

ENGINEERING
TOMORROW

Danfoss

Operator's Manual

Danfoss ET6100

Skiving Machine



Imprint

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

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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 ET6100

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, 11.10.2022



Managing Director Harald von Waitz

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1 About this document

1.1 Target groups

1 About this document

In this Operation Manual, the “hose skiving machine Danfoss ET6100“ is consistently referred to as machine.

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;

1 About this document

1.2 Storage

- 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 About this document

1.3 Name plate

1.3 Name plate

The name plate is fixed near the power cable.

2 Safety instructions

2.1 Presentation of warnings

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 damaged. This warning is supplemented by a hazard symbol or an exclamation mark.

2.2 Intended use

This machine is a hose skiving machine for industrial use, only suitable for skiving wire-reinforced hydraulic hoses, see “Technical Data” in Section 3.

Intended purposes include:

- single workplace for one person only,
- single stroke with manual feed and withdrawal,
- operating temperature between 10 °C and 35 °C,
- operation in a closed 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;

2 Safety instructions

2.3 Product-specific risks

- 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 modification of the machine;
- use in explosive environments;
- use of impermissible skiving domes;
- use of impermissible skiving blades;
- skiving of workpieces with ripped out wires,
- skiving without safety equipment,
- 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 Safety instructions

2.3 Product-specific risks

2.3.1 Risks imposed by mechanical equipment

Cutting risk

The skiving process and the skiving knife change-over imply a cutting risk.

- Keep sufficient distance to the skiving knives during operation.
- Take care when changing the skiving knives and wear protective gloves.

Risk of squeezing

There is risk of getting squeezed between the protection cover and the chassis when closing the protection cover.

- Use the strap grip to close the protection cover.

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 Risks imposed by noise

The noise level meter acc. to IEC 804, Class 2, was calibrated before measuring.

The operation of the machine/unit causes noise emissions of 60 dB(A) at the workplace. Noise protection is not required.

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

2 Safety instructions

2.3 Product-specific risks

- instruct staff to wear ear protection,
- provide information/instructions on risks,
- identify hazardous areas,
- provide health monitoring.

2.3.4 Risks imposed by substances

Oils, greases and emulsions may penetrate the skin. When handling hazardous substances, oils and greases, the manufacturers' safety instructions have to be observed. Apply skin protection appropriate for the hazardous substances used.

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.

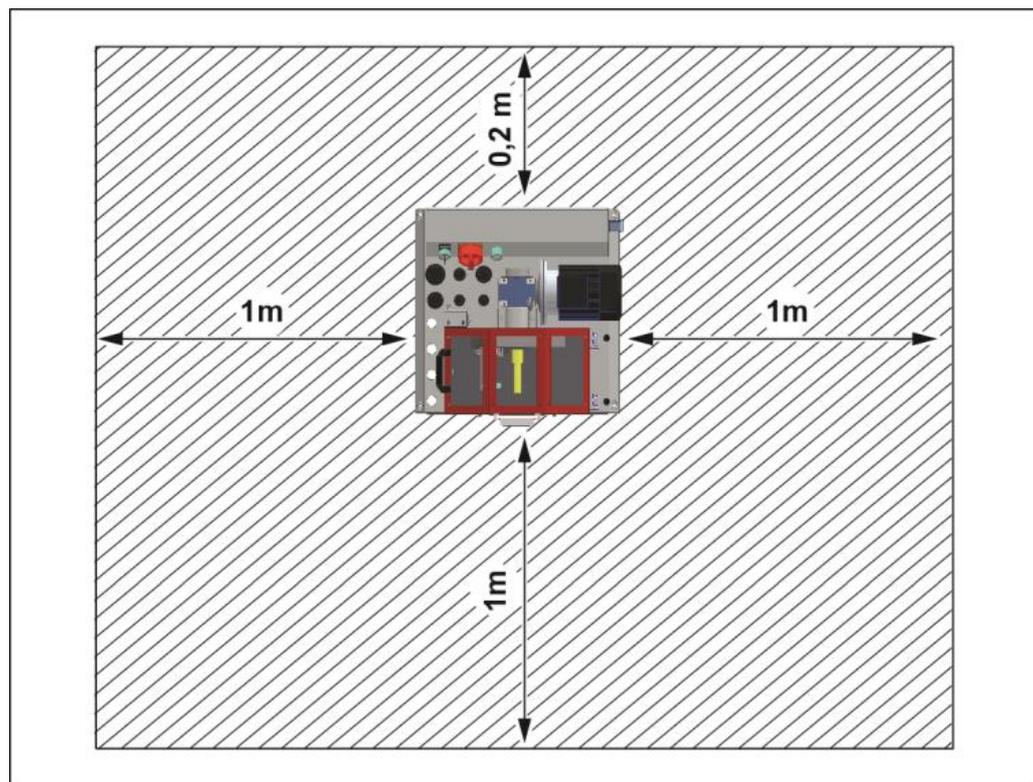
Use extinguishing powder in case of fire.

2 Safety instructions

2.4 Safety

2.4 Safety

2.4.1 Working area



The working area is designed as the area 1 metre all around the machine (shaded).

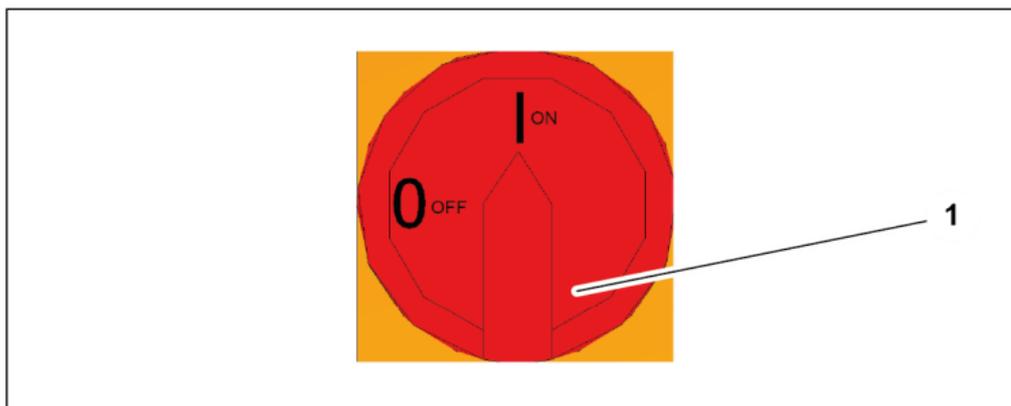
- Keep the working area free from trip hazards
- Use ducts for lines and cables
- Provide good illumination

2 Safety instructions

2.4 Safety

2.4.2 Emergency-stop

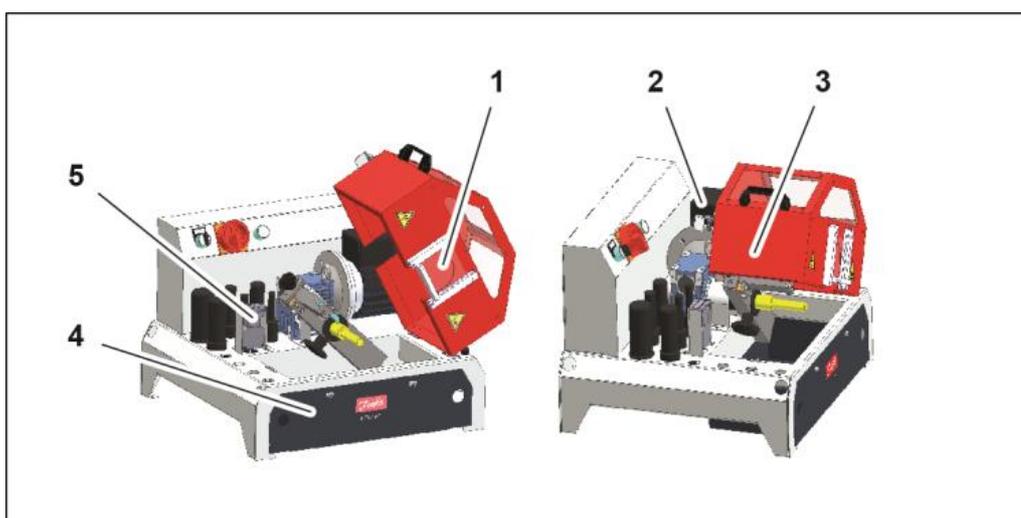
The machine is fitted with an emergency-stop switch on the control panel.



Immediately activate the emergency-stop switch (1) on the control panel in cases of emergency.

Remedy the cause of the emergency stop first before unlocking the emergency-stop switch.

2.4.3 Protection equipment



The manually operated protection cover (3) prevents individuals from accidentally reaching into the danger area. The protection cover is fitted with a safety switch (5). The safety switch (5) is closed by the contact plug (2) when the protection cover is closed. The safety

2 Safety instructions

2.4 Safety

switch (5) switches off the motor when the protection cover (3) is opened or the chip box (4) is removed.

DANGER!



Risk of injuries by manipulated safety switch

The manually operated protection cover is an essential safety feature of the machine.

- Never operate the machine with a non-functional safety switch.

The guard (1) on the protection cover prevents individuals from reaching into the skiving area when the motor is running. Lift the guard (1) with the hose and guide the hose centrally through the opening onto the pin.

Mounted safety equipment must not be removed, bypassed or avoided.

2.4.4 Warning signs on the machine



Crushing risk
on the cover

2 Safety instructions

2.4 Safety

	<p>Cutting risk on the skiving knives</p>
	<p>Danger from electric current at the power supply line</p>

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

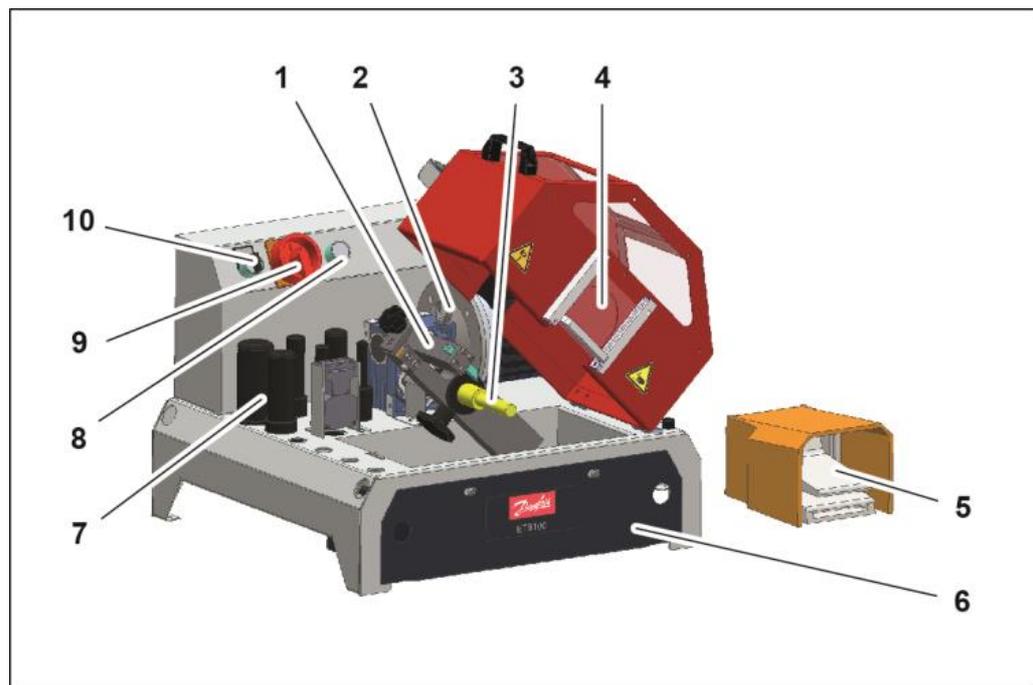
3 Machine description

3.1 Design and function

3 Machine description

3.1 Design and function

Basic machine



- (1) Outside skiving tool
- (2) Electric motor
- (3) Centering pin
- (4) Guard
- (5) Foot pedal
- (6) Chip box
- (7) Inside skiving tool
- (8) Operation indicator lamp
- (9) Main power switch
- (10) Change in direction of rotation switch

The hose is guided manually through the guard (4) onto the centering pin (3) and held by hand during the skiving process. By activating the foot pedal (5), the outside skiving tool (1) and/or the inside skiving tool is rotated. The skiving tool (inside / outside) is driven by the electric motor (2). The selected skiving tool (1/7) skives the hose either on

3 Machine description

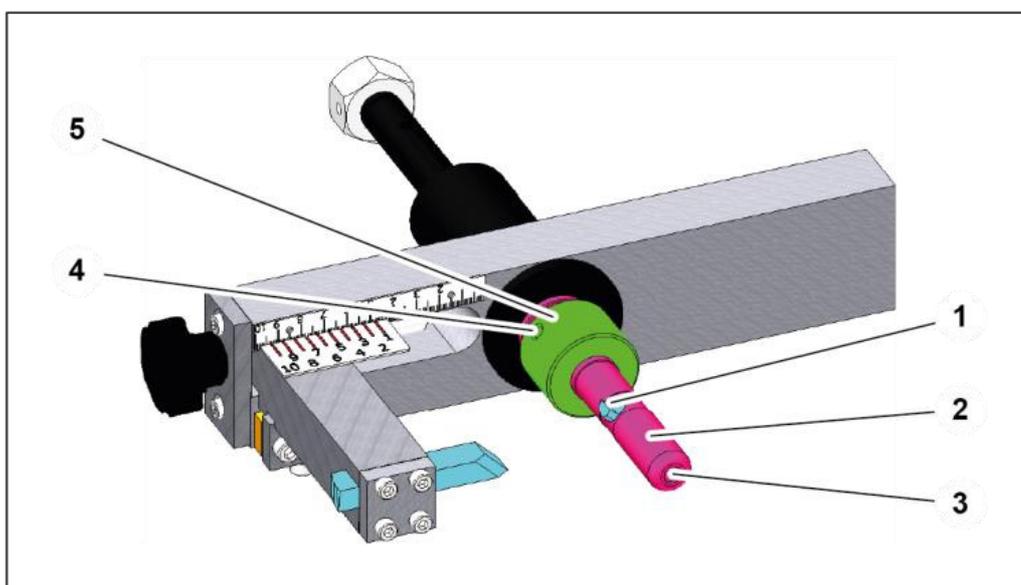
3.1 Design and function

the inside or outside. The hose is skived from the hose ends. The skiving dimension is set mechanically in advance. The skiving chips are collected in the chip box (6).

The skiving direction can be selected using the change in direction of rotation switch (10) on the control panel.

- Turn to the right for inside skiving
- Turn to the left for outside skiving

Inside skiving tool USM 10.2 EcoLine / USM 10.2



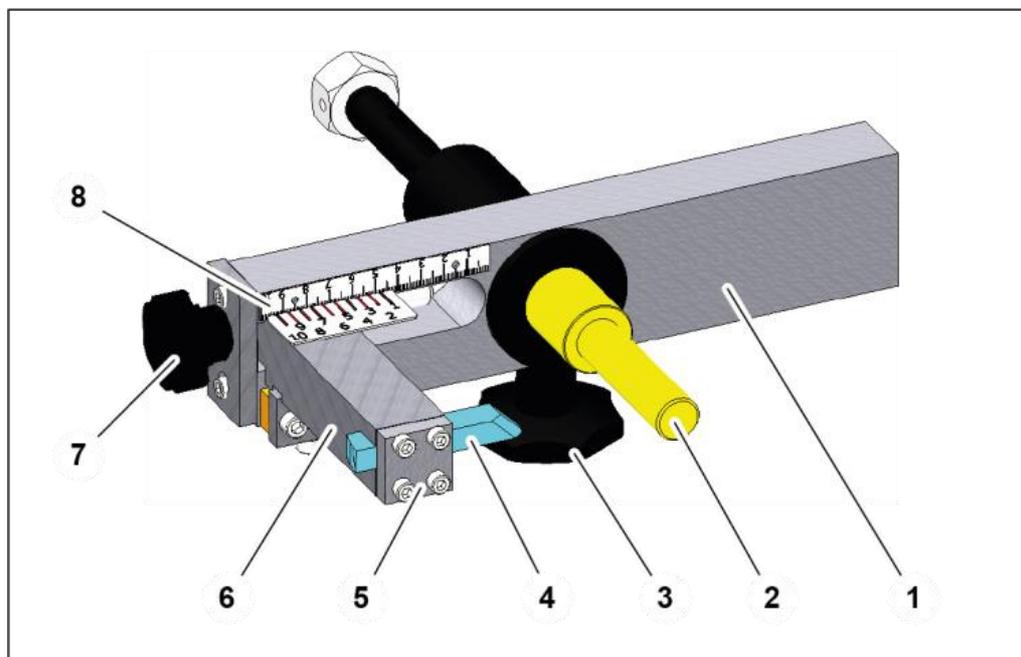
The inside skiving tool consists of the pin (2), the inside skiving knife (1) and the adjusting ring (5).

The skiving depth is set by turning the adjusting ring (5). The adjusting ring is secured to the pin by the hexagon socket threaded pin (4). The skiving diameter is set by adjusting the inside skiving knife (1). The inside skiving knife is held by the hexagon socket threaded pin (3). The inside skiving tool is inserted into the drive shaft (5) and secured using the star-shaped grip.

3 Machine description

3.1 Design and function

Outside skiving tool USM 10.2 EcoLine / USM 10.2



The outside skiving tool consists of the main body (1), the cutting arm (6) and the centering pin (2).

The skiving length is set by adjusting the centering pin (2). The centering pin (2) is inserted into the drive shaft and secured using the star-shaped grip (3). The outside skiving knife (4) is held by the cutting arm (6) and secured using the clamp (5). The skiving diameter is set by turning the star-shaped grip (7). The diameter can be read on the adjusting scale (8).

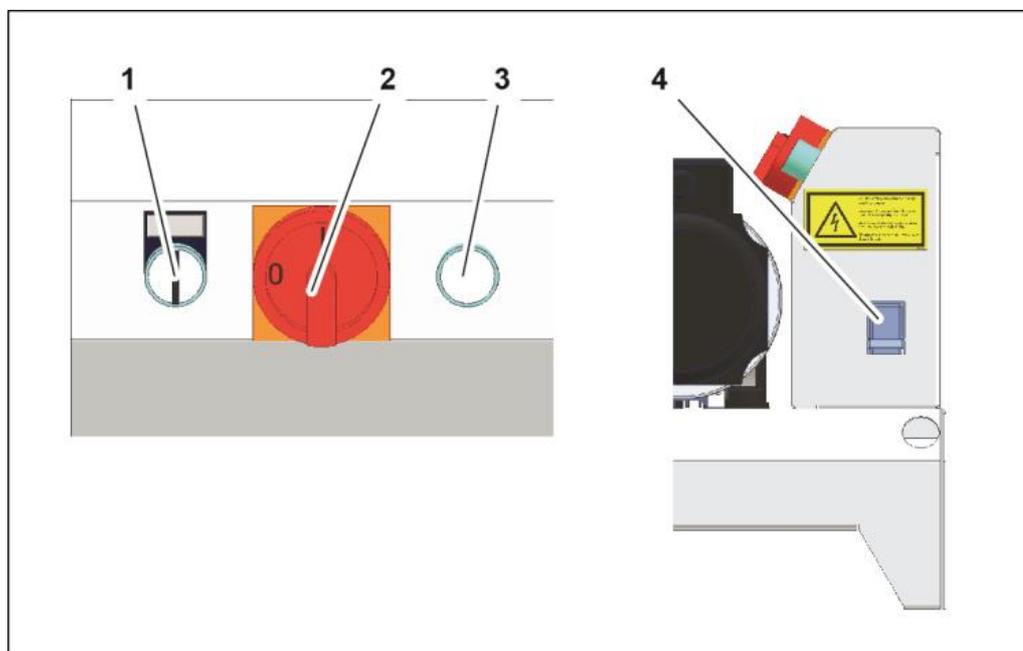


The skiving diameter only has to be set for the initial setup or after re-skiving.

3 Machine description

3.2 Operation and display elements

3.2 Operation and display elements



- (1) Change in direction of rotation switch
- (2) Emergency-stop switch / main switch
- (3) Operation indicator lamp



Turn the change in direction of rotation switch to the right for inside skiving or to the left for outside skiving.

- (4) Socket for single foot switch

3 Machine description

3.3 Technical data

3.3 Technical data

Machine

Dimensions L x W x H	440 x 440 x 545 mm
Weight	approx. 35 kg
Type of use	Workshop
Operation mode	S3-60 %
Noise level	< 70 dB(A)*
Protection class	IP 40

Function

Tool speed	110 rpm
------------	---------

Workpiece capacity

Inside skiving	5/8" - 2"
Outside skiving	3/16" - 2"

3 Machine description

3.3 Technical data

Electric connection

Connection power	0,37 kW
Connected voltage	400 V 50 Hz, 3 Phase+PE
Back-up fuse	16 A delayed

Gear oil

Oil volume	approx. 100 ml
Oil type	Shell Omala Oil 220

Workbench

Solid, plane workbench with a carrying capacity of	approx. 500 kg
--	----------------

We recommend industrial flooring meeting the following structural requirements

Permanent floor loading	Approx. 0.07 kg/mm ²
Floor carrying capacity	Min. 1000 kg/m ²
Floor quality	B25
Evenness	Max. unevenness 5 mm/m
Inclination	max. 5 mm/m

Ambient conditions

Ambient temperature	10 °C – 35 °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.

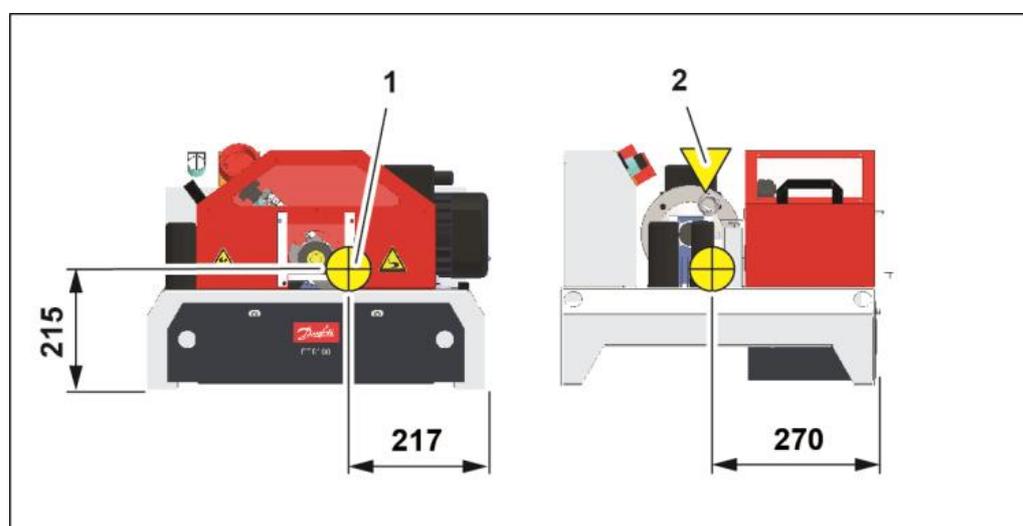
4 Transport and commissioning

4.1 Transport

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 must only be unloaded and transported with a crane. When a crane is used for transport, lifting gear with a sufficient length and lifting capacity has to be used. 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.

4 Transport and commissioning

4.2 Intermediate storage of machine/unit

WARNING!	
	<p>Danger from tilting machine!</p> <p>The machine may tilt if it is transported improperly. There is a risk of being injured.</p> <ul style="list-style-type: none"> • Consider the machine's centre of gravity (1). • Only lift the machine at the designated points.

1. Lift the machine at the identified points (2) using the crane and transport 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 on a stable and level workbench.
2. Bolt the machine legs onto the workbench.



The workbench must be sufficiently solid and stable.

4 Transport and commissioning

4.3 Commissioning



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

3. Check the machine for damage.
4. Check the electric cables for damage.
5. 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 skiving process. There is a risk of being injured.

- Simulate the skiving process several times without a work piece.
- Check the machine for atypical noise.

4 Transport and commissioning

4.3 Commissioning

4.3.1 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.



The permissible voltage frequency ranges and the relevant motor protection setting are also indicated on the nameplate..

3. Check rotation direction of motor (only for three-phase connection). If the rotation direction of the motor is incorrect, the rotation direction will be the opposite to the marking on the change in direction of rotation switch.

5 Operation

5.1 What you have to observe

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.

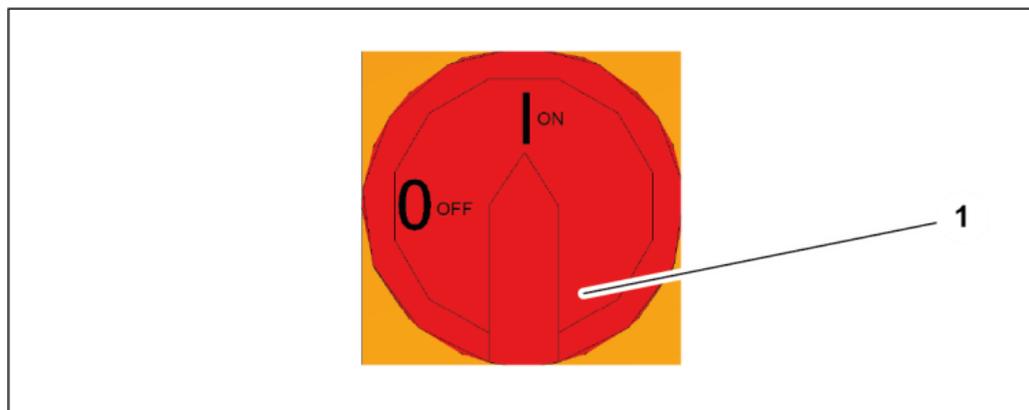
Before starting and/or re-starting

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

During operation

- Observe the safety instructions on the machine/unit.
- Make sure that no other persons stay in the working area.
- Use appropriate aids to handle heavy workpiece.
- Each movement of the hand must be observed.
- The control cabinet must be closed securely.
- 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 power switch (1).

5 Operation

5.3 Skiving the workpiece

5.3 Skiving the workpiece

5.3.1 Prerequisites

Prerequisites for a correct skiving process:

- A suitable outside/inside skiving tool is selected.
- The outside/inside skiving tool is inserted in the drive shaft.
- The outside/inside skiving tool is secured by the locking pin / star-shaped grip.
- The skiving length is set, see “Adjusting the skiving knives” in Section 5.
- The protection cover is closed.

WARNING!



Risk of squeezing

There is risk of getting squeezed between the protection cover and the chassis when closing the protection cover.

- Use the strap grip to close the protection cover.



On the USM 10.2 S, the skiving tools are pre-adjusted by the fitter.

5.4 Outside skiving

1. Select the skiving direction using the change in direction of rotation switch.
2. Press and hold down the foot pedal: the skiving tool rotates.
3. Guide the hose centrally through the guard onto the pin.
4. The hose is skived.
5. Remove the hose through the guard.
6. Release the foot pedal to stop the skiving tool.

5 Operation

5.5 Inside skiving

5.5 Inside skiving

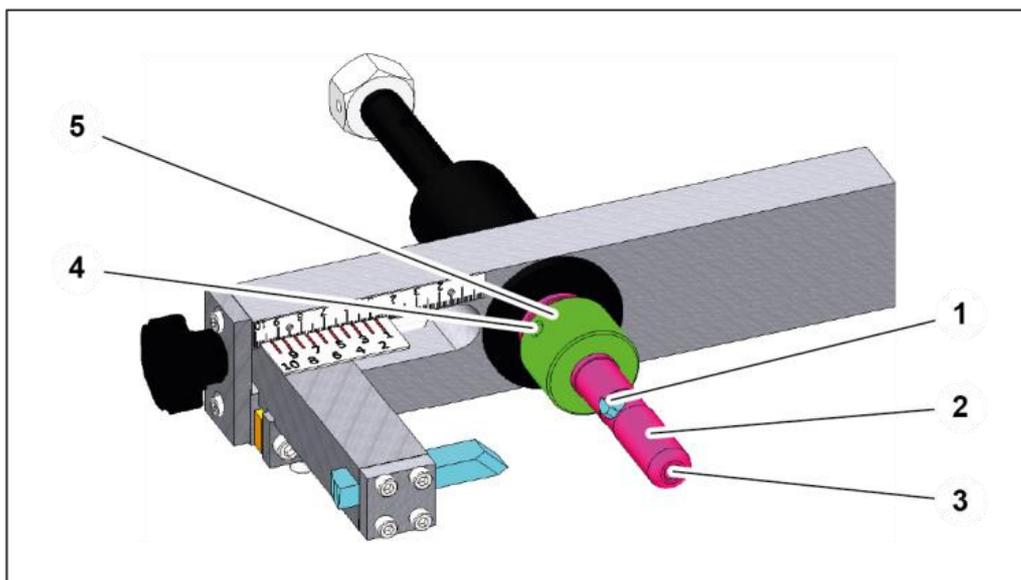
1. Select the skiving direction using the change in direction of rotation switch.
2. Press and hold down the foot pedal: the skiving tool rotates.
3. Guide the hose centrally through the guard onto the pin.
4. The hose is skived.
5. Remove the hose through the guard.
6. Release the foot pedal to stop the skiving tool.

5 Operation

5.6 Adjusting the skiving knife USM 10.2 EcoLine / USM 10.2

5.6 Adjusting the skiving knife USM 10.2 EcoLine / USM 10.2

5.6.1 Adjusting the inside skiving length and inside skiving diameter



1. Deactivate the machine on the power switch and secure it against unintentional restart.
2. Open the protection cover.
3. Loosen the hexagon socket threaded pin (4) on the adjusting ring (5).
4. Turn the adjusting ring (5) to adjust the skiving depth to the required length.
5. Tighten the hexagon socket threaded pin (4) on the adjusting ring (5).

WARNING!



Cutting risk!

There is an acute risk of injuries to the hands when the skiving knives are adjusted.

- Always wear protective gloves when changing the skiving knives.

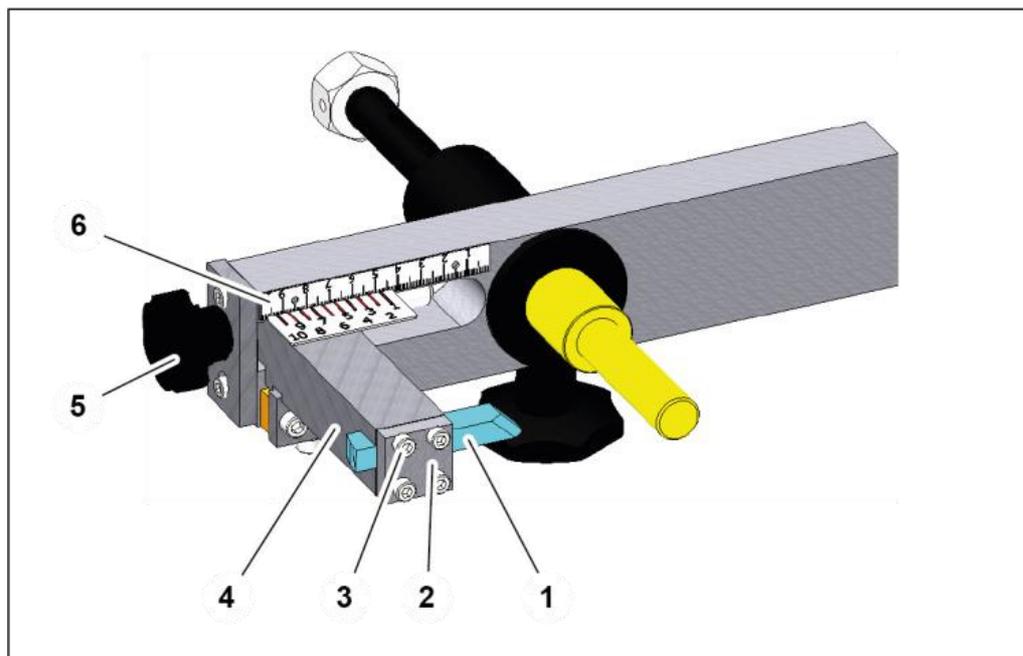
6. Loosen the hexagon socket threaded pin (3) and set the inside skiving knife (1) to the required diameter.

5 Operation

5.6 Adjusting the skiving knife USM 10.2 EcoLine / USM 10.2

7. Tighten the threaded pin using the Allen wrench (3).
8. Close the protection cover.

5.6.2 Adjusting the outside skiving length and outside skiving diameter



1. Deactivate the machine on the power switch and secure it against unintentional restart.
2. Open the protection cover.

WARNING!



Cutting risk!

There is an acute risk of injuries to the hands when the skiving knives are replaced.

- Always wear protective gloves when changing the skiving knives.

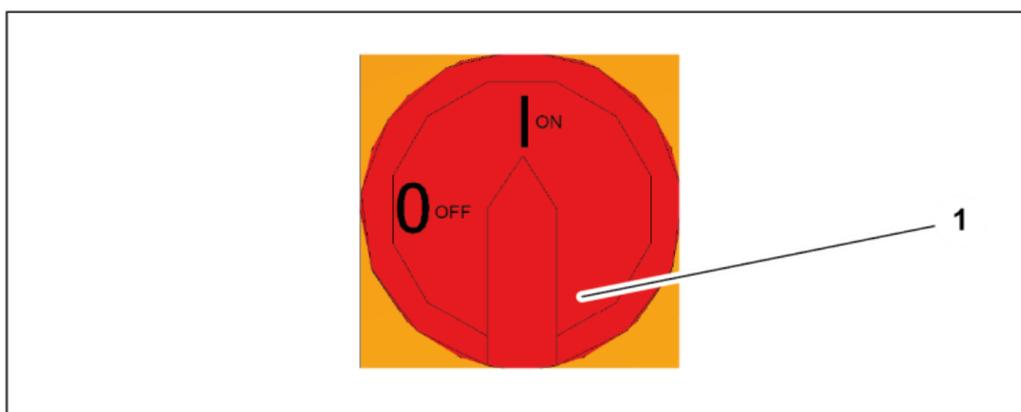
3. Turn the rotating handle (5) to set the cutting arm (4) to the required position. The value can be read on the adjusting scale (6).
4. Loosen the hexagon socket cylinder bolts (3) but do not remove them.
5. Adjust the outside skiving knife (1) to set the required diameter.

5 Operation

5.7 Stop

6. Tighten the clamping plate (2) with the hexagon socket cylinder bolts (3).
7. Close the protection cover.

5.7 Stop



1. Complete the skiving process.
2. Deposit the workpiece outside the machine.
3. Deactivate the main power switch (1) and secure it against unintentional restart.
4. Open the protection cover.
5. Empty the chip box.
6. Check the machine for contamination and outside damage.
7. Check the skiving knife for damage and wear.
8. Remove contamination and dust using a vacuum.



Inform the fitter in case of damage or other irregularities.

5 Operation

5.8 Emergency-stop

5.8 Emergency-stop

In case of an emergency

Immediately deactivate the emergency-stop switch in cases of emergency. The motor is switched off immediately. The skiving tool movement is stopped.

Restart after and emergency

WARNING!	
	<p>Risk of injuries!</p> <p>The emergency-stop button was probably activated due to the occurrence of a hazardous situation. A restart of the machine may cause injuries if the hazardous situation has not yet been remedied!</p> <ul style="list-style-type: none"> • Remedy the hazardous situation before a restart.

1. Remedy the cause of the emergency stop.
2. Activate the emergency-stop switch.

5.9 Cleaning

ATTENTION!	
	<p>Risk of damage to machinery!</p> <p>If the machine is cleaned with a steam jet or compressed air, dirt and water may ingress in the machine and cause serious damage.</p> <ul style="list-style-type: none"> • Do not use a steam jet to clean the machine. • Do not use compressed air to clean the machine.

1. Empty the chip box.
2. Use a vacuum cleaner or a soft cloth to clean the machine.

6 Maintenance

6.1 What you have to observe

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.

6 Maintenance

6.2 Maintenance schedule

Maintenance item	Weekly	Monthly	Every 6 months	Number of years
Skiving knife				
Check skiving knife - for sharpness, cracks and breakouts; resharpen or replace knives as appropriate.	X			
Bolted connections: To be checked and retightened, if required.		X		
Machine - Clean	X			
Safety equipment				
Emergency-stop switch. Check function.	X			
Safety switch: Check function.	X			
Check permanently installed partitioning protection equipment and covers for completeness and correct installation.		X		
Check enclosure foot switch for completeness. The enclosure protects the pedal against unintentional activation.		X		
Warning signs on machine: Check legibility (see "Warning signs on the machine" in Section 2).			X	
Protective screens have to be replaced five years after manufacture (see year of construction) at the latest.				5



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

6 Maintenance

6.3 Replacing the skiving knives

6.3 Replacing the skiving knives

6.3.1 Skiving knife USM 10.2 EcoLine / USM 10.2

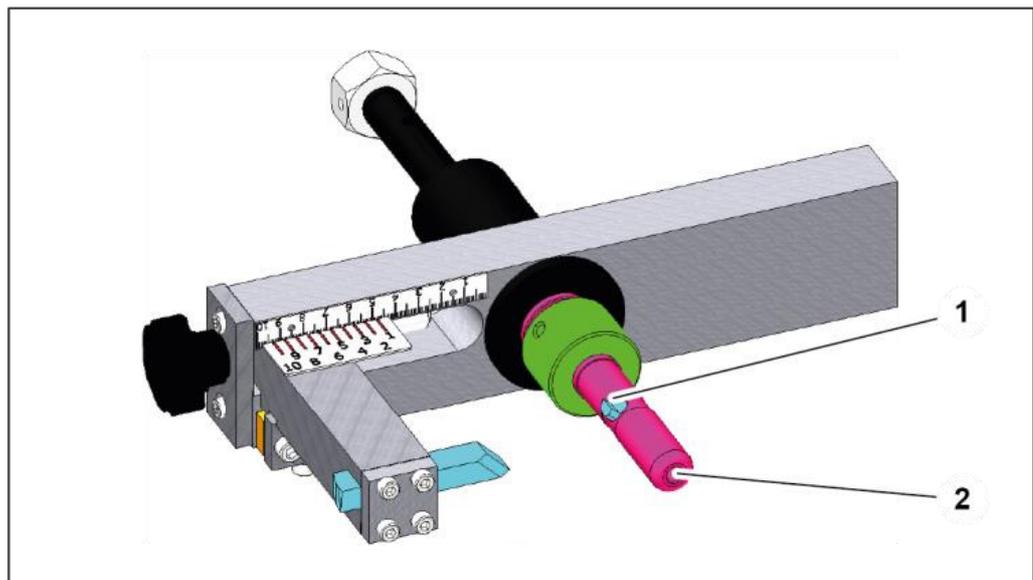
ATTENTION!



Risk of damage to machinery!

Worn skiving knives may cause damage to the machine and skiving inaccuracies.

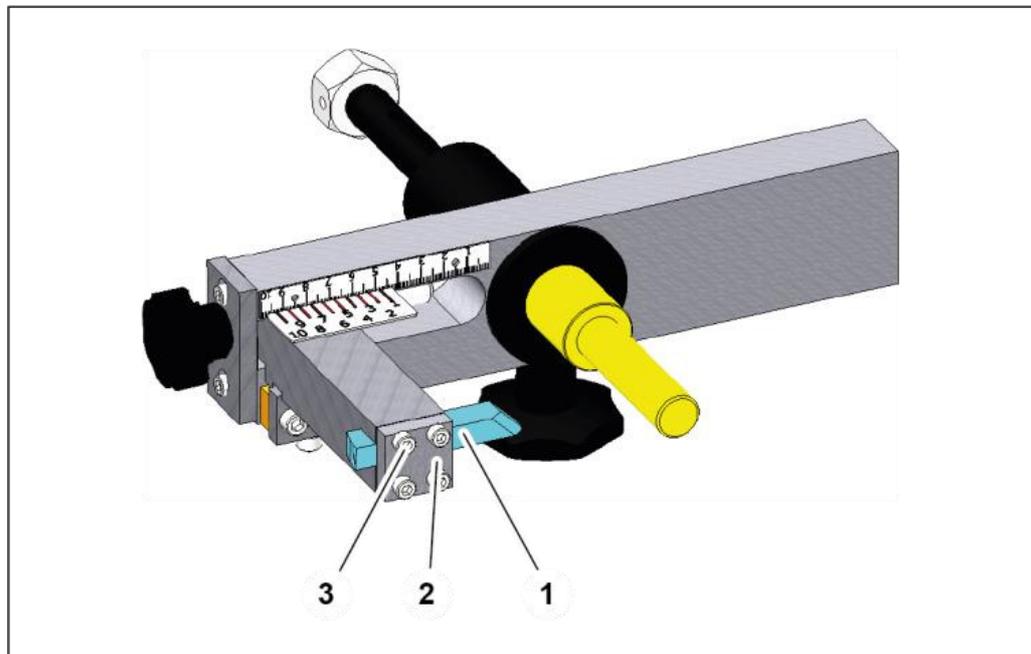
- Check the skiving knives daily.



1. Deactivate the machine on the power switch and secure it against unintentional restart.
2. Open the protection cover.
3. Loosen the hexagon socket threaded pin (2) on the inside skiving tool.
4. Remove the inside skiving knife (1).
5. Insert a new inside skiving knife (1).
6. For skiving knife adjustment, please refer to “Adjusting the skiving knives” in Section 5.
7. Tighten the threaded pin using the Allen wrench (2).

6 Maintenance

6.3 Replacing the skiving knives



8. Loosen the hexagon socket cylinder bolt (3) on the outside skiving tool.
9. Remove the clamping plate (2).
10. Remove the inside skiving knife (1).
11. Insert a new outside skiving knife (1).
12. For skiving knife adjustment, please refer to “Adjusting the skiving knives” in Section 5.
13. Tighten the clamping plate (2) with the hexagon socket cylinder bolts (3).



The skiving knives may be resharpened on the edge.

7 Troubleshooting

6.3 Replacing the skiving knives

7 Troubleshooting

Error	Cause	Remedy
Machine does not skive	Power switch is OFF	Activate the power switch
	Voltage incorrect	Check voltage supply
	Power plug defective	Check power plug and replace, if required
	Incorrect rotation direction of electric motor	Check rotation direction, correct electrical connection
	Foot pedal not connected to socket	Check cable connection between foot pedal and machine.
	Foot pedal is defective	Check the foot pedal and replace it, if required
Machine operates sluggishly	Skiving knives are worn	Check skiving knives for wear and replace them, if required
Skiving result is inadequate	Skiving knives are worn	Check skiving knives for wear and replace them, if required

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 hydraulic oil and other consumables imposes a risk of injuries for the skin, eyes, respiratory and intestinal tracts! Hydraulic liquid spills impose danger of slipping and falling!

- 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.
- Avoid floor contamination.

ATTENTION!



Risk of fire!

Hydraulic liquid spray or spills imposes a risk of fire.

- Avoid ignition sources (welding, cutting and soldering work) near the hydraulic oil filling.

8 Decommissioning, disposal

8.1 Dismantling

CAUTION!	
	<p>Risk of injuries!</p> <p>Parts of the machine/unit may be under pressure and/or tension. Loosening components may impose a risk of injuries!</p> <ul style="list-style-type: none"> • De-pressurize the machine/unit before performing any work and check for potential sources of hazard.

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.
- Open the machine/unit completely.
- Depressurise the machine/unit before dismantling it (deactivate the hydraulic pump and secure it against restart; operate valve manually, if any; open bolted hydraulic connections slowly and carefully).
- Check the machine/unit for mechanical tension and consider it during dismantling.
- Empty the machine/unit of all consumables, see “Maintenance”, Section 6.

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.

8 Decommissioning, disposal

8.3 Consumables and waste

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

9.1 Accessories (retrofitable)

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 (retrofitable)

Accessories	Part code
Bench	TU
Hose slicing device	SSG
PS	Foot pedal

9.2 Accessories (retrofitable) USM 10.2 EcoLine / USM 10.2

Accessories	Part code
Retention thorn NW05_3/16"	PJ_EXB250-05
Retention thorn NW06_1/4"	PJ_EXB250-06
Retention thorn NW08_5/16"	PJ_EXB250-08
Retention thorn NW10_3/8"	PJ_EXB250-10
Retention thorn NW12_1/2"	PJ_EXB250-12
Retention thorn NW16_5/8"	PJ_EXB250-16
Retention thorn NW19_3/4"	PJ_EXB250-19
Retention thorn NW25_1"	PJ_EXB250-25
Retention thorn NW32_11/4"	PJ_EXB250-32
Retention thorn NW38_11/2"	PJ_EXB250-38
Retention thorn NW50_2"	PJ_EXB250-50
Inside skiving pin DN 06 ID 1/4"	UIS.2 06
Inside skiving pin DN 08 ID 5/16"	UIS.2 08
Inside skiving pin DN 10 ID 3/8"	UIS.2 10
Inside skiving pin DN 12 ID 1/2"	UIS.2 12

9 Annex

9.3 Accessories (retrofittable) USM 10.2 S

Accessories	Part code
Inside skiving pin DN 16 ID 5/8"	UIS.2 16
Inside skiving pin DN 19 ID 3/4"	UIS.2 19
Inside skiving pin DN 25 ID 1"	UIS.2 25
Inside skiving pin DN 32 ID 1 1/4"	UIS.2 32
Inside skiving pin DN 38 ID 1 1/2"	UIS.2 38
Inside skiving pin DN 51 ID 2"	UIS.2 51
Replacement knife for inside skiving pin UIS.2/UIS.3 12	UJ_70.0110.29
Replacement knife for inside skiving pin UIS.2/UIS.3 16	PJ MCI-16
Replacement knife for inside skiving pin UIS.2/UIS.3 19	PJ MCI-19
Replacement knife for inside skiving pin UIS.2/UIS.3 25	PJ MCI-25
Replacement knife for inside skiving pin UIS.2/UIS.3 31	PJ MCI-31
Replacement knife for inside skiving pin UIS.2/UIS.3 38	PJ MCI-38
Replacement knife for inside skiving pin UIS.2/UIS.3 51	PJ MCI-51

9.3 Accessories (retrofittable) USM 10.2 S

Accessories	Part code
Rack for skiving tool USM 10 S	PJ_RK-STLS
Inside skiving tool DN 06 ID 1/4"	UIS.3 06
Inside skiving tool DN 08 ID 5/16"	UIS.3 08
Inside skiving tool DN 10 ID 3/8"	UIS.3 10
Inside skiving tool DN 12 ID 1/2"	UIS.3 12
Inside skiving tool DN 16 ID 5/8"	UIS.3 16
Inside skiving tool DN 19 ID 3/4"	UIS.3 19
Inside skiving tool DN 25 ID 1"	UIS.3 25
Inside skiving tool DN 32 ID 1 1/4"	UIS.3 32
Inside skiving tool DN 38 ID 1 1/2"	UIS.3 38

9 Annex

9.3 Accessories (retrofitable) USM 10.2 S

Accessories	Part code
Inside skiving tool DN 51 ID 2"	UIS.3 51
Outside skiving tool D ID 3/16"	UES.03 05
Outside skiving tool D ID 1/4"	UES.03 06
Outside skiving tool D ID 5/16"	UES.03 08
Outside skiving tool D ID 3/8"	UES.03 10
Outside skiving tool D ID 1/2"	UES.03 12
Outside skiving tool D ID 5/8"	UES.03 16
Outside skiving tool D ID 3/4"	UES.03 19
Outside skiving tool D ID 1"	UES.03 25
Outside skiving tool D ID 1 1/4"	UES.03 31
Outside skiving tool D ID 1 1/2"	UES.03 38
Outside skiving tool D ID 2"	UES.03 51
Replacement knife for inside skiving pin UIS.2/UIS.3 12	UJ_70.0110.29
Replacement knife for inside skiving pin UIS.2/UIS.3 16	PJ MCI-16
Replacement knife for inside skiving pin UIS.2/UIS.3 19	PJ MCI-19
Replacement knife for inside skiving pin UIS.2/UIS.3 25	PJ MCI-25
Replacement knife for inside skiving pin UIS.2/UIS.3 31	PJ MCI-31
Replacement knife for inside skiving pin UIS.2/UIS.3 38	PJ MCI-38
Replacement knife for inside skiving pin UIS.2/UIS.3 51	PJ MCI-51
Inside skiving tool set for USM 10S	313.1

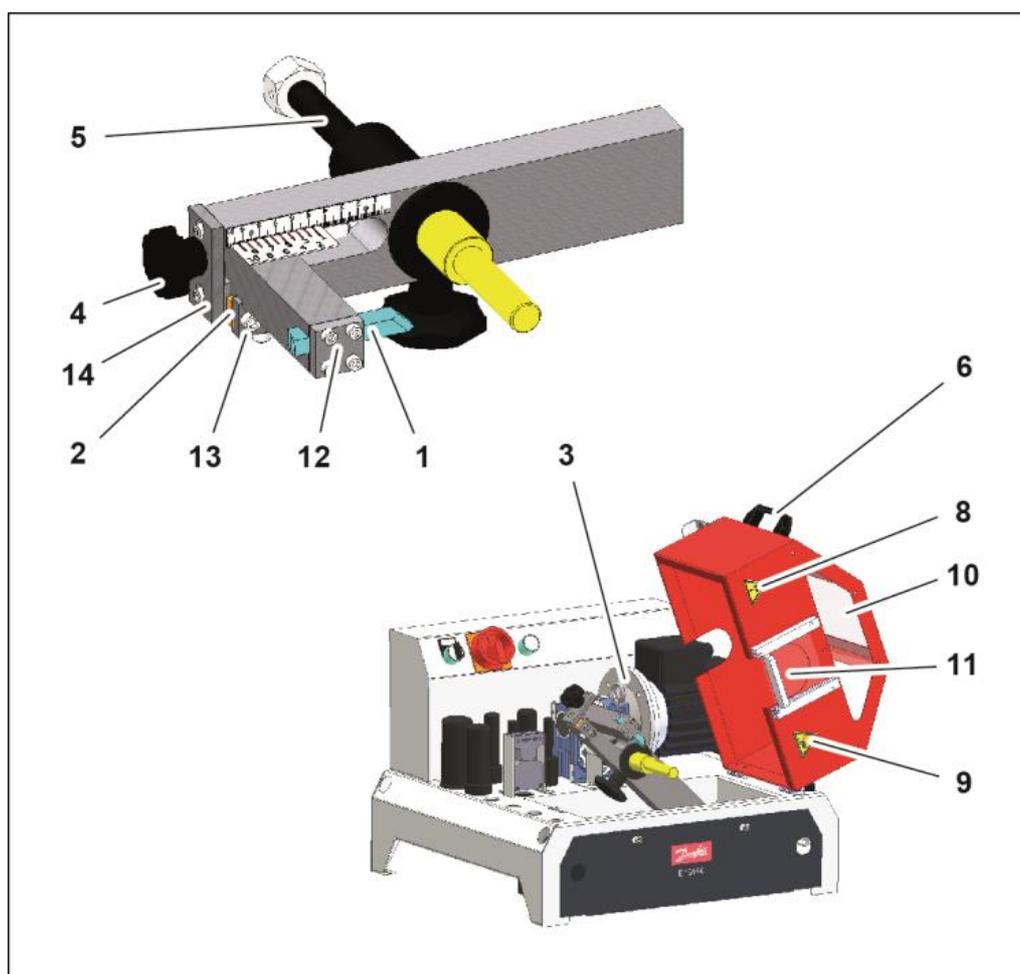
Please contact our Sales Department for ordering optional accessories.

9 Annex

9.4 Spare parts list

9.4 Spare parts list

9.4.1 Mechanical equipment USM 10.2 EcoLine / USM 10.2



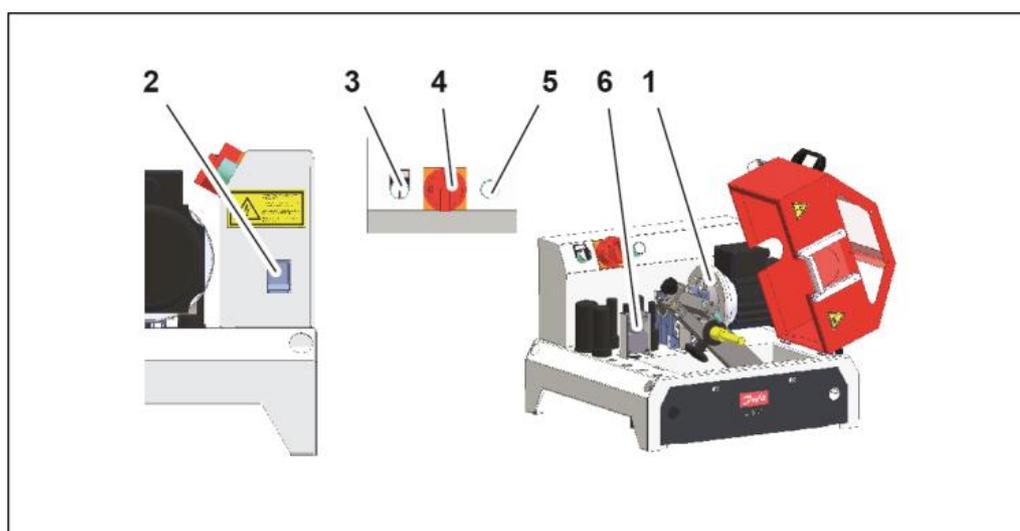
Item	Quantity	Part code	Designation
1	1	PJ_MCE250	Outside skiving knife
2	1	PJ_70.0100.16	Sliding bronze piece for skiving tool
3	1	798.000005	Eyebolt DIN 580-M8
4	1	PJ_MAS250	Adjusting screw / star-shaped grip
5	1	PJ_MAB250	Shaft
6	1	UJ_60.10:05	Strap grip

9 Annex

9.4 Spare parts list

Item	Quantity	Part code	Designation
No picture	1	777.031	Power supply disconnection warning sign
8	1	715.4	Squeezing risk warning sign
9	1	300.100.4	Cutting risk warning sign
10	1	313.1001	Protective screens set
11	1	313.1002	Movable safety guard set
12	1	UJ_70.0110.04	Knife holder plate
13	1	UJ_70.0110.06	Pressure plate
14	1	UJ_70.0100.24	Pressure plate

9.4.2 Electric equipment USM 10.2 / USM 10.2 S



Item	Quantity	Part code	Designation
1	1	313.203 313.005	Gear motor 400/50/3, 230/60/3 for USM 10 Gear motor 200V/50H for USM 10.2
2	1	8.12.031	Mounting enclosure CKAX03
3	1	UJ_20.30.325	Change in direction of rotation switch
4	1	UJ_20.30.52	Main switch with emergency stop function
5	1	UJ_20.30.08	Operating control lamp
6	1	307.010	Safety switch-AZ
No picture	1	VME 0264	Fine wire fuse 5x30 mm / 1.25A

9 Annex

9.5 Spare parts set USM 10.2 EcoLine

9.5 Spare parts set USM 10.2 EcoLine

Quantity	Part code	Designation
1	313.1001	Protective screens set
1	313.1002	Movable safety guard set

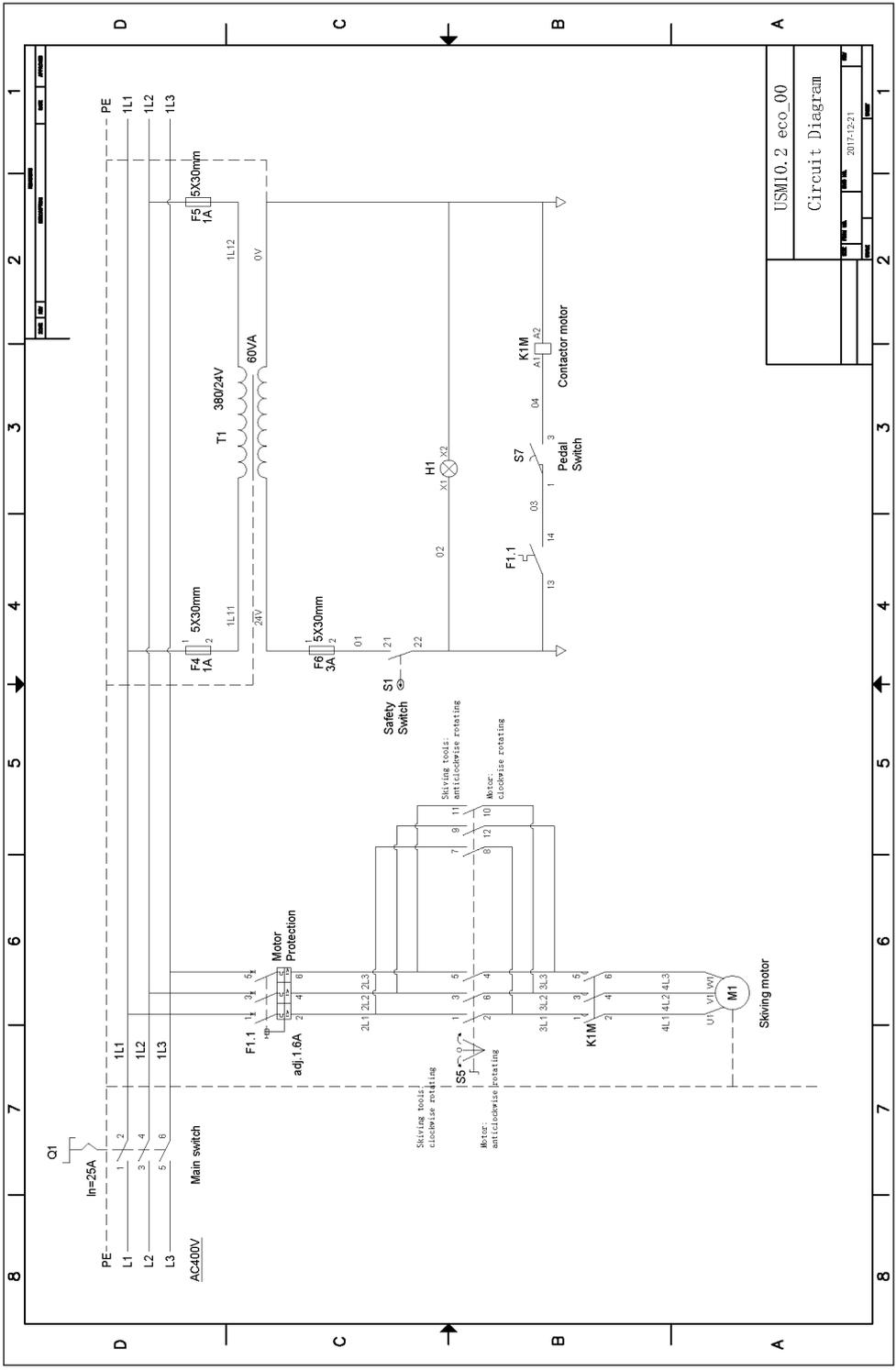
9.6 Spare parts set USM 10.2 / USM 10.2 S

Quantity	Part code	Designation
1	313.1001	Protective screens set
1	313.1002	Movable safety guard set

9 Annex

9.7 Electric diagram

9.7 Electric diagram



USM10.2 eco_00
Circuit Diagram
2017-12-21

9 Annex

9.9 Declaration of qualified staff

9.9 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

City	Date	Name	Signature

City	Date	Name	Signature

City	Date	Name	Signature

City	Date	Name	Signature

City	Date	Name	Signature

9 Annex

9.9 Declaration of qualified staff

9 Annex

9.9 Declaration of qualified staff

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