ENGINEERING
TOMORROW

Operator's Manual

Danfoss ET9650
Cutting Machine

Imprint

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Imprint

EC / UK - Declaration of Conformity

In accordance with EC Machinery Directive 2006/42/EC and UK-Supply of Machinery (Safety) Regulations 2008.

The following machine

Danfoss ET9650

was developed, designed and manufactured in compliance with EC Directive 2006/42/EC and UK-Supply of Machinery (Safety) Regulations 2008, in the sole responsibility of

UNIFLEX-Hydraulik GmbH
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The following standards, codes and specifications have been applied:

- EC Directive 2006/42/EC
- EMC Directive 2014/30/EC
- EN ISO 12100: 2010
- EN 60204-1: 2018
- UK-Supply of Machinery (Safety) Regulations 2008
- UK-Electromagnetic Compatibility Regulations 2016

This declaration are invalid when the machine is modified or if unauthorized and unapproved third-party components are used without our prior approval.

Entity authorised for documentation: Uniflex-Hydraulik GmbH, Technical Documentation Dept.

Karben, 06.10.2022

Managing Director Harald von Waitz

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1 About this document

The "Cutting machine Danfoss ET9650" is consistently designated as machine in this Operation Manual.

This Operation Manual includes important notes on how you operate your machine/unit safely, properly and economically.

Use not in compliance with the intended purpose may result in hazard to the operator's health and life and/or in the risk of damage to/the machine/unit. Consequently, please only use the machine/unit

- in good order and condition,
- in accordance with its intended purpose,
- in a safety-conscious manner, with awareness of risks and hazards,
- in compliance with all notes included in this Operation Manual.

The machine/unit may only be operated by staff who

- has read the Operation Manual,
- has understood it,
- has been instructed in the operation of the machine/unit, and
- has signed in the Annex.

Figures may include accessories/options. Customer-specific equipment may vary.
The product images shown are for reference only and may differ from the product delivered.

1.1 Target groups

The target groups of this Operation Manual are:

Owner

An owner is a natural person or entity using the device himself/herself/itself, or on whose behalf the device is used. An owner may appoint a representative to exercise the owner's rights and obligations.

The owner has to make sure that

- national provisions, occupational safety regulations and applicable environmental protection regulations are fully complied with;

- persons working on the machine/unit are adequately qualified;
- persons working on the machine/unit are suitable for operating the machine/unit;
- the Operation Manual has been read and understood. One hard-copy of the Operation Manual must always be kept at a designated place where the machine/unit is used.
- persons working on the machine/unit are aware of potential risks;
- the operating staff is familiar with the location as well as with operating the fire alarm and fighting means. Free access to this equipment must be ensured.
- personal protection equipment is worn (safety footwear, protection gloves and safety glasses).

Machine/unit fitters

Machine/unit fitters must be at least 18 years old and have completed training for the task, i.e. they must have attended a specialist vocational training.

A fitter

- must observe the instructions in the Operation Manual;
- must inform the owner on failures and damage.

Operator

An operator is a person charged with and instructed in the proper operation of the machine/unit by the owner or the otherwise contractually obliged person.

The operator

- must observe the instructions in the Operation Manual;
- must inform the owner on failures and damage.
- must not perform and maintenance or repair work on the machine/unit.

1.2 Storage

The Operation Manual is part of the machine/unit and must be kept near the machine/unit at all times. Upon disposal of the machine/unit, the Operation Manual must also be handed over.

1.3 Name plate

The name plate is fixed near the power cable.

1.4 Abbreviations

TM	cutting knife, plain
TMG	cutting knife, with slots
TMC	cutting knife, coated

2 Safety instructions

2.1 Presentation of warnings

Warning notes in the Operation Manual warn against risks involved with the handling of the machine/unit. Risk levels are identified as follows:

HAZARD! The signal word HAZARD identifies an imminent hazard resulting in serious injuries or death. This warning is supplemented by a triangular hazard symbol.

WARNING! The signal word WARNING identifies a potentially hazardous situation, which might result in serious injuries or death. This warning is supplemented by a triangular hazard symbol.

CAUTION! The signal word CAUTION identifies a potentially hazardous situation, which might result in light injuries. This warning is supplemented by a triangular hazard symbol.

ATTENTION! The signal word ATTENTION identifies a potentially hazardous situation, in which the product or property in the environment may be damages. This warning is supplemented by a hazard symbol or a exclamation mark.

2.2 Intended use

This machine is intended for industrial use; it is only suitable for cutting pneumatic and hydraulic hoses up to a specific permissible diameter, see “Technical Data” in Section 3.

Intended purposes include:

- Single user workplace for one person only
- Manual input and retrieval
- Operating temperatures between 5 °C and 40 °C
- Operation in a closed operation room
- The machine must not be operated by persons not capable of operating the machine without any risk. These may include:
  - ➢ persons with physical or mental disabilities;
  - ➢ children and persons under age;

➢ persons with a restricted capability for the operation of machines (e.g. under the influence of drugs, alcohol or narcotics)

Use of the control in compliance with the intended purpose also includes compliance with the instructions in this Operation Manual.

Use for other than the intended purpose

Any other use is considered as being not in compliance with the intended purpose, in particular:

- Design modifications of the machine
- Use in explosive environments
- Use of impermissible cutting knives
- Cutting of inflexible workpieces
- misuse of consumables and waste materials.

WARNING!	
	Risk for life and health! Use not in compliance with the intended purpose imposes risks for life and health. Consequences resulting from use for other than the intended purpose shall be under the sole responsibility of the owner. • Always use the machine in compliance with its intended purpose.

2.3 Product-specific risks

The machine/unit is designed in accordance with the latest state of technology. Nevertheless, the machine/unit may impose risks:

2.3.1 Risks imposed by mechanical equipment

Cutting risk

A cutting risk exists during cutting and when the cutting knives are replaced.

- Take care and wear cut-proof protective gloves when cutting and replacing knives.

Risk of squeezing

There is a risk of squeezing on the moving parts.

Tilting hazard

The risk of tilting mainly exists while the machine is being transported.

- Observe the machine's centre of gravity during transport.

2.3.2 Risks imposed by electricity

There is a risk of electrocution near the live parts!

- Work on electric systems may only be performed by qualified electricians or instructed and trained persons under the supervision of a qualified electrician.
- Deactivate the machine/unit and secure it against unintentional restart before maintenance.

2.3.3 Risk imposed by pneumatic system

Risks are imposed by all pneumatic lines and connections. Pneumatic systems are subject to special safety provisions.

- After the machine is deactivated, the given and potentially hazardous residual energy has to be considered.
- Use correct hoses and hose clamps.
- Only work in the permissible pressure range.

2.3.4 Risks imposed by noise

The noise level meter acc. to IEC 804, Class 2, was calibrated before measuring.
The operation of the machine causes noise emissions of 90 dB(A) at the workplace. Noise protection is required.

Higher noise emissions may occur when other machinery is simultaneously used at the workplace. The machine owner must provide for appropriate protection, e.g.

- instruct staff to wear ear protection;

- provide information/instructions on risks
- identify hazardous areas
- provide health monitoring

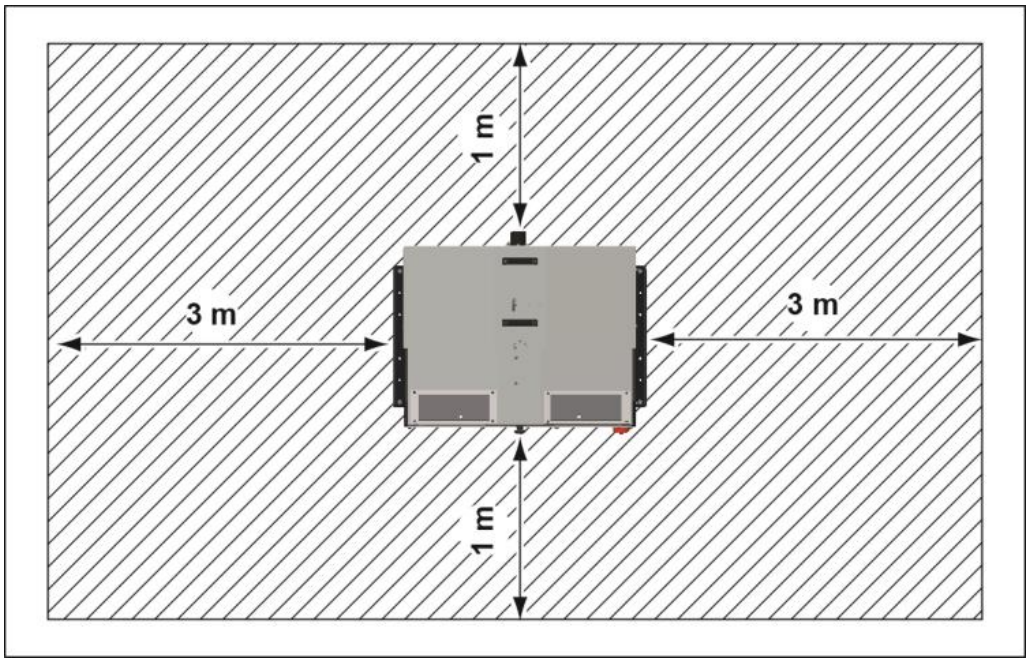
2.3.5 Risks in case of fire

The operating staff has to be familiar with the location as well as with operating the fire alarm and fighting means. Free access to this equipment must be ensured.

Use extinguishing powder in case of fire.

2.4 Safety

2.4.1 Working area

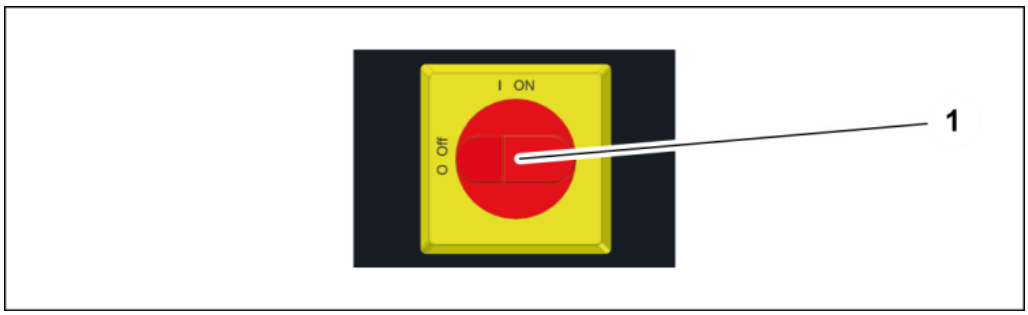


The working area is defined as the area all around the machine (shaded).

- Keep the working area free from trip hazards.
- Use ducts for lines and cables.
- Provide good illumination.

2.4.2 Emergency-stop

The machine is fitted with an emergency-stop button.



Immediately activate the emergency-stop function (1) in cases of emergency.

Remedy the cause of the emergency stop first before re-starting the machine.

2.4.3 Warning signs on the machine

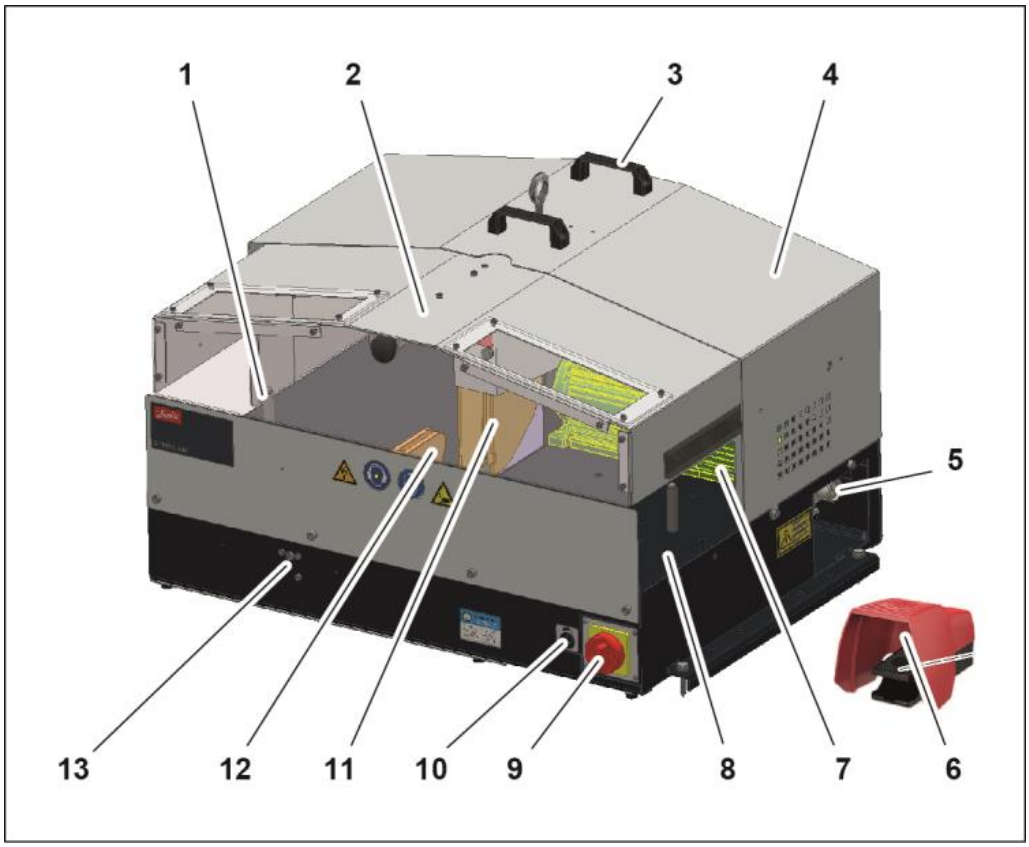
	Cutting risk on the cutting knife
	Hand injury on the cover
	Danger from electric current at the power supply line
	Risk of eye injuries Wear safety goggles

	Risk of hearing damage Wear ear protection

Illegible or missing warning signs must immediately be replaced by the operator.

3 Machine description

3.1 Design and function



(1) Bending pin
(2) Protective cover
(3) Strap grip
(4) Machine cover
(5) Compressed air maintenance unit
(6) Foot pedal
(7) Motor
(8) Cutting plate
(9) Main switch
(10) Control valve for feed speed
(11) Knife protection
(12) Hose feed

(13) Return stroke setting

The machine requires an electrical connection and a compressed air connection. The pressure of the compressed air can be adjusted at the compressed air maintenance unit (5).

The bending pins (1) prevent the cutting knife from getting jammed by the work piece and enhance the cutting performance. Once the bending pins (1) are positioned according to the hose diameter, the work piece is placed onto the cutting plate (8) between the bending pins (1) and hose feed (12). The knife protection (11) prevents the operator from unintentionally reaching into the cutting knife.

Once the protective cover (2) is closed, the machine is switched on at the main switch (9), which starts the motor (7) and drives the cutting knife. To perform the cutting procedure, the foot pedal (6) is pressed, which moves the work piece towards the cutting knife via the pneumatically driven hose feed (12). When the foot pedal (6) is released, the hose feed (12) moves back into the starting position.

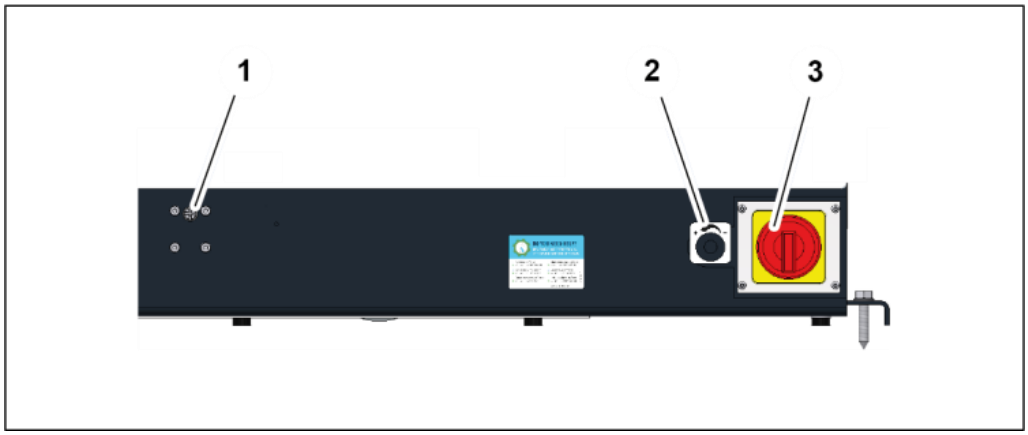
The control valve for feed speed (10) can be used to adjust the feed speed gradually according to the respective work pieces. The selected speed depends on the hose design.

The return stroke setting (13) can be used to gradually adjust the distance the hose feed (12) moves back towards the starting position. In this way, the return stroke path can be adjusted according to the respective diameter of the work piece.

3.2 Accessories

The machine may be fitted with accessories. A list of the available accessories is included in the Annex, Section "Accessories".

3.3 Operation and display elements



(1) Return stroke setting
(2) Feed speed
(3) Main switch / emergency-stop button

3.4 Technical data

Machine

Dimensions L x W x H	983 x 760 x 540 mm
Weight	approx. 140 kg
Noise level	85 dB(A)*
Protection class	IP 42
Operation mode	S6-60%

Function

Hose feed	Pneumatic
Brake motor	Yes
Extraction connection	Ø 60 mm
Cutting knife	TM C 400 x 4 x 30 mm

Work piece capacity

Workshop SAE R13 & SAE R15	2"
Production SAE R13 & SAE R15	1/4"
SAE R12	2½"
Industry	4"
Max. outside	Ø 120 mm

Electrical connection

Power rating	4.6 kW
Voltage rating	400 V ± 10 % 50/60 Hz, 3 phases
Back-up fuse	20 A (delayed)
Short circuit current Ik3p	6,7 kA
Short circuit current Ip3p	9,7 kA
Full load current of circuit	16,5 kA
Full load current of control circuit (primary)	0,48 kA

Pneumatic connection

Power rating	6.5 bar
Air consumption	Approx. 25 Nl/min

Workbench

Stable, level workbench with a carrying capacity of	approx. 500 kg

We recommend industrial flooring which meets the following structural requirements

Permanent floor loading	Approx. 0.07 kg/mm^2
Floor carrying capacity	Min. 2500 kg/m^2
Floor quality	B25
Evenness	Max. unevenness 5 mm/m
Inclination	max. 5 mm/m

Ambient conditions

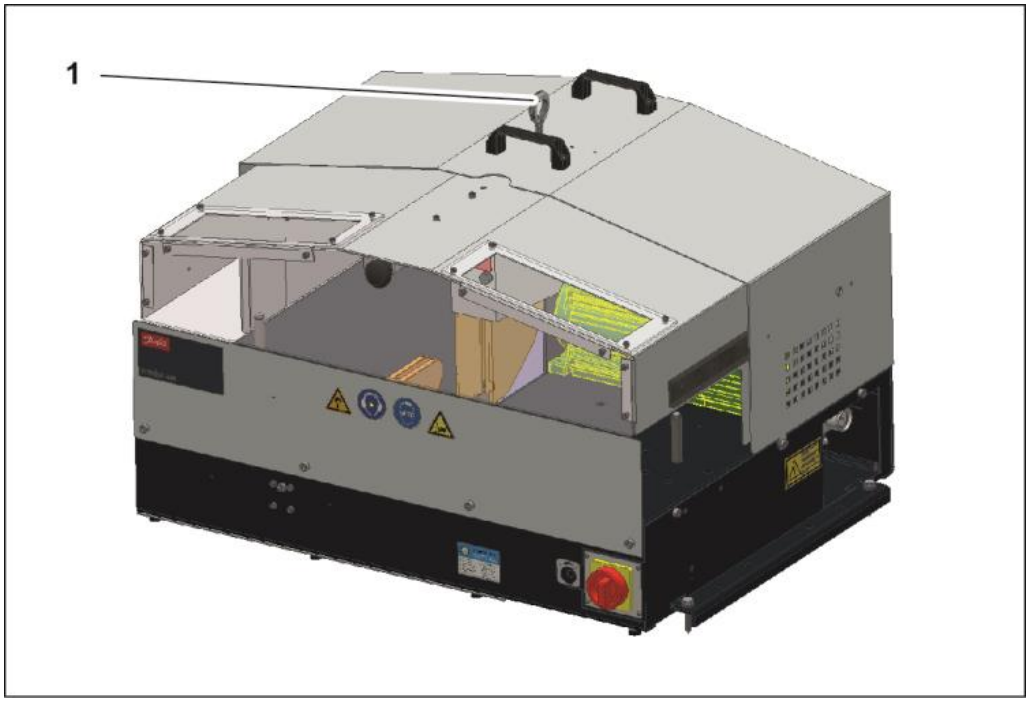
Ambient temperature	5 °C – 40 °C
Air humidity	45 % – 65 %

The * data are theoretical/computed values, or values measured on a prototype. Actual values may vary slightly, depending on the machine.

4 Transport and commissioning

4.1 Transport

The goods should be transported in the original packaging. During transport, the goods must be secured safely within the packaging. All applicable laws and regulations relating to securing loads shall be observed during transport.



The machine may only be unloaded and transported by means of a lift truck or a crane. When a crane is used for transport, lifting gear with a sufficient length and lifting capacity has to be used. The lifting gear must be attached to the lifting lug (1). For machine weight, please refer to "Technical data" in Section 3.

WARNING!	
	Danger from falling loads! Risk of injury from falling loads. • Do not stand under suspended loads.

WARNING!	
	Danger from tilting machine! The machine may tilt if it is transported improperly. There is a risk of being injured. • Only lift the machine at the designated points.

1. Lift the machine using the lifting lug (1) and transfer it to the installation site.

4.2 Intermediate storage of machine/unit

If the machine/unit cannot be mounted immediately upon delivery, it must be protected against:

- Contamination,
- Weather influences,
- Mechanical damage.

The machine/unit components may only be stored in closed rooms and under the following conditions:

- temperature between 10°C and 35°C,
- maximum air humidity 80% (non-condensating).

4.3 Commissioning

The machine is commissioned by the customer's fitter.

1. Place the machine hanging on the lifting lug on the optionally supplied table.
2. Position the cutting plate flush with the table edge.
3. Fix the machine on the workbench using suitable screws.
4. Remove the lifting lug from the machine.

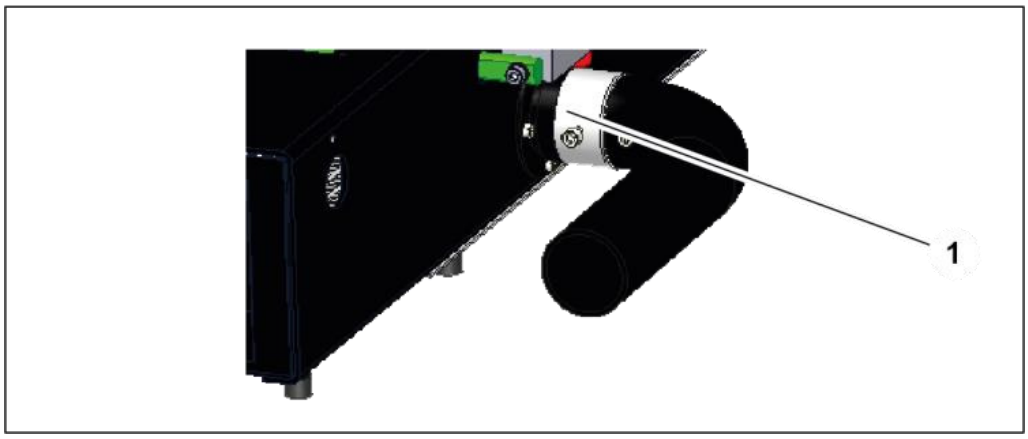
Place the machine in a way so that it is easily accessible for maintenance work from all sides.

5. Check the machine for damage.

6. Check the electric cables for damage.
7. Check the pneumatic hoses for damage and secure fitting.
8. Train the operating staff and record training sessions in “Declaration of trained staff”, Section 9.

WARNING!	
	Risk of injuries! Machine components might loosen during transport. Such components might be flung out during the cutting process. There is a risk of being injured. • Perform a cutting process in idle mode and without a work piece. • Check the machine for atypical noise.

4.3.1 Extraction process for TM/TMG cutting knife

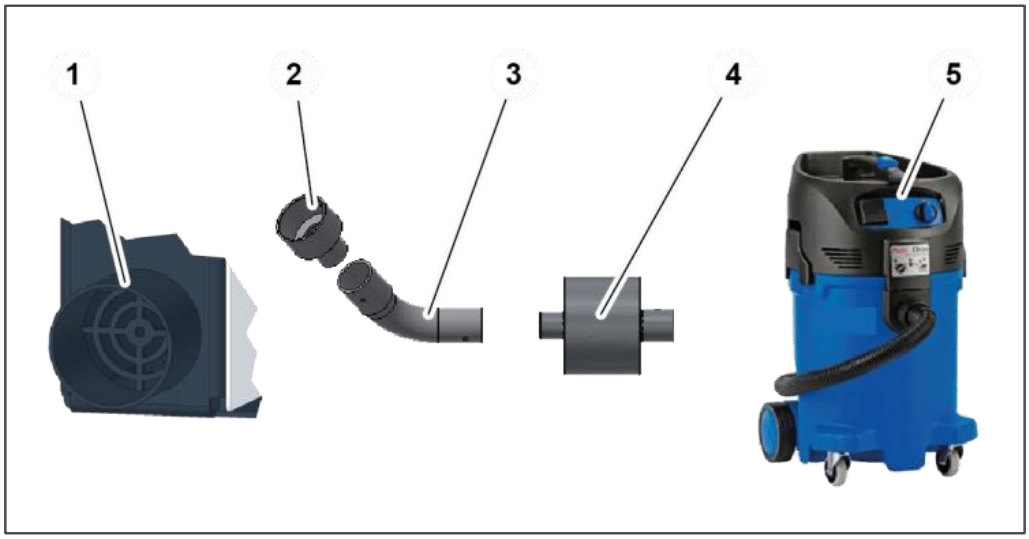


1. Mount a metal hose for smoke and particle extraction to the extraction nozzle (1).

We recommend an extraction fan with 100 mm water column and a capacity of 4 m³/min, as well as a filter element and a spark extinguisher suitable for this purpose.

4.3.2 Extraction process for TMC cutting knife

WARNING!	
	Risk of fire During cutting, there is a risk for life and health due to the fire hazard from flying sparks. • Only operate the machine with a spark extinguisher. • Clean the machine and spark extinguisher after each use (see “Cleaning” in Section 5).



1. Attach the adapter (2) to the extraction nozzle (1) of the machine.
2. Attach the angle adapter (3) to the adapter (2).
3. Attach the spark extinguisher (4) to the angle adapter (3).
4. Attach the metal hose to the spark extinguisher (4) and extraction device (5).

We recommend an extraction fan with 100 mm water column and a capacity of 4 m³/min, as well as a filter element suitable for this purpose.

Figures may include accessories/options. Customer-specific equipment may vary.
The product images shown are for reference only and may differ from the product delivered.

4.3.3 Connection of compressed air

ATTENTION!

Damage to the machine

Contaminated compressed air may cause damage to the machine.

- Only use clean, oil-free, and water-free compressed air.

The compressed air connection is located on the right side of the machine.

1. Establish the compressed air connection between the network and the compressed air maintenance unit (1) using a pneumatic hose Ø 8 mm (G ¼ “).

4.3.4 Electrical connection

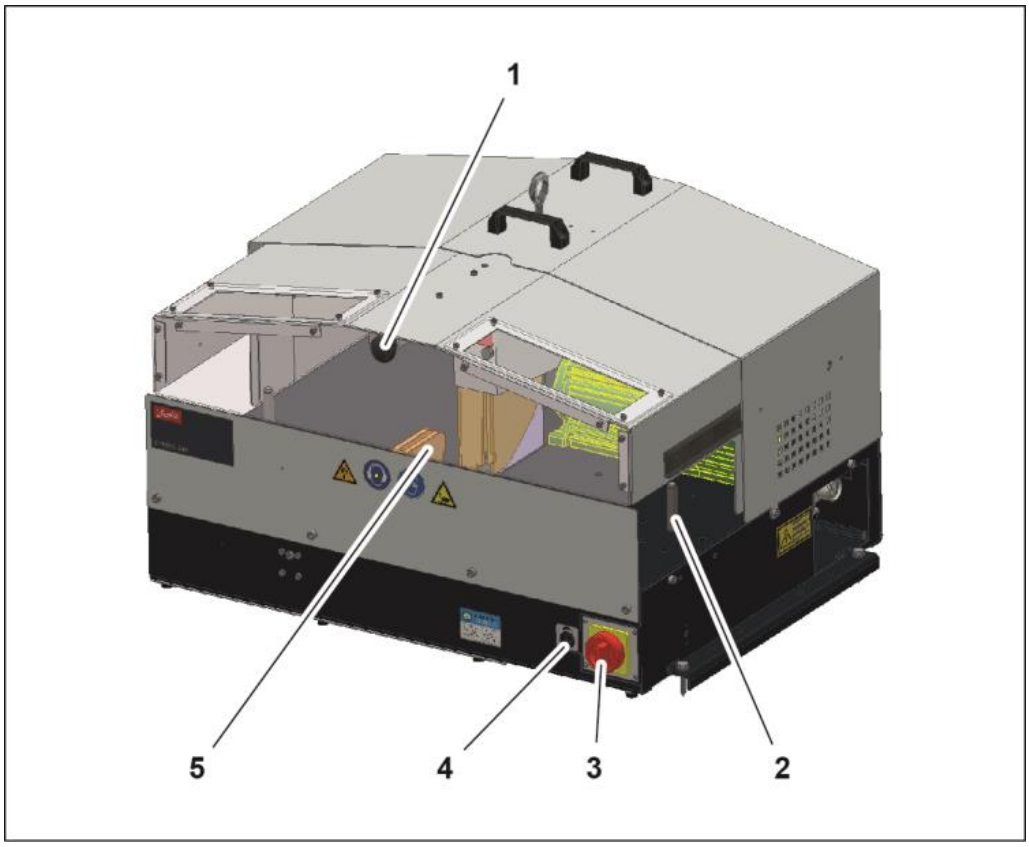
WARNING!	
	Risk by electrical voltage! There is a risk of electrocution near the live parts! • Work on electric systems may only be performed by qualified electricians or instructed and trained persons under the supervision of a qualified electrician. • Do not operate the machine without a sufficiently rated ground wire. • Deactivate the machine and secure it against unintentional restart before maintenance.

1. Disconnect the power supply for the machine and secure it against unintentional restart.
2. Have the power cable of the machine connected to the local mains by a qualified electrician according to the regulations of the Electricity Board.
3. Check the electric motor rotational direction according to the arrow. Exchange outer cable (phases) of the connection, if required.

ATTENTION!	
	Risk of damage to machinery! Operating the motor in the wrong direction of rotation results in the loosening of the knife attachment. • Ensure that the rotational direction of the motor is correct. Observe the red arrow on the motor cover. • If the motor has been operated in the wrong direction of rotation, the securing nut and/or bolt has to be tightened as described in Section 6 "Knife replacement".

4.3.5 Initial operation

WARNING!	
	Risk for life and health! Improper use imposes risks for life and health. • The initial operation may only be performed by qualified maintenance staff (machine fitters). • If unusual noises can be heard, switch off the machine immediately and eliminate the cause.



Test run without work piece

1. Close protective cover (1).
2. Switch on the machine using the main switch (3).
3. Activate the foot pedal until the hose feed (5) has reached the end position.

4. Loosen the foot pedal and wait until the hose feed (5) has returned completely.

Test run with work piece

1. Open the protection cover (1).
2. Position the bending pin (2) according to the hose diameter; see “Cutting the work piece” in Section 5.
3. Position the work piece on the cutting plate between the bending pin (2) and the hose feed (5).
4. Close protective cover (1).
5. Set the feed speed (4) to a low to medium speed.
6. Switch on the machine using the main switch (3).
7. Activate the foot pedal until the work piece is cut completely.
8. Loosen the foot pedal and wait until the hose feed (5) has returned completely.
9. Wait for about one minute until the cutting knife has cooled down.
10. Repeat the cutting process nine times when cutting a work piece with cutting knife TM or TMG.

These ten careful cutting processes are important for the durability of the cutting knife TM or TMG.

5 Operation

5.1 What you have to observe

The operator has received the Operation Manual from the owner, has read and understood it and will observe it.

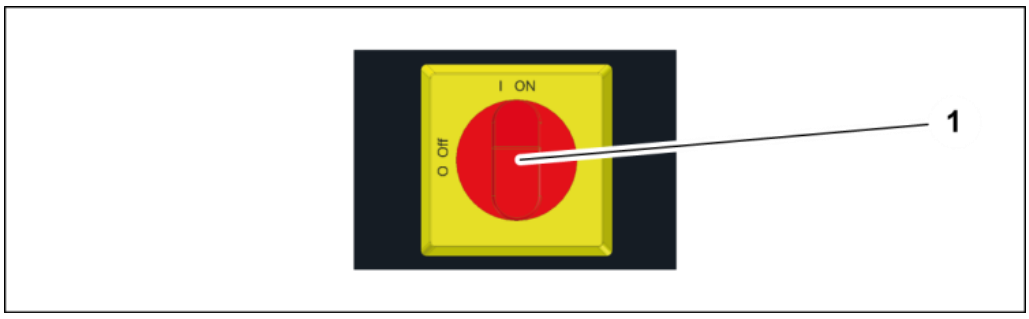
Before starting and/or re-starting

- Ensure sufficient illumination of the working area of the machine.

During operation

- Observe the safety instructions on the machine.
- Make sure that no other persons stay in the working area.
- Each movement of the hand must be observed.
- Eating, drinking and smoking at the workplace is prohibited.
- Wear close-fitting clothes.
- Do not wear watches or jewellery.

5.2 Start

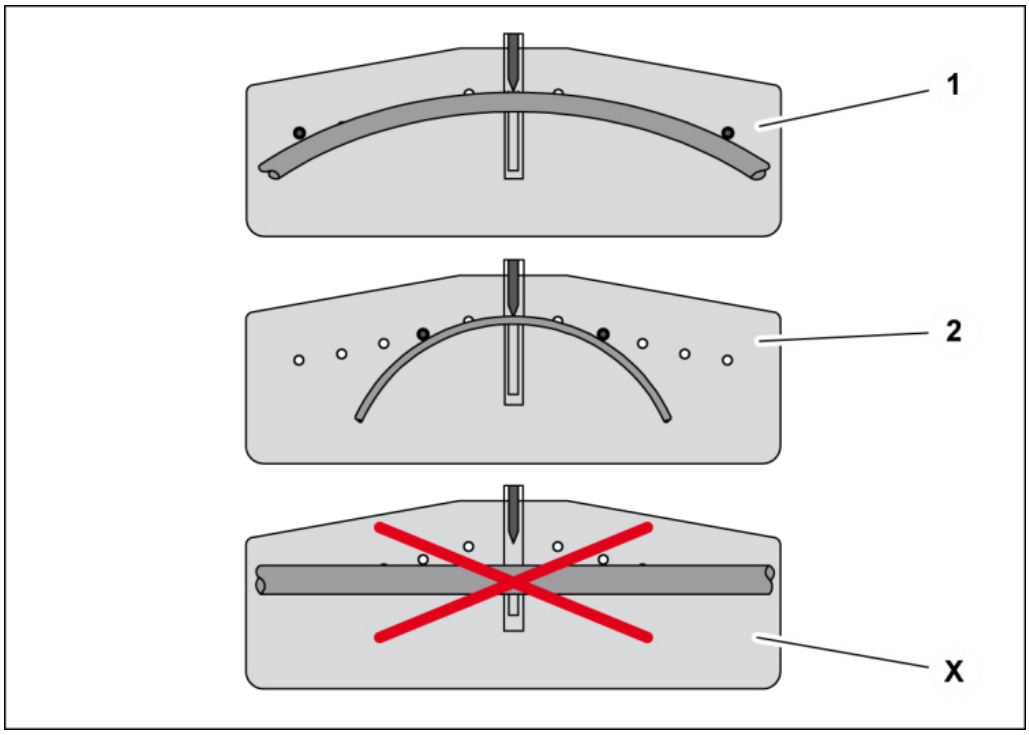


1. Check that there is no emergency-stop situation.
2. Activate the main switch (1).

5.3 Work piece cutting

5.3.1 Prerequisites

ATTENTION!	
!	**Damage to the machine** The knife may be damaged when the machine is operated without hose prestressing. • Never cut without bending (X). • Adjust the bending pin and the workpiece.



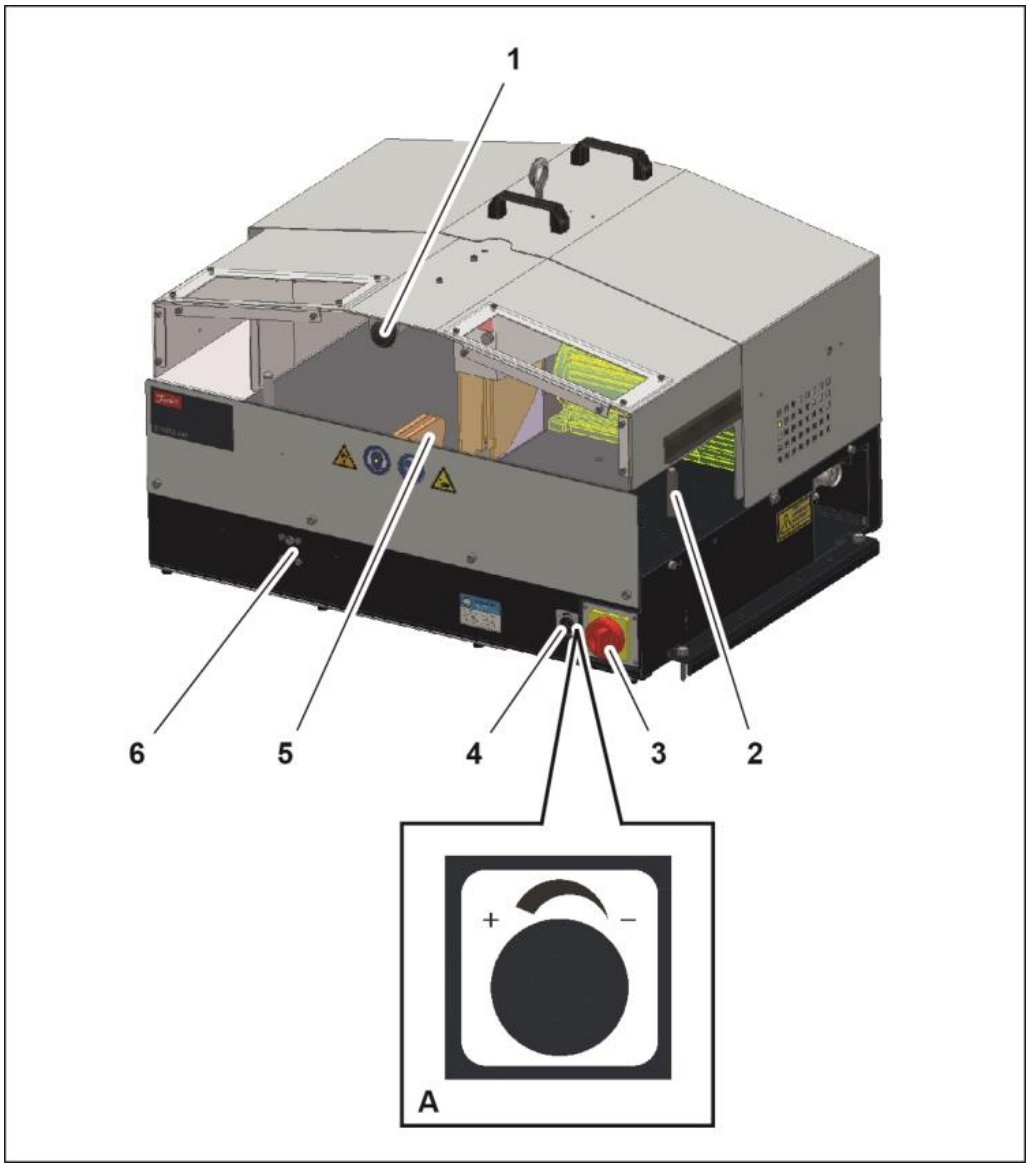
Prerequisites for a correct cutting process:

- The bending pin position and the hose diameter are matched to each other:
  - (1) Large hose diameter = large bolt distance
  - (2) Small hose diameter = small bolt distance

- The work piece must protrude over the two bending pins by at least 50 mm.
- The work piece must completely bear on the cutting plate.

5.3.2 Cutting individual hoses

WARNING!	
	Cutting risk There is a risk of cutting your extremities when cutting work pieces. • Do not reach into the working area of the cutting machine during operation.



1. Open protective cover (1).
2. Position the bending pin (2) according to the hose diameter; (see “Cutting the work piece” in Section 5).
3. Position the work piece on the cutting plate between the bending pin (2) and the hose feed (5).
4. Close protective cover (1).
5. Adjust the feed speed (4) to the middle of the scale (picture A).
6. Switch on the machine using the main switch (3).
7. Activate the foot pedal until the work piece is cut completely.
8. Loosen the foot pedal and wait until the hose feed (5) has returned completely.

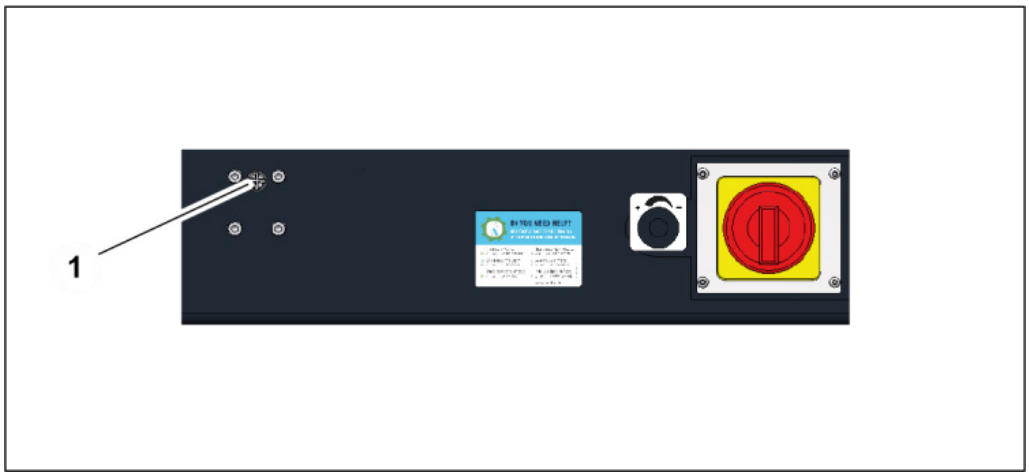
9. Open protective cover (1).

WARNING!	
	Cutting risk The motor continues to run when the protective cover is opened. The knife protection is only blocked mechanically in order to eliminate danger. • Do not reach into the cutting knife operating range.

10. Remove the work piece.
11. Check the cutting performance and adjust the feed speed (4) if necessary.

5.3.3 Setting the return stroke

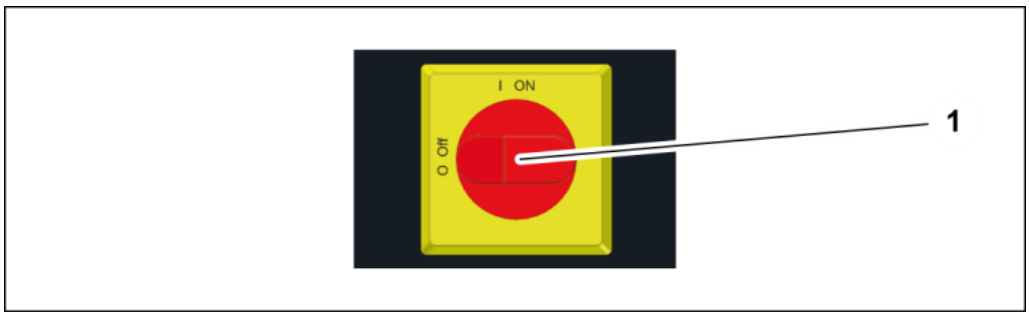
To enable quicker working processes, the return stroke setting can be used to adapt the return stroke to the work piece diameter.



1. Adjust the return stroke setting (1) by turning it to the desired position using a screwdriver.

Turning the return stroke setting in a clockwise direction increases the return stroke path.

5.4 Stop



1. Complete the cutting process.
2. Deposit the work piece outside the machine.
3. Deactivate the main switch (1).
4. Check the machine for glowing embers.
5. Check the machine for contamination and outside damage.
6. Check the cutting knife for damage and cracks.
7. Remove contamination, dust and chips using a vacuum.

Inform the fitter in case of damage or other irregularities.

5.5 Overload protection

The motor is protected against overload by a motor protection switch.

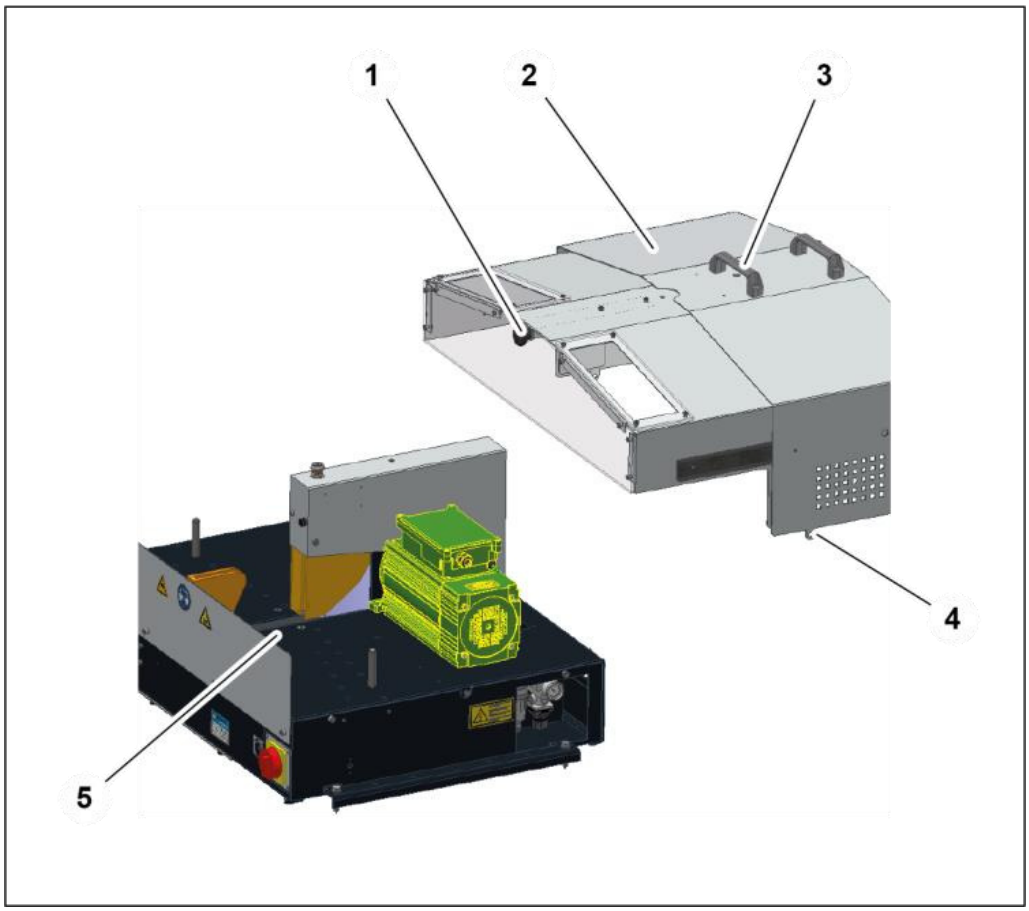
After a motor overload, if any, let the motor cool down and restart it.

The restart protection prevents an unintentional restart of the machine. Starting the machine is only possible by activating the main power switch again.

5.6 Cleaning

WARNING!	
	Risk for life and health! There is an acute risk of injuries when working in the danger zone of the cutting knife. • Disconnect the machine from all energy sources and secure it against switching on unintentionally. • Wear cut-proof gloves.

ATTENTION!	
	Risk of damage to machinery! If the machine is cleaned with a steam jet or compressed air, dirt and water may ingress in the machine and cause serious damage. • Do not use a steam jet to clean the machine. • Do not use compressed air to clean the machine.



1. Use a vacuum cleaner or a soft cloth to clean the machine.
2. Open protective cover (1).
3. Vacuum the hose guide (5).

If necessary, remove the machine cover to gain better access to the hose guide.

1. Release the four screws (4) of the machine cover (2).
2. Lift up and remove the machine cover (2) using the strap grips (3).
3. Vacuum the entire area (5) of the hose guide and hose feed.
4. Attach the machine cover (2).

6 Maintenance

Regular maintenance will ensure the continuous operation reliability of the device.

6.1 What you have to observe

This Section describes action to be taken by you as the fitter regularly to ensure the troublefree use of the machine/unit.

- Maintenance work may only be performed by qualified maintenance staff (machine/unit fitters).
- Repair work on the machine/unit or components may only be performed by appropriately qualified expert staff or UNIFLEX experts!
- The machine/unit must always be deactivated during maintenance work (see "Deactivation" in Section 5). Use the lock to prevent the main switch from being switched on and also attach a sign. Example text:

  Machine/unit out of service for maintenance work!
  Do not switch on!

- Welding, flame-cutting and grinding work on and in the machine/unit and its environment must be approved in advance. There is a risk of fire. The machine/unit must be cleaned from dust and inflammable substances. Adequate ventilation must be ensured.

6.2 Maintenance schedule

If not specified otherwise, inspections listed in the maintenance schedule are visual inspection. Replace defective parts.

If you work in 2 shifts, the check frequency has to be doubled. If you work in 3 shifts, you proceed as with 2-shift operation.

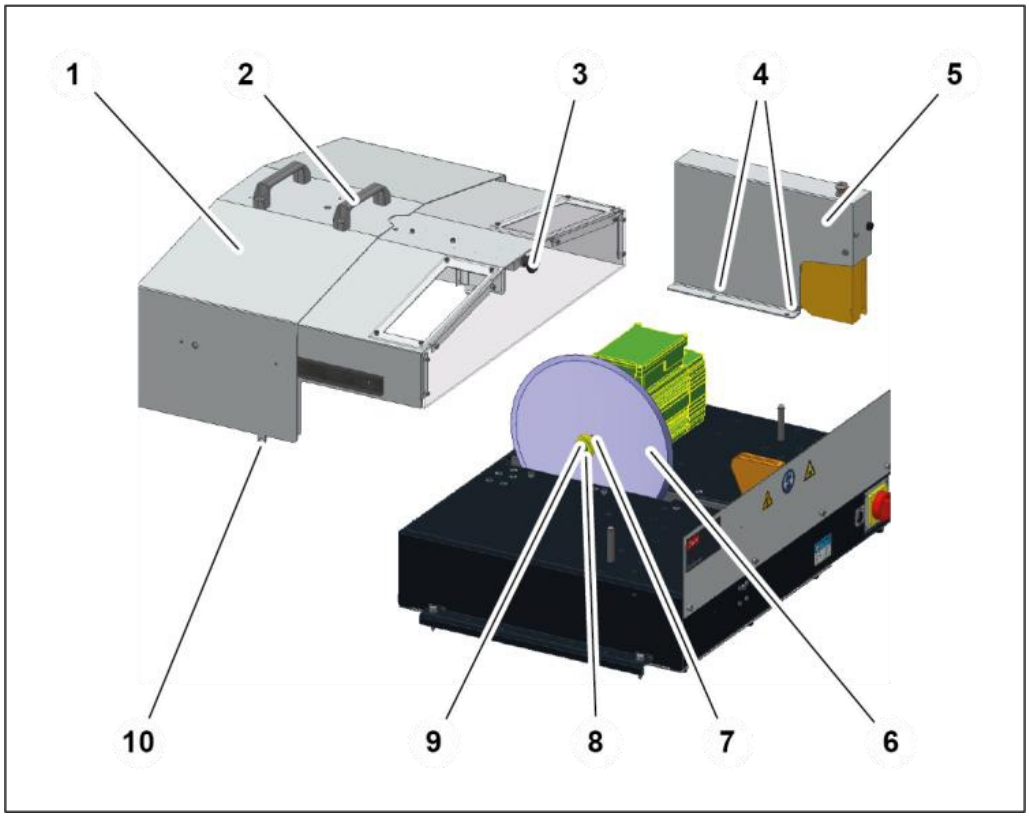
Record maintenance work performed in the maintenance log.

Maintenance item	Daily	Weekly	Monthly	Number of years
Cutting tool				
Cutting knife: Check cutting edge for sharpness, cracks and breakouts; resharpen (only TM and TMG cutting knife) or replace knives as appropriate. Coating: check (TMC cutting knives only).	X			
Bolted connections: check and retighten if necessary.			X	
Machine: Cleaning	X			
Extraction line: Cleaning	X			
Safety equipment				
Knife protection: check for function Press the knife protection on the outside edges towards the motor with both thumbs wearing cutting protection gloves. There must be a significant resistance.		X		
Warning signs on the machine: Check legibility (see "Warning signs on the machine" in Section 2).		X		
Motor brake: Motor: check for function and readjust if necessary (see "Motor brake readjustment", Section 6).).		X		
Protective screens: clean using a household window cleaner.		X		
Protective screens: replace no later than five years after manufacture (see year of construction).				5
Pneumatic system				
Check the compressed air hoses for damage and leaks.		X		
Check compressed air maintenance unit.		X		

The replacement of wear parts must be recorded in the maintenance log!

6.3 Knife replacement

WARNING!	
	Risk for life and health! Knife replacement imposes a significant risk of injuries to the hands. • Always wear cut-proof gloves when replacing the knives.



1. Complete the cutting process.
2. Deposit the work piece outside the machine.
3. Disconnect the machine from the power supply.
4. Open the protective cover (3).
5. Release the four screws (10) of the machine cover (1).
6. Lift up and remove the machine cover (1) using the strap grips (2).

The machine cover should be lifted up by two people using the strap grips.

7. Release the four screws (4) of cutting knife cover (5).
8. Remove the cutting knife cover (5).
9. Hold the shaft (8) with a SW 8 hexagon socket wrench and release the nut (7) using an SW 46 open-end wrench.

The nut has a left-hand thread!

10. Remove the washer (9) and cutting knife (6) from the shaft (8) and place them down carefully.
11. Attach the new cutting knife in the reverse order.

ATTENTION!

Risk of damage to machinery!

If the directions of rotation of the motor and the knife do not match, there is a risk that the knife will be destroyed during cutting.

- Check the direction of rotation before starting the machine.

In the case of slotted cutting knives, observe the cutting direction!
The direction of rotation is to the right when viewing the free end of the shaft.

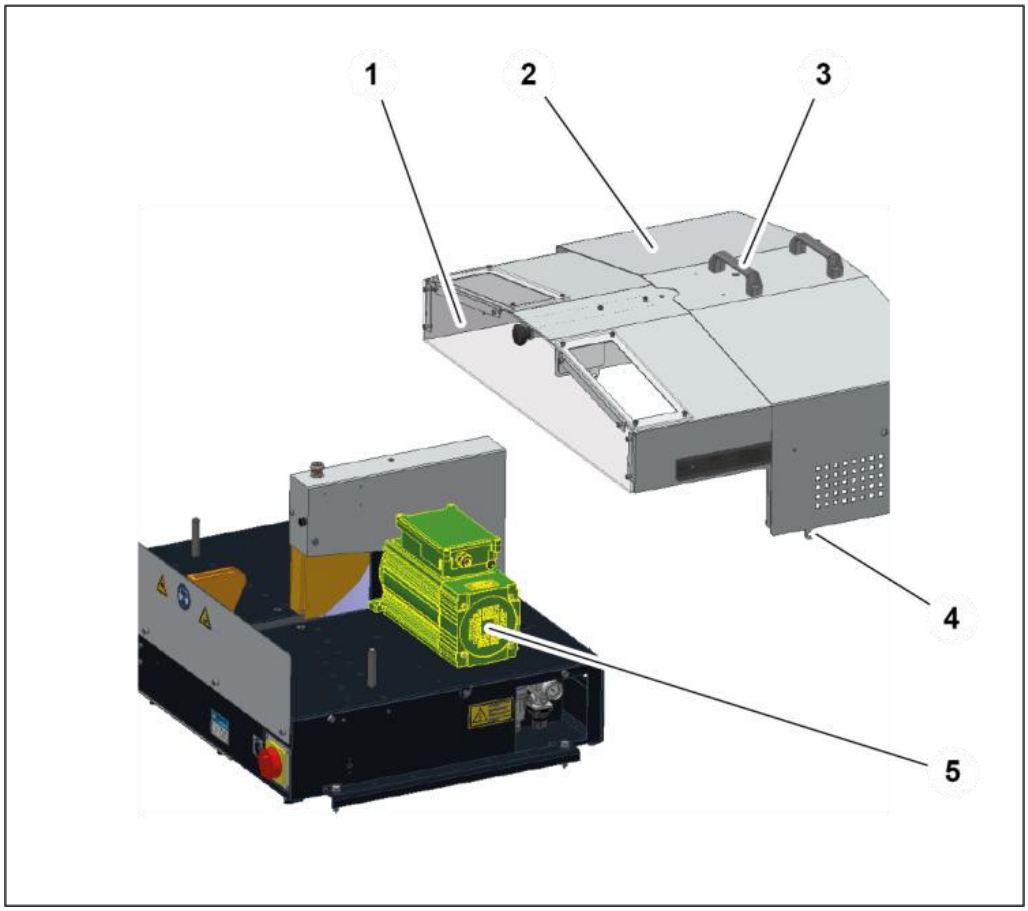
12. Remount cutting knife cover (5).
13. Remount machine cover (1).

6.4 Motor brake readjustment

Due to wear on the brake linings, the braking effect of the motor brake may decrease over time.

In this case, the brake has to be readjusted. If the brake cannot be re-adjusted anymore, the brake linings are worn and must be replaced.

WARNING!	
	Risk of injuries The motor brake is a major safety element of the machine. For this reason, the machine must in no event be operated without any functional motor brake and only with mounted fan runner cover. • Check and readjust the motor brake regularly. • Do not continue using the machine if the brake is defective.



The motor brake is located behind the black plastic cover (5) on the motor.

1. Deactivate the machine on the main switch and secure it against unintentional restart.
2. Open protective cover (1).

3. Release the four screws (4) of the machine cover (2).
4. Lift up and remove the machine cover (2) using the strap grips (3).

The machine cover should be lifted up by two people using the strap grips.

5. Remove nuts on the plastic cover (5) and remove the plastic cover.
6. Block the shaft using a hexagon socket wrench and turn the adjusting nut to the right using an open-end wrench.
7. Secure the plastic cover (5).
8. Switch on the motor.
9. Once the motor has reached full speed, allow the motor to run for a further 30 seconds.
10. Switch off the motor and measure the time taken for the motor to come to a complete standstill.
11. Check that the motor comes to a complete standstill within 10 seconds of being switched off.
12. If the braking effect is insufficient, repeat the process.

The motor brake must bring the motor to a standstill within 10 seconds of it being switched off. If this time is exceeded and it is still not possible to achieve this time despite repeated adjustment, contact the customer service of the manufacturer immediately.

WARNING!

Hot surface - risk of burns

The brake may become very hot. There is a risk of burns.

- Check the temperature carefully.

13. Let the motor run for 1 minute after adjusting the brake and then check the temperature on the adjusting nut.
    If the brake is hot, the adjustment has to be corrected.
14. Turn the adjusting nut to the left by 30°.

15. Check the braking effect and the temperature again.
16. Attach the plastic cover (5) and tighten the nuts.
17. Attach the machine cover (2).

If the problems with the brake continue, immediately contact the service department of the manufacturer.

7 Troubleshooting

Error	Cause	Remedy
Machine does not cut	Main switch is off	Switch on the main switch.
	Power plug defective	Check the power plug, replace if necessary.
	Motor defective	Contact service.
	Main switch defective	Contact service.
	Cutting knife worn	Check cutting knife for wear, replace if necessary.
Knife not centred	Flange disc is not positioned correctly on the feather key	Turn flange disc and insert it into the feather key.
Pneumatic feed is not working.	Compressed air supply disconnected.	Connect compressed air.
	Air pressure too low.	Check air pressure and increase, if required.
Work piece is jammed in knife protection.		Deactivate the machine on the main switch and secure it against unintentional restart. Open the protective cover. Remove the work piece. Wear cut-proof gloves.

8 Decommissioning, disposal

WARNING!	
	Risk by electrical voltage! There is a risk of electrocution near the live parts! • Shut down the machine/unit. • Disconnect the machine/unit from the power supply.

CAUTION!	
	Risk of injuries! Contact with consumables, e.g. oils, greases, test media, imposes a risk of injuries for the skin, eyes, respiratory and intestinal tracts! • Observe supplier's protection and safety instructions (see data sheet). • Wear personal protection equipment. • Do not eat, drink or smoke in the working area and when handling consumables. • Ensure good ventilation.

8.1 Dismantling

This section describes activities to be performed by you as the operator to ensure the safe dismantling of the machine/unit.

- The machine/unit may only be dismantled by entrusted and qualified staff.
- Check the machine/unit for mechanical tension and consider it during dismantling.

8.2 Recycling

The machine/unit contains metal, hydraulic hoses, electric cables and electronic components, depending on the type.

As regards disposal, the applicable national environmental protection and waste disposal regulations have to be complied with.

8.3 Consumables and waste

Observe applicable national environmental protection and waste disposal regulations.

Return consumables, e.g. oils, greases, test media, to supplier - they are hazardous waste. Also observe the information given on the safety data sheet.

9 Annex

Individual machine/unit components may deviate in their features. Please indicate the serial number of the machine for spare part orders.

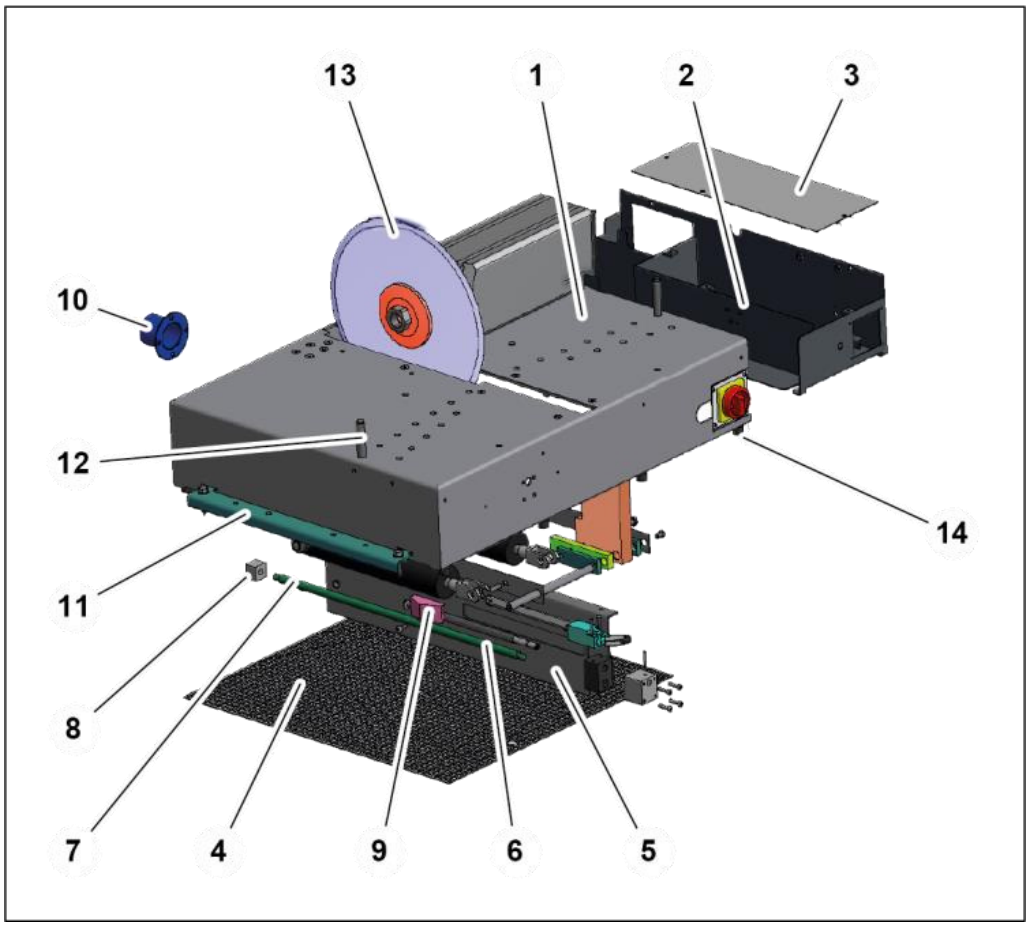
9.1 Accessories (upgradable)

Accessories	Part code
Hose guide 2000 mm	UHG 14
Extension 1000 mm	UHG 14 EXT
Suction system + Adaptor	UVC S36 + 777.055
Suction filter system	UVC 100.2 MVA FSD
Hose length measuring device	UMS 4
Spark extinguisher	330.050.3
Cutting knife, plain	TM 400x4x30
Cutting knife with inclined slots	TM G 400x4x30
Cutting knife, coated	TM C 400x4x30
Bench	TU
Hose coiling reel	UWT 2.2
Length measuring device for hose coiling reel	UMS 4 +514.1
Hose winder	UAT 4.2
Hose winder	USH 4-5
Quantity counter kit	323.1

Please contact our Sales Department for ordering optional accessories.

9.2 Spare parts list

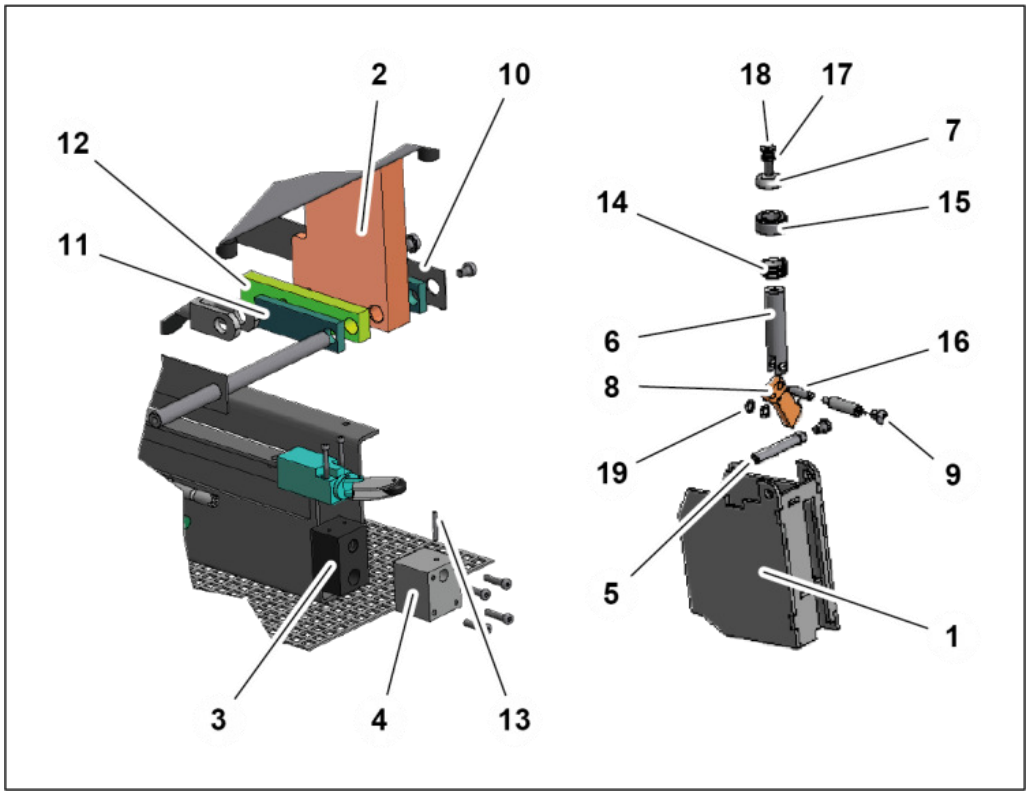
9.2.1 Mechanical equipment - Chassis



Item	Quantity	Part code	Designation
1	1	323.001.0	Chassis
2	1	323.040.1	Electric drawer
3	1	323.116.3	Cover plate
4	1	323.051.3	Base plate
5	1	323.006.3	U-Profile
6	1	323.024.4	Path adjustment axle
7	1	323.026.4	Guidance
8	1	323.028.4	Guidance connection
9	1	323.107.3	Positioner
10	1	323.121.3	Extraction connection

Item	Quantity	Part code	Designation
11	2	323.122.3	Retaining tab
12	1 set	304.2001	Set of bending pins
13	1	TM C 400x4x30	Cutting knife, coated
14	10	233.111	Rubber-metal buffer

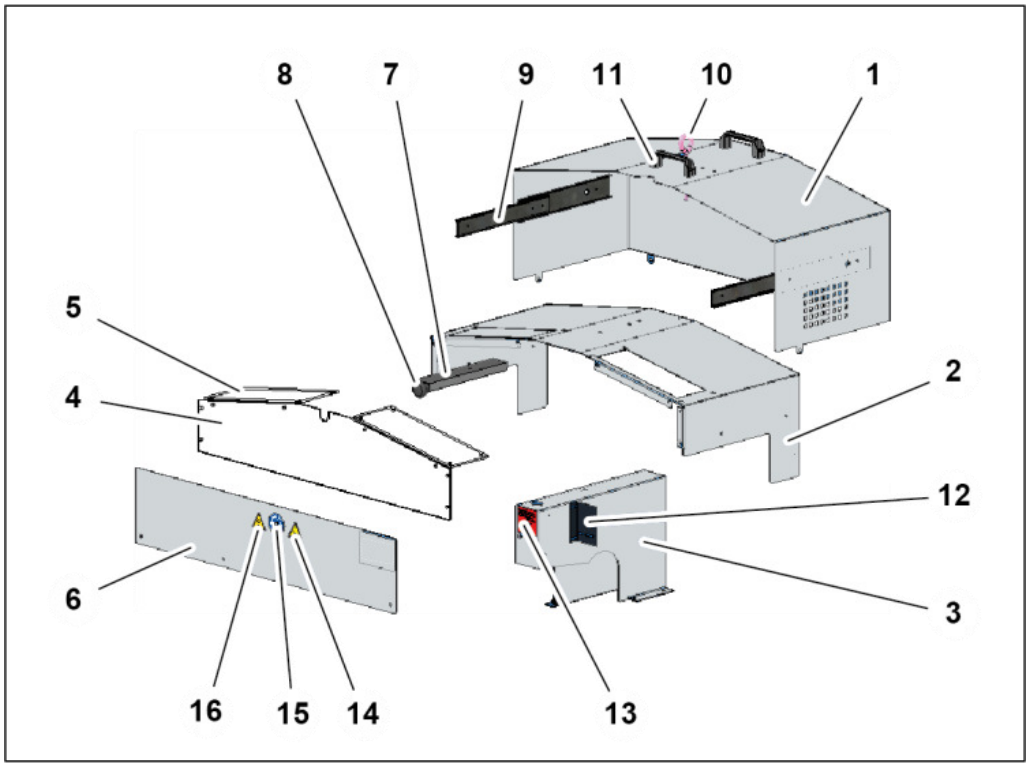
9.2.2 Mechanical equipment - Knife protection



Item	Quantity	Part code	Designation
1	1	323.111.0	Knife protection
2	1	323.002.3	Hose feed
3	1	323.025.4	Switch bracket
4	1	323.029.4	Guidance, front
5	1	323.020.4	Pin for knife protection
6	1	323.046.4	Fork of blocking bar
7	1	323.047.4	Guide sleeve
8	1	323.032.3	Blocker
9	1	323.035.4	Axle

Item	Quantity	Part code	Designation
10	2	323.102.4	Power connector
11	2	323.043.4	Transducer
12	1	323.091.4	Distance block
13	2	323.092.4	Pin
14	1	323.212	Pressure spring actuator
15	1	323.206	Adjusting ring
16	1 2	798.510007 798.610002	Pin EN 22340 Type B 8 x 30 Splint
17	1	798.310010	Hexagonal nut DIN EN ISO 4032 M8
18	1	798.110140	Countersunk screw with hexagon socket DIN EN ISO 10642 M8 x 30
19	2	798.220012	Adjusting washer DIN 988 8 x 14 0,5

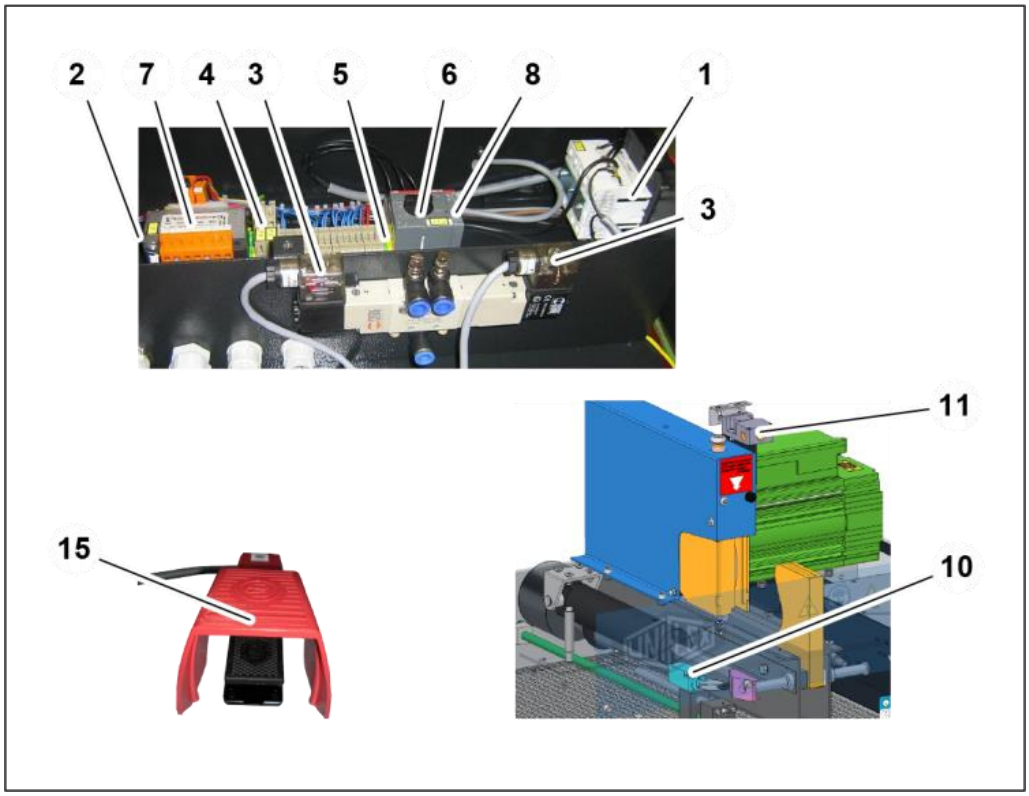
9.2.3 Mechanical equipment - Covers



Item	Quantity	Part code	Designation
1	1	323.019.0	Machine cover
2	1	323.014.1	Protective cover

Item	Quantity	Part code	Designation
3	1	323.018.1	U-Machine cover
 4 5	1 1 2	323.1071 323.131.1 323.110.3	Macrolon parts EM 8.5 P: Protective screen Protection case
6	1	323.132.2	Protective plate
7	1	323.036.3	Sliding piece
8	1	322.054	Mushroom-head handle
9	2	323.200	Telescopic rail
10	1	323.120.3	Eyebolt M12
11	2	501.068	Strap grip
12	1	323.105.3	Switch bracket
13	1	304.101.4	Knife sign
14	1	716.4	Hand injuries warning
15	1	3127/60	Mandatory Eye and Hearing Protection sticker
16	1	300.100.4	Cutting risk warning sign
No picture	1	3166	Red direction arrow
No picture	1	777.031	Power supply disconnection warning sign

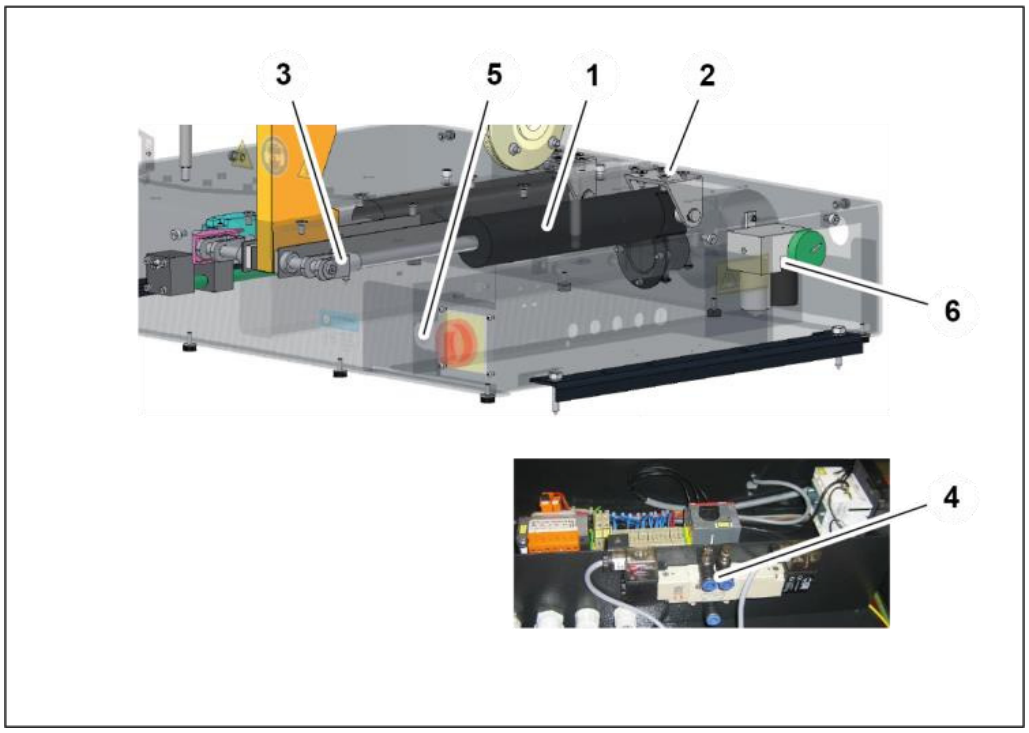
9.2.4 Electric equipment



Item	Quantity	Part code	Designation
1	1	322.401	Main power switch
2	1	322.400	Rectifier
3	16	800.083	Serial terminal
4	2	800.022	Securing clip
5	2	800.084	Protective conductor terminal
6	1	8.06.002	Motor protection switch
7	1	800.021	Safety isolating transformer
8	1	8.06.003	Auxiliary switch block
No picture	2	VME 0265	Fine wire fuse
10	1	323.204	Roller lever switch
11	1	307.010	Safety switch
No picture	1	320.111	Electric motor with brake
No picture	1	8.12.031	Mounted housing

Item	Quantity	Part code	Designation
No picture	1	888.228	Socket insert
15	1	PS	Foot pedal
No picture	1	8.00.030	Metal oxide varistor

9.2.5 Pneumatic equipment

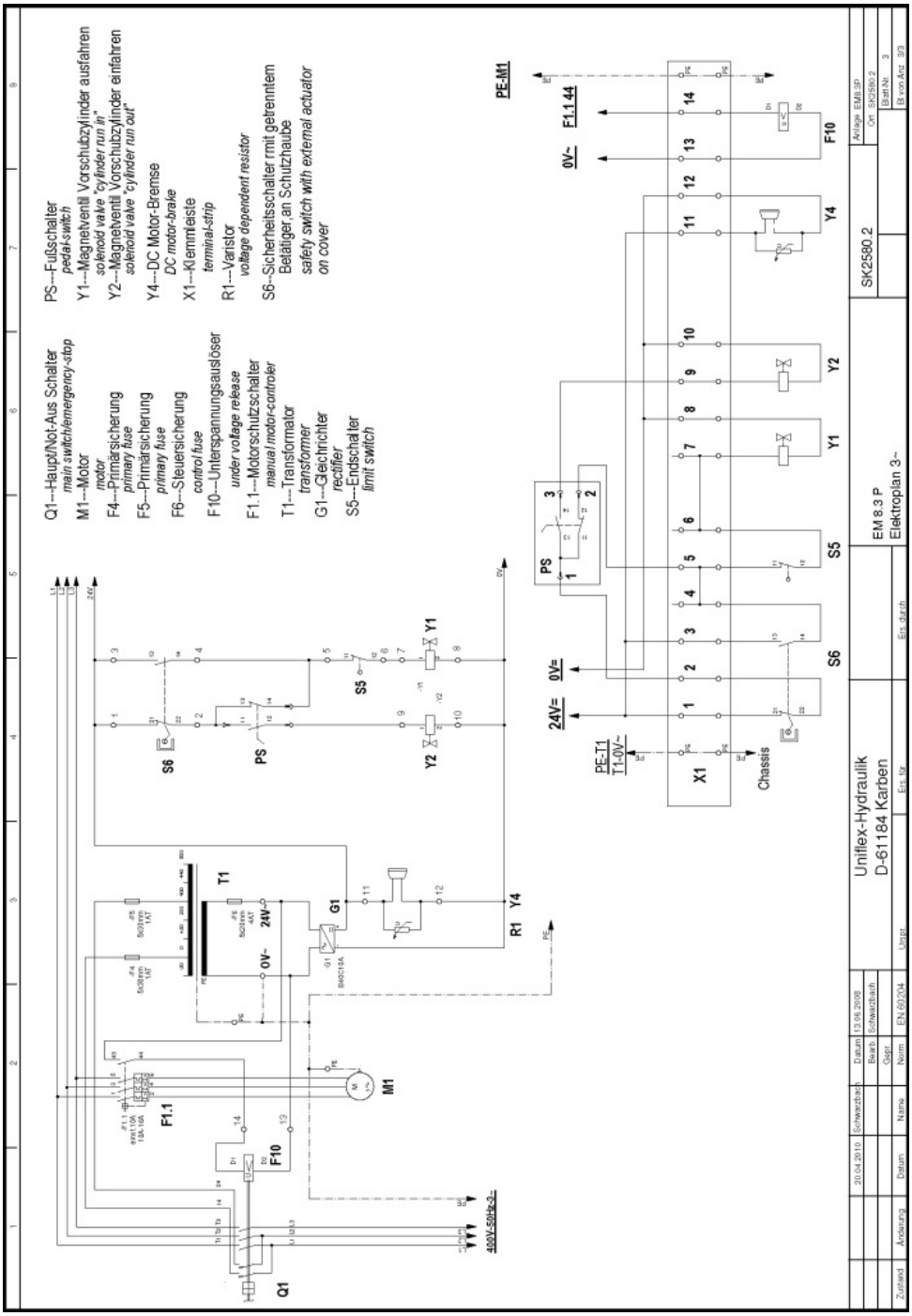


Item	Quantity	Part code	Designation
1	2	323.201	Pneumatic cylinder
2	2	323.202	Bracket for pneumatic cylinder
3	2	323.203	Fork head for pneumatic cylinder
4	1	322.050	Solenoid valve
5	1	322.406	Non-return throttle valve
6	1	323.208	Maintenance unit
No picture	1	405.080	Sound absorber

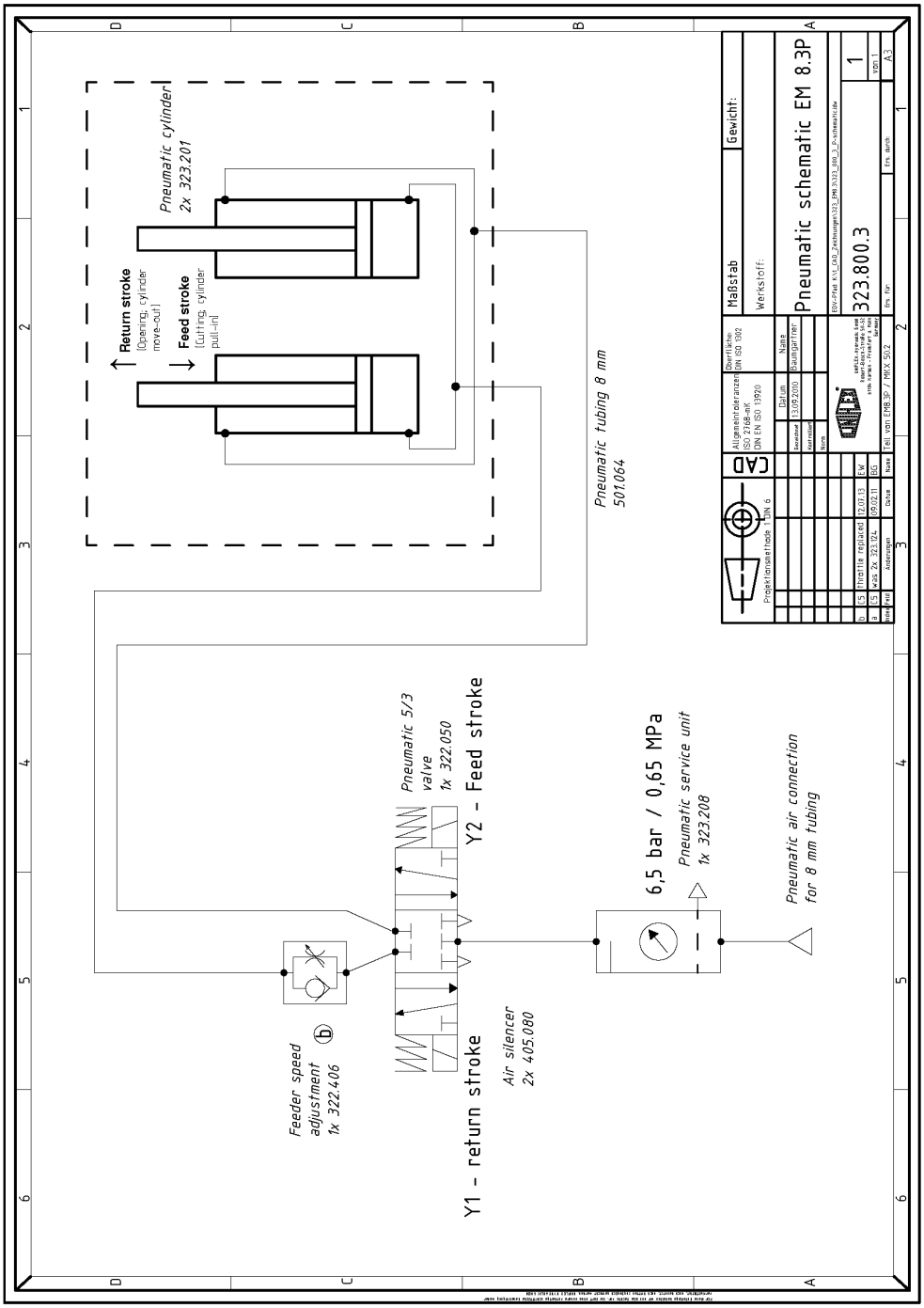
9.2.6 Wear parts

Quantity	Part code	Designation
1 Piece	TM C 400x4x30	Cutting knife, coated (standard)
1 Piece	TM G 400x4x30	Cutting knife with inclined slots (accessory)
1 Piece	TM 400x4x30	Cutting knife, plain (accessory)
1 Kit	320.121	Spare parts kit (Seimec/Habasit) Flange disc set and shaft nut
1 Piece	320.116	Spare brake Seimec (see motor nameplate)
1 Piece	320.118	Spare brake Soga (see motor nameplate)
1 Set	320.119	Spare flange set for motor 320.111 Soga
1 Piece	320.120	Spare shaft nut for motor 320.111 Soga
1 Piece	320.125	Fan for motor 320.111
1 Piece	320.126	Fan cover for motor 320.111
1 Set	304.2001	Set of bending pins

9.3 Electric diagram



9.4 Pneumatic diagram



9.5 Maintenance log

Cutting knife	Guide unit	Extraction line	Knife protection	Motor brake	Remark	Date	Signature
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9.6 Declaration of qualified staff

I herewith declare that I have attended an internal training for the operation of the UNIFLEX machine and have been informed on all safety-related details. In addition I declare that I have read and understood this Operation Manual completely.

City	Date	Name	Signature
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City	Date	Name	Signature
City	Date	Name	Signature
City	Date	Name	Signature
City	Date	Name	Signature

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