Operator´s manual

# TruTool TKF 1500 (2C1), (2D1)

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english

TRUMPF

# Table of contents

# 1. Safety

## 1.1 General safety information

**⚠ WARNING**

- Read all the safety information and instructions including those in the brochure also supplied.
- Failure to comply with the safety information and instructions can cause electric shock, burns and/or serious injury.
- Retain all the safety information and instructions for future use.

**⚠ DANGER**

**Electrical voltage! Risk of fatal injury due to electric shock!**

- ➢ Remove the plug from the plug socket before undertaking any maintenance work on the machine.
- ➢ Check the plug, cable and machine for damage each time before using the machine.
- ➢ Keep the machine dry and do not operate it in damp rooms.
- ➢ Connect the fault current (FI) circuit breaker with a maximum breaking current of 30 mA when using the electric tool outside.
- ➢ Protect the machine cable in areas where there are sparks.
- ➢ Only use original TRUMPF accessories.

**⚠ WARNING**

**Damage to the machine due to improper handling.**

- ➢ Wear safety glasses, hearing protection, protective gloves and work shoes when working at the machine.
- ➢ Do not insert the plug unless the machine is switched off. After use, pull out the power plug.
- ➢ Do not use the cable to carry the machine.
- ➢ Maintenance may be carried out by trained specialist technicians only.

## 1.2 Specific safety information for beveler

**⚠ DANGER**

**Electrical voltage! Risk of fatal injury due to electric shock!**

- ➢ Always lay the power cable away from the back of the device and do not pull it over sharp edges.
- ➢ Do not perform any work that may cause the machine to come into contact with hidden power lines or its own cable. Contact with a live conductor can cause metallic machine parts to become live and can lead to an electric shock.

**⚠ WARNING**

**Risk of injury to hands.**

- Do not reach into the processing line with your hands.
- Use both hands to hold the machine.

**⚠ WARNING**

**Risk of injury from hot and sharp chips!**

**Chips exit the chip ejector at high speed.**

- Use the chip box.

**⚠ WARNING**

**Risk of injury from falling machinery**

- The entire weight of the machine must be taken up after machining the workpiece.

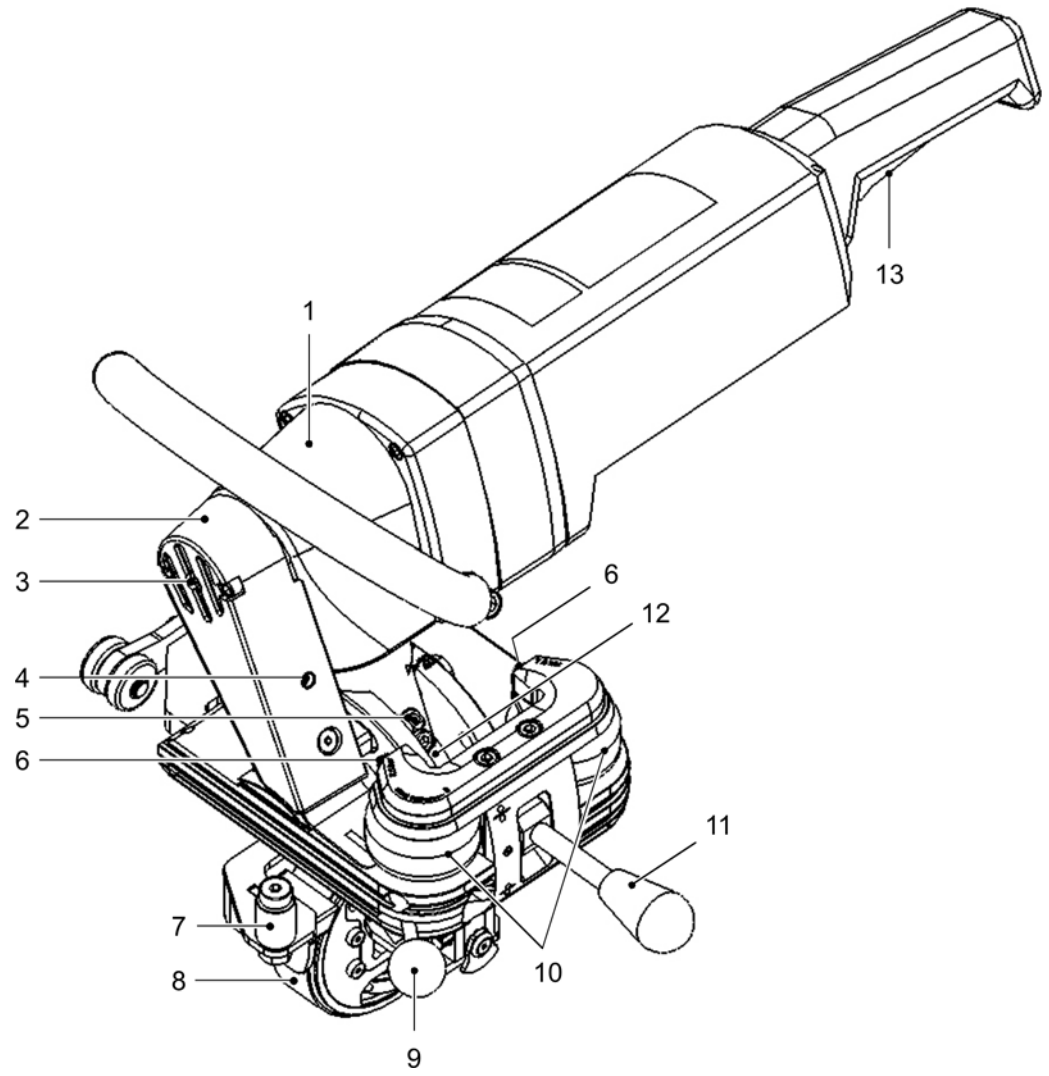
**⚠ CAUTION**

**Damage to property due to improper handling.**

**Collisions could result from an erroneous setting of the machine.**

- Rotate the eccentric shaft one full turn in a clockwise direction using the Allen key provided. If no collisions can be detected, remove the Allen key and put the machine into operation in accordance with regulations.

# 2. Description




| | | | | | |
|---|---|---|---|---|---|
| 1 | Gear head | 6 | Valve (2x) | 10 | Bellows (2x) |
| 2 | Drive unit | 7 | Stop roller | 11 | Clamping lever |
| 3 | Eccentric shaft | 8 | Impeller | 12 | Cutting tool |
| 4 | Overload indicator | 9 | Feed lever | 13 | On/Off switch |
| 5 | Grease nipple | | | | |

TruTool TKF 1500 beveler (2C1), (2D1) Fig. 56390

## 2.1 Intended use

The TRUMPF TruTool TKF 1500 beveler (2C1), (2D1) is an electrical powered hand-held device designed for the following applications:

- Preparation of all K-, V-, X-and Y-shaped welding grooves usual for gas and electrical fusion welding with various con-

tinuously adjustable angles of bevel and continuously adjustable lengths of bevels.

- Forming of uniform, oxide-free, bright metallic welding bevel edges in steel and aluminum.
- Beveling of edges on large, bulky workpieces by using the beveler as a hand-held device.

The TRUMPF TruTool TKF 1500 beveler (2D1) also offers 2-gear changing for modifying the working speed.

## 2.2 Technical data

**TruTool TKF 1500 (2C1)**

| | Other countries | | | USA |
|---|---|---|---|---|
| | Values | | | |
| **Voltage** | 230 V | 120 V | 110 V | 120 V |
| **Frequency** | 50/60 Hz | | | 50/60 Hz |
| **Max. length of bevel "ls" continuously adjustable:** | | | | |
| **Mild steel with 400 N/mm²** | 15 mm | | | 0.59 in |
| **Mild steel with 600 N/mm²** | 9 mm | | | 0.354 in |
| **Working speed** | 2 m/min | | | 6.55 ft/min |
| **Nominal power consumption** | 2000 W | | | - |
| **Nominal current** | - | | | 15 A |
| **Stroke rate with nominal load** | 370/min | 340/min | 340/min | 340/min |
| **Weight** | 24 kg | | | 52.9 lbs |
| **Material thicknesses:** | | | | |
| **Min.** | 6 mm | | | 0.236 in |
| **Max.** | 40 mm | | | 1.57 in |
| **Angle of bevel "ß" continuously adjustable** | 20°-55° | | | 20°-55° |
| **Safety class** | II / ☐ | | | II / ☐ |

Tab. 1

**TruTool TKF 1500 (2D1)**

| | Other countries | | | USA |
|---|---|---|---|---|
| | Values | | | |
| **Voltage** | 230 V | 120 V | 110 V | 120 V |
| **Frequency** | 50/60 Hz | | | 50/60 Hz |
| **Max. length of bevel "ls" continuously adjustable:** | | | | |
| **Mild steel with 400 N/mm²** | 15 mm (1st + 2nd gear) | | | 0.59 in |
| **Mild steel with 600 N/mm²** | 11 mm (1st gear)<br>9 mm (2nd gear) | | | 0.433 in<br>0.354 in |

**TruTool TKF 1500 (2D1)**

| | Other countries | | | USA |
|---|---|---|---|---|
| | Values | | | |
| **Working speed** | 1.25 m/min (1st gear)<br>2 m/min (2nd gear) | | | 4.1 ft/min (1st gear)<br>6.55 ft/min (2nd gear) |
| **Nominal power consumption** | 2000 W | | | - |
| **Nominal current** | - | | | 15 A |
| **Stroke rate with nominal load** | 230/min (1st gear)<br>370/min (2nd gear) | 170/min (1st gear)<br>340/min (2nd gear) | 170/min (1st gear)<br>340/min (2nd gear) | 170/min (1st gear)<br>340/min (2nd gear) |
| **Weight with guide handle** | 27 kg | | | 59.5 lbs |
| **Material thicknesses:** | | | | |
| **Min.** | 6 mm | | | 0.236 in |
| **Max.** | 40 mm | | | 1.57 in |
| **Angle of bevel "ß" continuously adjustable** | 20°-55° | | | 20°-55° |
| **Safety class** | II / ⧈ | | | II / ⧈ |

Tab. 2

## 2.3 Symbols

**Note**

The following symbols are important for reading and understanding the instruction manual. The correct interpretation of the symbols will help you operate the machine better and safer.

| Symbol | Name | Meaning |
|---|---|---|
|  | Read operating manual | Read the operator's manual and safety information in their entirety before starting up the machine. Closely follow the instructions given. |
|  | Safety class II | Indicates a doubly insulated tool. |
|  | Alternating current | Type or property of current |
| V | Volt | Voltage |
| A | Ampere | Current, current input |
| Hz | Hertz | Frequency (oscillations per second) |
| W | Watt | Power, power input |
| mm | Millimeters | Dimensions e.g.: material thickness, chamfer length |
| in | Inches | Dimensions e.g.: material thickness, chamfer length |
| $n_o$ | Idle speed | Revolution speed without load |

| Symbol | Name | Meaning |
|---|---|---|
| .../min | Revolutions/strokes per minute | Revolution speed, stroke rate per minute |

Tab. 3

## 2.4 Noise and vibration information

**WARNING**

**Noise emission value may be exceeded.**

- Wear hearing protection.

**WARNING**

**Vibration emission value may be exceeded.**

- Select tools correctly and replace them promptly when they show wear.
- Maintenance may be carried out by trained specialist technicians only.
- Establish additional safety precautions for the protection of the operator against the effects of vibrations (e.g. keeping hands warm, organizing the work sequences, machining with normal feed power).

**Notes**

- The specified vibration emission value was measured in accordance with a standardized testing procedure and can be used to compare one electric tool with another.
- The specified vibration emission value can also be applied for a provisional estimate of the vibration load.
- Times during which either the machine is switched off or running but not actually in use can considerably reduce the vibration load during the entire working period.
- Times during which the machine works independently and self-propelled do not have to be calculated.

| Designation of measured value | Unit | Value according to EN 60745 |
|---|---|---|
| Vibration emission value $a_h$ (vector sum of three directions) | $m/s^2$ | 12.1 |
| Uncertainty K for vibration emission value | $m/s^2$ | 2.5 |
| A-class acoustic pressure level $L_{PA}$ typically | dB (A) | 87 |
| A-class acoustic power level $L_{WA}$ typically | dB (A) | 98 |
| Uncertainty K for noise emission value | dB | 3 |

Tab. 4

# 3. Setting work

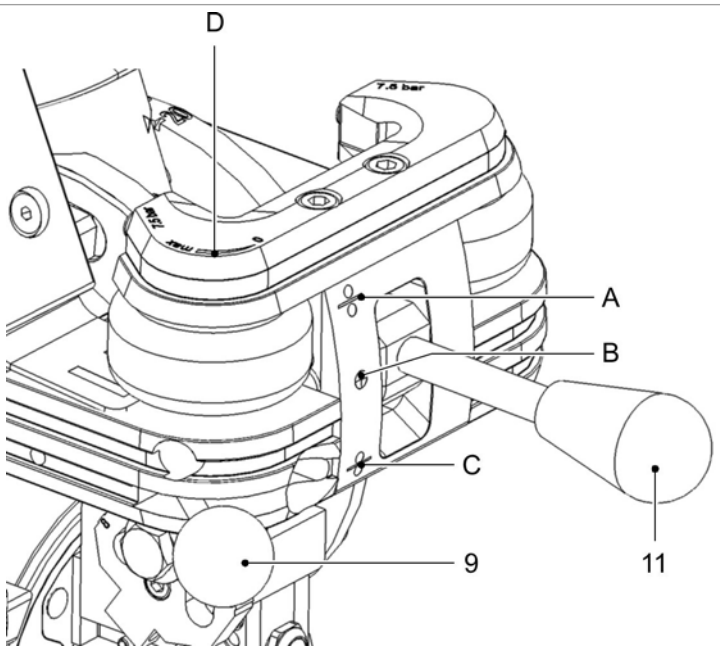
**⚠ CAUTION**

**Damage to property due to improper handling.**

**Collisions could result from an erroneous setting of the machine.**

➢ Rotate the eccentric shaft one full turn in a clockwise direction using the Allen key provided. If no collisions can be detected, remove the Allen key and put the machine into operation in accordance with regulations.

## 3.1 Operating automatic feed




| | | | |
|---|---|---|---|
| 9 | Feed lever | B | Clamping position "zero" |
| 11 | Clamping lever | C | Clamping position "clamp" |
| A | Clamping position "open" | D | Feed-index |

Fig. 56391

## 3.2 Inflating the bellows

**Notes**

- If the pressure in the bellows is too low, then there will be a danger that the machine will not be guided u close to the sheet edge and that the bevel will be of nonuniform size.

- If the pressure in the bellows is too high, then a very high drive force will be required and the drive will display an overload. If this is the case, then the pressure in the bellows can be reduced down as far as 6 bar.

**⚠ CAUTION**

**Damage to property due to improper handling.**

➢ Check the bellows regularly

1. Set clamping lever (11) to position "0" (see "Fig. 56391", pg. 10).
2. Remove the valve cap.
3. Screw the pump (Order No. 0384723) onto the valve (6).
4. Inflate to 7.5 bar (108 psi).
5. Quickly unscrew the pump from the valve (6).
6. Replace the valve cap.

   The system is now sealed.

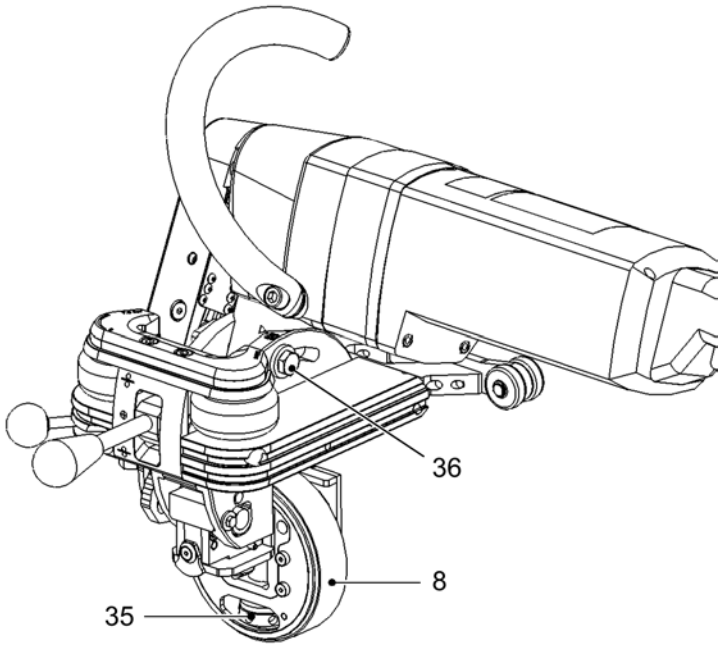
   **Note**

   The air pressure in the bellows influences the automotive function and must be equal on both sides.
7. Inflate the second set of bellows (10) in the same way.

## 3.3 Adjusting the angle of bevel

**Notes**

- The angle of bevel "ß" is continuously adjustable between 20° and 55°.
- The machine can be clamped to the sheet and/or the drive unit can be released in order to facilitate the setting adjustment (see "Installing and disassembling the drive unit", pg. 24).

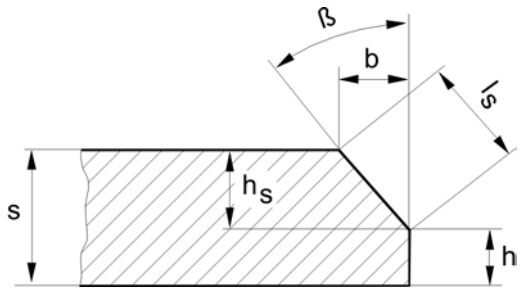



| | | | |
|---|---|---|---|
| 8 | Impeller | 36 | Hex. screw |
| 35 | Spindle for setting the material thickness | | |

Fig. 56393

1. Undo the hex. screw (36).
2. Set the desired angle in accordance with the scale.
3. Retighten the hex. screw (36).

## 3.4 Adjusting the ram length




| | | | |
|---|---|---|---|
| s | Material thickness | hs | Height of bevel |
| β | Angle of bevel | b | Width of bevel |
| ls | Length of bevel | h | Residual height |

Length of bevel and angle of bevel Fig. 9664

The values **highlighted in boldface** in the following table can not be processed with the "narrow" driving roller. The "wide" driving roller must be used here (see "Driving rollers", pg. 16).

| W | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | mm |
|---|---|---|---|---|---|---|---|---|---|---|
| ß 55° | 14.5 | 13.3 | 12.1 | 10.8 | **9.7** | **8.4** | **7.2** | **6.0** | **4.8** | ls |
| | 11.9 | 10.9 | 9.9 | 8.9 | **7.9** | **6.9** | **5.9** | **4.9** | **3.9** | b |
| | 8.3 | 7.7 | 7.0 | 6.2 | **5.6** | **4.8** | **4.2** | **3.5** | **2.8** | hs |
| ß 45° | 15 | 13.6 | 12.12 | 10.8 | **9.4** | **8** | **6.5** | **5.1** | **3.7** | ls |
| | 10.6 | 9.6 | 8.6 | 7.6 | **6.6** | **5.6** | **4.6** | **3.6** | **2.6** | b |
| | 10.6 | 9.6 | 8.6 | 7.6 | **6.6** | **5.6** | **4.6** | **3.6** | **2.6** | hs |
| ß 37.5° | 15.5 | 13.8 | 12.2 | 10.5 | **8.9** | **7.3** | **5.6** | **4** | **2.4** | ls |
| | 9.4 | 8.4 | 7.4 | 6.4 | **5.4** | **4.4** | **3.4** | **2.4** | **1.4** | b |
| | 12.3 | 11 | 9.6 | 8.3 | **7** | **5.8** | **4.4** | **3.1** | **1.9** | hs |
| ß 30° | - | 15 | 13 | 11 | **9** | **7** | **5** | **3** | **1** | ls |
| | - | 7.5 | 6.5 | 5.5 | **4.5** | **3.5** | **2.5** | **1.5** | **0.5** | b |
| | - | 13 | 11.2 | 9.5 | **7.8** | **6** | **4.3** | **2.6** | **0.8** | hs |
| ß 20° | - | - | 15 | **12.2** | **9.2** | **6.2** | **3.3** | - | - | ls |
| | - | - | 5.1 | **4.2** | **3.1** | **2.1** | **1.1** | - | - | b |
| | - | - | 14 | **11.4** | **8.6** | **5.8** | **3.1** | - | - | hs |

ß Angle of bevel

$l_s$ Length of bevel

h Height of bevel

b Width of bevel

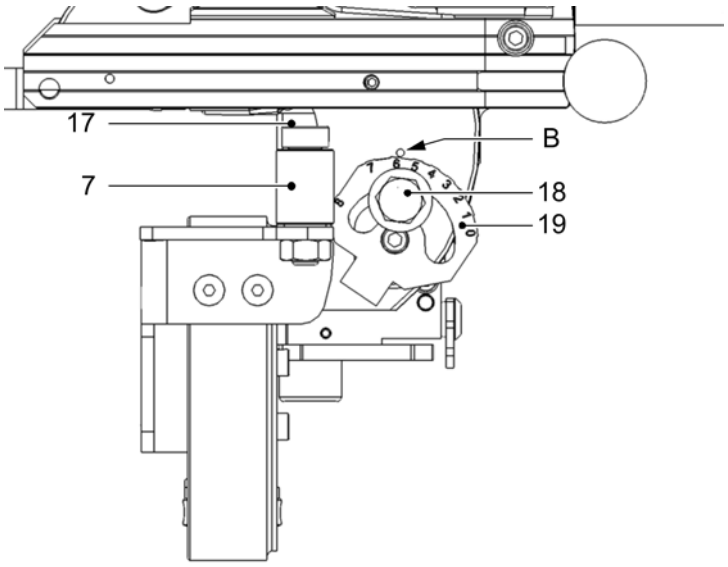
W Scale value which must be adjusted on the crank sliding block

Tab. 5

Example for working with the table:

| | |
|---|---|
| β desired | 30° |
| $l_s$ | 13 mm |
| W (from the table) | 6 |

Tab. 6




7 Stop roller
17 Pressure die
18 Hex. screw
19 Crank sliding block
B Reference point

Fig. 56392

1. Undo the hex. screw (18).
2. Consult the table to find the desired length of bevel/ram length $l_s$ and the associated scale value W (see "Tab. 5", pg. 13).

**Note**

Observe angle of bevel ß.

3. Rotate the crank sliding block (19) until the scale value W on the crank sliding block lines up with the reference point B.
4. Tighten the hex. screw (18).

## 3.5 Setting material thickness

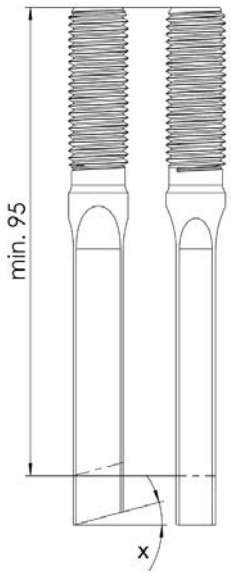
1. Set the machine on the sheet, setting the clamping lever (11) to the "zero" position while doing so (see "Fig. 56391", pg. 10).

**Note**

Make sure that the cutting tool is at the upper dead point. The machine is on top supported by four rollers, and can be pushed along the sheet edge up until the pressure die (17) and the stop roller (7) (see "Fig. 56392", pg. 14).

2. Undo the spindle (35) by pushing it up and out of the locking device.
3. Tighten the impeller (8) against the lower sheet edge by turning the spindle (35).
4. Lock the spindle (35) back into place by sliding it downwards, returning beforehand to the last home position if necessary (see "Fig. 56393", pg. 12).

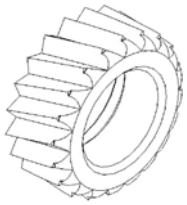
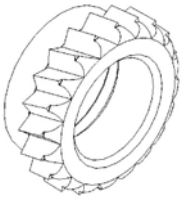
## 3.6 Selecting cutting tool

| Cutting tool | 7° standard | 7° high-tensile | 7° high-tensile 5575 | Aluminum |
|---|---|---|---|---|
| **Order No.** | 1559722 | 1559724 | 1559721 | 0005014 |
| **Application** | General mild steels | Higher-tensile mild steels | Higher-tensile mild steels, increased service life | Aluminum alloys |
| **Angle** | x = 7° | | | x = 15° |
| **Regrinding reserve** | 10 mm | | | |
| **Regrinding diagram** |  | | | |

Cutting tools for the TruTool TKF 1500 beveler (2C1), (2D1) Tab. 7

Assembly and setting work: (see "Changing the cutting tool", pg. 25).

## 3.7 Driving rollers

| Driving roller | wide | narrow |
|---|---|---|
| **Order No.** | 1450515 | 1418094 |
| **Characteristic feature** | Standard roller<br>Can be used for all chamfer sizes. | Does not leave marks behind on the workpiece. |
| **Restrictions** | - | ▪ Do not use for those chamfer sizes **printed in bold in the table**(see "Tab. 5", pg. 13).<br>▪ It is not possible to refinish the bevel. |
| |  |  |

Driving rollers for the TruTool TKF 1500 beveler (2C1), (2D1) Tab. 8

Assembly: (see "Changing the driving roller", pg. 30).

## 3.8 Accessories included

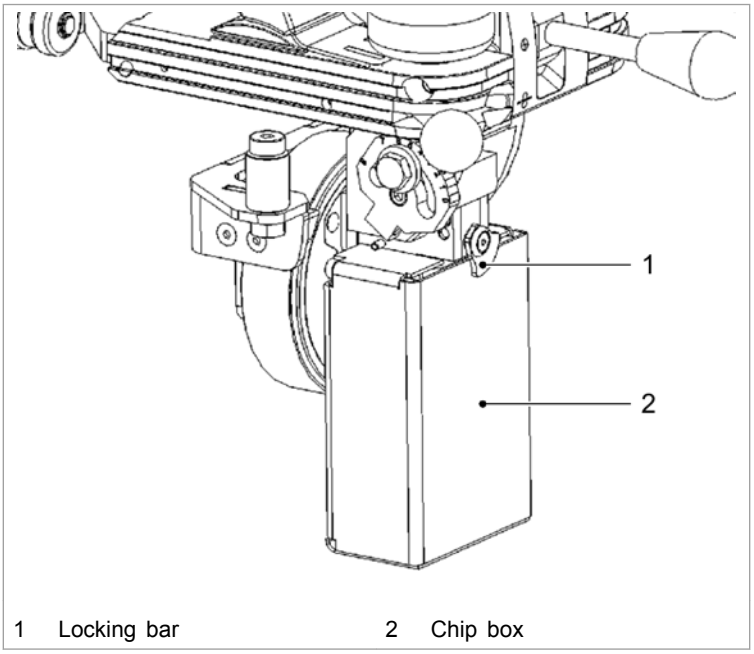
### Pedestal

Fig. 60840

The machine can be stored on the pedestal when it is not in use.

## Installing the chip box

Chips that fall away during machining are collected in the chip box.




1 Locking bar 2 Chip box

Machine with chip box Fig. 56396

1. Turn the locking bar (1) upward.
2. Push the chip box (2) onto the clamping plate.
3. Turn the locking bar (1) downward.

The chip box is secured against dropping out.

# 4. Operation

**⚠ WARNING**

**Damage to the machine due to improper handling.**

- Make sure the machine is always in a stable position when operating it.
- Never touch the tool while the machine is running.
- Always operate the machine away from your body.
- Do not operate the machine above your head.

**⚠ CAUTION**

**Damage to property due to excessively high line voltage**

**Motor damage**

- Check the line voltage. The power supply voltage must correspond to the information on the nameplate of the machine.
- When using an extension cord that is longer than 5 m, the cord must have a line diameter of at least 2.5 mm².

**⚠ CAUTION**

**Damage to property due to improper handling.**

**Collisions could result from an erroneous setting of the machine.**

- Rotate the eccentric shaft one full turn in a clockwise direction using the Allen key provided. If no collisions can be detected, remove the Allen key and put the machine into operation in accordance with regulations.

**⚠ DANGER**

**Electrical voltage! Risk of fatal injury due to electric shock!**

- Always lay the power cable away from the back of the device and do not pull it over sharp edges.
- Do not perform any work that may cause the machine to come into contact with hidden power lines or its own cable. Contact with a live conductor can cause metallic machine parts to become live and can lead to an electric shock.

**Monitoring during operation**

- During operation, at an interval of approx. 20 m, the grease nipple (5) on the supporting body should be lubricated with one or two squirts of grease. Doing so prolongs the service life of the cutting tool (see "Fig. 56390", pg. 6).
- Observe the overload indicator (4) during machining. If an overload is indicated, stop machine operation (see "Help in the case of problems", pg. 35).

**Lubricating oil**

In order to improve the cutting result and increase the service life of the cutting tool, coat the cutting track with oil before machining the workpiece.

| Component | Oil |
|---|---|
| Steel | Punching and nibbling oil (0.5 l, Order No. 0103387) |
| Aluminum | Punching and nibbling oil for aluminum (1 l, Order No. 0125874) |

Tab. 9

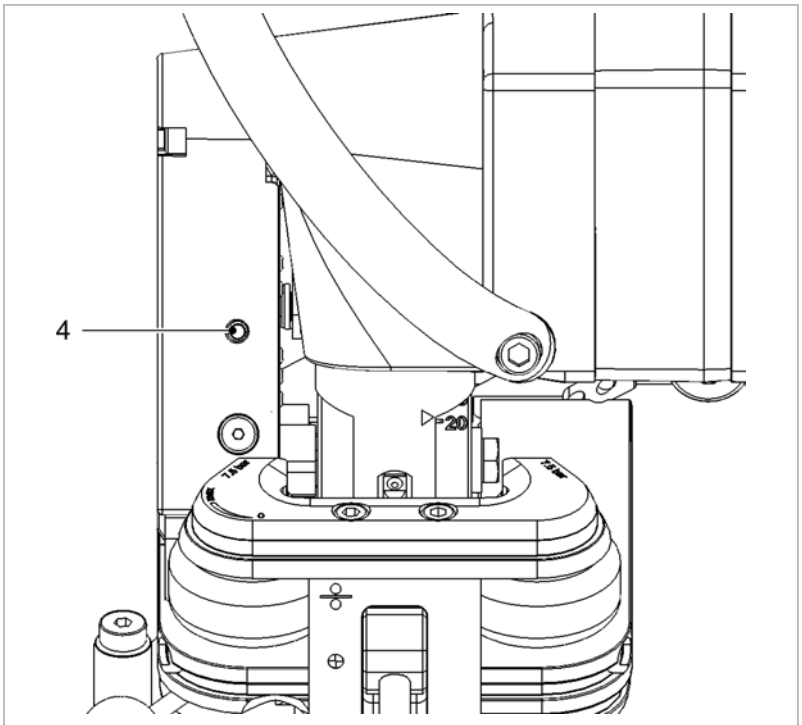
## 4.1 Overload indicator

**⚠ CAUTION**

**Damage to property due to improper handling.**

**The machine can become damaged when working with the machine for extended periods when it is overloaded.**

➢ Monitor the machine during machining.




4 Overload indicator pin

Fig. 56398

The integrated overload protection protects the drive from being damaged in the event of an overload.

E.g. when the slag is too think, due to fluctuations in material thickness or due to obstructions such as clamping screws, etc.

**Signs of overloading**

- The overload indicator pin (4) moves only minimally. The machine is not overloaded.
- The overload indicator pin (4) swings away to the right. This indicates an overload. Stop the machine.

## 4.2 Working with the TruTool TKF 1500

**⚠ WARNING**

**Risk of injury from hot and sharp chips!**

**Chips exit the chip ejector at high speed.**

➢ Use the chip box.

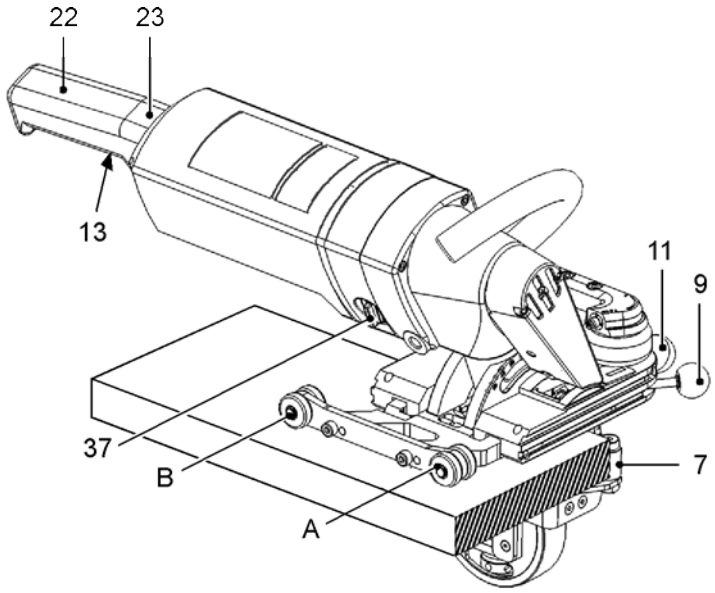
**⚠ CAUTION**

**Damage to property due to turning the gear switch during operation.**

**Damage to the gearbox can be a consequence.**

➢ Use the gear switch only when the motor is running down or at rest.

**Switching the machine on and working**




| | | | |
|---|---|---|---|
| 7 | Stop roller | 23 | Release switch |
| 9 | Feed lever | 37 | 2-gear changing |
| 11 | Clamping lever | A | Front rollers |
| 13 | On/Off switch | B | Rear rollers |
| 22 | Motor handle | | |

Placing the machine on the workpiece Fig. 56397

1. Performing setting work (see "Setting work", pg. 10).
2. For TruTool TKF 1500 (2D1): select gear (37).

3. Press release switch (23) and On switch (13).

   On switch (13) remains engaged. The motor is running.

4. To switch the instantaneous connection: press the release switch (23), then press the On/Off switch (13) together at the same time.

**Note**

Do not move the machine towards the workpiece until full speed has been reached.

5.

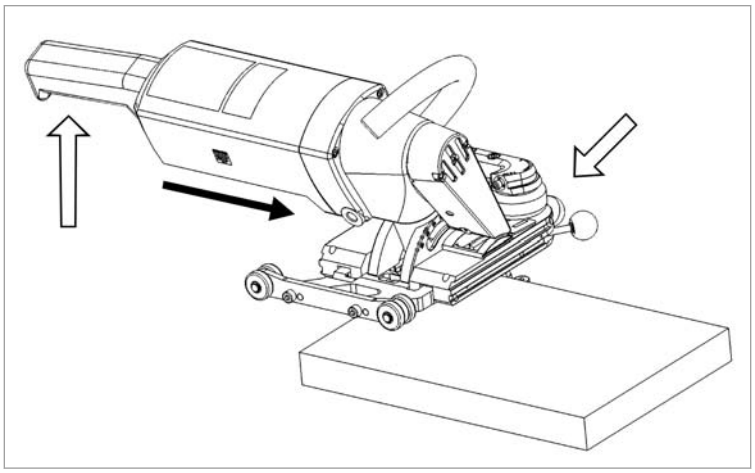


Fig. 56868

6. Start workpiece processing:
   - Only place the front rollers (A) of the machine onto the corner of a workpiece sheet.
   - Set the feed lever (9) to "0". Set the clamping lever (11) to "clamp" by pushing it downward.
7. Butt the machine against the workpiece edge:
   - The stop roller (7) and the pressure die (17) are against the grinding surfaces (see "Fig. 56392", pg. 14).
   - Set the feed lever (9) to 1/3 and gently lift the machine upward using the motor handle (22).
   - The machine now moves forward automatically. When the rear rollers (B) are on the sheet, the machine no longer has to be guided. The feed can now be varied at will.

**Note**

If additional machining processes are planned, then the feed lever (9) can be left in place after machining has been completed.

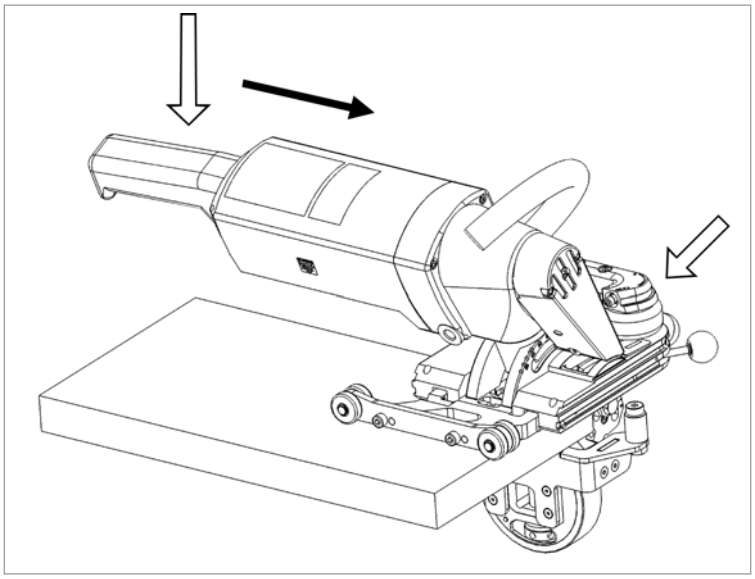


Fig. 56869

8. End of the workpiece:
   - manually guide the machine again on the end of the workpiece.
   - Machine stops automatically as soon as the driving roller travels over the end.
   - Complete machining by setting the feed lever (9) to "0"
   - Gently push the motor handle (22) downward and steadily push the machine forward along the sheet edge.

   The machining is completed.

**Switching off the machine**

9. Press the off switch (13).

# 5. Maintenance

**⚠ DANGER**

**Electrical voltage! Risk of fatal injury due to electric shock.**

➢ Remove the plug from the plug socket before undertaking any maintenance work on the machine.

**⚠ WARNING**

**Risk of injury due to incorrect repair work**

**Machine does not work properly.**

➢ Maintenance may be carried out by trained specialist technicians only.

**⚠ CAUTION**

**Damage to property caused by blunt tools.**

**Machine overload.**

➢ Check the cutting edge of the cutting tool for wear every hour. Sharp cutting tools provide good cutting performance and are easier on the machine. Replace the cutting tool promptly.

| Maintenance point | Procedure and interval | Recommended lubricants | Lubricant Order No. |
|---|---|---|---|
| Sliding sleeve and cutting tool | Fill the grease nipples with the grease gun | Lubricating grease "S1" | 0385478 |
| Sliding sleeve and cutting tool | Lubricate after tool change. | Lubricating grease "S1" | 0385478 |
| Plunger | Fill the lubricant pockets every 300 m when changing the cutting tool. | Lubricating grease "S1" | 0385478 |
| Supporting body | Lubricate every 300 m when changing the cutting tool | Lubricating grease "S1" | 0385478 |
| Impeller | Lubricate the inside of the impeller when starting up the machine and when it has not been used for long periods. | Universal oil or WD40 | 0138648 |
| Driving roller | Lubricate the thread after changing the roller | Lubricating grease "G3" | 0353969 |
| Driving roller | Change as needed. | - | 1450515 |
| Stop roller | Change as needed. | - | 1482906 |
| Bellows | Pump back up as needed. | - | - |
| Gearbox and gear head | After 300 operating hours, arrange for a trained specialist to relubricate or to replace the lubricating grease. | Lubricating grease "G1" | 0139440 |
| Pressure die | Clean as needed. | - | - |
| Pressure die | Change as needed, max. 1 mm wear. | - | - |
| Cutting tool | Regrind as required | - | - |
| Cutting tool | Change as needed. | - | - |
| Sliding sleeve | Change as needed (clearance between bushing and cutting tool > 0.3 mm). | - | - |

| Maintenance point | Procedure and interval | Recommended lubricants | Lubricant Order No. |
|---|---|---|---|
| Ventilation slots | Clean as needed. | - | - |
| Outer brush on the impeller | Change or clean as needed. | - | - |
| Spindle for setting material thickness | Clean as needed. | - | - |

Maintenance positions and intervals Tab. 10

## 5.1 Installing and disassembling the drive unit

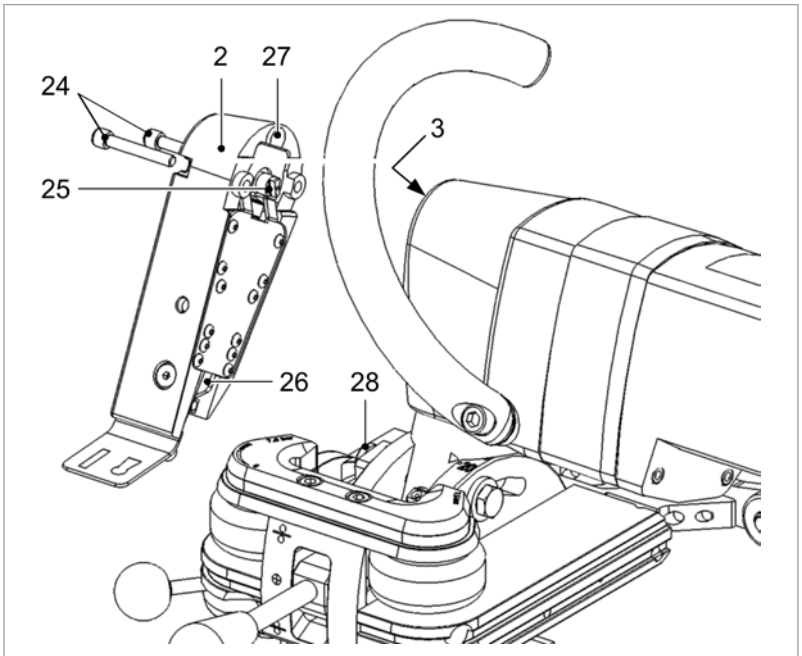
**⚠ CAUTION**

**Damage to property due to improper handling.**

**The drive unit can become damaged if installed incorrectly.**

- ➢ Manually position the drive unit.
- ➢ Gently tighten the screws (24).

It is necessary to disassemble the drive unit when changing the cutting tool or sliding sleeve.




| | | | |
|---|---|---|---|
| 2 | Drive unit | 26 | Guide |
| 3 | Eccentric shaft | 27 | Peg |
| 24 | Screws | 28 | Nut |
| 25 | Drive shaft with cam | | |

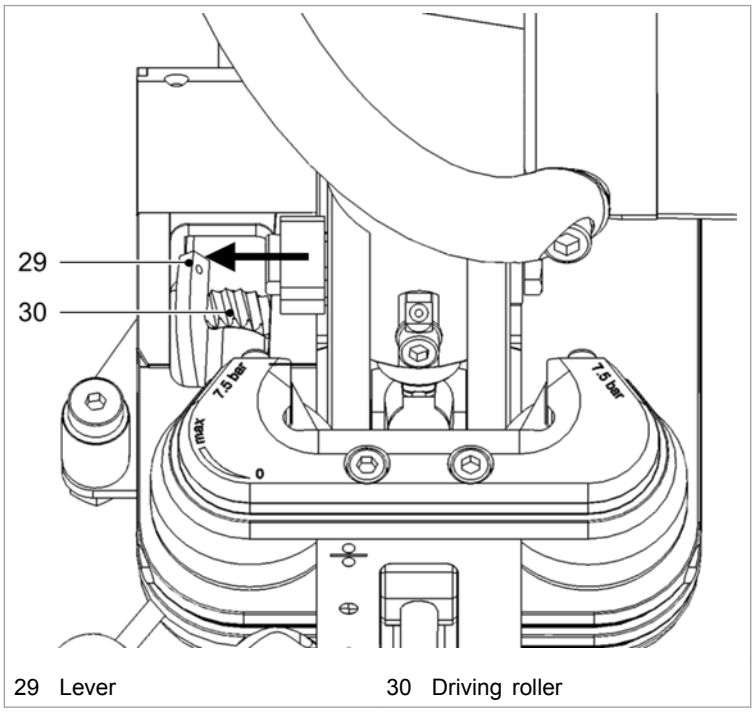
Fig. 56406

**Disassembling the drive unit**

1. Undo the screws (24) on the machine.

2. Remove the drive unit (2).

**Installing the drive unit**




29 Lever 30 Driving roller

Fig. 56407

3. Shift lever (29) to the left before assembly.
4. Attach the drive unit, to do this slide the guide (26) onto the nut (28).

**Note**

The drive shaft can only engage in one specific position.

5. Turn the drive shaft (25) such that the cam completely engages with the eccentric shaft (3).
6. Make sure the peg (27) lies directly against the gear head and there is no gap between the two. Secure the drive with screws (24) (max. 10 Nm).

## 5.2 Changing the cutting tool

**⚠ DANGER**

**Electrical voltage! Risk of fatal injury due to electric shock.**

➢ Remove the plug from the plug socket before undertaking any maintenance work on the machine.

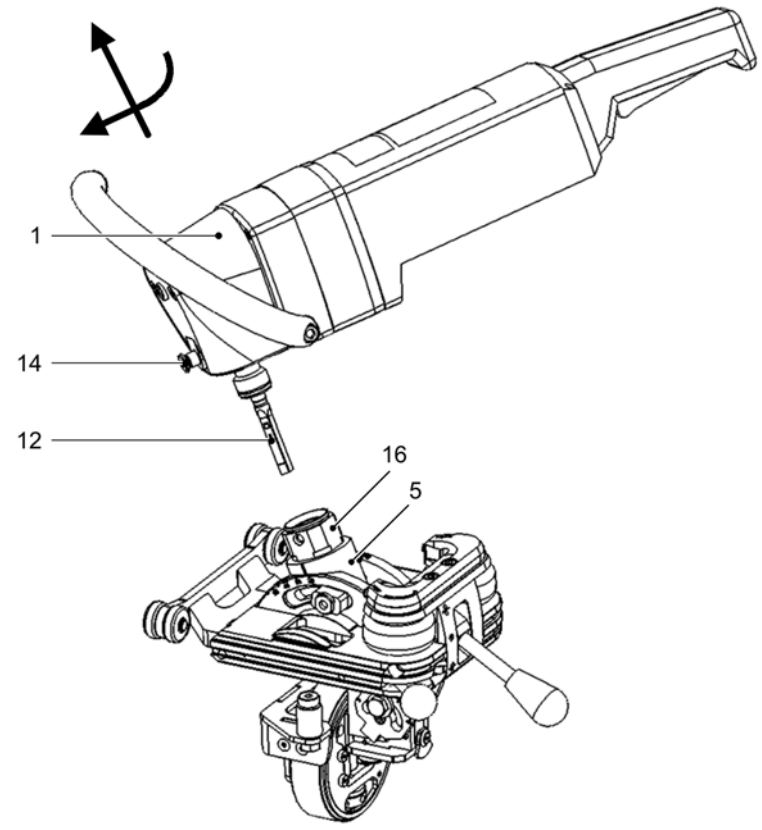
**⚠ CAUTION**

**Damage to property due to improper handling.**

**Collisions could result from an erroneous setting of the machine.**

- Rotate the eccentric shaft one full turn in a clockwise direction using the Allen key provided. If no collisions can be detected, remove the Allen key and put the machine into operation in accordance with regulations.

If the cutting tool is blunt, then it must be either reground or replaced.




| | | | |
|---|---|---|---|
| 1 | Gear head | 14 | Clamping screw |
| 5 | Grease nipple | 16 | Supporting body |
| 12 | Cutting tool | | |

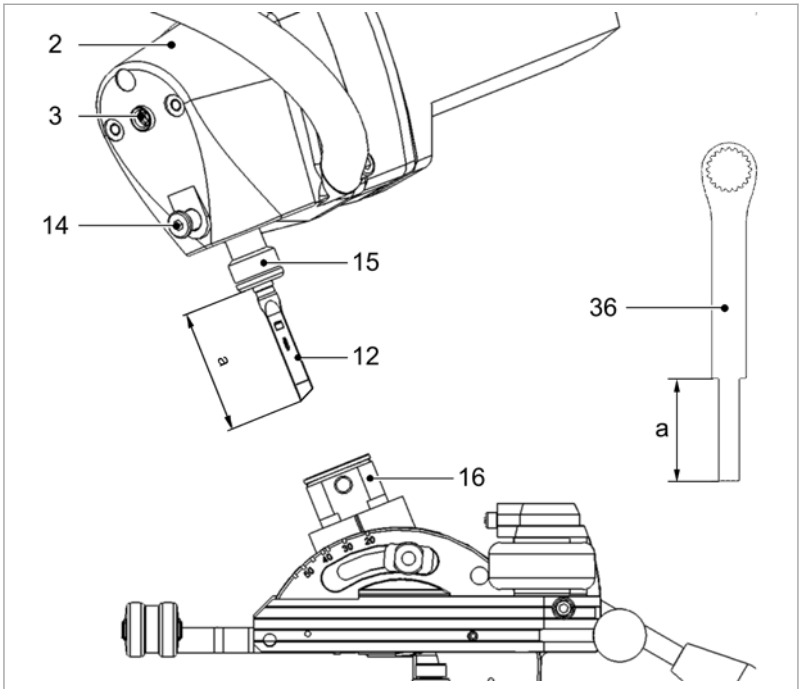
Fig. 56408

## Disassembling the cutting tool

1. Disassemble the drive unit (see "Installing and disassembling the drive unit", pg. 24).
2. Undo clamping screw (14)

3. Turn the gear head by 45°
4. Pull out the gear head upwards.
5. Screw out the cutting tool (12).

## Installing and setting the cutting tool




| | | | |
|---|---|---|---|
| 2 | Gear head | 15 | Ram |
| 3 | Eccentric shaft | 16 | Supporting body |
| 12 | Cutting tool | 36 | Assembly tool |
| 14 | Clamping screw | a | Screw-in depth |

Fig. 56409

1. Screw in the cutting tool into the ram (15). Observe the screw-in depth of a = 76.5 ± 0.9 mm. Use a setting gauge (TRUMPF order no.: 1411767) on the handle of the assembly tool (36).
2. Align the cutting edge of the cutting tool (12), observing the bevel grind while doing so.
3. Retract the gear head into the supporting body (16) as far as the lower stop.
4. Turn the gear head by 45°.
5. Retighten the clamping screw (14) (20 Nm).
6. Install the drive unit again (see "Installing and disassembling the drive unit", pg. 24).

## 5.3 Regrinding cutting tool

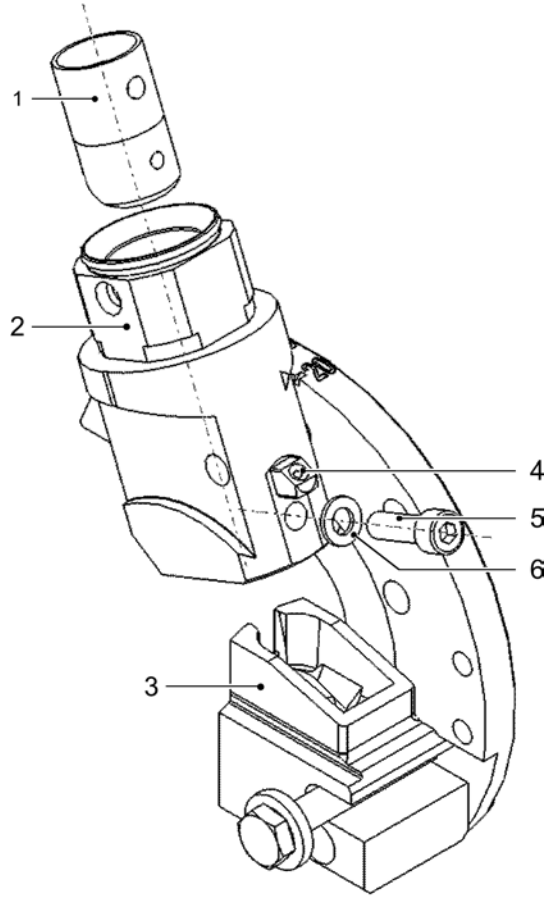
Cutting tools are ground at an angle on the grinding face.
Observe the corresponding regrinding diagram (see "Tab. 7", pg. 15).

**Notes**

- Maintain the minimum length of the cutting tools (see "Tab. 7", pg. 15).
- Do not use shorter cutting tools.
- Dress the cutting edge with an oil stone after regrinding.

## 5.4 Change the sliding sleeve

If the clearance between liner and cutting tool is > 0.3 mm, then the liner must be changed.




| | | | |
|---|---|---|---|
| 1 | Sliding sleeve | 4 | Grease nipple |
| 2 | Supporting body | 5 | Cap screw |
| 3 | Pressure die | 6 | Washer |

Fig. 56410

1. Disassemble the drive unit (see "Installing and disassembling the drive unit", pg. 24).
2. Loosen the clamping screw.
3. Turn the gear head by 45°.
4. Pull out the gear head upwards.
5. Undo the cap screw (5), pull the sliding sleeve (1) up and out of the supporting body (2).
6. Slide the new sliding sleeve (1) into the supporting body (2) from above. Observe the orientation.
7. Tighten cap screw (5).
8. Retract the gear head into the supporting body (2) as far as the lower stop.
9. Turn the gear head by 45°.
10. Retighten the clamping screw (20 Nm).
11. Install the drive unit again (see "Installing and disassembling the drive unit", pg. 24).

## 5.5 Lubricating the impeller

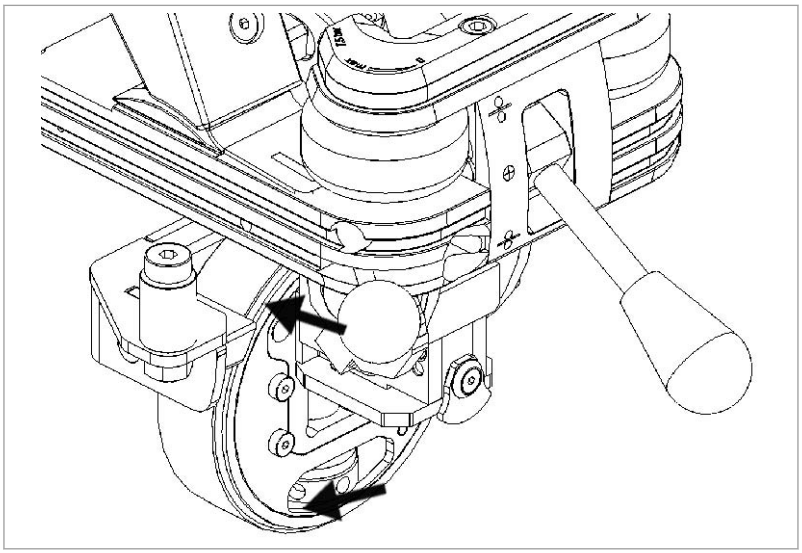


Fig. 56411

Before putting the machine into service for the first time or when it has not been used for long periods:

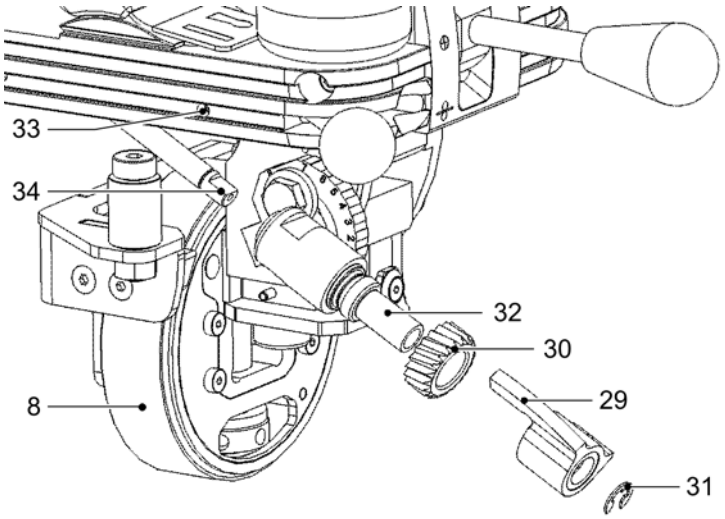
- Lubricate the inside of the impeller with the universal oil provided (Order No. 0138648).
- While doing so, manually crank the impeller several times

**or**

- Lubricate the impeller with commercially available "WD40" lubricating spray.
- Spray the lubricating spray directly into the gap.

## 5.6 Changing the driving roller

If the driving roller is too worn, the drive will not run smoothly if at all. Certain chamfer sizes can be machined with the narrow driving roller (Order No. 1418094) (see "Driving rollers", pg. 16).




| | | | |
|---|---|---|---|
| 8 | Impeller | 32 | Roller |
| 29 | Lever | 33 | Screw |
| 30 | Driving roller | 34 | Axis |
| 31 | Retaining ring | | |

Fig. 54710

**Changing the driving roller**

1. Set the impeller (8) to the maximum material thickness.
2. Undo the screw (33).
3. Swivel axis (34) downward.
4. Remove the retaining ring (31). Pull the roller (32) together with the driving roller (30) and lever (29) off the axis (34).
5. Pull the lever (29) off the roller (32).
6. Undo the driving roller (30) using the assembly tool.
7. Coat the thread with lubricating grease "G3" (Order No. 0353969) and screw a new driving roller (30) on.
8. Reattach lever (29).
9. Replace the roller (32) together with the driving roller (30) and lever (29) on the axis (34), observe the position of the lever (29) while doing so.
10. Install the retaining ring (31).
11. Swivel axis (34) upward again.
12. Secure axis (34) with a screw (33).

## 5.7 Changing the power cable

If the power cable is to be replaced, it should be procured from the manufacturer or an authorized dealer to avoid safety hazards.

**Note**

For TRUMPF service addresses, see www.trumpf-power-tools.com.

## 5.8 Replacing carbon brushes

The motor comes to a standstill whenever the carbon brushes are worn out.

**Note**

For TRUMPF service addresses, see www.trumpf-power-tools.com.

➢ Change the carbon brushes.

# 6. Accessories and consumables

| - | Scope of delivery | Consuma-bles | Accessories | Order no. |
|---|---|---|---|---|
| Standard cutting tool | - | x | - | 1559722 |
| Cutting tool for high-tensile materials | x | x | - | 1559724 |
| Cutting tool for aluminum | - | x | - | 0005014 |
| Driving roller, wide | x | x | - | 1450515 |
| Driving roller, narrow | - | x | x | 1418094 |
| Universal oil (0.1 l) | x | x | - | 0138648 |
| Punching and nibbling oil for steel (0.5 l) | x | x | - | 0103387 |
| Punching and nibbling oil for aluminum (1 l) | - | x | - | 0125874 |
| Lubricating grease "S1" (250 g) | x | x | - | 0385478 |
| Filled grease gun "S1" | x | - | x | 0385477 |
| Allen key AF 3 | x | - | x | 0067830 |
| Allen key AF 6 | x | - | x | 0385714 |
| Box-end wrench SW 17 | x | - | x | 0384564 |
| Assembly tool | x | - | x | 1424125 |
| Pump | x | - | x | 0384723 |
| Box for small parts | x | - | x | 0353966 |
| Chip box | x | - | x | 0023209 |
| Pedestal | x | - | x | 1555593 |
| TruTool TKF 1500 (2C1), (2D1) operator's manual | x | - | x | 1439388 |
| Safety information, other countries | x | - | x | 0125699 |
| Safety information, USA | x | - | x | 1239438 |

Tab. 11

## 6.1 Ordering consumables

**Note**

The following data must be specified in order to ensure that parts are delivered correctly and without delay.

1. Specify the order number.
2. Enter further order data:
   - Voltage data
   - Quantity
   - Machine type
3. Specify the complete shipping information:
   - Correct address.
   - Desired delivery type (e.g. air mail, courier, express mail, ordinary freight, parcel post).

**Note**

For TRUMPF service addresses, see www.trumpf-powertools.com.

4. Send the order to the TRUMPF representative office.

# 7. Help in the case of problems

| Problem | Cause | Correction |
|---|---|---|
| The machine does not remain on the sheet. | Cutting tool is blunt. | Regrind, replace the cutting tool. |
| | Incorrectly set material thickness (too loose). | Reset the material thickness, if necessary remove the burr on the workpiece. |
| | Sliding sleeve worn. | Change the sliding sleeve. |
| | Rear roller contaminated. | Clean the rear roller. |
| | Clamp force too low. | Reinflate the bellows. |
| | Driving roller worn. | Replace the driving roller. |
| The drive does not move, the overload indicator indicates that there is overloading. | Incorrectly set material thickness. (too tight). | Reset the material thickness, if necessary remove the burr on the workpiece. |
| | Cutting tool set incorrectly (screw-in depth greater than 76.5 mm). | Reset the cutting tool. Observe the screw-in depth. |
| | Jams caused by burr on the sheet, slag or scale, chips being traveled over. | Clean the part of the sheet affected. |
| | Uneven clamp force. | Check the pressure of the bellows |
| Drive does not move, an overload is not indicated. | Cam is on the wrong side. | Lift up rubber tab, check position, correct if necessary (see "Changing the driving roller", pg. 30). |
| | Incorrectly set material thickness. (too loose). | Reset the material thickness, if necessary remove the burr on the workpiece. |
| | Clamp force too low. | Reinflate the bellows. |
| It is difficult to attach the machine to the sheet. | Uneven clamp force. | Check the pressure of the bellows. |
| | Incorrect handling. | Gently lift the machine upward using the motor handle when starting machining. Gently push the machine downward when completing machining. |
| The machine is not lying flat on the sheet during setting work. It is not possible to set the material thickness. | The cutting tool is not at the upper dead point. | Using a screwdriver, turn the eccentric shaft until the cutting tool is at the upper dead point. |
| The spindle for setting material thickness cannot be turned. | Spindle contaminated, jammed. | Undo the spindle. Clean the spindle and guide. |
| Cutting tool broken on the thread. | Sliding sleeve worn. | Change the sliding sleeve. |
| The angle setting on the tool cannot be adjusted. | Drive unit is screwed on too tightly. | Loosen the drive unit for the time required to set the angle. |
| The gear head becomes hot. | The cutting tool is not lubricated sufficiently. | Using a grease gun lubricate the cutting tool and the sliding sleeve via the grease nipple in the supporting body. |
| The edge perforation on the lower part of the bevel is too large. | Support not sufficient. | Have a qualified technician remove the impeller and reinstall it after having turned it 180°. This should provide improved support. The lower edge of the sheet should no longer exhibit burring. |

Tab. 12

# 8. Appendix: Guarantee, declaration of conformity, replacement parts lists