

Operator's manual



TruTool N 1000 (2B1)

Nibbler

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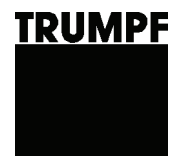


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1. Safety

1.1 General safety information

 **WARNING**

Read all warnings and instructions.

- Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injuries.
 - Keep all warnings and instructions for future reference.
-

 **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 power tool outside.
 - Protect the machine cable in areas where there are flying sparks.
 - Only use original TRUMPF accessories.
-

 **WARNING**

Damage to the machine due to improper handling.

- Do not carry the machine by the cable.
 - Maintenance may be carried out by trained specialist technicians only.
-

 **WARNING**

Personal safety

- Wear safety glasses, hearing protection, breathing protection, protective gloves and working shoes when working.
 - Connect the plug only when the machine is switched off. Pull the power plug after use.
-

1.2 Specific safety information for nibbler

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

- Always keep the power cable behind 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.
-

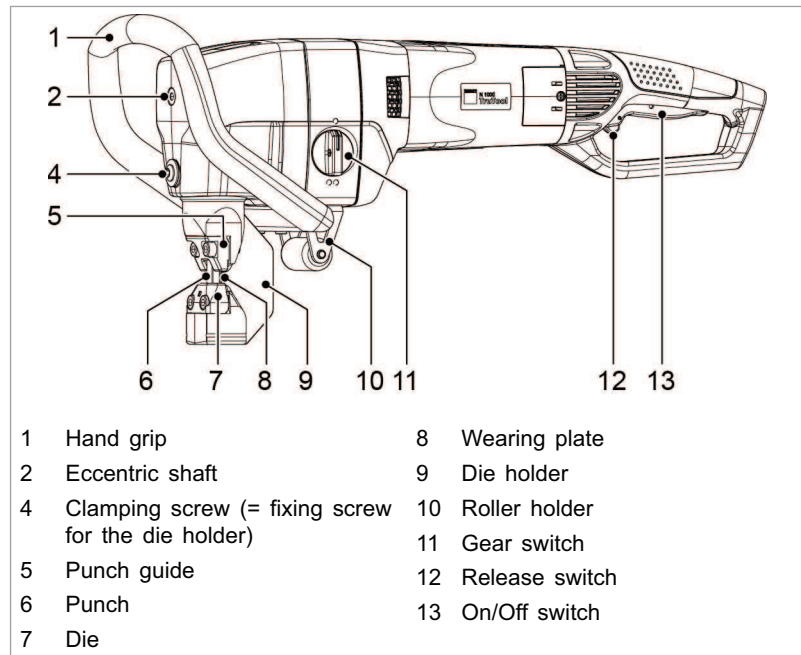
⚠ WARNING**Risk of injury from hot and sharp chips!****Chips exit the chip ejector at high speed.**

- Use a chip bag.
-

⚠ WARNING**Risk of injury from falling machinery****The entire weight of the machine must be taken up after machining the workpiece.**

- Use the suspension bracket with balancer.
 - Use the suspension cable.
-

2. Description



Nibbler TruTool N 1000

Fig. 85216

2.1 Intended use





The TRUMPF Nibbler TruTool N 1000 is an electrically operated hand-held device for:

- The slitting of plate-shaped workpieces made of a punchable material such as steel, aluminum, non-ferrous heavy metals and plastic.
- The slitting of pipes and for machining of bent sheet profiles or bends; for example, for tanks, crash barrier, troughs, etc.
- The nibbling of straight or curved exterior and interior cut-outs.
- Nibbling along scribed lines or templates.

Note

The nibbling process produces cutting edges free of deformations.

2.2 Technical data





TruTool N 1000	Other countries			USA
Voltage	230 V 220 V (China)	120 V	110 V	120 V
Frequency	50/60 Hz	50/60 Hz	50 Hz	50/60 Hz
Permissible material thickness: steel up to 400 N/mm²	10 mm (1st gear) 8 mm (2nd gear)	10 mm (1st gear) 8 mm (2nd gear)	10 mm (1st gear) 8 mm (2nd gear)	0.394 in (1st gear) 0.315 in (2nd gear)
Permissible material thickness: steel up to 600 N/mm²	7 mm (1st gear) 5 mm (2nd gear)	7 mm (1st gear) 5 mm (2nd gear)	7 mm (1st gear) 5 mm (2nd gear)	0.276 in (1st gear) 0.2 in (2nd gear)
Permissible material thickness: steel up to 800 N/mm²	5 mm (1st gear) 4 mm (2nd gear)	5 mm (1st gear) 4 mm (2nd gear)	5 mm (1st gear) 4 mm (2nd gear)	0.2 in (1st gear) 0.157 in (2nd gear)
Permissible material thickness: aluminum up to 250 N/mm²	12 mm (1st gear) 10 mm (2nd gear)	12 mm (1st gear) 10 mm (2nd gear)	12 mm (1st gear) 10 mm (2nd gear)	0.472 in (1st gear) 0.394 in (2nd gear)
Working Speed	1 m/min (1st gear) approx. 1.6 m/min (2nd gear)	1 m/min (1st gear) approx. 1.6 m/min (2nd gear)	1 m/min (1st gear) approx. 1.6 m/min (2nd gear)	3.3 ft/min (1st gear) 5.2 ft/min (2nd gear)
Nominal power consumption	2600 W	2000 W	2000 W	-
Rated current:	11.3 A	-	-	16 A
Idle stroke rate	360/min (1st gear) approx. 560/min (2nd gear)	360/min (1st gear) approx. 560/min (2nd gear)	360/min (1st gear) approx. 560/min (2nd gear)	360/min (1st gear) approx. 560/min (2nd gear)
Weight	14.7 kg	14.7 kg	14.7 kg	32.7 lbs
Sheet profiles (90°) at 10 mm material thickness: Inside bending radius	min. 12 mm	min. 12 mm	min. 12 mm	0.472 in
Start hole for die	min. 75 mm	min. 75 mm	min. 75 mm	2.95 in
Cutting track width	12 mm	12 mm	12 mm	0.472 in
Smallest radius for curved cut- outs	300 mm	300 mm	300 mm	11.8 in
Protective insulation	II / 	II / 	II / 	II / 

Tab. 1

2.3 Icons

Note

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

Icon	Name	Description
 / 	Read operator's 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	Inch	Dimensions e.g.: material thickness, chamfer length
n_o	Idle speed	Revolution speed without load
.../min	Revolutions/strokes per minute	Revolution speed, stroke rate per minute

Tab. 2

2.4 Noise and vibration information

WARNING

Noise emission value may be exceeded.

- Wear hearing protection.

WARNING

The vibration emission value can be exceeded!

- Select the right tools and exchange them in time in the event of wear.
- Have maintenance carried out by trained specialized technicians.
- Define additional safety measures for protecting the operator from the effect of vibrations (e. g. keep hands warm, organization of working procedures, machining at normal feed force).
- Depending on the operating conditions and state of the electric tool, the actual load might be higher or lower than the specified measured value.

 **CAUTION**

Vigorous upward and downward movements (hammering) due to unsuitable die.

Excessive tool wear and increasing loads on the machine.

- Use dies with the greatest height possible (keep distance X, shown in the drawing below, as small as possible).

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	12.8
Uncertainty K for vibration emission value	m/s ²	3.6
A-class acoustic pressure level L_{PA} typically	dB (A)	91
A-class acoustic power level L_{WA} typically	dB (A)	102
Uncertainty K for noise emission value	dB	3

Tab. 3

3. Setting work

3.1 Selecting a die

⚠ CAUTION

Vigorous upward and downward movements (hammering) due to unsuitable die.

Excessive tool wear and increasing loads on the machine.

- Use dies with the greatest height possible (keep distance X, shown in the drawing below, as small as possible).

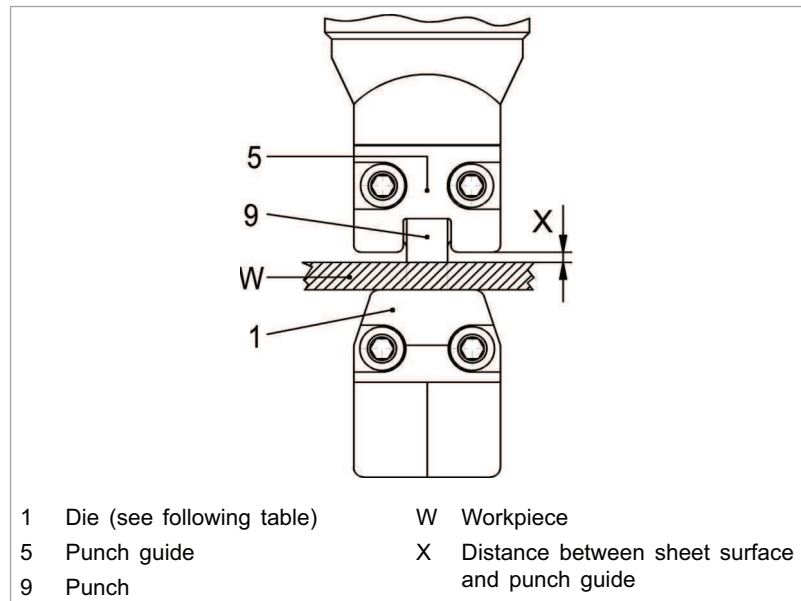
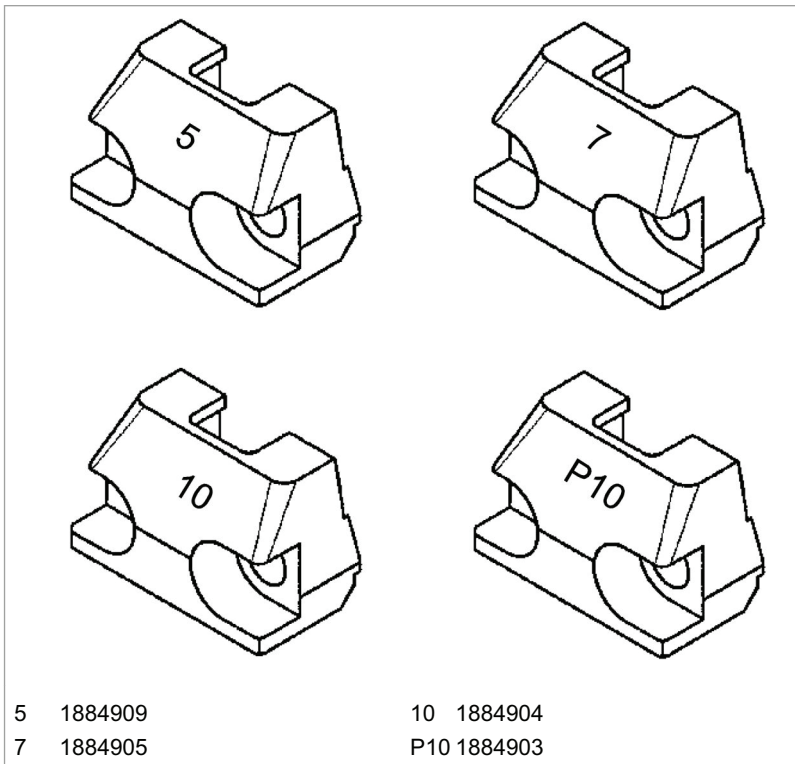


Fig. 16802

Depending on the thickness, tensile strength and type of the workpiece, one of the following types of die can be selected for the machining process:



Types of die and their respective order numbers

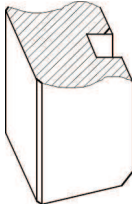
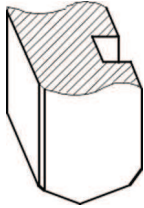
Fig. 18270

	Type of die 5	Type of die 7	Type of die 10	Type of die P10
Material thickness in mm for a flat single rolled sheet				
Aluminum 250 N/mm ²	-5	>5-7	>7-10	>10-12
Mild steel 400 N/mm ²	-5	>5-7	>7-10	-
Stainless steel 600 N/mm ²	-5	>5-7	-	-
Stainless steel 800 N/mm ²	-5	-	-	-
Material thickness in mm when machining "profiles", e.g. workpieces with press brake bending up to 90°				
-	-3	>3-5	>5-7	>7-10

Tab. 4

3.2 Select punch

There are 2 different punches available for machining sheets of various tensile strength:

Components	Standard punch	Punch for high-tensile steels
		
Area of application	Suitable for machining materials up to 400 N/mm ² e. g. aluminum, mild steel.	Suitable for machining materials over 400 N/mm ² e. g. stainless steel.
Order number	112900	120344
Aluminum 250 N/mm ²	X	-
Mild steel 400 N/mm ²	X	-
Stainless steel 600 N/mm ²	-	X
Stainless steel 800 N/mm ²	-	X

Tab. 5

3.3 Select gear

Note

Depending on the material thickness, strength and type of workpiece, a different gear must be selected for machining. Instead of in 2nd gear, 1st gear can always be worked with, but never vice versa.

⚠ CAUTION

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

Damage to the gearbox can be a consequence.

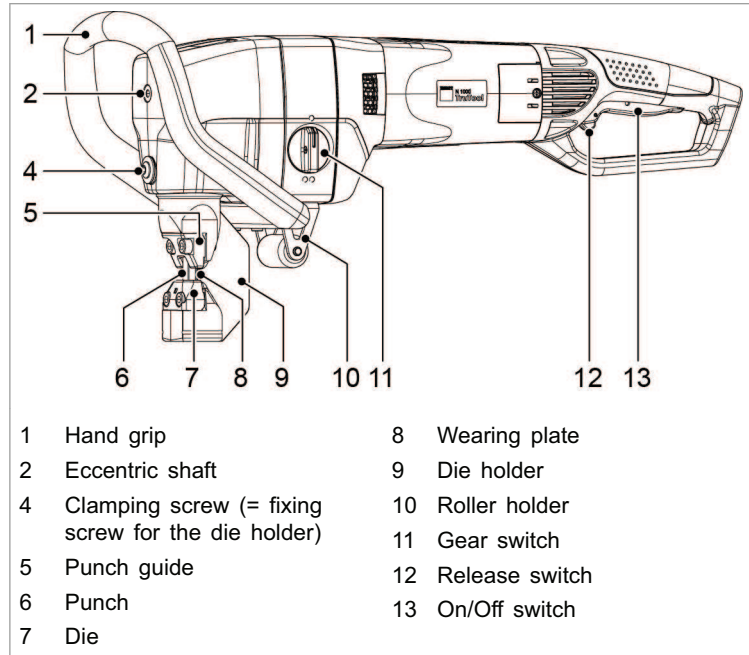
- Use the gear switch only when the motor is running down or at rest.

⚠ CAUTION

Damage to property due to too high a stroke rate

Damage to the motor due to an overload can be a consequence.

- Observe the specifications in the technical data (see "Technical data", pg. 5).



Nibbler TruTool N 1000

Fig. 85216

1. Put the machine into a stable position.
2. Switch on the machine briefly:
 - Press the release switch (12).
 - Press On/Off switch (13).
3. While the motor is running down, rotate the gear switch (11) to the desired position.

3.4 Setting the penetration depth

Notes

- A greater penetration depth causes less vibrations, but a greater effort is required when pushing the machine forward and the service life of the punch is reduced.
- The penetration depth of the punch into the die should be 1 to 3 mm.

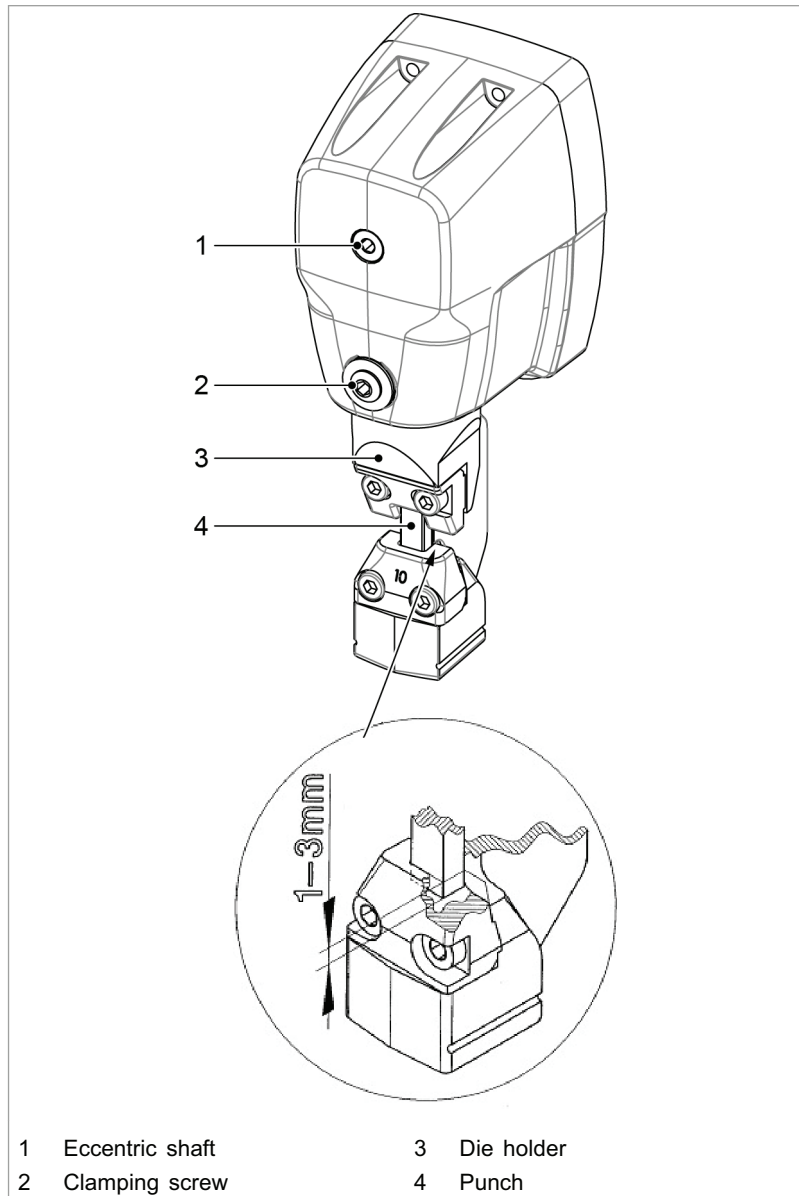


Fig. 85217

1. Rotate the eccentric shaft (1) until the punch (4) reaches its maximum plunging depth.
2. Open the locking mechanism.

Note

One rotation by 360° corresponds to a height adjustment of 1.75 mm.

3. Continue rotating the die holder (3) by 360° until the punch plunging depth of 1–3 mm has been reached.
4. Close the locking mechanism.

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

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.

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

Material	Oil
Steel	Punching and nibbling oil for steel (0.5 l, order no. 0103387)
Aluminum	Punching and nibbling oil for aluminum (1 l, order no. 0125874)

Tab. 6

4.1 Working with TruTool N 1000

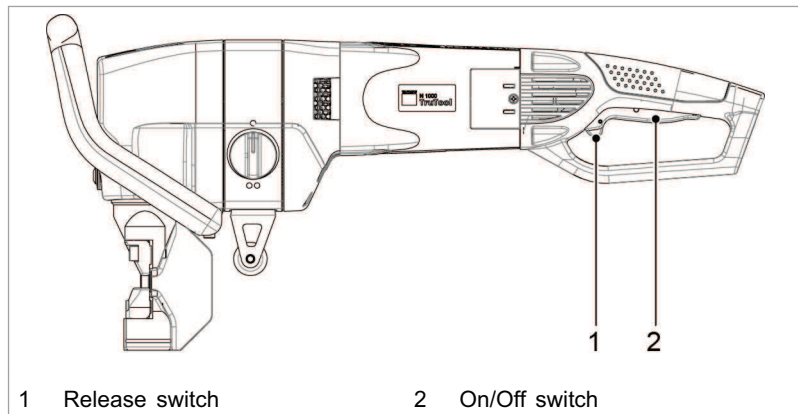


Fig. 85218

Positioning the machine 1. Put the machine in position in front of the tool.

Switching on 2. To switch the machine to continuous operation:
 – Press the release switch (1) forward and hold it.
 – Press On/Off switch (2).

The switch remains engaged. The motor is running.

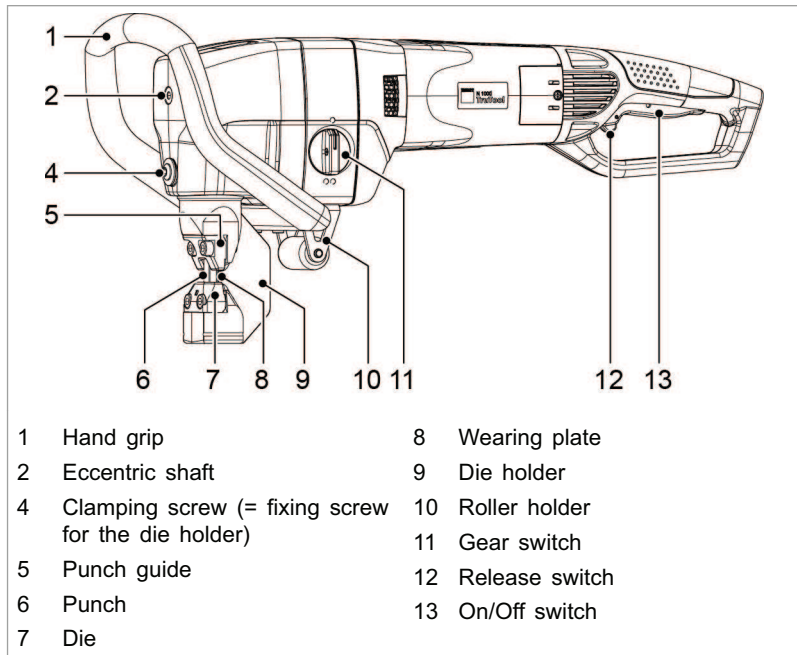
Processing the material 3. Once the full speed has been reached: move the machine toward the workpiece.
 4. Process the desired cutting line.
 5. If the cutting track ends in the sheet: retract the running machine a few millimeters in the direction of the already free-cut cutting track.

Switching off 6. Press On/Off switch (2).

4.2 Changing the cutting direction

The tool can be installed with an altered cutting direction in confined space conditions.

- To cut profiles: install the tool rotated by 90° to the right or left.
- To nibble to the rear: install the tool rotated by 180° to the right or left.



Nibbler TruTool N 1000

Fig. 85216

1. Loosen the locking screw (4).
2. Rotate the die holder (9) into the desired direction.
3. Tighten the clamping screw (4) again by hand.
4. Check the plunging depth of the punch.

4.3 Nibbling with a template

The following requirements must be met when nibbling with templates:

- The template must be at least 5 mm thick.
- There must be a clearance of 15.5 mm between the contour of the template and the contour to be nibbled out.
- The nibbler must be guided in such a way that the outer edge of the punch guide (5) always remains up against the template.
- Observe a minimum radius of 400 mm.

4.4 Producing interior cutouts

- Produce start bore with at least a 65 mm diameter.

5. Maintenance



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.



Risk of injury due to incorrect repair work

Machine does not work properly.

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



Damage to property caused by blunt tools!

Machine overload.

- Check the cutting edge of the cutting tool every hour for wear or in the event of poor cutting behavior or poor work result. Sharp cutting tool produces good cutting performance and protects the machine.
- Change the cutting tool in a timely manner.

Maintenance point	Procedure and interval	Recommended lubricant	Lubricant order number
Punch, die and wear parts	Check every hour	-	-
Punch	Regrind/replace as needed.	-	-
Ventilation slots/grids	Clean as needed	-	-
Die	Change as needed	-	-
Wearing plate	Change as needed	-	-
Punches and die holders	For tool change	Lubricating grease "S1"	0121486
Gearbox and gear head	Every 300 operating hours, have a trained specialist relubricate or replace the lubricating grease.	Lubricating grease "G1"	0139440

Maintenance positions and maintenance intervals

Tab. 7

5.1 Replacing the tool

Note

If the punch or die is blunt or the punch cannot be reground, the tools must be replaced.

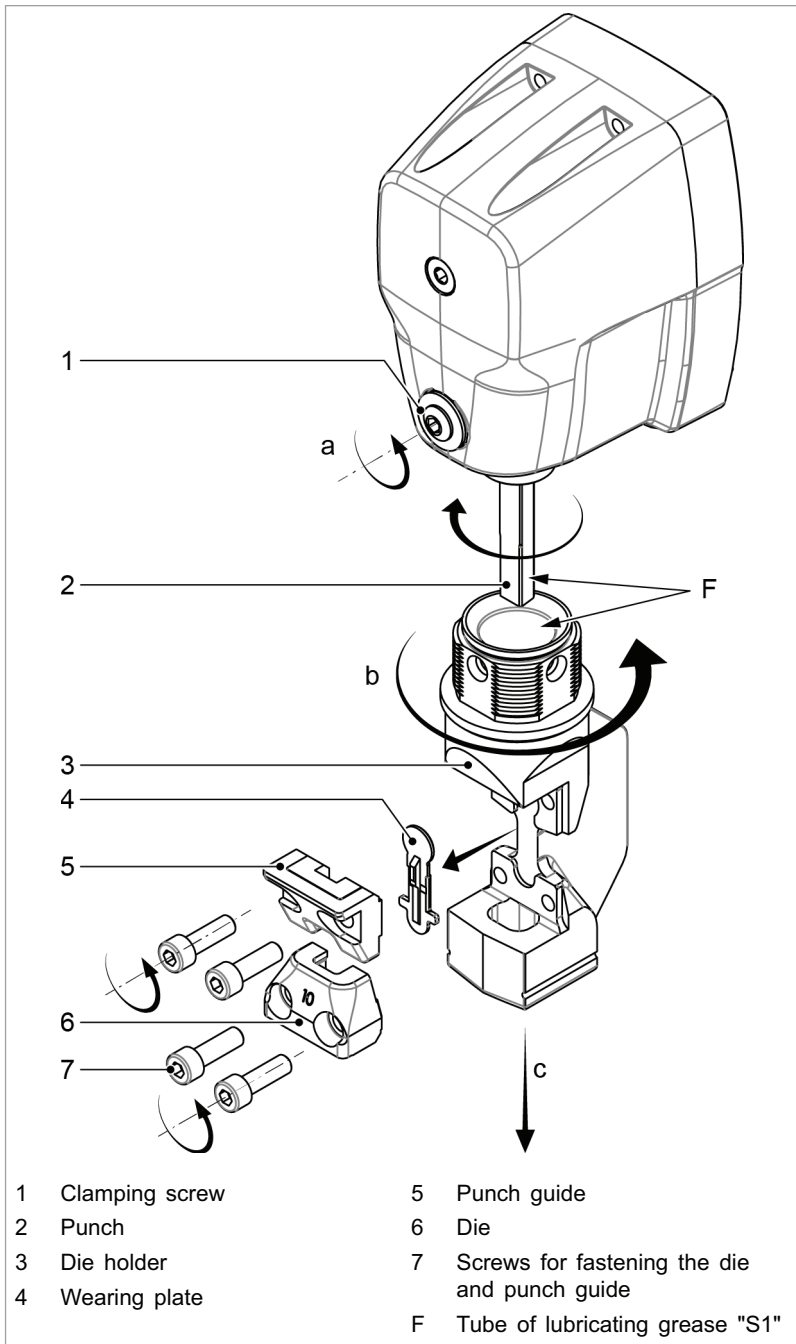


Fig. 85219

Changing the punch

1. Loosen the locking screw (1).
2. Rotate the die holder (3) by 45°.
3. Pull the die holder (3) downward and out.
4. Screw out the punch (2).

Note

To grease, use lubricating grease "S1" (order number 121486).

5. Apply a thin film of grease on the square part of the punch and die holder bore.
6. Screw in the punch and align to 45°.
7. Check the penetration depth of the punch with the setting gauge (order number 1411767).
8. Close the locking mechanism.

Replacing the die and punch guide

1. Unscrew screws (7).
2. Clean the support areas on the die carrier (3).
3. Clean the replacement parts if necessary.

Note

To grease, use lubricating grease "S1" (order number 121486).

4. Lubricate the guide surfaces of the punch guide.

Note

Only use **new** original screws at every change (order number 0070955).

5. Firmly tighten screws (7) (tightening torque 40 Nm).

5.2 Regrinding the punch**Notes**

- Dies cannot be reground.
- Use only original spare parts from TRUMPF.
- The punch can be reground in total 5 to 10 mm, depending on with which die it is used. Shorter punches must be replaced (risk of collision).

Type of die	Minimum length X	Regrinding reserve for punch
P10	92 mm	5 mm
10	89.5 mm	7.5 mm
7	87 mm	10 mm

Type of die	Minimum length X	Regrinding reserve for punch
5	85 mm	12 mm

Tab. 8

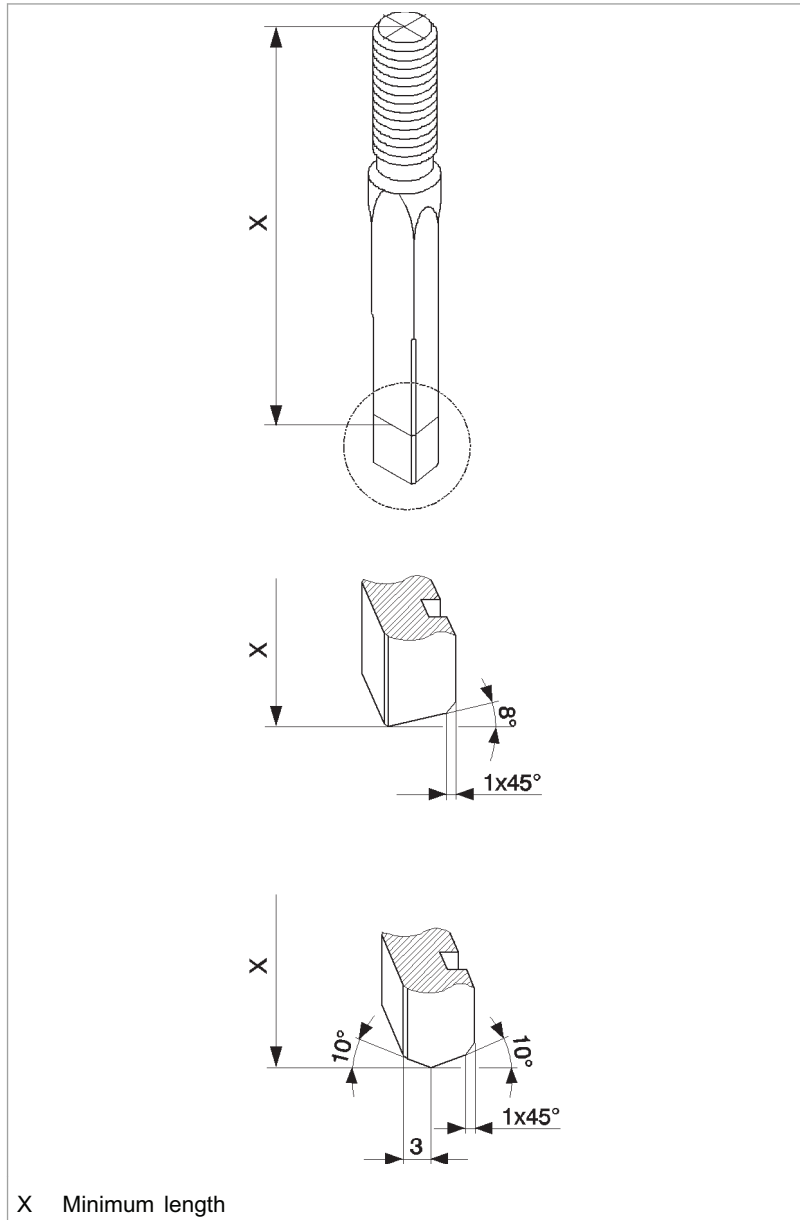


Fig. 9017

1. Regrind the grinding surface according to the sketch, paying attention to good cooling.
2. Dress the cutting edge lightly with a fine oil stone.

5.3 Changing the wearing plate

The wearing plate protects the die carrier against excessive wear.

Note

Excessive wearing can overload the machine and lead to a worsening of the cutting quality.

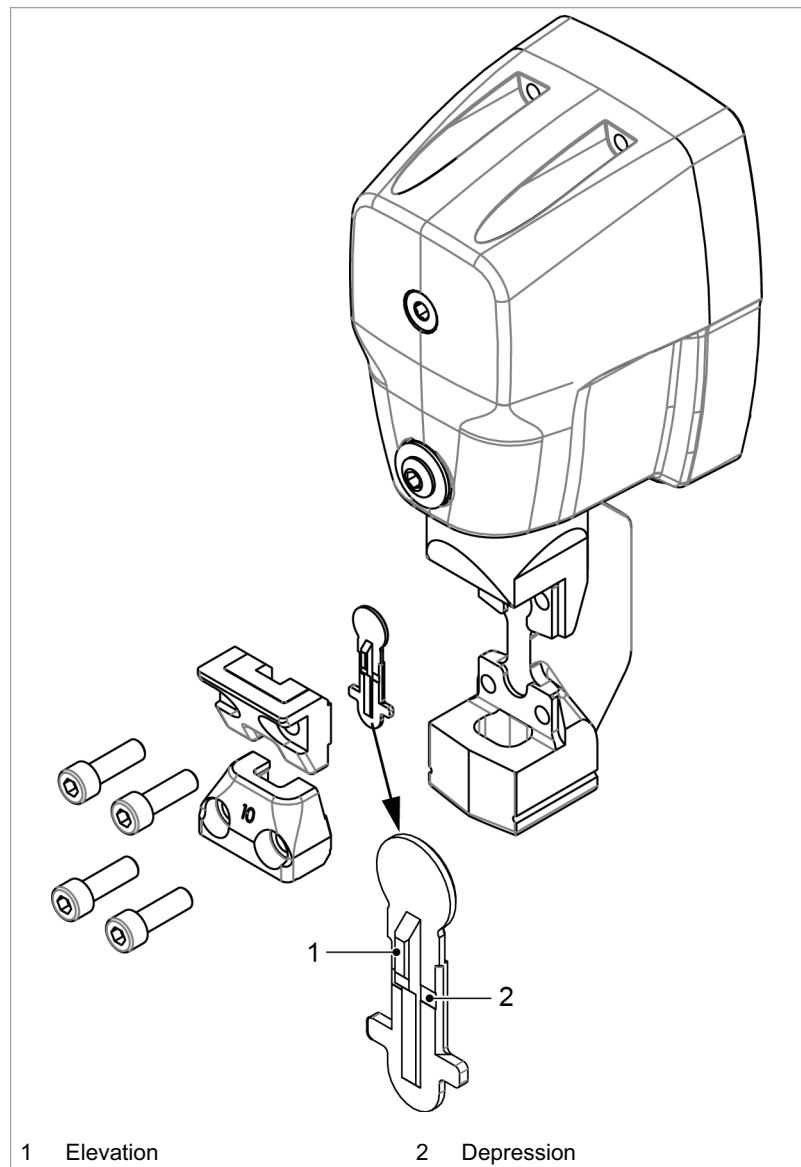


Fig. 85220

The wearing plate must be replaced when:

- The raised part (1) is worn down.
- The depression (2) is no longer visible.

5.4 Changing cable connection

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.

5.5 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

Name	Order number	Scope of delivery
1x standard punch	2260113	x
2x standard punch	1264155	-
5x standard punch	1264156	-
1x high-tensile punch	2260114	-
2x high-tensile punch	1264412	-
5x high-tensile punch	1264413	-
1x heavy duty punch	2285565	-
1x die 5 (up to 5 mm)	1884909	-
1x die 7 (5-7 mm)	1884905	-
2x die 7 (5-7 mm)	1264184	-
1x die 10 (7-10 mm)	1884904	x
2x die 10 (7-10 mm)	1264177	-
1x die P10 (profile sheets 7-10 mm)	1884903	-
2x die P10 (profile sheets 7-10 mm)	1264185	-
1x wearing plate	2260115	x
2x wearing plate	1264375	-
5x wearing plate	1264376	-
1x punch guide	1884906	x
2x punch guide	1264368	-
Punching and nibbling oil for steel (500 ml)	0103387	x
Punching and nibbling oil for aluminum (1000 ml)	0125874	-
Lubricating grease "S1", tube (25 g)	0121486	-
Lubricating grease "S1", tube (250 g)	0385478	x

Consumables

Tab. 9

Name	Order number	Scope of delivery
Bow-handle	2010098	x
2x screws M6x25	2277450	x
Box for small parts	0353966	x
Adjusting gauge	1411767	x
Operator's manual	2246985	x
Safety information, other countries	0125699	x
Safety information (red document), USA	1239438	x
Chip bag	0115215	-
Allen key M5	0067857	x
Allen key M6	0118860	x
Case	2277078	x

Accessories

Tab. 10

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. Appendix: Declaration of conformity,
guarantee, replacement parts lists**