Original Operating Instructions

Rail Cutter

Type 13.80

(With three-phase motor, symbol image)

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These operating instructions were produced in accordance with the current state of technology at the time of printing.
The right to change on the basis of further developments is reserved.
Dimensions and weights are approximated.
Photographs show special layouts in some cases.

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1 TECHNICAL DATA

1.1 Drive motor

Three-phase motor, 400 V, 50 Hz

Power at 2850 1/min	2,7 kW

1.2 Cutting disk (300 Ø)

Diameter, outside / borehole x width	300/22.2x3 mm
Speed of the grinding wheel, max. permitted	5090 revs/min
Circumferential speed, max. permitted	80 m/s
Weight	0.5 kg

1.3 Cutting disk (350 Ø)

Diameter, outside / borehole x width	350/22.2x3 mm
Speed of the grinding wheel, max. permitted	5090 revs/min
Circumferential speed, max. permitted	100 m/s
Weight	0.8 kg

1.4 Dimensions

Rail abrasive cutting machine (without cutting disk)

Length	675 mm
Depth	360 mm
Height	380 mm

Guiding frame

Length	550 mm
Depth	350 mm
Height	310 mm

1.5 Weights

Rail abrasive cutting machine (without cutting disk)	29.5 kg
Guiding frame	12 kg

1.6 Safety blocking wedge device (if ordered)

Length	180 mm
Depth	200 mm
Height	40 mm
Weight	1.5 kg

2 SAFETY

2.1 General dangers

The machine has been constructed and built to cut rails at an exact right angle, without using coolants, and may only be used for this purpose. The protective devices on the machine meet current safety regulations; they must be attached continually during operation. Personal protective equipment must be worn during work!!

For further information, see Appendix A.

2.2 Information about dangers

All the following information and instructions are intended to protect the operator's personal safety and physical well-being against dangers and the assets of the company operating the machine from damage. The instructions on hand consistently use certain terms to distinguish between types of danger and the level of consequences to be expected from not complying with instructions. These are as follows:

DANGER points out that non-compliance with instructions may result in death or severe injury to the operator or considerable damage to the operating company's assets.

CAUTION

CAUTION points out that non-compliance with instructions may result in injury to the operator or damage to the operating company's assets.

INFORMATION contains important information about the device, its operation or about a section of the instructions on hand.

2.3 First aid

Always ensure that proper "first aid" equipment is provided.

Consult the medical service or doctor at your office regarding "first aid" measures and appropriate equipment.

2.4 Abrasive cutter

CAUTION **Use of products which cut, grind, drill, sand or shape material can generate dust and vapors which may contain harmful chemicals. Know the nature of the material being worked on and wear appropriate dust mask or respirator protection.**

- Before starting the machine, always check whether the wheel protection is mounted correctly.
- Make sure that no clothing or body parts can come in contact with the cutting blade.
- Do not start the power cutter without the cutting arm or cutting head fitted. Otherwise the clutch can come loose and cause personal injury.
- Ensure that you and the machine stand firmly and that the cutting blade rotates freely.
- Make sure no unauthorised persons are within the working area.

Free-hand use and hand guided use are strictly prohibited.

- The rail cutter 13.80 must only be used together with the guiding frame.

2.5 Personal protective equipment

- Basic health and safety requirements must be observed.

- Wear protective helmet.
- Wear eye protection!
  Ideally, a polycarbonate (safety glass), pull-down visor, which is firmly fixed to the protective helmet; at the very least, approved safety glasses (closed on all sides).
- Wear suitable ear protection against high frequency sound.
- Wear steel-capped working shoes.
- Wear tight fitting clothing in the lower leg and arm area!

3 MACHINE DESCRIPTION

3.1 Designated use

The machine has been constructed and built to cut rails at an exact right angle, without using coolants, and may only be used for this purpose.

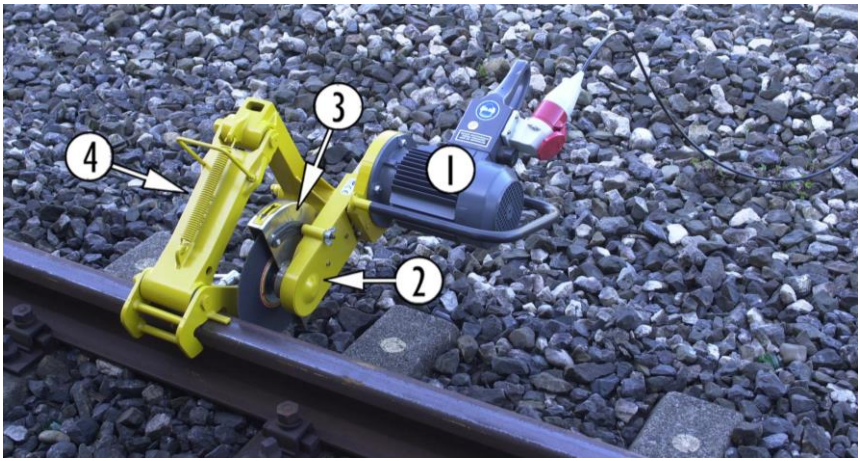
Abrasive cutter and guiding frame are assigned to each other with steel stamping letters (machine number).

3.2 Foreseeable misuse

Free-hand cuts are not permissible!
The rail cutter 13.80 may only be used in conjunction with the guiding frame.

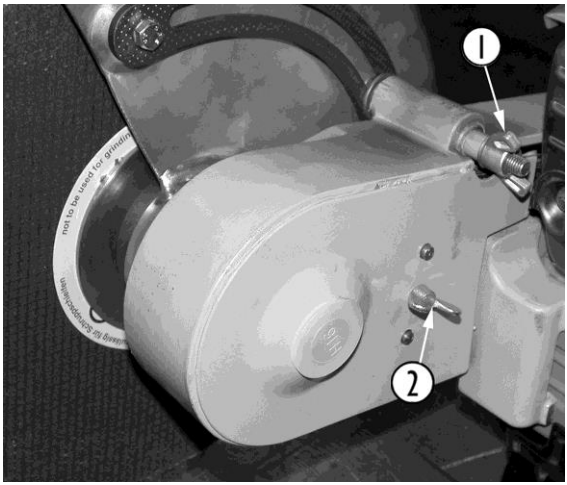
3.3 Components

The ROBEL 13.80 rail cutter consists of an abrasive cutting machine and a guiding frame to be fastened to the rail.



1 Motor (symbol image above)
2 Bearing arm
3 Protection
4 Guiding frame

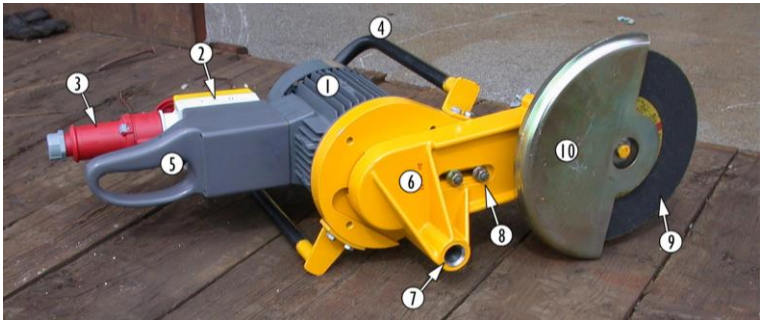
3.4 Front view

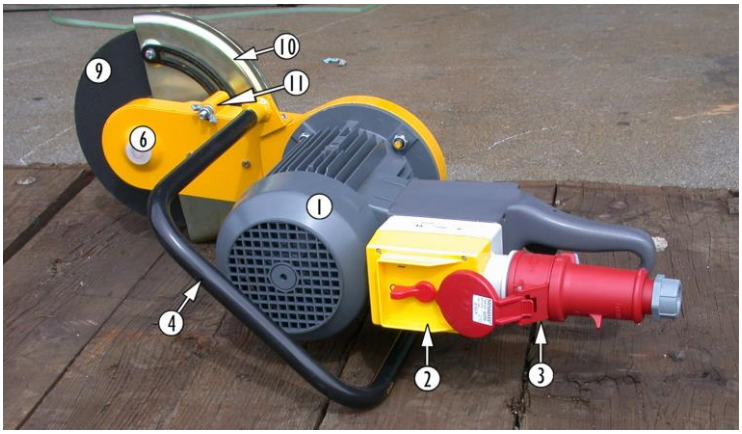


1 Adjusting screw for wheel protection
2 Wing nut for covering

3.5 Abrasive cutter

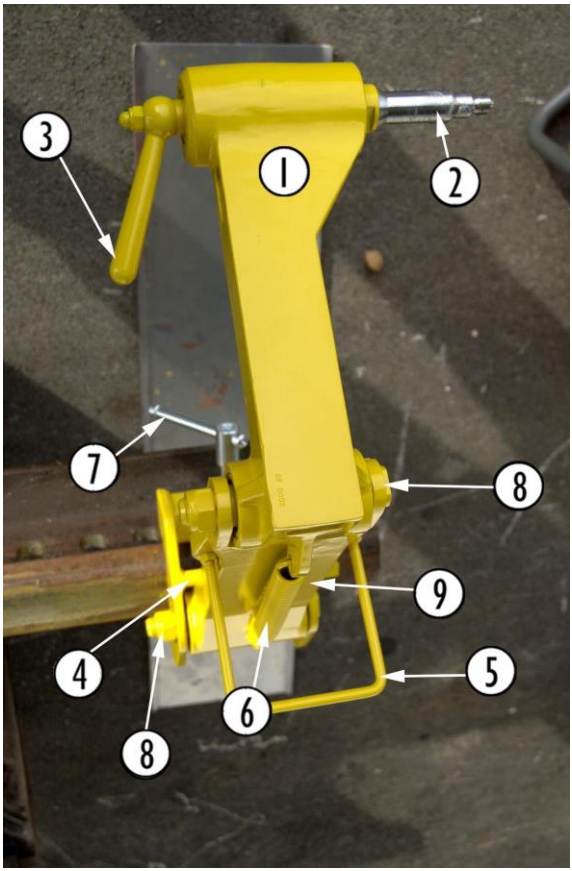
The interchangeable cutting disk is driven by a three-phase motor via a fan belt.





1 Motor
2 Safety switch
3 Plug
4 Front handle (motor arch)
5 Handle (right hand grip)
6 Bearing arm
7 Attachment for guiding frame
8 Tightening screw motor / separating arm
9 Cutting disk
10 Wheel protection
11 Adjusting screw for wheel protection

3.5.1 Guiding frame



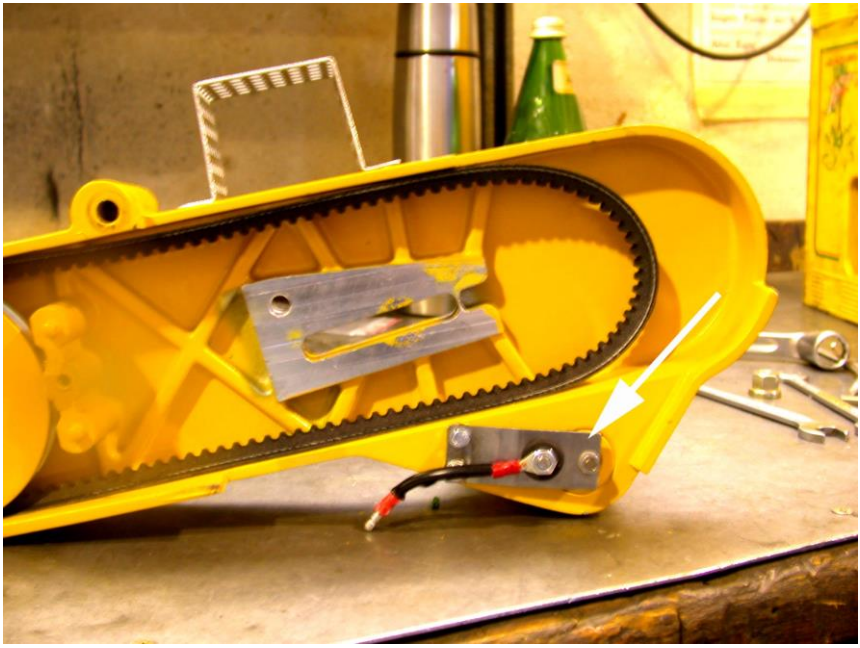
1 Upper guiding arm
2 Locking spindle (rotating)
3 Screw grip
4 Clamping foot
5 Carrying handle
6 Spring
7 Tommy screw
8 Guiding joints
9 Lower guiding arm

The guiding frame consists of the upper guiding arm and the lower guiding arm, which is joined with a hinge by means of a ball bearing. The lower guiding arm is in turn connected to the clamping foot by a hinge. Both the upper and the lower guiding arm can be guided with the abrasive cutter on both sides of the rail via both guiding joints.

The guiding frame is robustly designed and allows complete rail separation, even if the cutting disks are worn, without the process having to be interrupted and the device having to be dismounted.

The spring ensures the equilibration of the abrasive cutter.

3.6 Engine – Automatic Cut-Out (optional)

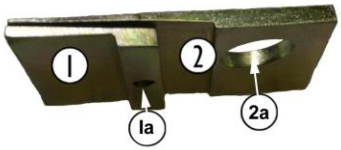


The automatic engine cut-out shuts down the engine or prevents it from starting up if the rail cutter is not secured to the guide frame.

An electrical contact is made once the locking spindle has been inserted and tightened. Only then can the rail cutter be started up. The contact is broken once the locking spindle has been removed - the rail cutter can no longer be started up.

3.7 Safety blocking wedge device (13.81)

(if ordered)



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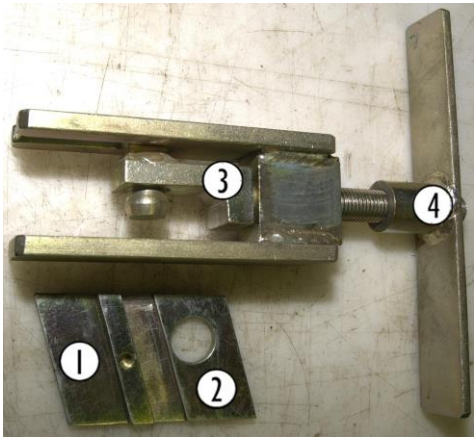

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1	Blocking wedge	1a	Locking hole in blocking wedge
2	Pulling wedge	2a	Locking hole in pulling wedge
3	Pulling mechanism		
4	T-handle		

The safety blocking wedge device, combined with abrasive cutters, safely prevents the cutting disk jamming due to stressed rails caused by axial thrust.

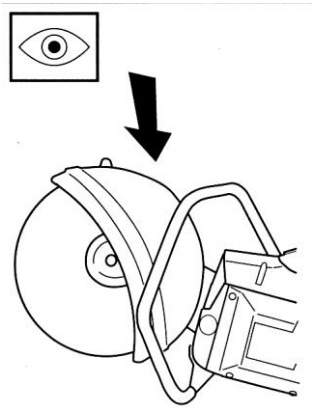
Two special wedges are inserted in the parting line of the rail foot which has been partially cut through and are wedged there against each other with their surfaces parallel.

After the rails have been cut, the wedges must be removed by using a light, manageable pulling device with a screw spindle.

These special wedges also prevent deformation of the rail foot through their large, parallel compression area.

The force of pressure can be up to 700 kN (70 t).

3.8 Wheel protection for the cutting disk



CAUTION

Risk of injury!

- Before starting the machine, always check whether the wheel protection is mounted correctly.

This protective device is mounted over the cutting disk and prevents fragments being hurled at the user during the separation process.

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4 OPERATING CONDITIONS

From -20°C to a maximum of +70°C (motor temperature) with minimal power losses at an installation height of up to 100 m mean sea level.

CAUTION

Risk of damage!

- Excessive solar radiation may overheat the machine to way above +70°C. Electrical safety is endangered by distortion of the housing.

4.1 Storage

The temperature range for storing the cutter is -20°C to +70°C. The storage area must be dry and free of dust.

- Store the abrasive cutter in a lockable room, so that it is inaccessible to children or unauthorised persons.
- Do not store or transport the abrasive cutter with a mounted cutting disk.

Storage of abrasives and cutting-off wheels

- Store the abrasives in appropriate shelves or containers in such a way that, on the one hand, they cannot be damaged and, on the other hand, they can easily be unloaded without relocating.
- Older stock ought to be used first.
- Please mind the following:
  - Keep the abrasives in a dry and frost-free place.
  - Store cutting-off wheels on an even support without intermediate padding and weigh them down by means of a steel-plate or a cast iron plate.
  - Pile cylndrical abrasives with soft intermediate padding.
  - Store tall and straight abrasives in upright position and prevent them from rolling.
  - Keep small abrasives in adequate containers.

Correctly stored, the abrasives' shelf life is 3 – 5 years (see expiry date on respective label).

4.2 Transport

The temperature range for storing the cutter is -20°C to +70°C. The cutter can be transported on all transport routes without incurring any damage if it is properly tied down and in its original packaging.

5 START-UP

5.1 Personal protective equipment

Basic health and safety requirements must be observed!

- Wear protective helmet and eye protection!
- Wear suitable hearing protection for high-frequency sound!
- Wear safety boots with steel reinforcement!
- Wear tight fitting clothing in the lower leg and arm area!

5.2 Checks

- Before using the machine, the operating resources must be checked and supplemented, where necessary.
- Check if cables and connections are tightly connected and undamaged (check by view).
- Checking the cutting disk to make sure it is fixed firmly (check by hand)!

Danger!

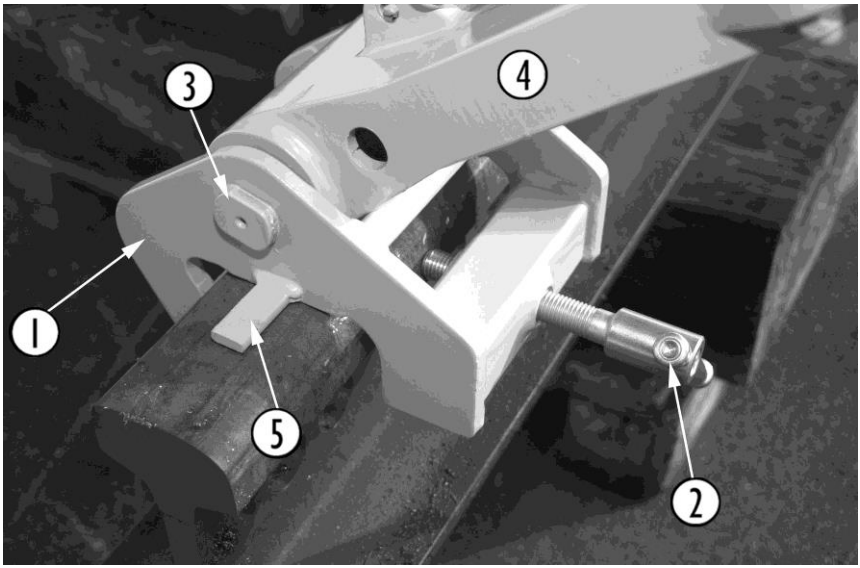
- When using cutting disks whose attachment borehole's diameter is in inches, the corresponding adapter ring must be installed together with the securing ring!
- Cutting disks which are loose are HIGHLY DANGEROUS!
- Never work with a cutting disc that has fallen onto the ground.
- Do not use a faulty protective cover or one that is incorrect-ly mounted

Visual checks:

- Check the cutting disk for cracks or other damage (cavities) and sufficient diameter.
- Make sure safety devices are fitted properly and undamaged and that drive belts for the cutting disk are undamaged and sufficiently tensed .
- Under no circumstances use defective wheel protection or wheel protection which has not been correctly mounted.
- Make sure the joint of the guiding frame can move freely (can be easily folded by hand and the thread runs well).
- The tommy screw must move freely.

Refer also to the maintenance section.

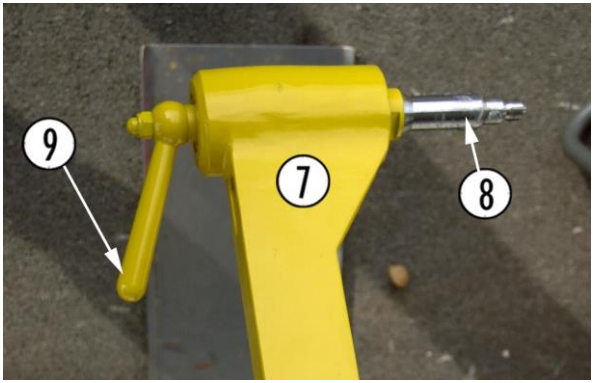
5.3 Positioning the guiding frame

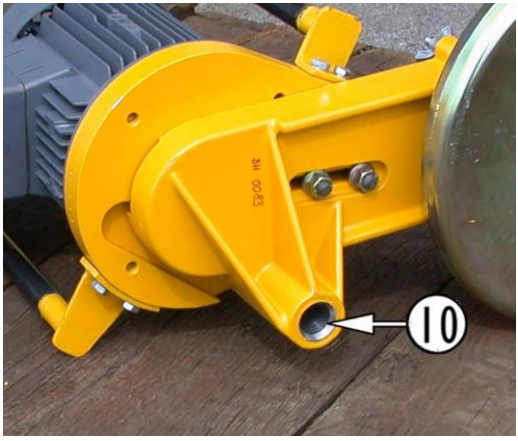


1 Clamping foot
2 Tommy screw
3 Guiding joints
4 Lower guiding arm
5 Distance gauge

- Place the clamping foot (1) on the rail so that the distance gauge (5) comes to rest exactly on the marked cutting spot.
- Attach the clamping foot tightly to the rails with the tommy screw (2).

5.4 Fastening the abrasive cutter with the spindle





After attaching the guiding frame tightly to the rail, the abrasive cutter is fixed by clamping the locking spindle to the attachment (10) and screwing it tight with the screw grip (9, turn clockwise).

5.5 Starting the engine

Danger!

- The motor can only be started when the guiding frame has been fixed to the rail correctly and the rail cutter has been fixed to the guiding frame correctly

Free-hand use and hand guided use are strictly prohibited.

- The rail cutter 13.80 must only be used together with the guiding frame.

5.5.1 Preconditions

Danger!

- The electric motor must on no account be covered. **Danger of overheating!**

The abrasive wheel turns as soon as the motor turns

- Connect external electricity supply via plug.

5.5.2 Starting the electric motor

- Switch the main switch to “ON“ (I).

5.5.3 Stopping the electric motor

Switch the main switch to “OFF“ (O).

Pull the electricity supply cable out of the socket.

Danger!

- For safety reasons, the electricity supply to the machine must be disconnected after use to prevent unauthorised persons from handling the machine (danger of accident).
- The machine must be correctly switched off in order to avoid damage to electrical parts or the whole machine (impact). (Switch off in a horizontal position; secure with a wedge to prevent rolling.)
- If electrical parts have become defective due to environmental influences (flaws in the housing, cables have been ripped off), these must be replaced in order to ensure their continued safe use.
- **For additional safety regulations, see original external leaflet and EN norms.**

5.6 Test run

Risk of accident!

- The grinder must be correctly set up both when using it for the first time and whenever the grinding tool is changed. Start the engine up.
- Then position the grinder so that the grinding tool can turn freely and without hindrance.
- Ensure that other people do not run the risk of injury in the event of the grinding tool breaking.
- Gradually apply the throttle and, taking all safety precautions into account, carry out **a test run at top speed for at least one minute.**
- If the grinding tool does not turn freely, the cutter must be turned off immediately.
- Only use the appliance if the grinding tool is able to move freely (no wobbling, no aspherical movement, no grinding noises).
- If any of the above occurs, establish the cause and then carry out remedial action. Repeat the test run

5.7 Abrasive cutting

Danger!

- The motor can only be started when the guiding frame has been fixed to the rail correctly and the rail cutter has been fixed to the guiding frame correctly!

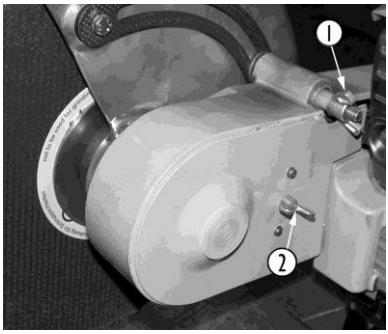
Free-hand use and hand guided use are strictly prohibited.

- The rail cutter 13.80 must only be used together with the guiding frame.

Danger of flying sparks!

The safety clearance from the rail cutter is 15 metres.

- Make sure that there are no people or animals within the working area. Do not commence cutting until the working area is clear.!



- Adjust the protective hood with the wing nut (1) so that it moves easily in the outlet of the guiding segment.

Risk of accidents!

- **The disk protection must always be attached**.
- Perform a test run (see chap. 5.6).

- The protection must be adjusted so that the back part of the protection is located in close proximity to the part that is being worked on.

Cutting particles and sparks are therefore intercepted by the protection and diverted from the operator.

- Bring the device into position in compliance with safety regulations.

Right hand on the grip (throttle handle), left hand on the motor arch.

Symbol image (petrol motor) only!

5.7.1 Abrasive cutting procedure

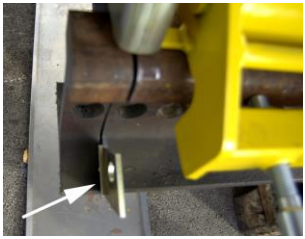
- The motor must constantly run at maximum speed.
- Never start the cutting process jerkily, but oscillate constantly to and fro vertical to the rail.
- An economical cut can be achieved with the appropriate contact pressure up to the performance limit of the motor, i.e. before the speed drops.
- Only execute the cut with one and the same cutting disk! (A new disk would jam due to the unused width!)
- Track the cutting process with the protective hood, to guarantee optimum spark protection!
- Cut through the railhead with an oscillating movement from top to bottom.

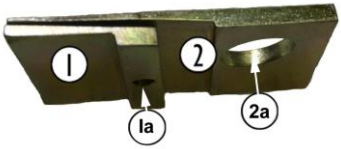
If the rail cannot be separated from one side (if the grinding wheel is worn or the rails are larger), the guiding frame is swung to the other side of the rail and separation of the rail is completed from the other side.

It is thereby possible to separate the rail in one pass, i.e. without having to adjust the guiding device.

Symbol images (petrol motor) only!

5.7.2 Use of the safety blocking wedge device

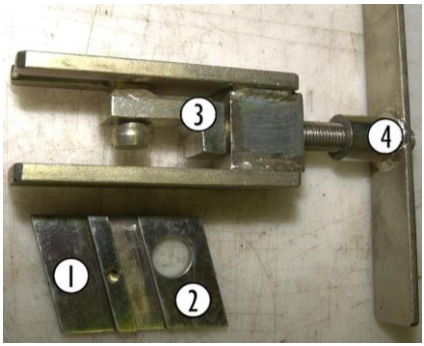




First the blocking wedge (1) is inserted as deep as possible by hand into the rail foot, which is separated on one side, and then the pulling wedge (2) – as shown in the photo above right – is pushed in and wedged by means of hammer blows.

Afterwards the other half of the rail is cut by inverting the cutting head.

The pulling mechanism of the safety blocking wedge device must be used if there is high compression on the rail ends which have been cut free.



The T-handle (4) is turned up to the far end of the thread, then the freely movable pulling mechanism (3) is placed with the bolt into the locking hole of the pulling wedge (2a) and the pull-off device is placed on the rail foot. The pulling wedge (2) is pulled by turning the T-handle (4) clockwise.

After relaxing the rail pressure, the blocking wedge (1) can also be pulled with a hook.

6 MAINTENANCE

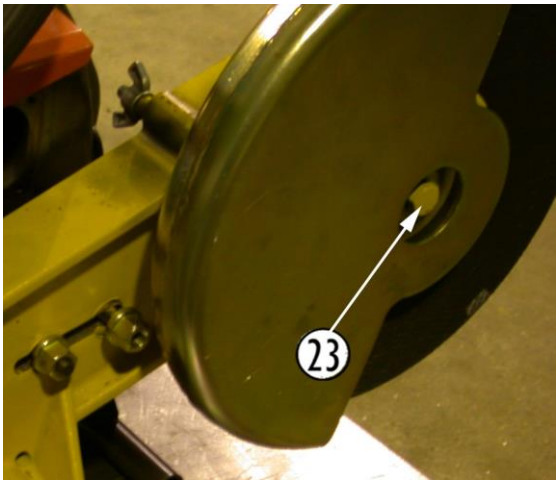
- Please always use the stipulated lubricants and, in the case of repairs, the original spare parts. This is on the one hand important for the guarantee validity and, on the other hand, for the increased operating safety of your cutter.

If spare parts are ordered correctly, this contributes significantly to the swift delivery of spare parts and, hence, the economic effectiveness of the machine.

- Please give us the following information when ordering spare parts:
  - Machine type
  - Machine number
  - Construction unit
  - Description and spare part number
  - Piece number
  - Mode of shipment
  - Address for shipment

- Comply with the stipulated maintenance intervals!

6.1 Changing the abrasive



- Undo the screw (23) by turning it clockwise **(LEFT-HAND THREAD!)**
- The nut on the back is held with a spanner. After removing the screw, the grinding wheel can be removed.
- The new abrasive disk is inserted so that a clamping pad comes to rest in front of and behind the wheel.
- The screw is inserted through the boreholes and is screwed tight with the nut on the back **(ANTI clockwise)**.

⇒ The screw tightens itself during the abrasive cutting process.

Check the grinding wheel by lightly striking it against a piece of wood. If the wheel does not give off a resonant, pleasant-sounding tone, it is damaged and must be replaced with a new one.

- Perform a test run (refer to page 20).

6.2 Readjusting the belt tension/Changing the belt

The fan belt must be retightened when the machine is new, each time a new belt is fitted, and after approximately 5 abrasives have been used.

(It should not be possible to squeeze the fan belt through by more than approximately 7 mm if it is pressed firmly in the middle with a finger).

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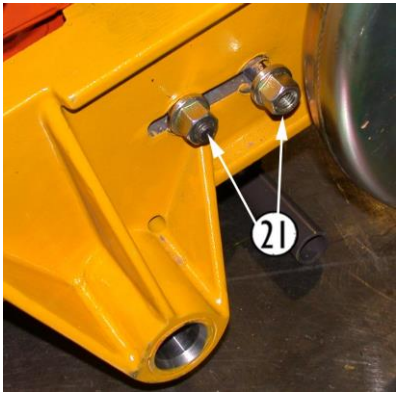
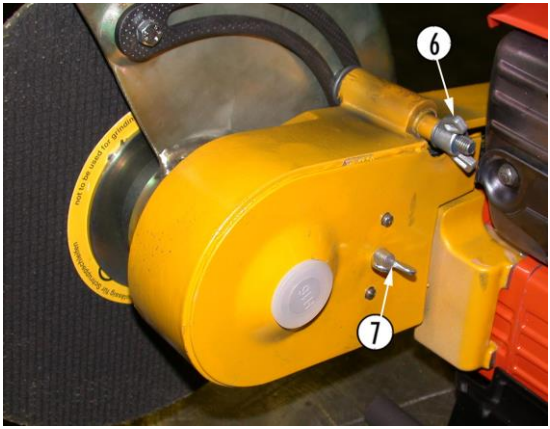


- Unscrew both screws (21) by turning them anticlockwise.



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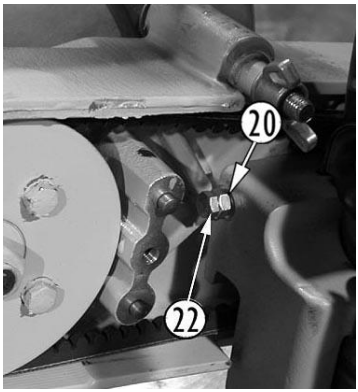
- Unscrew the wing nut (7); remove the cover.



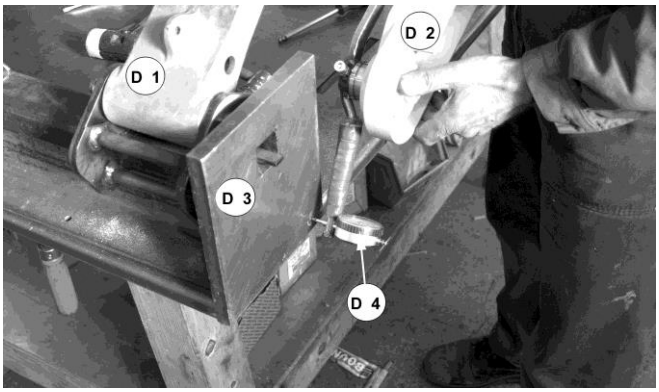
Turn the screw (20) anticlockwise = fan belt is tensed

Clockwise = the fan belt is slackened

- After setting the fan belt tension, screw the counternut on (22) tight!

6.3 Adjusting the cutting line

To prevent the grinding wheel from bending in the parting line during the cutting, the guiding frame with the machine housing is set to a precision of 0.1 mm cut parallelism with the aid of a dial gauge in the area of a surface of approx. 150 x 150 mm².



D1 Guiding frame
D2 Machine housing
D3 Test plate
D4 Dial gauge

6.4 Maintenance schedule

6.4.1 Daily maintenance

1. Check the tension of the drive belt.
2. Check the condition of the cutting blade.
3. Check the condition of the blade guard.
4. Check that all nuts and bolts are tightened correctly.

6.4.2 Monthly maintenance

- Check all cables and connections.

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7 APPENDIX A

The electric parts are insulated, protected from splash water and dust, and maintenance-free. This also accounts for the three-phase motor (safety designation IP54 according to VDE-guidelines).

Danger!
If the motor rotates in the wrong direction, this may be repaired by an electrician only!

- The motor of a damaged appliance may be maintained by the customer service or an electrician only!

7.1 Safety Standards for electric drives

Safety Designation	Protection against contact and dust	Water protection
IP 54	Comprehensive protection of non-moving and inner moving parts against stress contact. Protection from damaging deposits of dust.	Water spraying from any direction onto the machine has no damaging effect.
IP55	The penetration of dust is not completely prevented, but dust does not penetrate in such quantities that the operation of the machine is impaired.	A stream of water from a container, aimed at the machine from any direction, has no damaging effect.
IP56		Water from continuous flooding, e.g. heavy seas, should not penetrate the machine in damaging quantities.

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8 APPENDIX B

8.1 Area of application

The Rail cutter has been constructed and built to cut rails at an exact right angle, without using coolants, and may only be used for this purpose.

8.2 Liability exclusions

The manufacturer declares that it is excluded from any liability for damage incurred if the machine is used for any other purposes than those specified according to the regulations (see area of application). Non-designated use also occurs if the machine is operated without safeguards.

Any use of the machine other than that specified above is not designated and endangers the lives and health of operating and maintenance personnel as well as the material assets of the operating company. The manufacturer of the device declares itself free from liability for damage to persons or property belonging to the operating company or third parties if:

- the machine is not used according to the regulations,
- the operating and maintenance personnel have not read or understood the available instructions and have used the device for other purposes,
- the operating and maintenance personnel are not sufficiently qualified (see Point 7.8) or the machine is operated under conditions which exceed the specified limiting values,
- the machine is not serviced according to the rules within the specified intervals.

These exclusions from liability for damage to people or material property do not affect other grounds for exclusion.

8.3 Copyrights

8.4 General regulations

Effective legal provisions and accident prevention regulations in the respective fields of application must generally be observed. If they are not observed, the operator of the machine is liable for the legal consequences.

In the event of differences between prevailing regulations applying to the operator's use of the machine and the manufacturer's or its subcontractor's regulations, whichever stipulations are the most stringent must apply.

The buyer must provide all necessary machinery, equipment and material resources for putting the delivered product into operation and training staff. It must also make unrestricted, safe and sufficiently long track and work sections available, on which staff can learn how to operate and use the delivered product and practise these tasks.

ROBEL Bahnbaumaschinen GmbH, together with its customer service organisation, is happy to provide advice, training and other consultative services; details and conditions relating to these services must be agreed separately.

8.5 Acceptance, equipment and operating licence

The buyer is responsible for checking that the purchased item is equipped according to the specified and agreed specifications and that its condition, operative capability and especially its safety features conform to these specifications; the buyer is responsible for accepting the purchased item according to the contractually agreed stipulations.

The buyer must install all equipment stipulated by respective operating and safety regulations, norms, statutory requirements or other regulations in the purchased item.

Delivery of the purchased item only includes equipment which is legally stipulated in Germany, unless other agreements have been reached.

The buyer is also responsible for presenting the purchased item with the necessary documentation from the office in charge so that the operating licence can be granted. The documentation needed to be able to do this (descriptions, proof, certificates, etc.), to be supplied by the manufacturer or supplier, must be specified and agreed in the contract of sale.

The buyer shall pay for any other measures that might be necessary to obtain any additional operating licences.

8.6 Safety regulations

The necessary requirements for protecting life, health, material property and the environment when handling the machine must take precedence!

- Before starting up the machine, make sure you can prove that all personnel affected have been made aware of all the relevant:
  - national statutory safety regulations,
  - stipulations of the respective building code and works rules,
  - stipulations of the respective professional and trade associations,
  - national industrial and environmental safety regulations, and licensing regulations,
  - internal company regulations and
  - other applicable regulations,

in addition to and in concert with the manufacturer's safety and operating regulations for the machine and the equipment located in it.

If necessary, the office in charge of operation of the machine must lay down additional regulations and measures geared to the special tasks of the machine to ensure that all additional safety requirements are met.

We would ask you to pay special attention to the following safety regulations pertaining to the machine, in addition to the information detailed above, and to ensure that they are observed.

8.7 Protection and use of the machine

- Protect the machine to prevent unauthorised persons starting it up or using its facilities or equipment.
- The machine should only be started up and used if all necessary
- Conditions for safe operation have been fulfilled.

8.8 Intended audience for the operating instructions

These instructions contain the necessary information for using the machine they describe in accordance with the regulations.

The instructions have been written exclusively for technically qualified personnel. Qualified personnel in this sense are:

- persons who have proved their suitability to operate this device, whether on the basis of certificates or through experience,
- persons who are familiar with the safety concepts of these kinds of devices;
- maintenance and service personnel who are specially trained to repair machinery of this type.

Only persons who are able to read and understand the available instructions are allowed to work on the machine. They must have read and understood the available instructions and have confirmed this with their signature. Use, maintenance and operation of the device may only occur if the following have been taken into account and strictly complied with: the respective railways' and divisions' effective operating and safety regulations, official regulations, especially relating to safety, industrial and environmental protection, operating, maintenance and safety regulations or other rules stipulated by the manufacturer or the supplier.

8.9 Accident prevention

Basic health and safety requirements also apply to these operating instructions.

Familiarise yourself with potential dangers connected with the machine's specific area of activity and ensure that you receive appropriate training before starting up the machine.

- Check to make sure the machine is in proper working order before starting it up, for example:
  - Make sure equipment, devices, tools, accessories and safety equipment, etc., are complete and intact.
  - Make sure servicing and maintenance work has been carried out professionally and on time.
  - Make sure operating materials have been topped up or that they are adequate (fuel, lubricants and working materials etc.).
  - Make sure all pre-conditions for danger-free operation for yourself and other persons, as well as for property and the environment, have been met.

Pay attention to the particular dangers posed by the machine and in your area of work, especially:

- People and obstacles
- Compliance with safety distances
- Work on adjoining tracks
- Safe installation of all safety devices
- Fulfilment of all necessary operative protective measures.
- Only use tools and appliances that work properly.

Leaking operating materials (oil, grease, etc.) must be removed immediately to prevent danger from slipping and fire. Keep suitable oil binding and cleaning agents at hand.

8.10 Safety principles

As a general rule, all accident prevention measures of professional associations must be observed!

- The machine should only be put into service by trained personnel!
- Exercise caution with regard to rotating abrasive materials!
- Keep items of clothing away from the machine!
- Take care that you do not damage the motor or electrical supply lines!

In addition, any potential sources of danger must be marked on the machine with warning signs and / or captions.

8.11 Special types of danger

The machine must be switched off prior to adjustment and maintenance work (motor off) and protected from unauthorised or accidental re-start. All energy supplies (mechanical, electrical and hydraulic) must be switched off, neutralised and protected so that they cannot be switched on again.

8.12 Dangers due to electrical energy

Only specially qualified personnel may carry out repair and maintenance work on the electrical parts of the machine. Electrical equipment in the machine must be regularly checked and any faults detected must be repaired immediately, e.g. contact faults, external damage to cables or housing etc. Any sections of the electrical system where work is to be carried out must be de-energised beforehand.

Hazards caused by electrical energy may be averted by taking the following precautions:

- Switch off the motor and remove the power supply plug.
- Only allow specially qualified personnel (e.g. personnel from ROBEL Bahnbaumaschinen GmbH) to perform work on the electrical part of the machine.

8.13 Dangers due to heat

The machine must be switched off and left to cool off for at least 30 minutes before working on any heated parts.

8.14 Other dangers – safety devices

- Compression wounds on fingers and hands caused by turning parts and abrasive materials
- Burns on fingers and hands caused by hot parts (abrasive materials and processed rails)
- Permanent damage, especially to hearing, if the appropriate personal noise protection is not continuously worn by the operator
- Eye protection against flyaway abrasive parts

The operator must reinstall the safety devices provided after repair or maintenance work or place them in the position intended by the manufacturer. The operator must wear appropriate clothing; i.e. no long sleeves or parts that can easily get caught up in operating machine parts.

The person appointed by the customer to carry out maintenance work must reinstall safety devices when he/she has finished the work. The basic qualification includes compulsory participation in a training course organised by the manufacturer.

The instructions must be accessible to all participants at all times.

The operator must contribute to the safety of the machine, especially by carrying out regular maintenance according to the available instructions.

8.15 Fire risk

If smouldering fires occur in the electrical equipment, poisonous fumes are released by the charring of cables.

Fire risk due to flyaway hot or burning abrasive grit.

In general, fires that occur should only be abated with powder fire extinguishers.

8.16 Fire protection

- No highly inflammable substances should be on or near the machine!
- Familiarise yourself with the operative fire protection regulations and the use of extinguishing substances in good time. Consult the fire protection representative from your department for this purpose.
- Only nationally prescribed and authorised fire extinguishers (e.g. dry powder extinguishers) from the stipulated fire protection class may be used.
- The fire extinguishers must be periodically checked and given a test label (check the expiry date!).
- A fire extinguisher must be replaced immediately after it has been used.

APPENDIX: EC-DECLARATION OF CONFORMITY

ROBEL

EG-Konformitätserklärung (deutsche Originalfassung)

EC Declaration of Conformity (English translation)
Déclaration „CE" de Conformité (Traduction francaise)

gemäß Maschinen-Richtlinie 2006/42/EG, Anhang II A
as defined by the Machinery Directive 2006/42/EC Annex II A
conformément à la directive „CE" relative aux machines 2006/42/CE, Annexe II A

Hersteller (Name und Anschrift): Manufacturer (name and address): Fabricant (nom et adresse):	ROBEL Bahnbaumaschinen GmbH Industriestraße 31 D-83395 Freilassing
Hiermit erklären wir, dass das Herewith we declare that the model Par la présente, nous déclarons, que le modèle fourni par	Schienen-Trennschleifgerät Typ 13.80
folgenden einschlägigen Bestimmungen entspricht: complies with the following provisions applying to it: correspond aux dispositions pertinentes suivantes:	2006/42/EG
Angewandte harmonisierte Normen: Applied harmonized standards: Normes harmonisées appliquées:	DIN EN 13977: 2011 DIN EN ISO 12100: 2011
Bevollmächtigt für die techn. Dokumentation: Responsible person for technical documentation: Personne chargee pour la documentation technique:	Mag. Bernhard Lair Abt. Technische Dokumentation Industriestraße 31, D-83395 Freilassing
Die benannte Stelle nach Anhang IX: The notified body according to Annex IX: L'organisme habilité conformément à l'Annexe IX:	DGUV Test Prüf- und Zertifizierungsstelle, FB Bauwesen Landsberger Straße 309, 80687 München Notified Body, Nr.: 0515
wurde (wird) eingeschaltet zur: was (is) engaged for: intervient pour:	Freiwilligen Baumusterprüfung voluntary type-examination effectuer l'examen de type volontaire

ROBEL Bahnbaumaschinen GmbH
Industriestraße 31
83395 Freilassing

Freilassing, 2013-01-10 - Geschäftsführer -

Ort, Datum
Place, date / Lieu, date

Unterschrift, Angabe der Funktion im Unternehmen
Signature, acting in the company / Signature, en qualité de

产品说明书

切轨机

类型13.80

（带三相电机，矢量图）

德国 Robel 轨道机械有限公司		Industriestraße 31,	83395 Freilassing
电子邮箱	info@robel.com	Telefon/电话/Téléfone	(08654) 609-0
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印刷时的技术现状编制的。
Robel 保留在进一步发展的基础上进行修改的权利。
尺寸和重量都为近似值。
某些情况下，照片显示的为特殊布局。

ROBEL

目录

附录：欧共体声明

1 技术参数

1.1 驱动电机

三相电机，400 V，50 Hz

2850 1/min下功率	2,7 kW

1.2 切割盘（300Ø）

直径，外径/内径x宽度	300/22.2x3 mm
砂轮（磨轮）的最大允许转速	5090 revs/min
最大允许圆周速度	80 m/s
重量	0.5 kg

1.3 切割盘（350Ø）

直径，外径/内径 x宽度	350/22.2x3 mm
砂轮的转速	5090 revs/min
最大允许圆周速度	100 m/s
重量	0.8 kg

1.4 尺寸

轨道砂轮切割机（无切割盘）

长度	675 mm
深度	360 mm
高度	380 mm

导向架

长度	550 mm
深度	350 mm
高度	310 mm

1.5 重量

轨道砂轮切割机（无切割盘）	29.5 kg
导向架	12 kg

1.6 安全闭锁楔装置（如订购）

长度	180 mm
深度	200 mm
高度	40 mm
重量	1.5 kg

2 安全

2.1 一般危险

该机器的构造和建造是为了在不使用冷却液的情况下，以一个精确的直角切割钢轨，并且只能用于此目的。机器上的防护装置符合现行的安全规程，在使用过程中必须持续安装。作业时必须佩带人身防护设备！

欲知详情，请参阅附录A。

2.2 危险信息

下列所有信息和说明都是为了保护操作人员的人身安全和身体健康，以防危险，并保护操作机器的公司资产不受损害。现有说明书一贯使用某些术语来区分危险的类型以及不遵守说明预期产生的后果的严重程度。具体如下：

危险，表示不遵守使用说明书可能导致操作人员死亡或严重受伤，或对作业公司的资产造成相当大的损害。

小心，表示不遵守说明书可能会对操作人员造成伤害或对作业公司的资产造成损害。

信息包含关于设备及其操作，或关于现有部分说明书的重要信息。

2.3 急救

始终确保提供适当的急救设备。

向您所在地的医疗服务机构或医生咨询 “急救” 措施和适当的设备。

2.4 砂轮切割机

CAUTION
小心

使用产品进行材料切割、打磨、钻孔、砂磨或成型作业会产生可能含有有害化学物质的粉尘和蒸气。了解作业的材料的性质，并佩戴适当的防尘口罩或呼吸防护装置。

- 在启动机器之前，一定要检查砂轮保护装置是否安装正确。
- 确保衣服或身体任何部位都不与切割刀片接触。
- 在没有安装切割臂或切割头的情况下，不要启动本动力切割器。否则离合器会松动，造成人身伤害。
- 确保你和机器都站稳，切割刀片自由旋转。
- 确保作业区域内没有未经授权的人员。

严格禁止徒手使用和手动引导使用。

- 此切轨机13.80必须与导向架一起使用。

2.5 人身防护设备

- 必须遵守基本的健康与安全要求。

- 戴防护头盔。
- 戴眼睛防护装置！
- 理想情况是，配备一个聚碳酸酯（安全玻璃）、下拉式遮阳板，将之牢固固定到保护头盔上；起码应配备认可的安全眼镜（四面都密闭）。
- 佩戴合适的防高频声音的耳防护装置。
- 穿钢顶工作鞋。
- 穿小腿和手臂处紧身的衣服！

3 机器简介

3.1 指定用途

该机器的构造和建造是为了在不使用冷却液的情况下，以一个精确的直角切割轨道，并且只能用于此目的。

砂轮切割机和导向架是用钢印字母（机器编号）相互分配的。

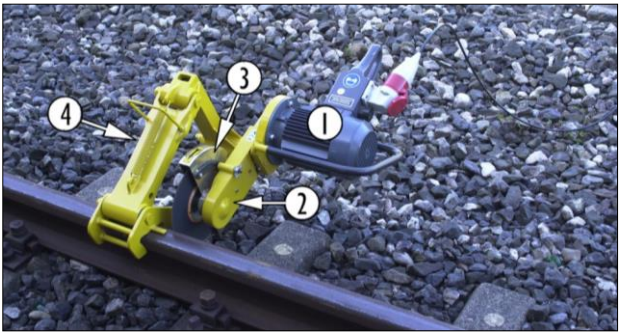
3.2 可预见的误用

禁止徒手切割！

切轨机13.80只能与导向架配合使用。

3.3 组件

该ROBEL 13.80切轨机由砂轮切割机和固定在轨道上的导向架组成。



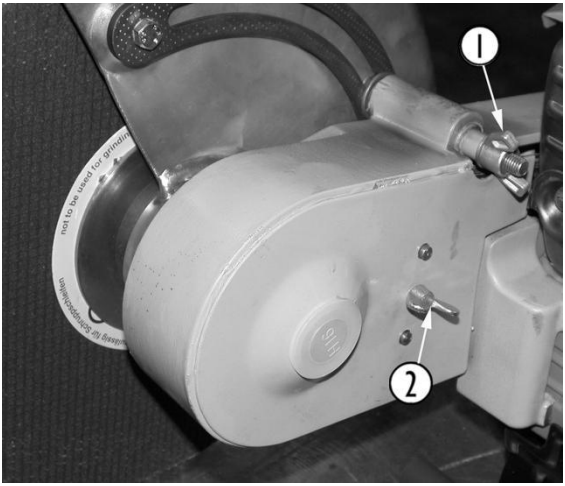
1 电机（如上面的矢量图所示）

2 轴承臂

3 防护装置

4 导向架

3.4 正视图

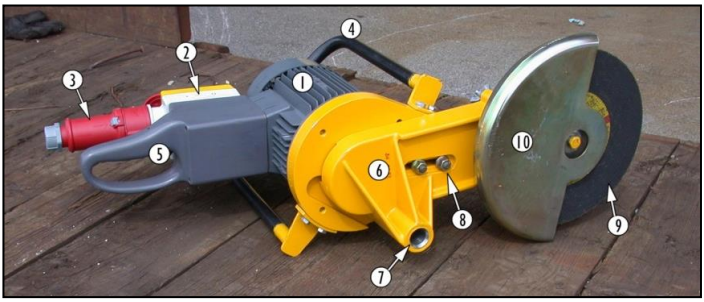


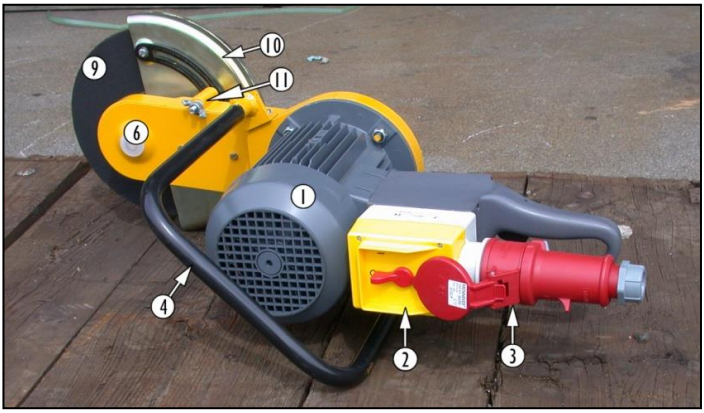
1 砂轮保护用调整螺钉

2 护盖用翼形螺母

3.5 砂轮切割机

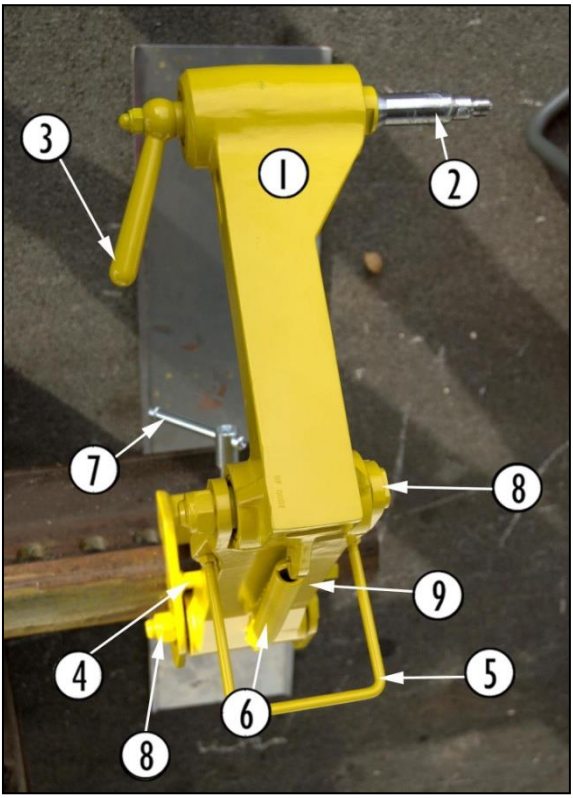
可互换的切割盘由三相电机通过风扇皮带驱动。





1 电机
2 安全开关
3 插头
4 前手柄（电机）
5 手柄（右手握）
6 轴承臂
7 导向架附件
8 电机紧固螺钉/分离臂
9 切割盘
10 砂轮保护装置
11 砂轮防护用调整螺钉

3.5.1 导向架



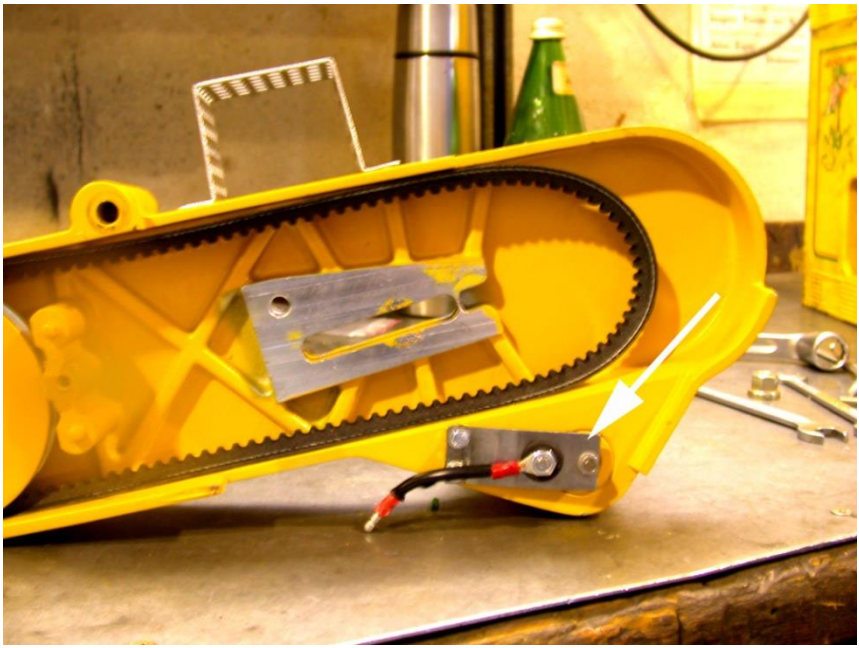
1 上导向臂
2 锁紧轴（旋转）
3 螺钉手把
4 夹紧脚
5 提手
6 弹簧
7 贯头螺钉
8 导向接头
9 下导向臂

导向架由上导向臂和下导向臂组成，下导向臂通过滚珠轴承与铰链连接。下导向臂依次通过铰链与夹紧脚连接。所述上、下导向臂可通过两个导向接头再利用轨道两侧的砂轮切割机进行导向。。

该导向架设计坚固，即使切割盘磨损，也能实现轨道完全分离，无需要中断作业，也无需拆卸该装置。

弹簧保证了砂轮切割机的平衡。

3.6 发动机 -自动断电装置（可选）

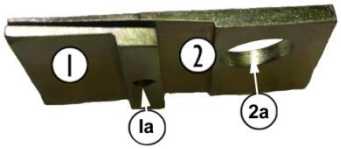


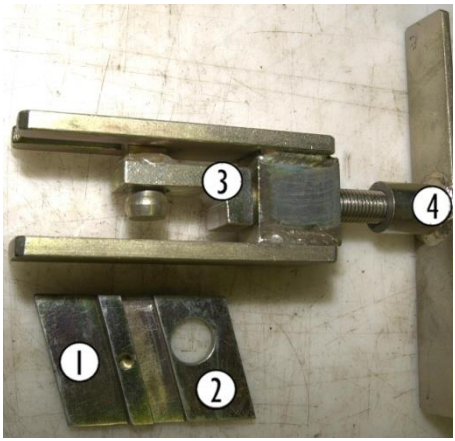
如果切轨机没有固定在导向架上，发动机自动断电装置就会关闭发动机或阻止发动机启动。

一旦锁定轴插入并拧紧，就会形成电气接触。只有这样，切轨机才能启动。一旦拆下锁定轴，接触就会断开 - 切轨机就无法再启动了。

3.7 安全闭锁楔装置（13.81）

（如订购）





1	闭锁楔	1a	闭锁楔锁定孔
2	牵引楔	2a	牵引楔锁定孔
3	牵引机构		
4	T形手柄		

安全闭锁楔装置，配合砂轮切割器，可安全地防止由于轴向推力引起的轨道应力而造成切割盘堵塞。

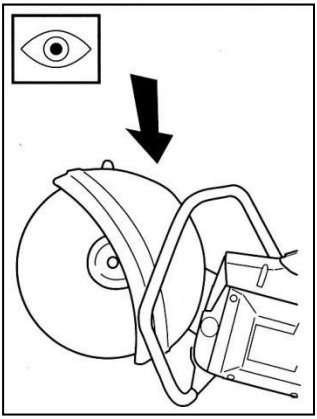
在部分切断的轨底的分型线上插入两个特殊的楔，并且在它们的表面平行的情况下将它们互相楔住。

轨道被切断后，必须用一个轻的、易于操作的带螺旋轴的牵引装置来拆卸楔。

这些特殊的楔也可通过其较大的平行受压面积防止轨底变形。

这个压力可高达700 kN（70 t）。

3.8 切割盘砂轮保护装置



CAUTION
小心

有受伤的风险！

- 在启动机器之前，一定要检查砂轮保护装置是否安装正确。

该保护装置安装在切割盘上，防止分离过程中碎片溅向使用者。

此页留空。

4 操作条件

安装高度高达海平面以上100米处，以及-20°C至最高+70°C（电机温度）范围内功率损耗最小。

CAUTION
小心

有损坏的风险！

- 过度的太阳辐射可能会使机器过热到 +70°C以上。外壳变形会危及电气安全。

4.1 储存

存储切割机的温度范围为 -20°C至 +70°C。储存区域必须干燥无尘。

- 将砂轮切割机存放在可上锁的房间里，以免儿童或未经授权的人接触。
- 不要用安装好的切割盘储存或运输砂轮切割机。

砂轮和切断轮的贮存

- 将砂轮储存在适当的架子或容器中，一方面不会损坏砂轮，另一方面可以很容易地卸下砂轮而不需要重新放置。
- 应先使用旧的存货。
- 请注意以下几点：
  - 将砂轮存放在干燥无霜的地方。
  - 将切断轮存放在无中间衬垫的平坦支架上，并用钢板或铸铁板将其压住。
  - 利用柔软的中间衬垫堆放筒状砂轮。
  - 将高的和直的砂轮以垂直位置存放，并防止它们滚动。
  - 将小砂轮存放在适当的容器中。

正确储存，砂轮的保质期为3-5年（见标签上的到期日）。

4.2 运输

切割机的运输温度范围为-20℃至+70℃。如切割机妥善捆缚并装在其原包装里，则可以在所有的运输路线上运输，且不会引起任何损害事故。

5 启动

5.1 人身防护设备

必须遵守基本的健康和安全要求！

- 戴防护头盔和眼睛保护装置！
- 佩戴适合高频声音的听力保护装置！
- 穿用钢加固的安全靴！
- 穿小腿和手臂处紧身的衣服！

5.2 检查

- 使用机器之前，必须对作业资源进行必要的检查和补充。
- 检查电缆及连接是否紧密，是否完好无损（目视检查）。
- 检查切割盘是否牢固固定（手动检查）！

危险！

- 使用连接孔直径为英寸的切割盘时，相应的配接环必须与固定环一起安装！
- 切割盘松动是非常危险的！
- 切勿使用掉在地上的切割盘。
- 不要使用有故障的保护罩或安装不正确的保护罩

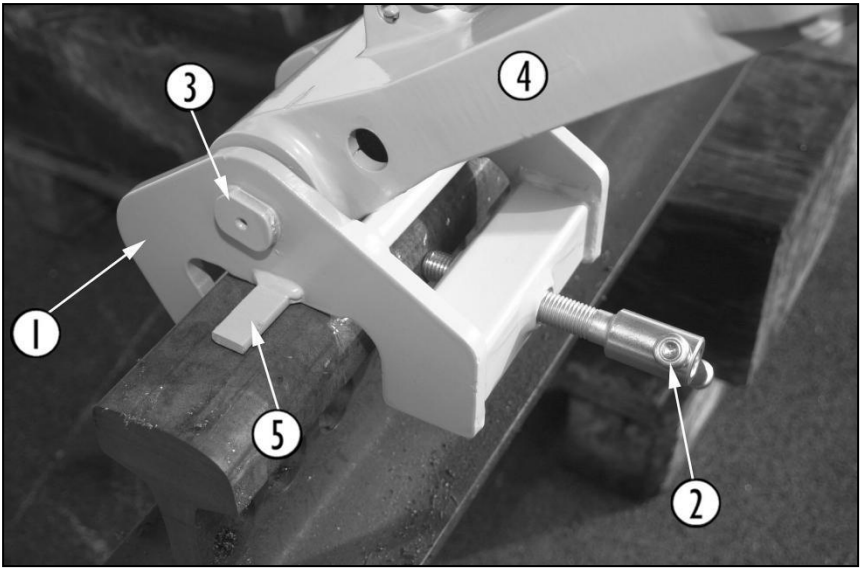
目视检查：

- 检查切割盘是否有裂纹或其他损伤（空洞）以及直径是否恰当。

- 确保安全装置安装正确，没有损坏，切割盘的传动皮带没有损坏，并有足够的张力。
- 在任何情况下都不得使用有缺陷的砂轮保护装置或没有正确安装的砂轮保护装置。
- 确保导向架的接头可以自由移动（可以很容易地手动折叠，且螺纹运行良好）。
- 贯头螺钉必须能自由转动。

也请参阅维护章节。

5.3 导向架定置



1 夹紧脚

2 贯头螺钉

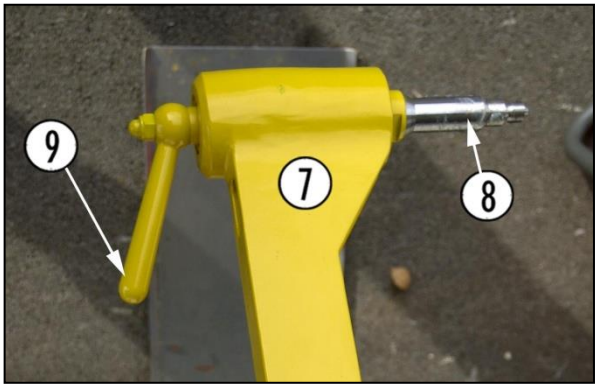
3 导向接头

4 下导向臂

5 测距规

- 将夹紧脚（1）放在轨道上，使测距规（5）正好落在标记的切割点上。
- 用贯头螺丝（2）将夹紧脚牢牢地固定在轨道上。

5.4 用主轴固定砂轮



将导向架牢固地固定在轨道上之后，砂轮切割机通过将锁紧主轴夹紧在配件（10）上，并用螺钉手把（9，顺时针转动）将其拧紧来固定。

5.5 启动发动机

危险！

- 只有正确地将导向架固定在轨道上并正确地将切轨机固定在导向架上才能启动发动机

严禁徒手使用和手动导向使用。

- 切轨机13.80必须与导向架一起使用。

5.5.1 前提条件

危险！

- **切勿覆盖电机。**
- **过热危险！**

电机一转动，砂轮就转动

- 通过插头连接外部电源。

5.5.2 电机起动

- 将主开关切换到 “ON” （I）。

5.5.3 电机停机

把主开关转至 “OFF” （O）。

把电源线从插座上拉出。

危险！

- 为安全起见，机器使用后必须切断电源，以防止未经许可的人操作机器（有发生事故的危险）。
- 机器必须正确关闭，以避免损坏电气部件或整个机器（冲击）。（在水平位置关闭；用楔子固定以防止滚动。）
- 如果由于环境的影响，电气部件出现了缺陷（外壳缺陷、电缆被扯掉等），则必须更换这些部件，以确保它们可以持续安全的使用。
- **有关附加安全规则，请参阅原始的外部说明书和EN规范。**

5.6 测试运行

有意外事故的风险！

- 第一次使用时和更换打磨工具时，必须正确设置打磨机。启动发动机。
- 然后将打磨机定位，使打磨工具能够自由转动，不受阻碍。
- 确保打磨工具断裂时，其他人不会有受伤的危险。
- **在考虑所有的安全预防措施的前提下逐渐加油门，以最高速度进行至少一分钟测试运行。**
- 如果打磨工具不能自由转动，则必须立即关闭切割机。
- 只有在打磨工具能够自由移动的情况下才使用该装置（没有摆动，没有非球面运动，没有打磨噪声）。
- 如果出现上述任何一种情况，确定原因，然后采取补救措施。并重复测试运行

5.7 砂轮切割

危险！

- 只有正确地将导向架固定在轨道上，正确地将切轨机固定在导向架上，电机才能启动！

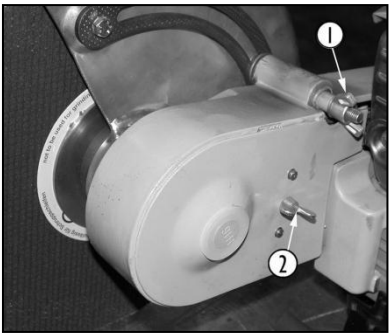
严禁徒手使用和人工导向使用。

- 切轨机13.80必须与导向架一起使用。

火花飞溅的危险！

切轨机的安全间隙为15米。

- 确保作业区域内没有人和动物。开始切割前作业区域必须清场！



- 用翼形螺母（1）调整保护罩，使其在导向段的出口处容易移动。

有意外事故的风险！

- 必须始终装有切割盘保护装置。
- 执行一次测试运行（参见第5.6章）。

- 必须调整保护装置，以便其后面部分靠近作业部位。

切割颗粒物和火花因此被保护装置拦截并远离操作人员。

- 按照安全规程定置该设备。

右手握住手把（油门手柄），左手握住油门拱。

矢量图（汽油发动机）！

5.7.1 砂轮切割程序

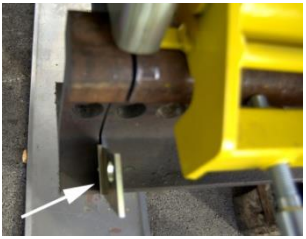
- 电机必须以最高速度持续运转。
- 切勿突然启动切割程序，但切割机必须与轨道保持垂直并来回摆动。
- 当适当的接触压力达到电机的性能极限时，即在转速下降之前，可实现经济的切割。
- 必须用同一个切割盘进行切割！（一个新的切割盘会因为宽度未使用而阻塞！）
- 利用保护罩跟踪切割过程，以确保最佳的火花保护！
- 利用从上到下的振荡运动切断轨头。

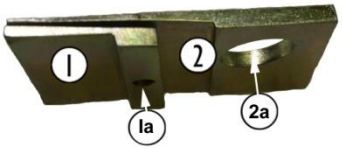
如果轨道无法与一侧分离（如果磨轮磨损或轨道较大），将导向架转向轨道的另一侧，从而实现导轨与另一侧完全分离。

因此，不需要调整导向装置，就可以一次分离钢轨。

矢量图（汽油发动机）！

5.7.2 安全闭锁楔装置的使用

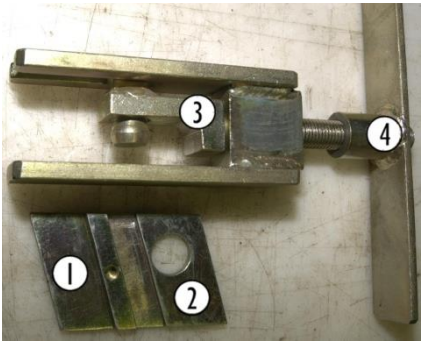




首先用手将闭锁楔（1）尽可能深地插入到一侧分离的轨底，然后将牵引楔（2）-如右上图所示 - 通过锤击推入和楔入。

之后，通过将切割头倒置来切割轨道的另一半。

如果已被切断的钢轨端部有较大的受压力，则必须使用安全闭锁楔装置的牵引机构。



将T型手柄（4）向上翻转至螺纹的远端，然后将可自由移动的牵引机构（3）与螺栓一起放置在牵引楔（2a）的锁紧孔中，并将牵引装置放置在轨底上。通过顺时针旋转T形手柄（4）来拉动牵引楔（2）。

放松轨道压力之后，也可以用一个挂钩来拉动闭锁楔（1）。

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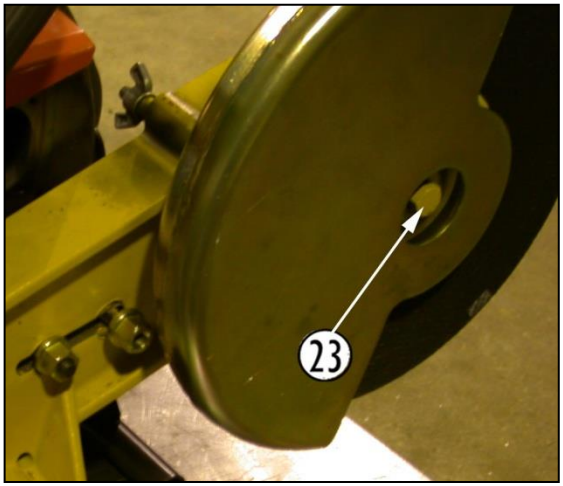
6 保养维护

- 请始终使用规定的润滑剂，并在维修时使用原装零件。这一方面对保证有效性很重要，另一方面对提高切割机的操作安全性也很重要。

如果备件订购正确，这将极大促进备件的快速交付，从而提高机器的经济效益。

- 订购备件时，请提供以下资料：
  - 机器类型
  - 机器编号
  - 施工单位
  - 描述及备件品号
  - 工件号
  - 装运方式
  - 发货地址
- 遵守规定的维护间隔周期！

6.1 更换砂轮



- **通过顺时针旋转松开螺钉（23）（左旋螺纹！）**
- 背面的螺母是用扳手夹住的。拆下螺钉后，便可拆卸下砂轮。
- 插入新的磨盘，这样夹紧垫就会停在砂轮的前面和后面。
- 用一块木头轻轻敲击砂轮来对其进行检查。如果砂轮没有发出共振、悦耳的声音，则表明砂轮已损坏，必须更换新的砂轮。
- 通过钻孔插入螺钉，将螺钉拧紧，螺母在背面（**逆时针方向**）。

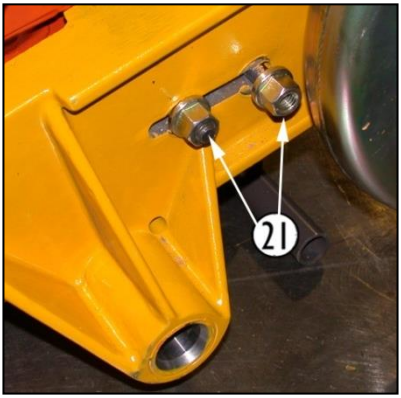
⇒ 在砂轮切割过程中，螺钉会自动拧紧。

- 进行一次测试运行（参见第20页）。

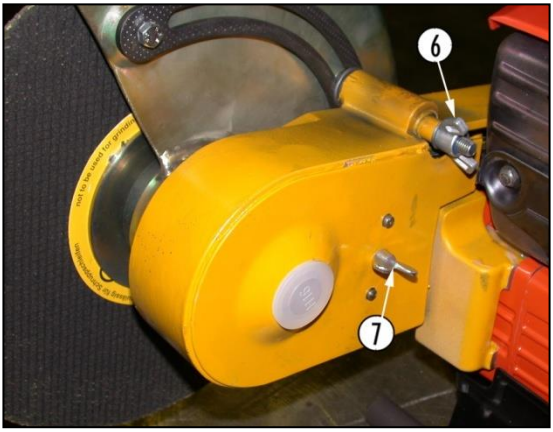
6.2 重新调整皮带张力/更换皮带

机器是新的时，每次安装了新的皮带时，以及使用了大约5个砂轮之后，必须重新紧固风扇皮带。

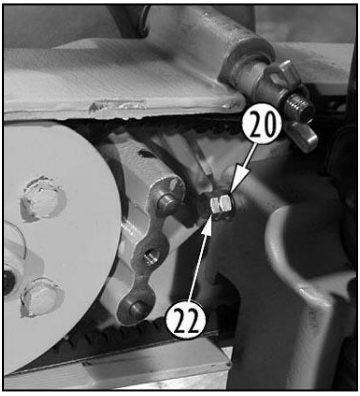
（如果用手指将风扇皮带牢固地压在中间，则不可将其挤压超过约7毫米）。



- 通过逆时针旋转来松开两个螺钉（21）。



- 旋下翼形螺母（7）；拆下护盖。



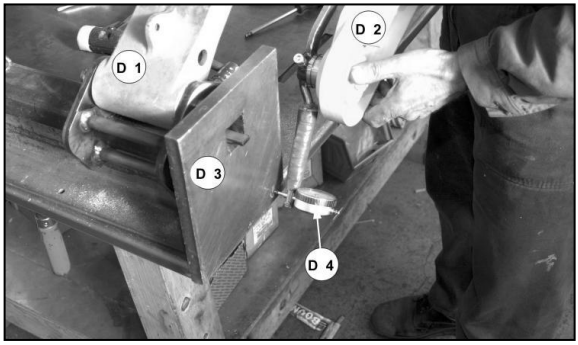
逆时针旋转螺钉（20）=扇形皮带拉紧

顺时针 =风扇皮带放松

- 设定风扇皮带张力后，拧紧（22）上的埋头螺母！

6.3 调整切割线

为了防止砂轮在切割过程中在分型线处发生弯曲，在大约150 x 150 mm²的表面区域内，借助千分表将带机壳的导向架的精度设置为0.1毫米的切割平行度。



D1 导向架

D2 机壳

D3 试验板

D4 千分表

6.4 维护计划表

6.4.1 日常维护

1. 检查传动带皮的张力。
2. 检查切割刀片的状况。
3. 检查刀片护罩的状况。
4. 检查所有螺母和螺栓是否正确紧固。

6.4.2 月度维护

- 检查所有电缆和连接。

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7 附录A

电气部件是绝缘的，不受飞溅的水和灰尘的影响，并且免维护，这也适用于三相电机（根据VDE指南达到IP54的安全等级）。

危险！

如果电机往错误的方向旋转，则必须由电工来修理！

- 损坏装置的电机只能由客户服务人员或电工来维修！

7.1 电气驱动装置的安全标准

安全等级	防触防尘	防水
IP 54	全面保护非活动部件和内部活动部件不受应力接触。防止有害的灰尘沉积损坏。	水从任何方向喷到机器上都不会造成损害。
IP55	并没有被完全阻止灰尘进入，但是进入量并没有达到机器不能正常运转的程度。	从容器中流出的水流，从任何方向流向机器，都不会造成损害。
IP56		持续性泛滥的水，如大浪等，不应以破坏性数量进入机器。

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8 附录B

8.1 应用领域

切轨机的构造和建造是为了在不使用冷却液的情况下，以一个精确的直角切割轨道，并且只能用于此目的。

8.2 责任免除

制造商声明，如果机器被用于任何其他用途，而不是按照指定的用途（见应用范围）使用，则不承担任何损害责任。如果机器在没有防护措施的情况下操作，也属此范畴。

上文指定用途以外的任何用途均视为非指定用途，会危及操作和维护人员的生命安全，以及作业公司的财产。如果下列情况发生，该装置的制造商对作业公司或第三方的人身伤害或财产损失不承担任何责任：

- 未按预定用途使用此机器，
- 操作和维护人员没有阅读或理解有效说明书，并已将该装置用于其他用途，
- 操作和维护人员不具备足够的资格（见8.8点），或者在超过规定限值的条件下操作机器，
- 在规定的时间间隔内未按规定对机器进行保养。

这些对人身伤害或物质财产损害的责任豁免并不影响其他免除责任的依据。

8.3 版权

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8.4 一般规定

一般情况下，使用本机器必须遵守适用法律要求并采取事故预防措施。如未遵守，由此产生的任何法律后果均由机器操作人员承担。

如果适用于机器使用的现行法规与制造商或分包商的规范之间存在差异，则最严格的限制规定适用。

买方必须提供一切必要的机械、设备和材料资源，以便将交付的产品投入运行并培训员工。此外还必须提供无限制、安全和足够长的轨道和作业区段，使工作人员能够学习如何操作和使用交付的产品并进行实操训练。

德国Robel轨道机械有限公司及其客户服务部门乐于提供进一步的建议、培训或其他咨询服务。更多细节和条件可另行约定。

8.5 验收、设备及经营许可证

买方负责检查所购货物是否按照规定和约定的规格配备，其状态、作业能力，特别是安全性能是否符合本规定；买方有责任按照合同约定对所购货物进行验收。

买方必须在采购的物项中安装相应操作和安全法规、规范、法定要求或其他规例规定的所有设备。

采购物项的交付只包括德国法律规定的设备，除非达成了其他协议。

买方还有责任就采购物项提交主管机关要求的文件，以便获得经营许可证。获得经营许可证必需的文件（简介、证明、证书等）有哪些，是制造商提供还是供应商提供，必须在销售合同中加以规定和约定。

买方须支付为取得任何额外经营许可证而可能需要采取的任何其他措施的费用。

8.6 安全规程

操作机器时，必须优先考虑保护生命、健康、物质财产和环境的必要要求！

- 在启动机器之前，请确保您能证明所有受影响的人员都已了解所有相关信息：
  - 国家法定安全条例
  - 相应建筑守则及工程规则的条文，
  - 相应专业和行业协会的规定，
  - 国家工业和环境安全条例以及许可条例
  - 公司内部规章制度以及
  - 其他适用规例，

此外还包括机器和安装于其中的设备的制造商安全与操作规程。

必要时，负责机器操作的部门必须针对机器的特殊作业制定补充规定和措施，以确保满足所有附加安全要求。

我们要求您在上述信息之外特别注意与机器相关的下列安全规程并确保遵守这些规程。

8.7 机器的保护和使用

- 保护机器，以防止未经授权的人员启动或使用其设施或设备。
- 这台机器只有在必要时才能启动和使用
- 已经具备了安全运行的条件。

8.8 本说明书的阅读对象

本说明书包含按照规定使用其中所描述的机器必需的信息。

本说明书是专门为技术上合格的人员编写的。从这个意义上说，合格的人员包括：

- 已证明其适合操作该装置的人，不论是根据证书还是经验，
- 熟悉此类装置的安全概念的人员；
- 受过专业培训，负责修理此类机械的维修和服务人员。

只有能够阅读和理解所提供的说明书的人才可以在机器上工作。他们必须已经阅读并理解了该说明书，并已签名确认。只有在考虑到以下情况并严格遵守以下规定的情况下，才可以使用、维护和操作本产品：相应铁路及部门的有效作业和安全规程、正式条例，特别是安全、工业与环境保护、操作、维护和安全方面的规定或者制造商或供应商规定的其他规则。

8.9 事故预防

基本的健康与安全要求也适用于本说明书。

熟悉与机器特定活动区域相关的潜在危险，并确保在启动机器前接受适当的培训。

- 在开机前检查机器是否处于正常工作状态，例如：
  - 确保设备、装置、工具、附件和安全设备等齐备且完好。
  - 确保维修和维护工作及时、专业地进行。
  - 确保操作材料已经加满或足够（燃料、润滑剂和工作材料等）。）。
  - 确保自己和他人以及财产和环境无风险操作的所有先决条件都已得到满足。

- 注意机器和你的作业区域所造成的特殊危险，特别是：
  - 人与障碍
  - 遵守安全距离
  - 在相邻的轨道上工作
  - 所有安全装置的安全安装
  - 履行一切必要的作业保护措施。
  - 只使用工作正常的工具和用具。

泄漏的操作物料（机油、油脂等）必须立即清除，以防止滑倒和起火危险。手边常备适当的油封和清洗剂。

8.10 安全准则

作为一般规则，专业协会的所有事故预防措施都必须遵守！

- 这台机器只有受过培训的人才能使用！
- 使用旋转打磨材料时要格外小心！
- 衣物不得接触到机器！
- 注意不要损坏电机或供电线路！

此外，任何潜在的危险源都必须在机器上标明警告标志和/或说明。

8.11 特殊危险类型

调整和维护工作（电机关闭）之前，必须关闭机器，并防止未经许可或意外重新启动。所有的能源供应（机械、电气和液压）都必须关闭、中和及保护，这样它们就不能再开启。

8.12 电能引起的危险

只有具备专门资质的人员才能对机器的电气部分进行维修和保养工作。机器内的电气设备必须定期检查，发现任何故障必须立即修理，如接触故障、电缆或外壳的外部损坏等。电气系统中任何要进行作业的部分都必须事先去能。

采取下列预防措施可避免电能引起的危险：

- 关掉电机并拆下电源插头。
- 只允许有专门资质的人员（例如：Robel公司人员）负责机器电气部分的工作。

8.13 热引起的危险

机器必须关掉并冷却至少30分钟，然后才能在受热部件上作业。

8.14 其他危险——安全装置

- 转动部件和打磨材料造成的手指和手的挤压伤
- 手指和手被热部件（打磨材料和加工过的轨道）灼伤
- 如果操作者没有持续佩戴适当的个人噪音防护装置，会对人造成永久性损害，尤其是对听力
- 防飞溅磨具零件的眼睛防护装置

修理或维护工作后操作人员必须重新配装提供的安全装置，或将其放置在制造商指定的位置。操作人员必须穿合身的衣服，不能穿长袖或容易被机器部件缠住的衣服。

客户指定的进行维护工作的人员必须在完成工作后重新安装安全装置。基本资格包括强制参加由制造商组织的培训课程。

所有参与人员都必须随时可查阅本说明书。

操作人员必须尽力确保机器安全，特别是按照现有的说明书定期进行维护保养。

8.15 火灾风险

如果电气设备发生焖火，烧焦电缆会释放出有毒烟气。

由于飞走的热的或燃烧的磨料而引起的火灾危险。

发热或燃烧的磨砂飞溅而引起的火灾风险。

8.16 防火

- 机器上或机器附近不得有高度易燃物质！
- 熟知有效防火规定，及时使用灭火物质。详情请咨询你所在部门的消防代表。
- 只有国家规定和认可且达到规定的防火等级的灭火器（例如干粉灭火器）才可以使用。
- 灭火器必须定期检查并贴上测试标签（检查有效期！）。
- 灭火器使用后必须立即更换。

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附录：欧共体声明

ROBEL

EG-Konformitätserklärung (deutsche Originalfassung)
EC Declaration of Conformity (English translation)
Déclaration „CE" de Conformité (Traduction francaise)

gemäß Maschinen-Richtlinie 2006/42/EG, Anhang II A
as defined by the Machinery Directive 2006/42/EC Annex II A
conformément à la directive „CE" relative aux machines 2006/42/CE, Annexe II A

Hersteller (Name und Anschrift): Manufacturer (name and address): Fabricant (nom et adresse):	ROBEL Bahnbaumaschinen GmbH Industriestraße 31 D-83395 Freilassing
Hiermit erklären wir, dass das Herewith we declare that the model Par la présente, nous déclarons, que le modèle fourni par	Schienen-Trennschleifgerät Typ 13.80
folgenden einschlägigen Bestimmungen entspricht: complies with the following provisions applying to it: correspond aux dispositions pertinentes suivantes:	2006/42/EG
Angewandte harmonisierte Normen: Applied harmonized standards: Normes harmonisées appliquées:	DIN EN 13977: 2011 DIN EN ISO 12100: 2011
Bevollmächtigt für die techn. Dokumentation: Responsible person for technical documentation: Personne chargee pour la documentation technique:	Mag. Bernhard Lair Abt. Technische Dokumentation Industriestraße 31, D-83395 Freilassing
Die benannte Stelle nach Anhang IX: The notified body according to Annex IX: L'organisme habilité conformément à l'Annexe IX:	DGUV Test Prüf- und Zertifizierungsstelle, FB Bauwesen Landsberger Straße 309, 80687 München Notified Body, Nr.: 0515
wurde (wird) eingeschaltet zur: was (is) engaged for: intervient pour:	Freiwilligen Baumusterprüfung voluntary type-examination effectuer l'examen de type volontaire

Freilassing, 2013-01-10

- Geschäftsführer -

Industriestraße 31
83395 Freilassing

Ort, Datum
Place, date / Lieu, date

Unterschrift, Angabe der Funktion im Unternehmen
Signature, acting in the company / Signature, en qualité de