



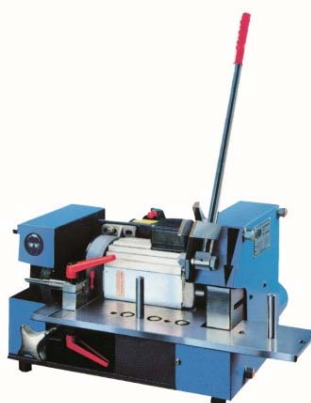
The best Return on Investment

Maschinen zur Herstellung von Schlauchleitungen
Machines for the production of hose assemblies



OPERATING MANUAL

- EM 1
- EM 2
- EM 3.2 Ecoline / EM 3.3 / EM 3.4 DC
- EM 6 Ecoline



Technical Details subject to change

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EN

CE Declaration of Conformity

within the meaning of Directive Machines 2006/42/EEC.

The following machine

EM 1

EM 2

EM 3.2 Ecoline / EM 3.3 / EM 3.4 DC

EM 6 Ecoline

was developed, designed and manufactured in accordance with Directive 2006/42/EC under the sole responsibility of

Company	UNIFLEX - Hydraulik GmbH Robert-Bosch-Straße 50 - 52 D - 61184 Karben
Documentation officer	Carsten Baumgartner

The following standards, directives and specifications were applied:

- EG-Richtlinie 2006/42/EG - Directive 2006/42/EEC
- EG-Richtlinie 2014/35/EU - CE Directive 2014/35/EU
- EMV Richtlinie 2004/108/EG - EMC Directive 2004/108/EEC
- EN ISO 12100: 2010
- EN 60204: 2006

If the machine is changed in any way without consulting us beforehand or if any non-tested and non-accepted outside parts are used, this declaration shall lose its validity.

Complete technical documentation is available.

This Operating Manual of the machine is a translation; the original version is in German.

Karben, 29. June 2015

Place, Date



Signature

Geschäftsführer / Gérant

Function of the signee

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Copyright

The copyright for this operating manual rests with the company UNIFLEX-Hydraulic GmbH. This operating manual is meant for the owner / operator of the machine. It contains regulations and notes that may not be copied in part or as a whole or distributed in any way. Noncompliance may have legal consequences.

General information regarding the operating instructions

This operating manual forms part of the scope of delivery of your UNIFLEX cutting and skiving machine and it is intended for the user and maintenance / service staff.

The manual describes how the function of the machine, provides information on hazards that may arise during its operation, contains detailed information on how to operate the machine, and describes the steps necessary for servicing and checking the accuracy of the cutting and skiving machine. Even if you have attended a training course for operating this machine, please read these operating instructions completely before starting up the machine.

By signing your name on the last page >Appendix<, you confirm that you have read completely and understood this Operating Manual. The owner of the machine shall be obliged to only let such persons operate and carry out maintenance work on the cutting and skiving machine, who satisfy the above-mentioned prerequisite.

Safety and accident prevention

This cutting and skiving machine is a state-of-the-art machine and it is safe to use. Nonetheless, certain rules have to be observed to minimize the risk of injuries and protect the machine.

Please pay particular attention to Chapter 2 >Safety< in these operating instructions.

Pictograms



This pictogram indicates texts providing useful information on the application of the machine and how it can be handled and used optimally.



This symbol points out critical points, which can lead to damage of the machine, incorrect functioning, or faulty production.



This symbol points out hazards to life and health as well as risks of injuries.



This symbol refers to hazards arising during the work process.



Warning:

Serious accidents may occur, if the machine is handled incorrect.

The cutting and brushing machine is built with up-to-date technology and is functioning safely when operated correctly. However, there are some regulations which limit the risk of damages for the operator, third persons or the machine.

General Security notes

These operating instructions contain the most important information needed to operate the cutting and brushing machine safely. These instructions, particularly the safety information, have to be observed by all persons operating the machine. Furthermore, all rules and regulations regarding the prevention of accidents, which are applicable at the place of use, have to be observed.

The owner undertakes to:

- only let such persons work at the machine who are familiar with the basic regulations on work safety and accident prevention,
- have been instructed in the operation of the UNIFLEX machine, and
- have read and understood the operating instructions and have confirmed this with their signature on the last page.

The owner shall check at regular intervals whether the personnel is operating the machine according to the safety regulations.

Obligations of the personnel

All persons authorized to work at this Uniflex cutting and brushing machine are obliged to observe the basic regulations on work safety and accident prevention, to read the operating instructions and to confirm with their signature on the last page that they have understood the instructions.

Hazards when operating the machine

This machine has been constructed according to state-of-the-art engineering and acknowledged safety regulations. Nonetheless, dangers can arise for the operator or third persons, or the machine and/or other property can be damaged during operation of the machine. The machine may only be used:

- for its proper purpose and intended use,
- when it is in perfect and safe working order.
- Any faults have to be remedied immediately.

Usage to the intended purpose

This UNIFLEX machine is designed only for cutting and brushing hydraulic hoses. Any other usage or any usage exceeding the tasks described above shall not be considered usage to the intended purpose. Operating the machine in a potentially explosive atmosphere is prohibited.

Usage to the intended purpose also includes the following:

- observance of all information and instructions provided in the operating instructions and
- observance of the inspection and maintenance work.



Other types of application shall only be permissible following prior consultation with the manufacturer!

Warranty and liability

As a rule our "General Terms and Conditions of Sale and Delivery" shall apply. These will have been made available to the buyer at the latest when the purchase agreement was concluded. Warranty and liability claims for injuries to persons and/or damage to property shall be excluded if such claims can be attributed to one or several of the causes listed below:

- Improper use of the machine, i.e. not to the intended purpose.
- Improper assembly, start up, operation and/or maintenance/repair of the machine.
- Operation of the machine without the protective coverings being mounted correctly.
- Non-observance of the information concerning the transport, storage, assembly, start up, operation and maintenance of the machine provided in the operating manual.
- Unauthorized constructional changes on the machine.
- Unauthorized modification of programs that affect the control of the machine.
- Inadequate inspection of wearing parts.
- Incorrectly performed repair work.
- Emergencies due to external causes and/or force majeure.

We grant a warranty of 12 months on our machines, valid from the passing of liability. A condition for this is that enclosed UNIFLEX-accessories or by UNIFLEX tested and approved material is being used and the operation is done in accordance to this manual.

Informal safety measures

The instruction manual is to be kept together with the machine at all times. General as well as local regulations for accident prevention and environmental protection are to be displayed and adhered to in addition to the instruction manual. All security and danger notes on the machine are to be kept in a readable condition.

Training of the personnel

Only adequately trained and instructed personnel should be authorized to work at the machine. The responsibilities of the personnel as to the assembly, start up, operation, maintenance and repair of the machine should be clearly defined. Personnel undergoing training should only work at the machine under the supervision of an experienced person.

Control of the hose cutting and skiving machine



Under no circumstances may the control system be modified in any way!

Safety measures for normal operation

The machine must only be operated when all protective coverings have been mounted correctly. Prior to switching on the machine it must be certain that no-one can be injured or endangered by the starting machine. Inspect the outside of the machine at least once during every shift to check for any damages. After finishing working with the machine switch it off on the main switch.

Hazards caused by electrical energy

Only qualified electricians should carry out work on the electric power supply. The electrical components of the machine need to be checked at regular intervals. Any loose connections and damaged cables should be repaired immediately. The housing must always be kept closed. Access should only be permitted to authorized personnel.



Warning:

If work on live parts of the machine is required, a second individual shall be present to operate the machine Power switch in case of emergency.

Maintenance and servicing, trouble-shooting

Carry out prescribed maintenance work on time. Inform operating personnel before you begin with the maintenance and servicing work. Always make sure that the machine is off circuit when any maintenance, inspection or repair work is to be carried out and that the main switch cannot be switched on unintendedly (i.e. by securing it accordingly). Put up a warning sign prohibiting any third persons from starting up the machine. Make sure that all connections are firmly tightened. Mount all protective and safety guards again as soon as the maintenance work has been completed.

Constructional modifications of the machine

The hose skiving machine may not be modified and no parts may be built on or modified without the manufacturer's approval. Any modifications need to be confirmed in writing by UNIFLEX-Hydraulik GmbH. Any parts that are not in perfect working order should be replaced immediately. Only original spare parts and wearing parts should be used. It cannot be guaranteed that other parts are designed and manufactured in such a way that they will meet the safety requirements.

Cleaning the machine and waste disposal

All substances and materials used have to be handled and disposed of properly, in particular when work with lubricants was carried out.

The national regulations on waste disposal have to be observed.

Security installations

The main switch is located at the front of the machine on the operating board.

Emergency switch



Note:

The emergency switch must be activated in all situations where injuries of people or damage on the machine can arise:

When operating this switch, the cutting and brushing devices of the machine stop within 10 seconds.

Security devices

The cutting and brushing machine has a security device, which protects the operator from contact with the cutting knife:

Test the correct functioning of the knife protection

Once a week test the functioning of the knife protection. See chapter >maintenance< in this operating manual.

Prior to every switching on of the machine all safety devices have to be assembled correctly, they have to function correctly and they must be closed. They may only be removed by authorized personnel after a complete standstill and after protecting against a startup of the machine.

When additional parts are supplied at a later date, the owner shall be responsible for mounting any warning labels and safety devices delivered with such parts on the machine according to regulations.

Personal safety

Irrespective of the local accident prevention regulations, the following instructions should be observed as a means of protecting the health and safety of the maintenance and operating personnel:

- Never reach into the skiving machine during operation.
- Always keep a copy of the operating instructions at the place of use of the machine.
- Make sure that all safety and danger notices on the machine are always legible.
- Only operate the machine when all safety devices are in perfect working order.
- Before starting up the hydraulic unit, make sure that no-one can be endangered by the running machine.
- Do not place any objects on the floor near the workplace.
- Do not wear loose clothing.
- Remove any jewelry, watches and rings.
- Wear working gloves.
- Wear safety glasses.
- Wear ear protection when cutting with EM 3.4 DC / EM 3.2 Ecoline / EM 6 Ecoline.

A danger for the health and safety of the operator does not arise during correct use of the machine. However, we point to the following dangerous areas



Warning:

Never reach into the skiving area when the machine is working!



Warning:

Always wear protecting glasses when brushing a hose!



Warning:

During all maintenance and repair works switch off the machine on the main switch and disconnect it from the circuit!

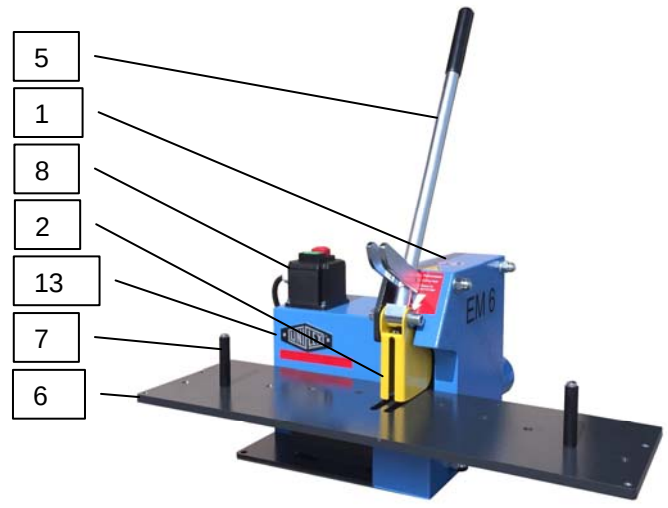
Technical Data

Technical Data	EM 1	EM 2	EM 3.4 DC	EM 3.3	EM 3.2 Ecoline	EM 6 Ecoline
Workshop SAE R13 & SAE R15	-	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ½"
Production SAE R13 & SAE R15	-	¾"	¾"	¾"	-	1 ¼"
SAE R12	5/8"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ½"
Industrial	1 ¼"	2"	2"	2"	1 ¼"	2"
Maxi outside	Ø 45 mm	Ø 80 mm	Ø 80 mm	Ø 80 mm	Ø 52 mm	Ø 80mm
Hosefeed	Manual	Manual	Manual	Manual	Manual	Manual
Noise Level	80 dBA	80 dBA	93 dBA	80 dBA	90 dBA	90 dBA
Brake Motor	-	YES	-	YES	-	-
Suction connection	Ø 30 mm	Ø 80 mm	Ø 40 mm	Ø 80 mm	Ø 40 mm	Ø 80mm
Drive	1,2kW 1Ph	3 kW	12 VDC = 2,0 kW 24 VDC = 3,2 kW	3 kW	2,8 kW	2,4 kW
Cutting blade (mm)	160x2,5x20	275x3x30	250x2,5x40	275x3x30	200x1,6x25,4	275x3x25,4
Brushing DN 5-6-8-10-12-16-19-25-31-38-51	-	YES	-	-	-	-
L-W-H (mm)	360x340x310	630x440x330	470x567x365	540x440x300	400x510x540	700x510x310
Weight ca.	8 kg	65 kg	25 kg	50 kg	20 kg	45kg
Options						
Bench	YES	YES	YES	YES	YES	YES

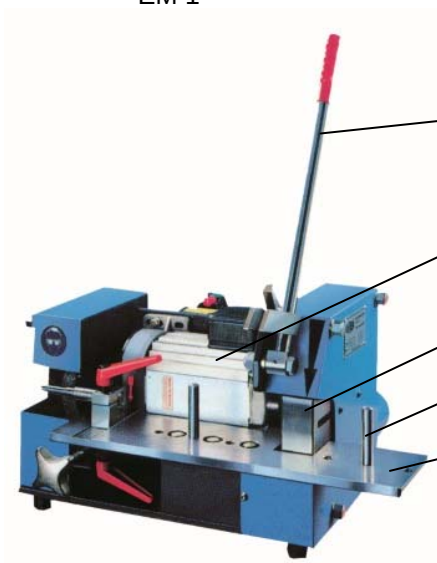
Design



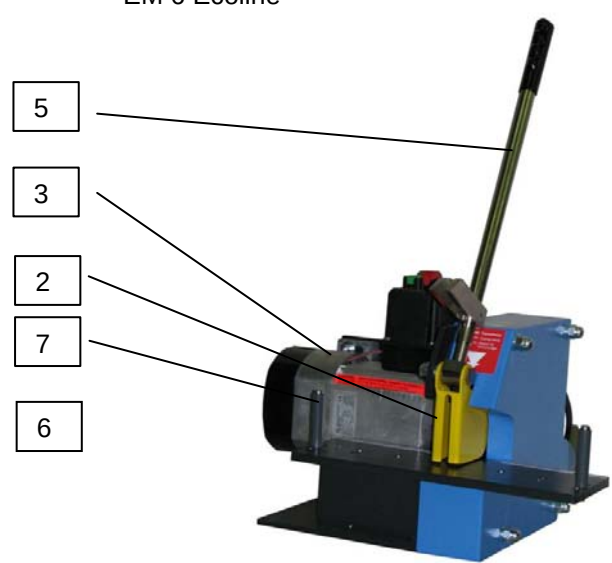
EM 1



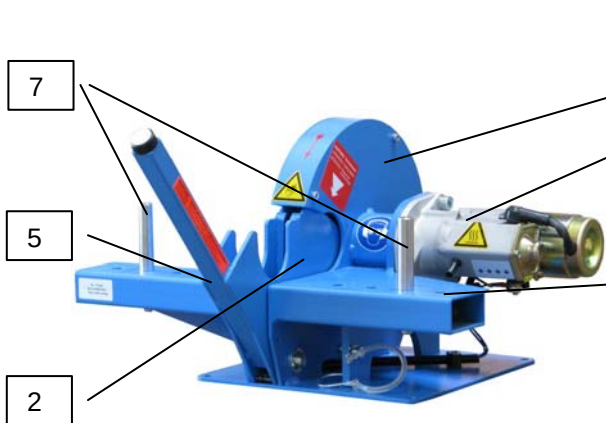
EM 6 Ecoline



EM 2



EM 3.3



EM 3.4 DC



EM 3.2 Ecoline

1 Cover	6 Cutting Support	11 Upper Hexagon Head Bolt
2 Blade Protection	7 Bending Bolt	12 Lower Hexagon Head Bolt
3 Brake Motor	8 Main Switch	13 Electric Motor
4 Pedal Switch	9 Handle	
5 Hand Lever	10 Holding Disk	



Note:
The machine may only be commissioned and operated by trained and authorized personnel!

Unpacking / Set up

The cutting and skiving machine was tested prior to delivery and is ready for operation.

How to prevent damage when unpacking:

- Carefully remove all packaging.
- Check the delivery for completeness using the delivery note.
- Remove all screws that fasten the machine to the packaging.
- Use suitable lifting gear to lift the machine off the palette.



Note:
Pay attention to the correct balance!



Note:
Set the machine in such a way that it is accessible from all sides for maintenance works.



Note:
Only set up and operate the machine in weather proof rooms.

- Lift the machine on the included workbench (optional).
- Fasten the machine to the workbench. (Rubber-metal buffer reduce vibrations).



Note:
The work bench must be level.

The cutting support should go further than the desk so the hose can be guided towards the cutting knife or the round brush freely (EM 3.4 DC; EM 3.2 Ecoline).

Connecting the electric supply (Alternating Current)



Caution:

This work should only be performed by a qualified electrician! Note the marked voltage on the type plate and select the appropriate electric circuit diagram! Works on live wires are hazardous!

- Switch the main connection of the machine off-circuit and make sure that it cannot be switched on again.
- Connect the electric connecting cable to the connection of the power supply. For the correct voltage refer to the type plate.



Note:

The rotating direction of the electric motor is indicated by an arrow on the motor / chassis!



Note:

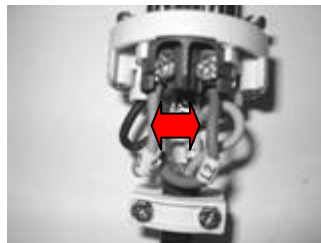
The connecting plug must comply with current local electrical regulations!



Checking the rotating direction of the electric motor (only with 3-Phases)



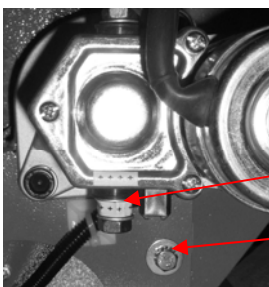
If the motor does not rotate in the direction indicated by the arrow, two phases must be switched as shown:



Attention:

The motor will be damaged if it rotates in the wrong direction for some time.

Connecting the electric supply EM 3.4 DC (Continuous Current)



+ Pol

- Pol

- 12 VDC / 24 VDC Continuous Current, To screw tightly.
- No Gelbattery.
- Look for an adequacy engine power of the current generator.
- Suitable fuse: 250 A: 12 VDC inactive
: 150 A: 24 VDC inactive

Exhaust

The exhaust behind the cutting blade and the round brush has to be connected with a metal hose to suck off the smoke and debris.

We recommend an exhaust fan 100 mm WS and a suction of 4 m³/min as well as a filter element suited for this application.



Attention:

Put on the safety goggles before switching on the machine!

Adhere to the safety regulations!

Overload protection



Note:

The Motor is protected by a thermal contact against overloads.

- If necessary leave the motor to cool off and start anew.
- The warm restart protection prevents an unintended start of the machine. Another restart is only possible by pushing the start key.

Commissioning the EM 1

The UNIFLEX EM 1 has been designed as a table machine and should be mounted to a solid working bench using two bore holes of Ø 11 mm located in housing bottom. The machine should extend about 30 mm over the table edge so that hoses to be cut may be jammed between the hexagon bolt.

Make sure that the voltage displayed on the type plate is identical to the voltage that is fed to the machine.

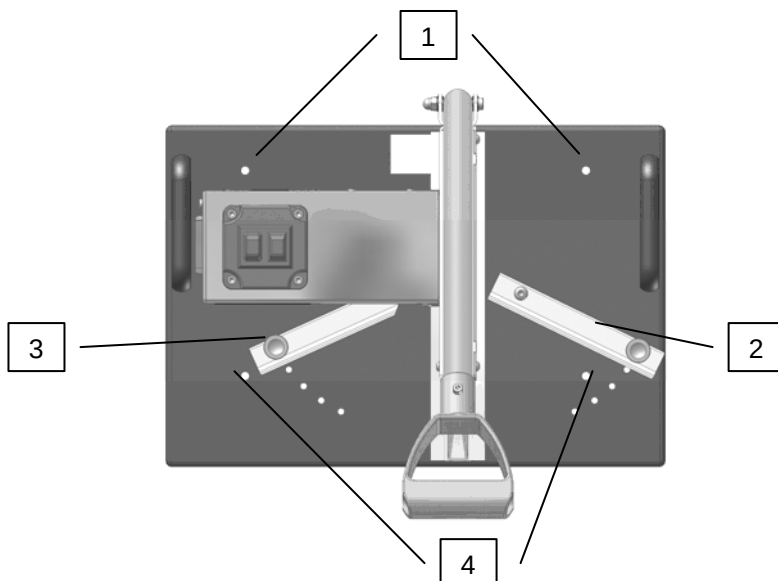
Commissioning the EM 3.2 Ecoline

The UNIFLEX EM 3 Ecoline / EM 3.2 Ecoline has been designed as a table machine and should be used on a solid work bench. Two bore holes of Ø 9 mm located in the chassis (refer to drawing) should be used in case of a stationary mounting. Make sure that the voltage displayed on the type plate is identical to the voltage that is fed to the machine.



Note:

Operation S2 – 5min / Service machine. To protect against overheating the machine may never be used for more than 5 minutes continuously. After that the switched off motor needs to be left to cool for at least 10 minutes.



1 Bore holes for transport and for table top operation

2 Right Guide

3 Left Guide

4 Bore holes for transport

Work preparations



Note:
Choose the correct distance between the holding pins /guides. Note Pictures A, B and C!

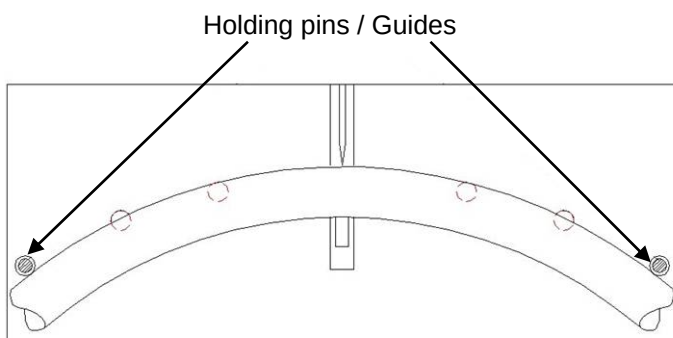


Generally it can be said for the distance between the holding pins:
Large hose diameter
= large distance ! (see Picture A)

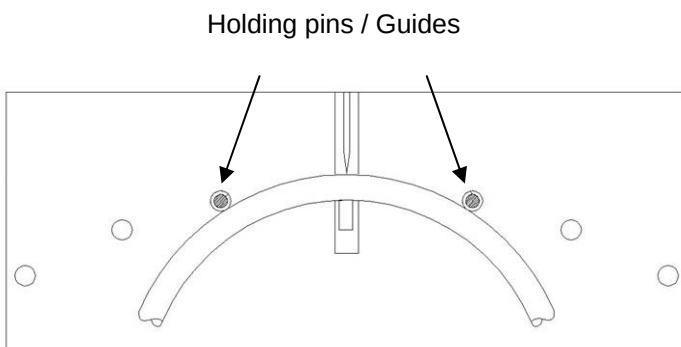
Small hose diameter
= small distance ! (see Picture B)

Never cut without bending (see Picture C)

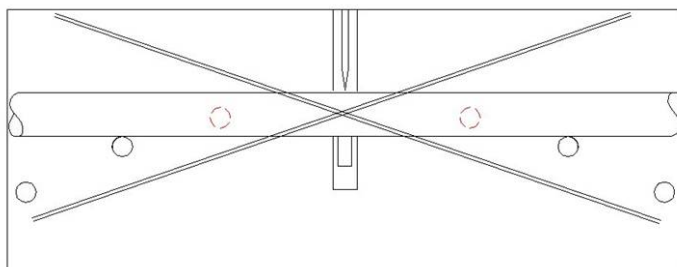
Picture A
z.B DN 38



Picture B
z.B DN 16



Picture C



Attention:
Never cut without bending.



Attention:
The hoselength must be minimum outside of the Bending Bolt (Guides).



Note:

The safe and professional cutting is only possible with correctly set holding pins / guides. (see position of holding pins in pictures A and B on page 15).



Attention:

The cutting without pretensioning the hose is dangerous and therefore forbidden! (See picture C, page 15)

During the cutting process the hydraulic hose needs to open so that no lateral friction arises and the cutting blade cannot heat up. The feeding speed has to be adapted to the material thickness.

- Hose assemblies should be guided smoothly to the rotating cutting blade.
- They should be cut evenly as well as quickly.



Note:

When cutting extremely heavy hoses, the cutting pressure should be lowered.

Hand lever or foot pedal should be opened shortly to continue cutting slowly.

With pneumatic machines control the air pressure according to hose thickness.



Attention:

When cutting inappropriately the cutting blade can anneal and break



Note:

Cracked or deformed cutting blades need to be exchanged immediately.

Cutting of Hoses

The blade protection opens and closes automatically with each cutting process.



Warning:

Never operate the blade protection by hand!

Cutting without pneumatic feeder (EM 1 / EM 2 / EM 3.3 / EM 3.2 Ecoline / EM 6 Ecoline)

- Prepare the machine as shown above.
- Mark the desired cutting length.
- Start the machine by turning the main switch to «I».
- Place the hose line in front of the holding pins on the cutting support.
- Hold the hose ends, tense with the hand lever and at the same time pull / push the hose assembly through.
- After cutting the hose line, put the hand lever back to its original position.
- Take out hose pieces.
- By turning the main switch to position «O» switch the machine off.

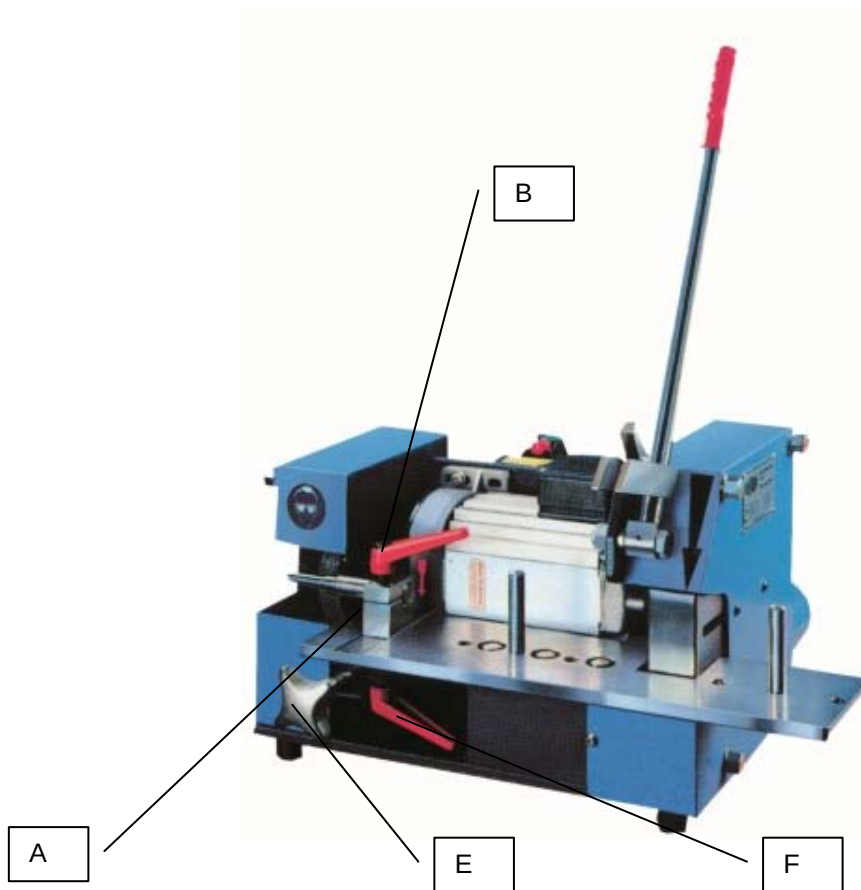
Cutting with EM 3.4 DC

- Wear ear protection.
- Cut as shown <cutting without pneumatic feeder>.
- Don't operating with gel batteries
- Make sure the Batteries are protected for overloading.
- Use sufficient dimensioned Batteries
- Don't cut several hose line one after another.

Brushing

- Prepare the machine as detailed above.
- Insert the skiving mandrel in clamping device A and secure with clamping device B.
- The skiving length is set by the positioning of the skiving mandrel (+ or -).
- Place the hose end on the skiving mandrel and hold while you use setting screw E to move the hose against the round brush. Do this until the desired skiving depth has been reached.
- Fasten the clamping screw F. Then start the motor using the main switch (Position «I»).
- Use both hands to turn the hose over the skiving mandrel. When the skiving process is finished, carefully remove the hose.
- Turn the machine off by operating the OFF-Switch «O».

EM 2



Maintenance, Service, Repair

All maintenance and repair works may only be performed by authorized and trained personnel.

- Stick to the specified maintenance and inspection periods.
- Inform the operating personnel prior to conducting all special works on the machine.
- Identify a supervisor prior to this work.
- For all works that modify the operation, the settings according to products, general modification of the setting of the machine and its security relevant devices adhere to the correct activation / deactivation procedures mentioned in this document. If necessary secure the area.
- If the machine is turned off completely for maintenance or repair works, ensure against unintended switching on: Set up a warning sign.
- Clean the machine and all (screwed) connections off oil, fuel or cleaning agents! Do not use any aggressive cleaning agents! Use fibreless cleaning cloths!
- After the cleaning check all fuel-, motor oil- and hydraulic oil connections for leakage, loose connections, abrasion and other damages. Remove these faults immediately!
- If a disassembling of protecting devices becomes necessary during the general assembling, maintenance- or repair works of the machine, a remounting after finishing the works has to follow immediately. Always refasten the screws that were loosened during maintenance and repair.
- Make sure to discard all operating and auxiliary materials safely and environmentally friendly.
- Only conduct welding, firing or grinding on the machine if it is explicitly allowed, as there may be the danger of fire or explosion!
- Prior to any welding, firing or grinding clean the machine and the surroundings of dust and flammable substances and provide adequate ventilation (Danger of explosion)!



Attention:
Do not remove safety installations!



Attention:
Check the functioning of the emergency stop button regularly!



Attention:
The machine needs to be switched off on the main switch during all maintenance works!

Daily Maintenance:

- Required are a rag and some detergent. Clean the machine from any cutting / skiving residue
- Check the form of the cutting blade and check it for fissures.
- Check the housing and cable for defects.
- Pay attention to any unusual noises and vibrations
- Keep the machine dry.
- Use a vacuum cleaner or another suitable object to remove any dirt particles.

Weekly Maintenance:

- If necessary sharpen or exchange the blade.
- Check the security settings of the blade protection: Turn the machine off. With a chain-glove push the protection towards the cutting blade.
- Put on metal chain gloves and carefully push the blade protection in the direction of the cutting blade. It should not be possible to move the blade protection.



Attention:

The protection may only yield to a considerable force. The movement of the protection should be constant at all times, otherwise you need to check the spring mechanism of the protection.

Annually Maintenance:

- Check the security settings and functioning elements of the machine.
- Clean the machine and if required the attached suction line.

Disassembling the cutting blade

Loosen all screws of the cover and pull the same of.

At all machine with pneumatic feed, disconnect the compressed air up to the service unit.

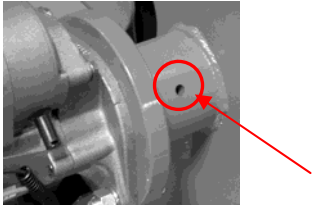


Warning:

The cutting blade is extremely sharp! Always wear special gloves when working on the cutting blade!

1. Block the drive shaft to prevent rotation:

EM 3.4 DC



Pull the hand lever as far as possible towards you.

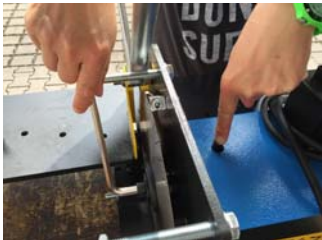
Push a Ø 6 mm mandrel through the bore hole.

EM 3.2 Ecoline



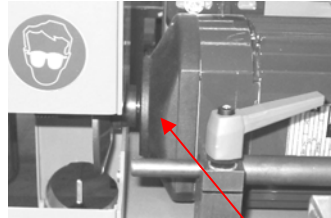
Secure the drive shaft with a ring wrench or a flat wrench SW22 and loosen the screw with a ring wrench or a ratch SW13.

EM 6 Ecoline



Secure the drive shaft with the lock bolt and lose the Cylinder head screw with a hexagon socket wrench SW8

EM 2



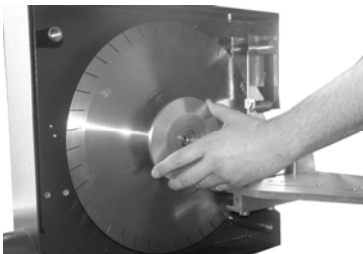
Secure the drive shaft with a combination wrench between motor and brush.

EM 3.3

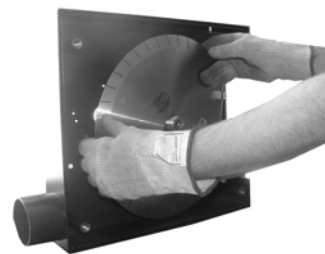


Hold the nut with a hex key and loosen the nut with a size 30 key.

2. Loosen the holding nut with a combination wrench in the same rotating direction of the blade.



3. Take off the flange disk



4. Wearing special gloves, carefully take off the cutting blade.

Assembling the cutting blade

The assembly of the cutting blade is done in reverse order.



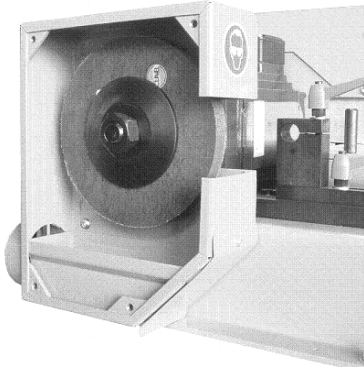
Warning:

Make sure that motor and blade rotate in the same direction, otherwise there is the danger of damaging the blade during cutting.

Take off the round brush

Loosen all screws on the cover and pull the same off.

Secure the drive shaft against rotating. (The rotating direction of the nut equals to the rotating direction of the round brush).

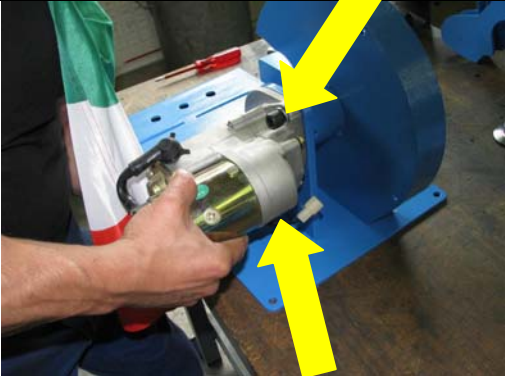
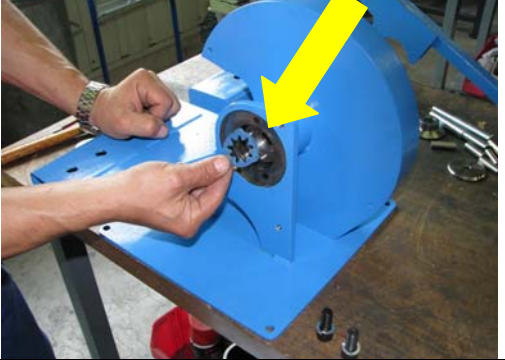


Take nut and flange off and remove the round brush.

Mounting the round brush

To mount the round brush, do the same as is described above in reverse order.

Change of the driving disk EM 3.4 DC

Sequence: 	Unscrew the engine screws (2x).
	Take off the engine.
	Exchange the disk.
	Position the engine. Take care that the engine sprocket meshes with the driving disk.
	Remount and tighten the engine screws.  If distance plates had been fitted between the engine and the chassis, they must be inserted at the same position.

Anhang / Appendix / Apèndice / Appendice

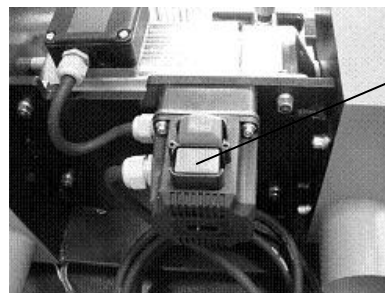
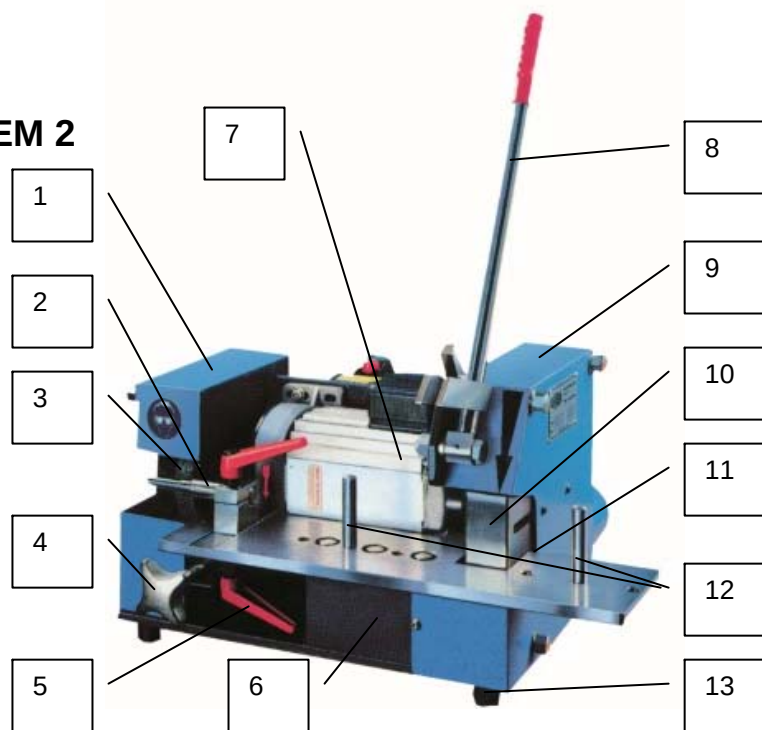
Ersatzteilliste / Spare Parts List / Pièces détachées / Lista de piezas de recambio

EM 1



Pos.	Anzahl/ Amount	Artikel / Article	Deutsch	English	Français	Espanol
1	1	303.020	Kreissäge	Circular saw	Scie circulaire	Sierra circular
2	1	TM 160 x 2,5 x 20	Trennmesser	Cutting blade	Lame de coupe	Cuchilla de corte
3	1	303.103.3	Gelenk	Joint	Pièce d'articulation	Articulación
4	1	303.101.3	Chassis	Chassis	Châssis	Armazón
5	1	303.102.3	Schneidplatte	Cutting Support	Support de coupe	Placa de corte

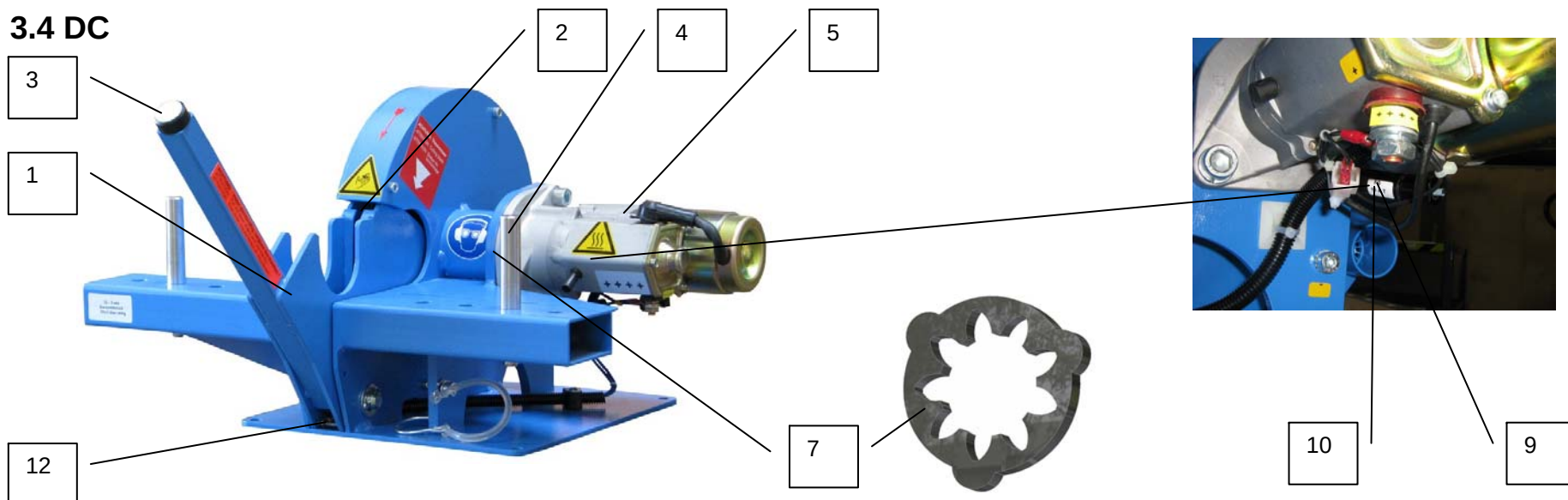
EM 2



E- Motor / Moteur électrique / Motor eléctrico	
Artikelnr. / Article No. / Référence / Article No.	Spannung / Voltage / Tension / Voltaje
300.022	230V- 400V, 50Hz, 3~
300.028	415V, 50Hz, 3~
300.029	440V, 60Hz, 3~
300.024	230V, 60Hz, 1~
300.026	230V, 50Hz, 1~
300.027	200V, 50Hz, 3~
304.025	500V, 50Hz, 3~

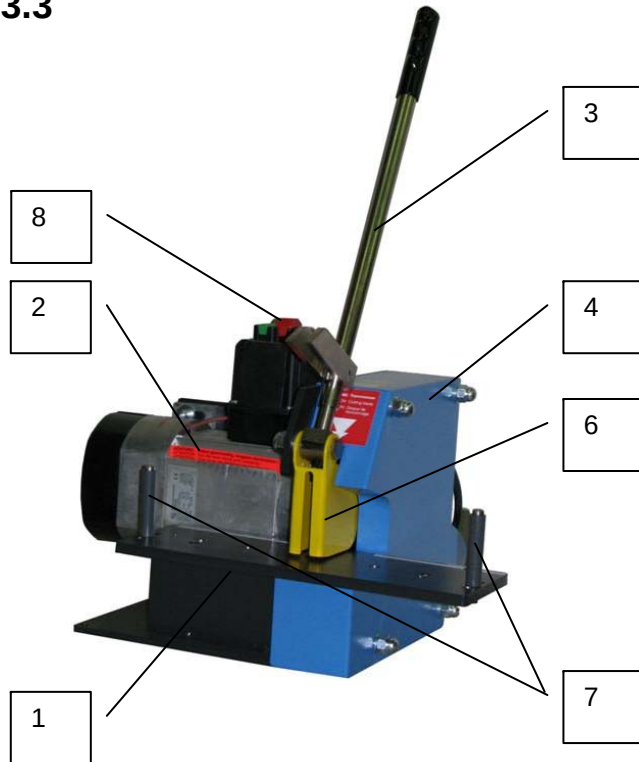
Pos.	Anzahl / Amount	Artikel / Article	Deutsch	English	Français	Espanol
1	1	302.003.1	Verkleidung links	Cover left	Capot côté gauche	Tapa izquierda
2	1	300.90	Bürstdorne	Brushing Mandrels	Mandrins de brosse	Mandriles cepilladores
3	1	RB 300-200-24	Rundbürste	Round Brush	Brosse circulaire	Cepillo circular
4	1	300.005.1	Stellspindel	Adjusting Spindle	Broche de réglage	Husillo de ajuste
5	1	300.009 / U.300.010	Klemmhebel	Clamping lever	Levier de blocage	Palanca de bloqueo
6	1	300.001.0	Chassis	Chassis	Châssis	Armazón
7	1	See table	E-Motor	Electric Motor	Moteur électrique	Motor eléctrico
8	1	300.2001	Handhebel	Hand lever	Levier	Palanca manual
9	1	301.002.1	Verkleidung rechts	Cover right	Capot côté droit	Tapa derecha
Ohne Bild / Pas d' image	1	TM 300-275x3x30	Trennmesser	Cutting Blade	Lame de coupe	Cuchilla de corte
10	1	301.109.4	Messerschutz	Blade Protection	Protection de la lame	Protector de cuchilla
11	1	300.004.1	Schneidauflage	Cutting Support	Support de coupe	Placa de corte
12	2	304.2001	Biegebolzen	Bending Bolt	Pige de cintrage	Perno de flexión
13	4	300.001	Gummimetallpuffer	Rubber-Metal-Buffer	Tampon caoutchouc métal	Cojín metal-caucho
14	1	300.088	Hauptschalter	Main Switch	Interrupteur principal	Interruptor principal
Ohne Bild / Pas d' image	1	300.017	Flanschscheibensatz	Flange disc set	Flasque set	uego de discos de brida

EM 3.4 DC



Pos.	Anzahl / Amount	Artikel / Article	Deutsch	English	Français	Espanol
1	1	EM 3 DC	Maschine komplett	Complete machine	Machine complète	Máquina completa
2	1	TMZ 250x2x40 Z	Trennmesser	Cutting Blade	Lame de coupe	Cuchilla de corte
3	1	888.091	Drucktaster	Pushbottom	Bouton-poussoir	Pulsador
4	2	311.008.4	Bolzen	Bolt	Boulon	Bulón
5a	1	311.011	Starter-Motor 12V / 2,0 kW	E-Motor 12V / 2,0 kW	Moteur électrique 12V / 2,0 kW	Motor eléctrico 12V / 2,0 kW
5b	1	311.111	Starter-Motor 24V / 3,2 kW	E-Motor 24V / 3,2 kW	Moteur électrique 24V / 3,2 kW	Motor eléctrico 24V / 3,2 kW
Ohne Bild / Pas d' image	2	6006 2RSH	Kugellager	Bearing	Roulement à billes	Rodamiento
7a	1	311.015.4	Mitnehmerscheibe 12 VDC	Carrier Panel 12 VDC	Douille d'accouplement disque 12 VDC	Plato de arrastre 12 VDC
7b	1	311.056.4	Mitnehmerscheibe 24 VDC	Carrier Panel 24 VDC	Douille d'accouplement disque 24 VDC	Plato de arrastre 24 VDC
Zubehör Ohne Bild / accessoires Pas d' image	1	GK 205 A	Gleichstrom-Kabelset	Direct Current Cable Set	Courant continu câble kit	Corriente continua cable juego
9	1	800.014	Sicherungshalter	Fuse Holder	Porte fusible	Detentor de fusible
10	1	800.099	Sicherungseinsatz	Fuse Cartridge	Cartouche fusible	Tapón de fusible
Ohne Bild / Pas d' image	1	311.059	Motor Start-Kabel EM3.3DC	Motor start cable EM3.3DC	Câble starter EM3.3DC	Cable de arranque EM3.3DC
12	1	311.027	Zugfeder	Extension spring	Ressort de traction	Resorte regulator

EM 3.3

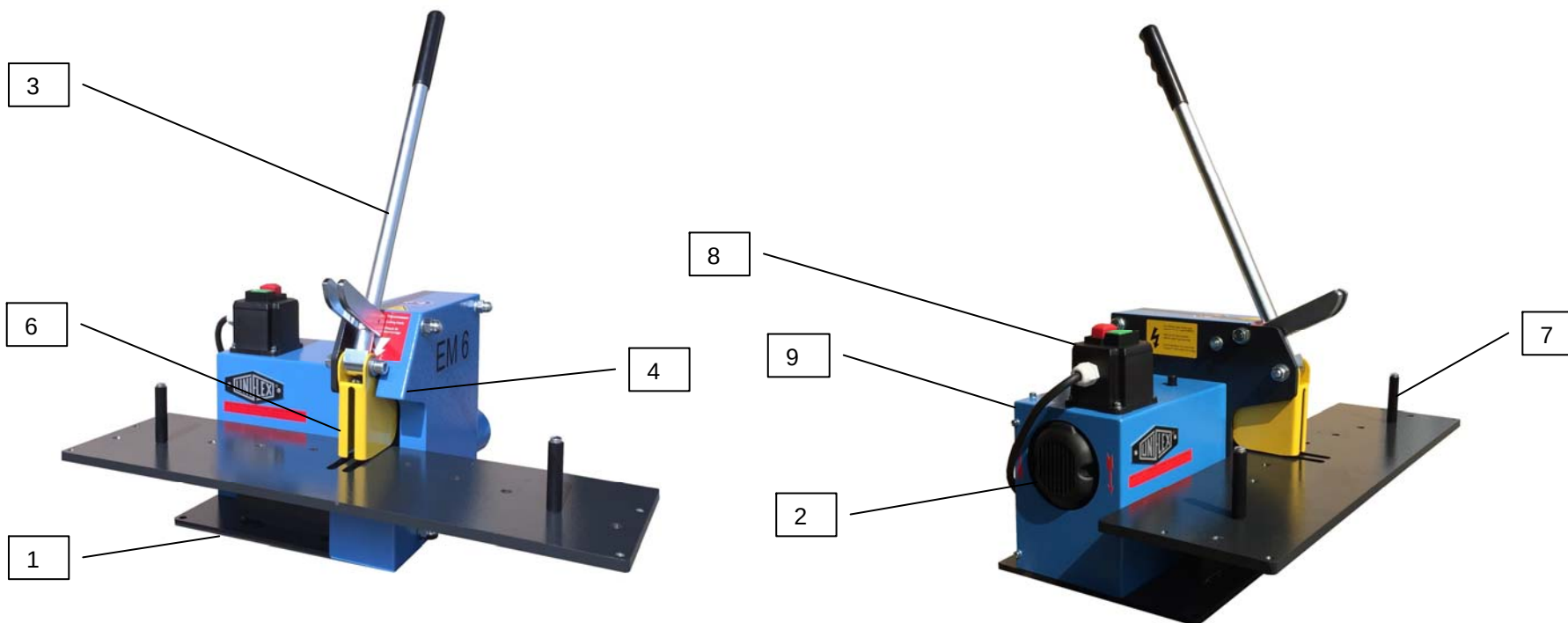


EM 3.3 - E-Motor Pos. 2	Artikelnr. / Article No. / Référence N°/ N° artículo	Schalter / Switch Pos 8 / Interrupteur / Interruptor Pos 8	Bremse / brake / frein / freno	Spannung / Voltage/ Tension / Voltaje
	300.022	300.088	a.A. / o.r.	230V-400V, 50Hz, 3~
	300.050	8.13.005	300.044	230V-400V, 50-60Hz, 3~
	300.028	a.A. / o.r.	a.A. / o.r.	415V, 50Hz, 3~
	300.029	a.A. / o.r.	a.A. / o.r.	440V, 60Hz, 3~
	300.024	a.A. / o.r.	a.A. / o.r.	230V, 60Hz, 1~
	300.026	a.A. / o.r.	a.A. / o.r.	230V, 50Hz, 1~
	300.027	a.A. / o.r.	a.A. / o.r.	200V, 50Hz, 3~
	300.025	a.A. / o.r.	a.A. / o.r.	500V, 50Hz, 3~
	300.032	a.A. / o.r.	a.A. / o.r.	380V, 60Hz, 3~

a.A. / o.r.= auf Anfrage, Angabe Maschinentyp, Baujahr, Seriennummer notwendig /
on request, Machine type, year of construction, serial number must be known /
sur demande, il est indispensable d'indiquer le type, l'année de construction et le numéro de série de la machine /
En caso de consulta, es preciso saber el tipo, año de construcción y núm. de serie de la máquina

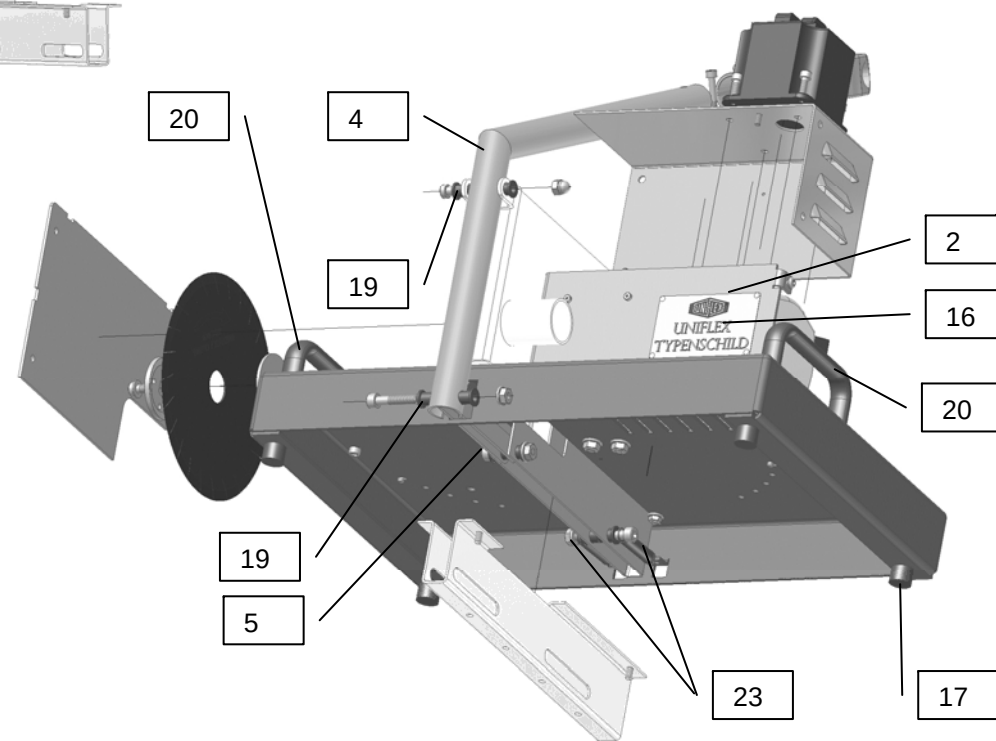
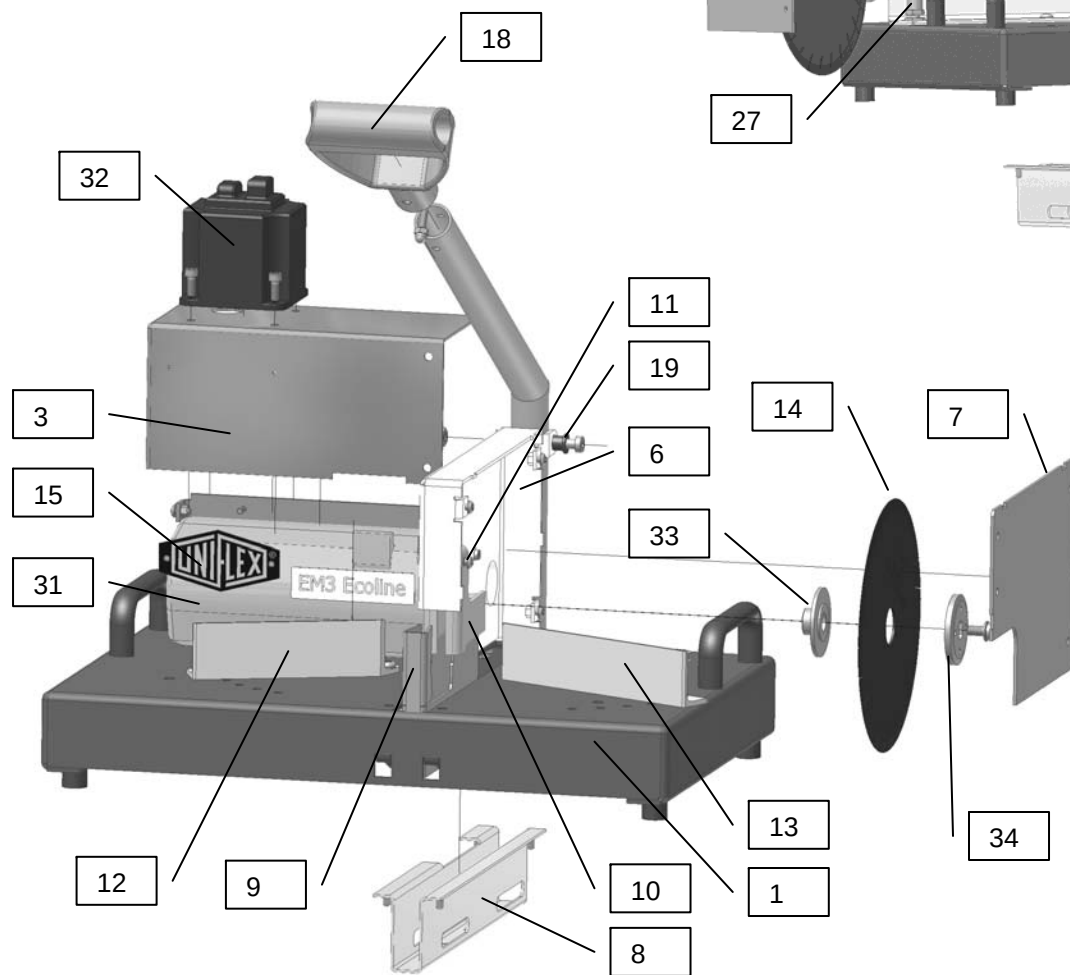
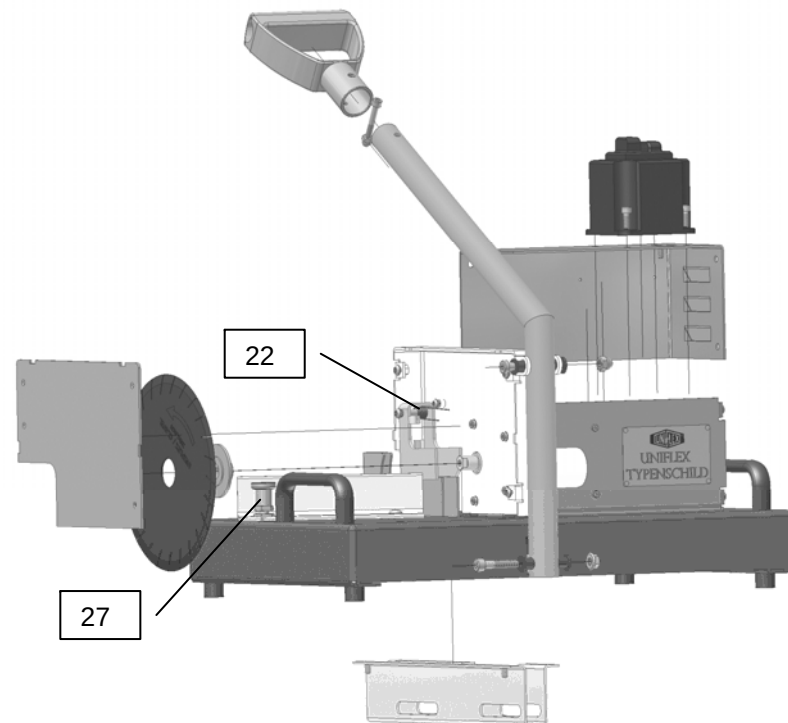
Pos.	Anzahl / Amount	Artikel / Article	Deutsch	English	Français	Espanol
1	1	301.018.0	Chassis	Chassis	Châssis	Armazón
2	1	See table	E-Motor	Electric Motor	Moteur électrique	Motor eléctrico
3	1	300.2001	Handhebel	Hand lever	Levier	Palanca manual
4	1	301.002.1	Verkleidung rechts	Cover right	Capot côté droit	Tapa derecha
Ohne Bild / Pas d' image	1	TMG 275x3x30	Trennmesser	Cutting Blade	Lame de coupe	Cuchilla de corte
6	1	301.109.4	Messerschutz	Blade Protection	Protection de la lame	Protector de cuchilla
7	2	304.2001	Biegebolzen	Bending Bolt	Pige de cintrage	Perno de flexión
8	1	See table	Schalter	Switch	Interrupteur	Interruptor
Ohne Bild / Pas d' image	1	300.017	Flanschscheibensatz	Flange disc set	Flasque set	Juego de discos de brida

EM 6 Ecoline



Pos.	Anzahl / Amount	Artikel / Article	Deutsch	English	Français	Espanol
1	1	315.001.0	Chassis	Chassis	Châssis	Armazón
2	1	331.100.3 331.101.3	MVD E-Motor MVC	MVD Electric Motor MVC	MVD Moteur électrique MVC	MVD Motor eléctrico MVC
3	1	301.1250	Handhebel	Hand lever	Levier	Palanca manual
4	1	301.404.1	Verkleidung rechts	Cover right	Capot côté droit	Tapa derecha
Ohne Bild / Pas d' image	1	TMG 275x3x24,4	Trennmesser	Cutting Blade	Lame de coupe	Cuchilla de corte
6	1	301.109.4	Messerschutz	Blade Protection	Protection de la lame	Protector de cuchilla
7	2	304.2001	Biegebolzen	Bending Bolt	Pige de cintrage	Perno de flexión
8	1	319.134 319.131	MVD Schalter MVC	MVD Switch MVC	MVD Interrupteur MVC	MVD Interruptor MVC
9	1	331.011.3	Motorhaube	Cowl	Capot	El capot

EM 3.2 Ecoline



Pos.	Anzahl/ Amount	Artikel / Article	Deutsch	English	Français	Espanol
1	1	319.200.1	Chassis	Chassis	Châssis	Armazón
2	1	319.201.2	Motorhalterung	Motor Fastener	Fixation moteur	Soporte de motor
3	1	319.202.2	Abdeckhaube	Cover	Capot moteur	Cubierta
4	1	319.106.3	Bedienhebel	Lever	Levier	Palanca de mando
5	2	319.107.4	Zugblech	Pulling Plate	Pièce de liaison	Placa de tracción
6	1	319.203.1	Schutzblech	Safety Cover	Capot de protection de lame	Chapa protectora
7	1	319.109.3	Abdeckblech	Covering Plate	Plaque de protection	Chapa salvamanos
8	1	319.205.2	Führungsschiene	Guide track	Rail de guidage	Guía
9	1	319.206.2	Schlitten	Slide	Coulisseau	Carro
10	1	319.207.2	Schwingschutz	Swing Protection	Volet de protection	Protección oscilante
11	1	319.208.4	Gewindestift	Set Screw	Tige filetée	Tornillo de sujeción
12	1	319.209.3	Führung links	Guide left	Guide côté gauche	Guía izquierda
13	1	319.118.3	Führung rechts	Guide right	Guide côté droit	Guía derecha
Ohne Bild / Pas d' image	1	319.211.2	Distanzblech	Distance Plate	Plaque de distance	Chapa distancia
14	1	TM G 200x1.6x25.4	Trennmesser	Cutting Blade	Lame de coupe	Cuchilla de corte
15	1	SK 575.4	UNIFLEX-Zeichen, klein	UNIFLEX Logo, small	Logo UNIFLEX, petit	UNIFLEX Logotipo, peque.
16	1	213.090.4	Typenschild	Type plate	Plaque signalétique	Placa de características
17	4	233.111	Gummimetall-Puffer	Buffer	Tampon caoutchouc métal	Cojín metal-caucho
18	1	319.120	Spatengriff	Handle	Poignée du levier	Empuñadura
19	8	319.121	Bundbuchse	Collar Bush	Douille à collet	Casquillo con gollete
20	2	319.122	Bügelgriff	Handle	Poignée en forme d'étrier	Asidero
Ohne Bild / Pas d' image	1	3166	Richtungspfeil rot	Direction Arrow Red	Flèche de direction rouge	Flecha direccional roja
22	1	319.124	Schenkelfeder	Leg Spring	Ressort spiralé	Resorte espiral
23	2	319.125	Zugfeder	Pulling Spring	Ressort de traction	Muelle de tracción
Ohne Bild / Pas d' image	1	304.101.4	Hinweisschild Messer	Warning Sign Knife	Signal d'avertissement	Señal de aviso: Cuchilla
25	1	3127/60	Augen- und Gehörschutz tragen	Warning Sign Wear Eye and Ear protection	Signal d'avertissement du port de lunettes de sécurité et d'un casque anti-bruit	Señal de aviso: Usar protección ocular y de oído
Ohne Bild / Pas d' image	1	716.4	Warnschild	Warning Sign	Signal d'avertissement	Señal de aviso

27	2	501.071	Rastbolzen	Locking Pin	Boulon d'arrêt	Perno de retención
Ohne Bild / Pas d' image	1	300.100.4	Warn. Schnittverletzung	Warning Cutting Injury	Signal d'avertissement d'un risque de coupure	Aviso: Peligro de lesión por corte
31	1	319.001	E-Motor, 1,8kW (230V-50Hz-1~)	E-Motor, 1,8kW (230V-50Hz-1~)	Moteur électrique, 1,8kW (230V-50Hz-1~)	Motor eléctrico, 1,8kW (230V-50Hz-1~)
32	1	319.131	Motorschalter 230V-1Ph	Motor Interrupter 230V-1~ with. Socket	Interrupteur moteur 230V-1Ph	Interruptor guardamotor 230V-1~
33	1	Nur mit Motor / only with Motor	Haltescheibe	Holding disc	Rondelle de fixation	Disco de fijación
34	1	Nur mit Motor / only with Motor	Flanschscheibe	Flange disc	Flasque	Disco de brida

Wo Sie Ersatzteile bestellen können / Where to obtain spare parts /

Adresse pour nous contacter / La dirección para encargar piezas de recambio:

Uniflex Hydraulik GmbH
Robert-Bosch-Straße 50 - 52
D-61184 Karben

Tel.: 06039 / 91 71 – 0
Fax: 06039 / 9171 - 181

E-mail: sales@uniflex.de

<http://www.uniflex.de>

Bei der Bestellung eines Ersatzteiles bitte unbedingt folgende Angaben machen!

When ordering spare parts please have the following information ready!

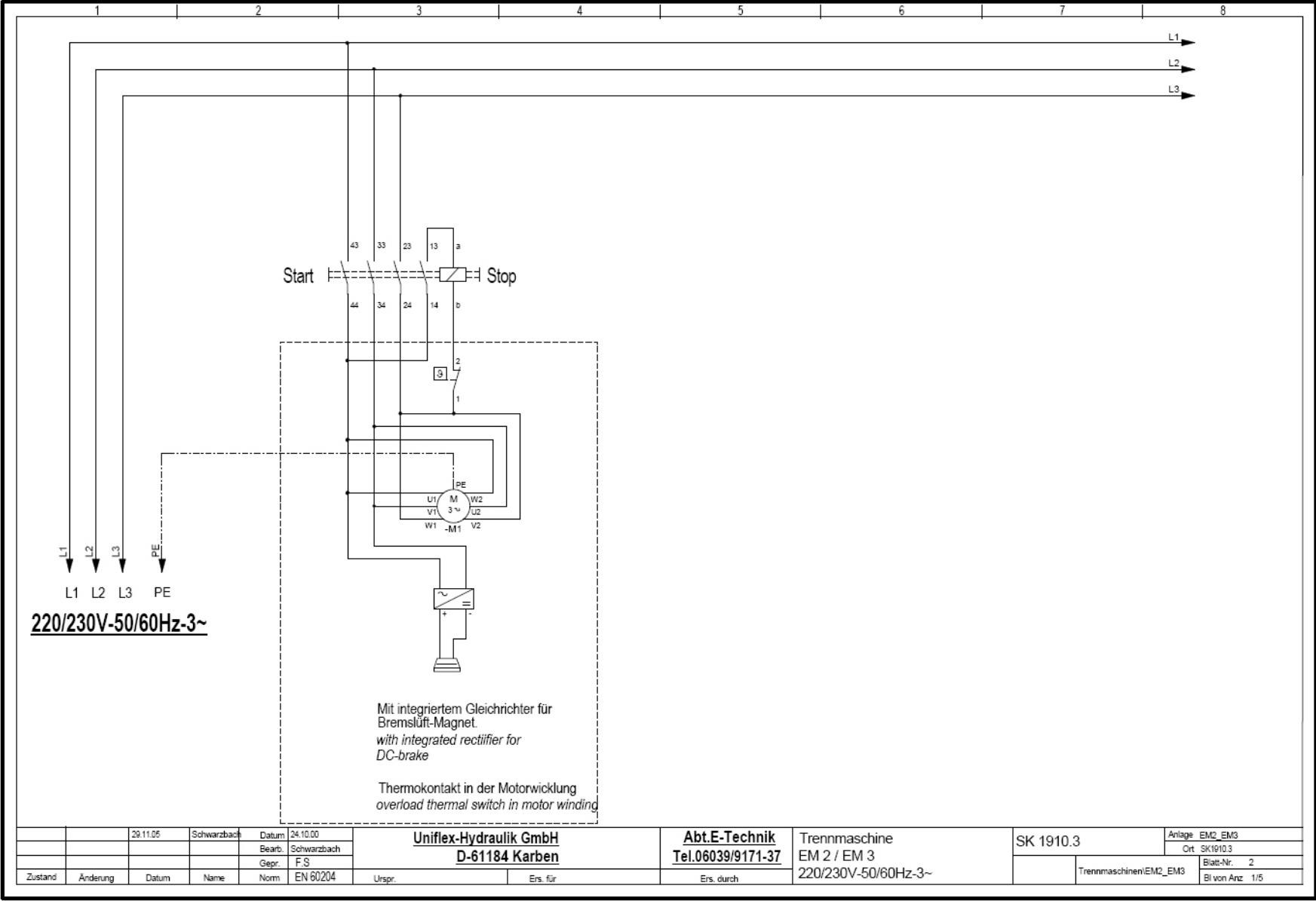
Veillez indiquer impérativement les données suivantes dans votre commande !

¡En el pedido de una pieza de recambio es imprescindible de hacer los siguientes indicaciones!

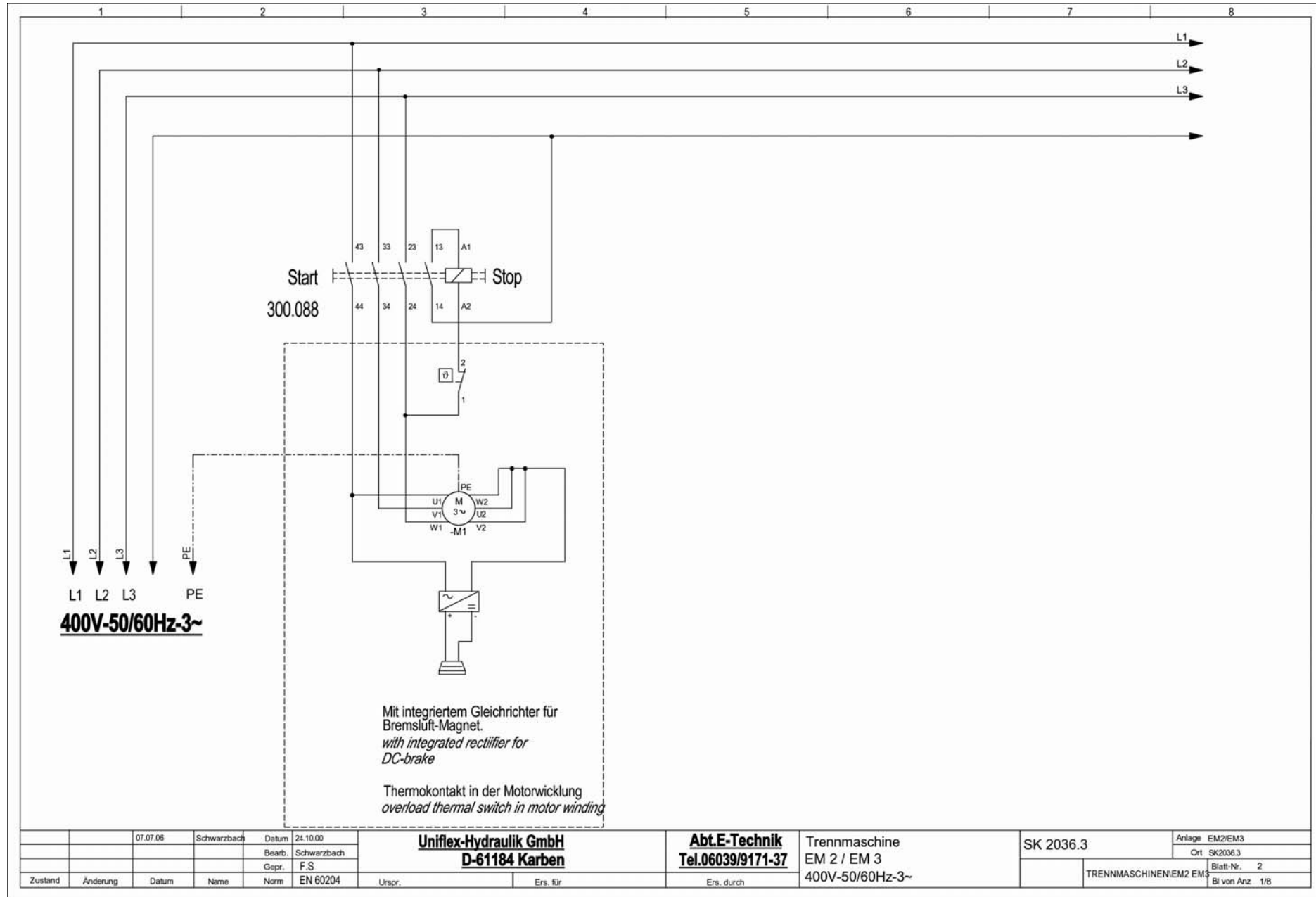
- Maschinentyp / Machine type / Le type de la machine / Tipo de máquina
- Seriennummer / Serial-Number / Le numéro de série / Número de serie
- Baujahr / Year of production / L'année de construction / Año de construcción
- Spannung / Voltage / La tension de service / Voltaje

Elektroplan / Electric Circuit Diagram / Schéma électrique / Esquema de circuitos eléctricos

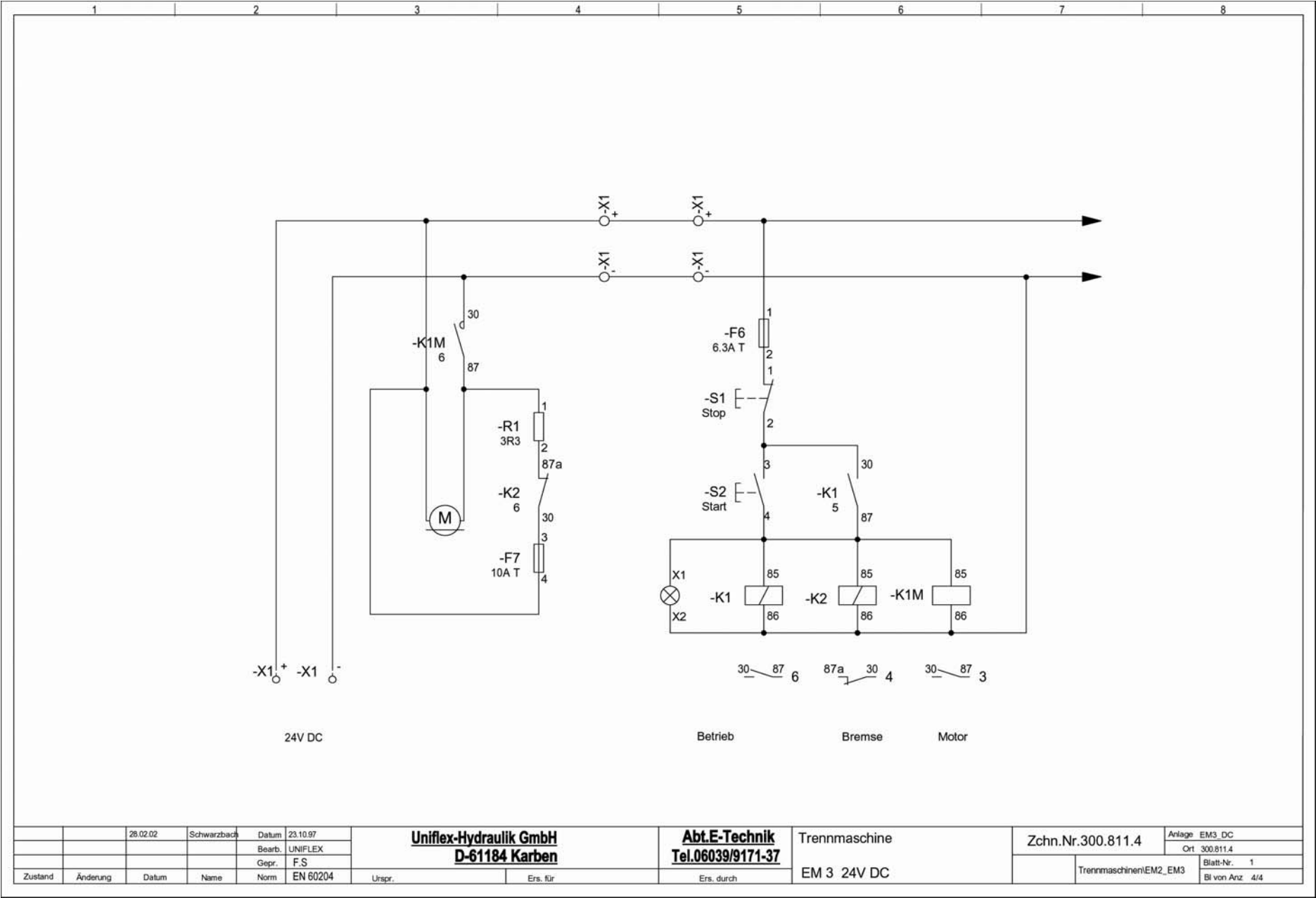
EM 2 (220 / 230 V, 50 / 60 Hz, 3~)



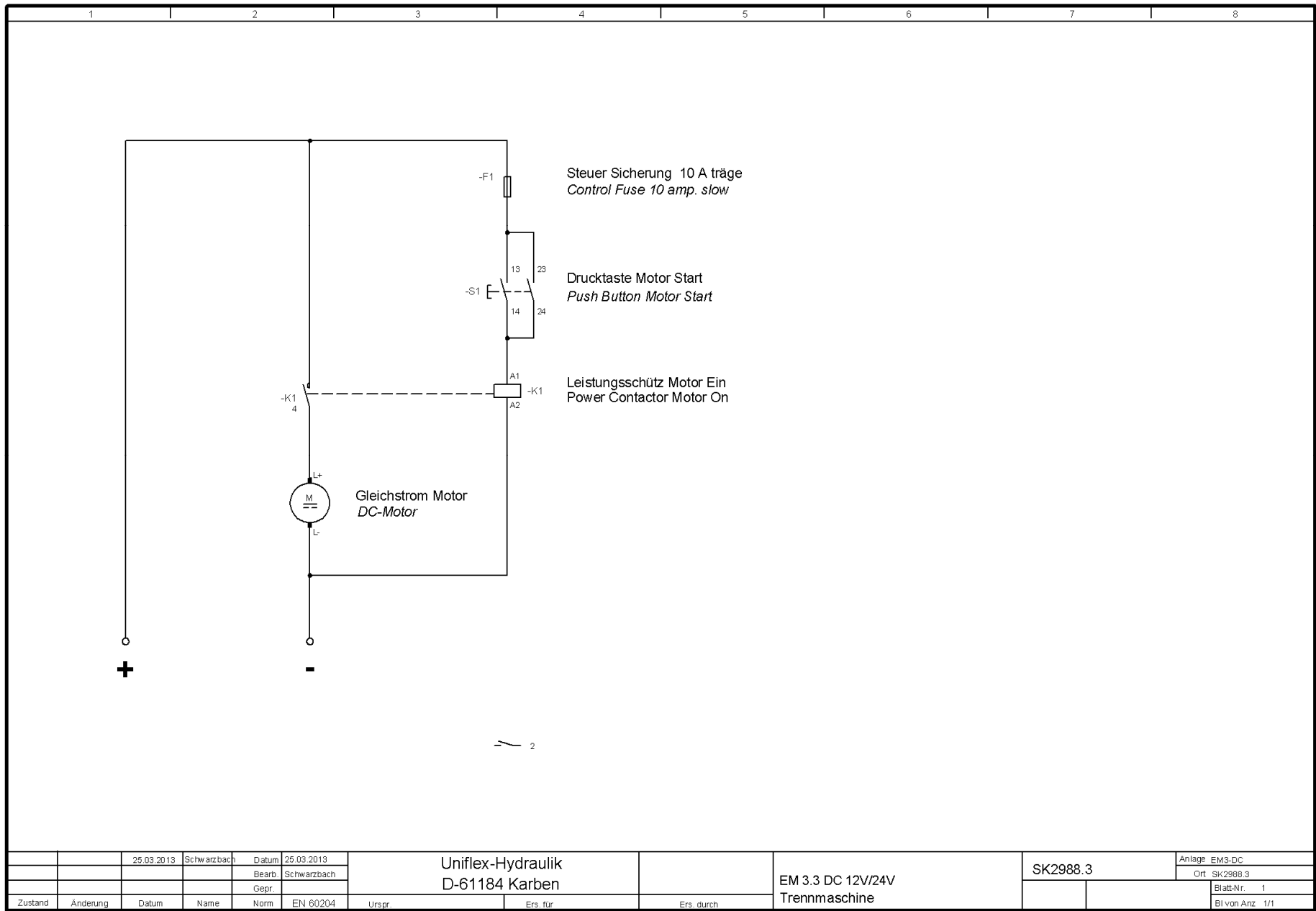
EM 2 (400 V, 50 / 60 Hz, 3~)



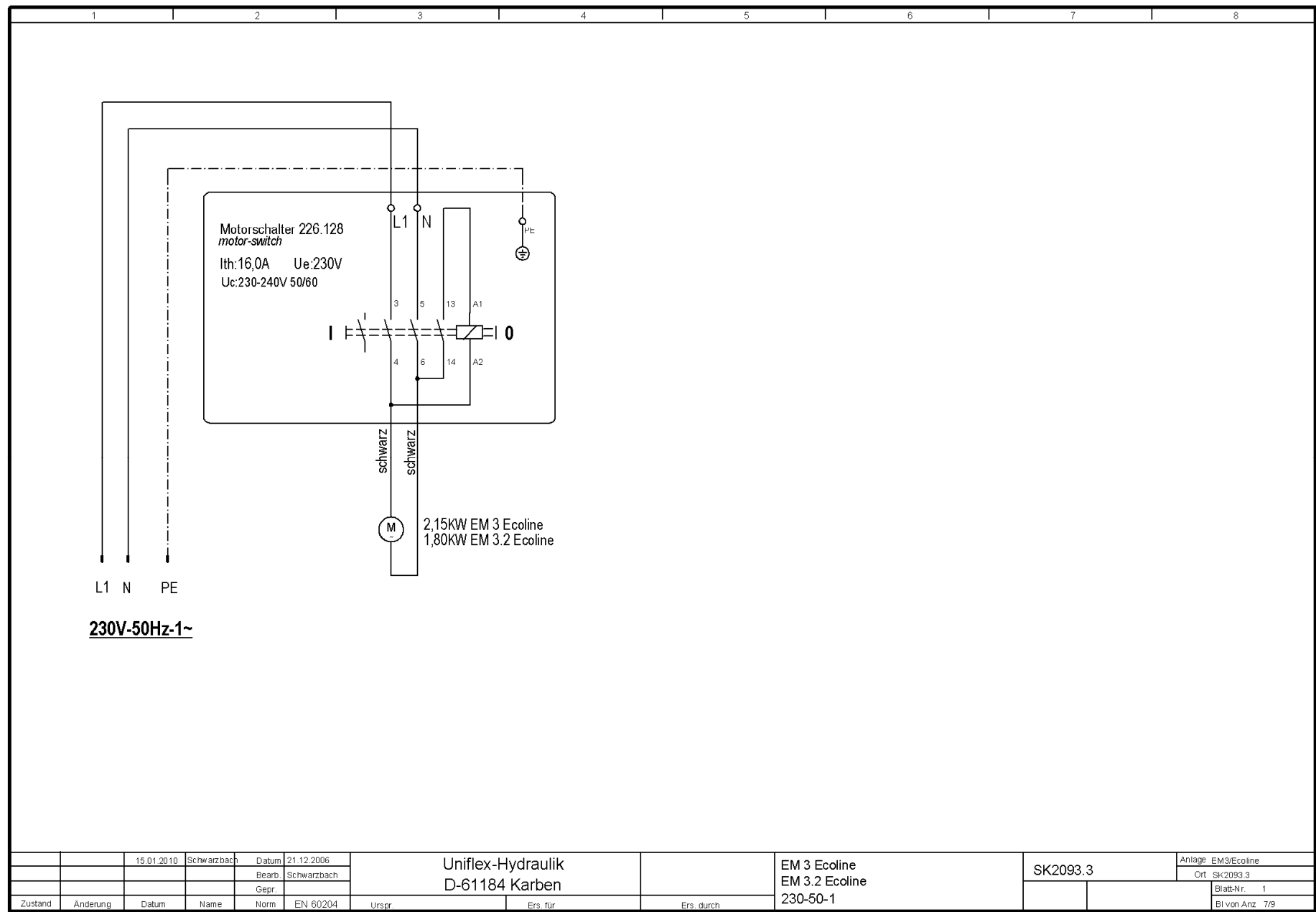
EM 3.4 DC (24V)



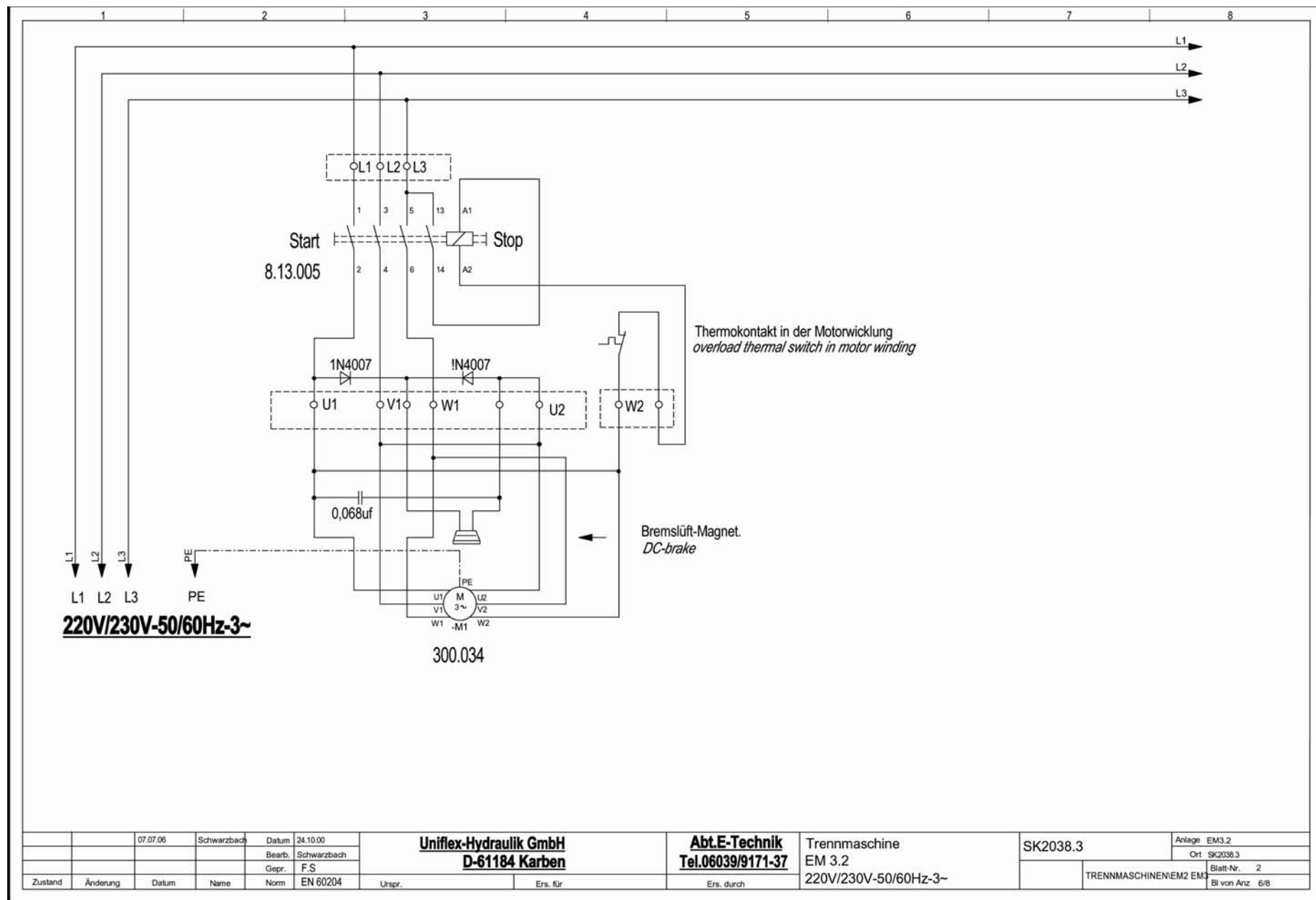
EM 3.4 DC (12VDC / 24VDC)



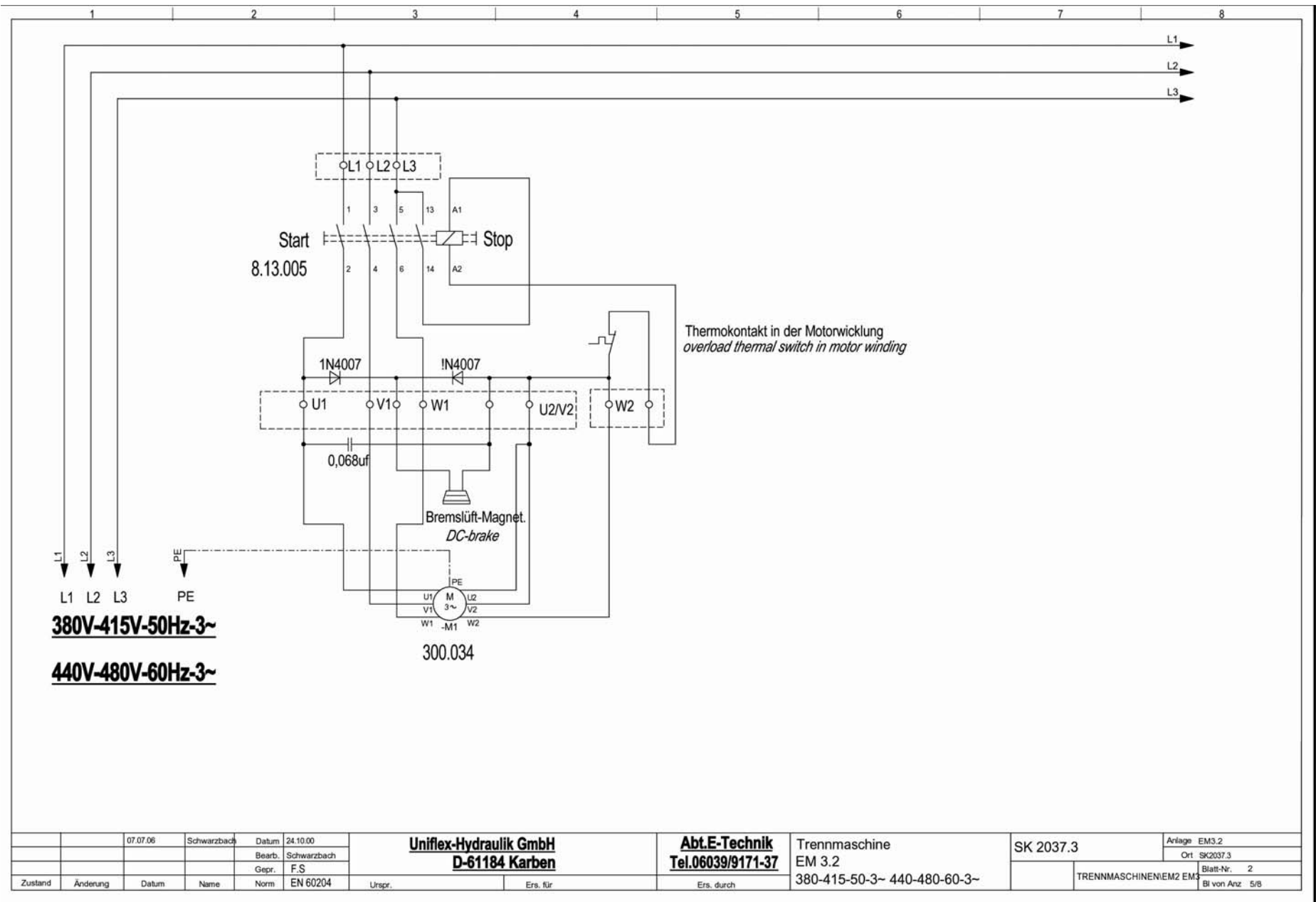
EM 3.2 Ecoline



EM 3.3 (220-230 V, 60 Hz, 3~)



EM 3.3 (440-460 V, 60 Hz, 3~ / 380-415 V, 50 Hz, 3~)



Wartungsbuch / Maintenance book / Carnet d'entretien / Libro de mantenimiento / Libretto die manutenzione / Onderhoud boek

Deutsch
English
Français
Español
Italiano
Dutch

Datum	Techniker	Gleitlagerblech	Federn	Relais	Öl	Bemerkung
Date	Technician	Slide bearing	Spring	Relais	Oil	Notice
Date	Technicien	Cojinete deslizante	Ressort	Relais	Huile	Remarque
Fecha	Técnico	Chapas de cojinete deslizante	Resorte	Relé	Aceite	Observación
Data	Tecnico	Cuscinetto a scorrimento	Molle	Relé	Olio	Osservazione
Datum	Technicus	Glijlagerplaat	Drukveer	Relais	Olie	Opmerking
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Erklärung des geschulten Personals / Declaration of Trained Personnel

Ich erkläre hiermit, dass ich an einer innerbetrieblichen Schulung zur Bedienung der UNIFLEX Maschine teilgenommen habe und über alle sicherheitsrelevanten Details informiert wurde. Des Weiteren erkläre ich, dass ich diese Betriebsanleitung vollständig gelesen und verstanden habe.

I herewith declare that I have attended an internal training course for the operation of this machine and have been informed about all details regarding safety.
I also declare that I have read and understood this operating manual in full.

Par la présente, je déclare avoir suivi une formation dans l'entreprise pour m'initier à l'utilisation de la machine UNIFLEX et avoir été informé de tous les détails liés à la sécurité. De plus, je déclare avoir lu et compris entièrement la présente notice d'instructions

Confirmo con esto de haber participado en un entrenamiento interno para la operación de la máquina UNIFLEX, y que fue informado sobre todos los detalles relevantes a la seguridad técnica. Además, confirmo de haber leído y comprendido el presente manual de instrucciones por completo.

Ort / Place Lieu / Lugar	Datum / Date Date / Fecha	Name / Name Nom / Nombre	Unterschrift / Signature Signature / Firma
Ort / Place Lieu / Lugar	Datum / Date Date / Fecha	Name / Name Nom / Nombre	Unterschrift / Signature Signature / Firma
Ort / Place Lieu / Lugar	Datum / Date Date / Fecha	Name / Name Nom / Nombre	Unterschrift / Signature Signature / Firma
Ort / Place Lieu / Lugar	Datum / Date Date / Fecha	Name / Name Nom / Nombre	Unterschrift / Signature Signature / Firma
Ort / Place Lieu / Lugar	Datum / Date Date / Fecha	Name / Name Nom / Nombre	Unterschrift / Signature Signature / Firma
Ort / Place Lieu / Lugar	Datum / Date Date / Fecha	Name / Name Nom / Nombre	Unterschrift / Signature Signature / Firma