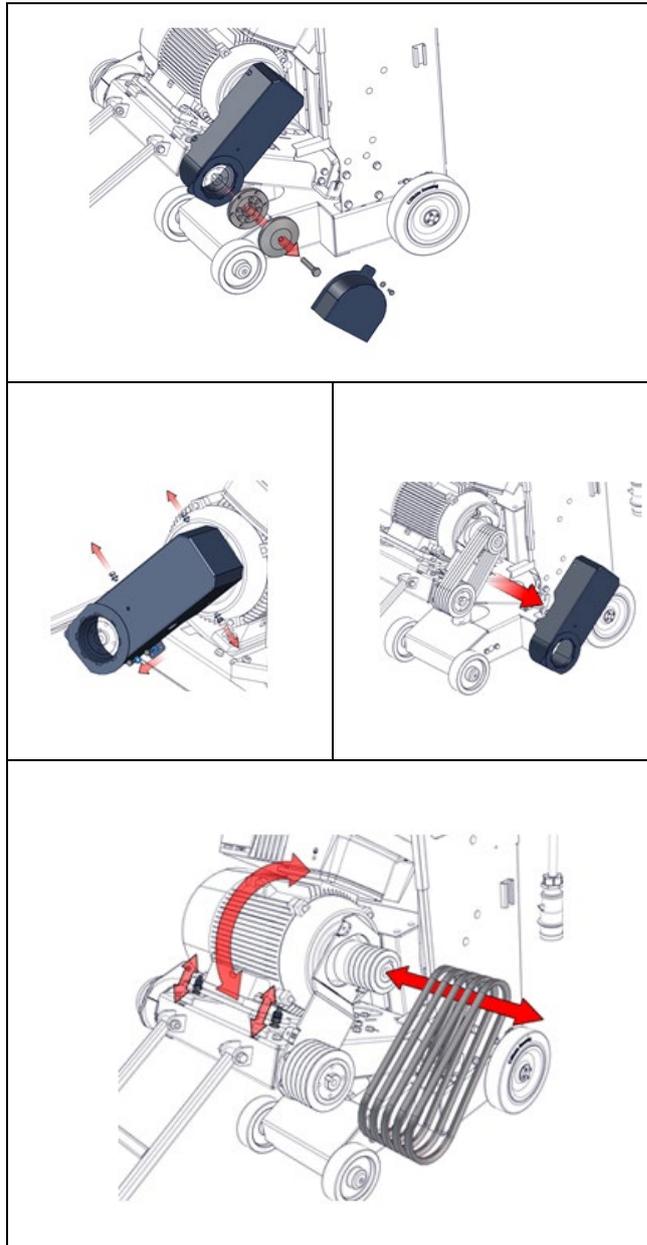
- Drive belts too loose:
drive belts slip on the v-belt pulley
no or poor power transmission, excessive wear
- Drive belts too tight:
excess wear, severe heating of the v-belt pulley with consequential damage

Adjusting belt tension



- Loosen the counter nut at the motor console
- Evenly loosen/tighten the
- tensioning screws on the motor console and adjust the v-belt tension.
- Motor and cutting shaft have to be parallel!

8.4 Replacing the cutting shaft drive belts



- Disconnect the power supply.
- Remove the flange cover and flange.
- Loosen the 5 mounting screws and remove the belt cover.
- Evenly loosen the tensioning screws on the motor console in turns and relax the belts.
- Remove the belts and install a new set.
- Reinstall belt guard in reverse order.

NOTICE



Replacing V-belts

Only use belts of the same type from the same manufacturer. We urgently recommend always replacing complete belt sets. Simultaneously using old and new belts cuts the service life of the new belts in half.

8.5 Checking V-belt tension of traction drive

WARNUNG

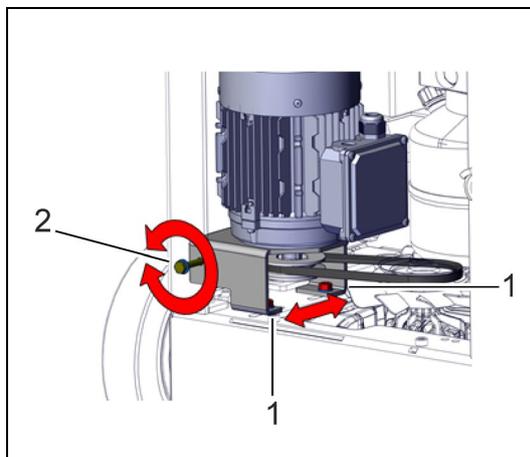


Cut and crush hazard from rotating v-belt drive

When touching the rotating v-belt, hands and clothing can become entangled and pulled in, resulting in cut and crush injuries including dismemberment..



- ▶ Do not open or remove the belt guard or touch the v-belt while it rotates.
- ▶ Only perform this work with the engine turned off and pulleys standing still.



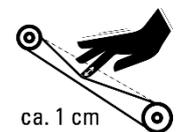
Adjust belt tension

- Loosen bolts at motor console (Pos 1).
- Adjust v-belt tension via set screw (Pos. 2).
- Tighten bolts on motor console.

Checking tension

V-belt tension can be checked by pushing them with a finger.

- Remove the service hatch cover.
- Check by pushing with a finger, the drive belts must yield about one belt strength.



8.6 Troubleshooting



The motor must be switched off before maintenance or repair work.
Secure the machine against being unintentionally switched back on.
Maintenance and service work may only be carried out by qualified technical personnel.

NOTICE

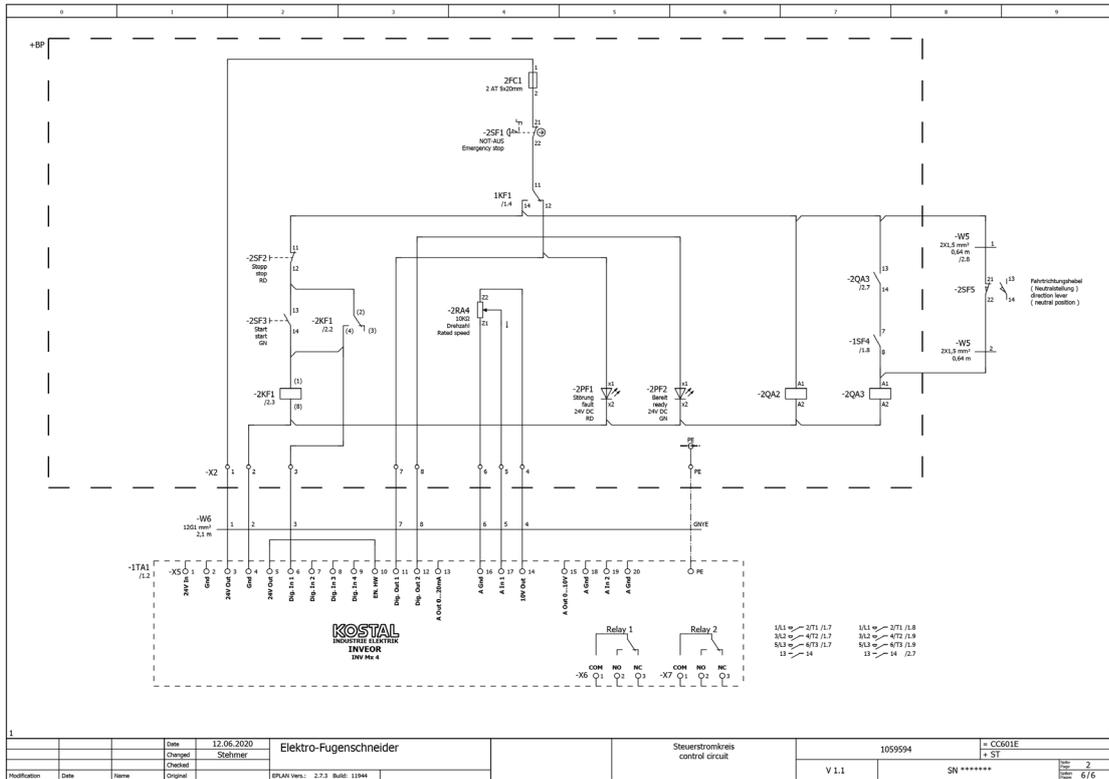
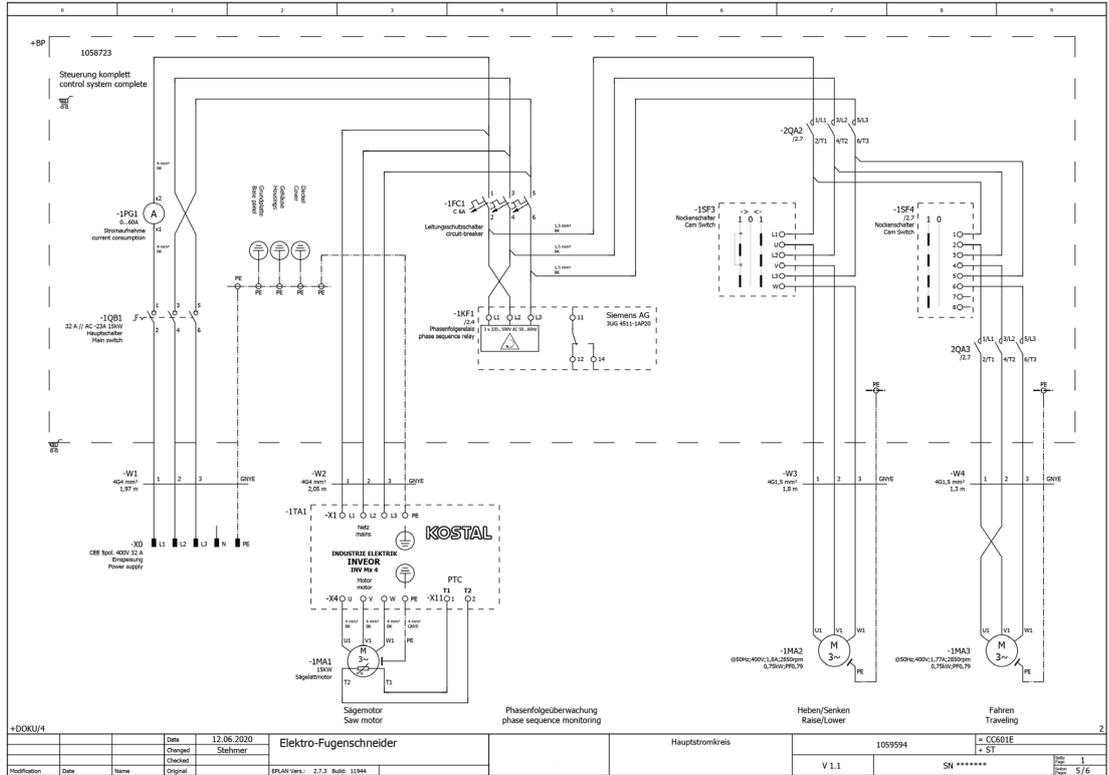


The following points must be checked first in the event of cutting problems:

- Is the saw blade blunt or defective?
- Is there too little water to cool the saw blade?
- Has the correct saw blade been selected?
- Full power or speed from the motor?

Error	Possible cause	Abhilfe
Poor cutting performance	Saw blade is blunt	Remedy
	too little cooling water	Replace the saw blade
	V-belts slip	Flush the water supply with pressure
	The motor does not provide the full performance	max. 5 bar
The floor saw does not start	No power	Check v-belts, retighten
	Fuse/RCD tripped	Check electrical supply
	Feed lever in the incorrect position	Check electrical supply
Excessive vibrations	Tool blunt	Check fuse/RCD
	Motor bearing is imbalanced/incorrectly calibrated	Put the feed lever in the center position

9 Circuit diagram



10 EC Declaration of Conformity

Description Floor saw

Type designation FSE1022

We declare under our sole responsibility that this product complies with the following directives and standards:

Directive applied

2006/42/EG

Applied standards

EN 13862:2001+A1:2009

EN ISO 12100:2010

21.01.2021



Roland Kägi
Operations + R & D Machines

TYROLIT CONSTRUCTION PRODUCTS GMBH

Swarovskistraße 33 | 6130 Schwaz | Austria

Tel +43 5242 606-0 | Fax +43 5242 63398

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on our website at **www.tyrolit.com**