Operator's manual

TruTool S 450 (1A1)

english

TRUMPF

Table of contents

1. Safety

USA/CAN

- Read the Operator's Manual and the general safety rules (Material number 1239438, red document) in their entirety before starting up the machine. Follow precisely the directions contained therein.

Rest of the world

- Read the Operator's Manual and the safety instructions (Material number 125699, red document) in their entirety before starting up the machine. Follow precisely the directions contained therein.
- The safety regulations according to DIN VDE, CEE, AFNOR and other regulations which are valid in individual countries should be adhered to.

Danger

Lethal danger due to electric shock!

- Remove the plug from the plug socket before undertaking any maintenance work on the machine.
- Check the plug, the cable and the machine for damage each time before the appliance is used.
- Keep the machine dry and do not operate in damp rooms.
- When using the electric tool outside, connect the fault current (FI) protective switch with a maximum breaking current of 30 mA.

Warning

Danger of injury possible due to improper handling!

- When working with the machine, wear safety glasses, hearing protection, protective gloves and work shoes.
- Do not plug in the plug unless the machine has been switched off. Pull out the mains plug after use.

Warning

Risk of injury to the hands!

- Do not place your hand into the processing line.
- Use both hands to hold the machine.

Caution

Damage to property possible due to improper handling!

The machine will be damaged or destroyed.

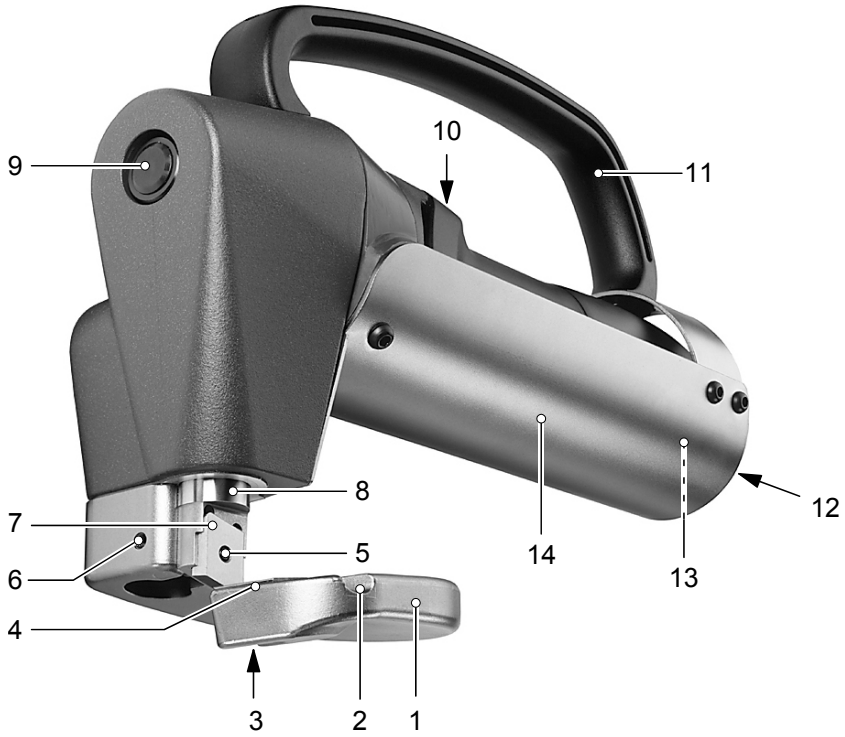
- Do not use the power cord to carry the machine.
- Always guide the electric cord away from the back of the machine and do not pull it across sharp edges.
- Arrange for start-ups and checks on manual electric tools to be carried out by a trained specialist. Only used the original accessories provided by TRUMPF.

Warning

Risk of injury from chip!

- Use chip deflector.

2. Description



1	Fixed blade carrier	6	Thread for fastening the traction eyelet (optional)	11	Handle
2	Adjusting screw			12	Speed controller
3	Fixing screw for fixed cutter blade	7	Moving cutter blade	13	Red indicator light (LED) "Motor overload"
		8	Ram		
4	Fixed cutter blade	9	Axis	14	Chip deflector (hand protection)
5	Fixing screw for moving cutter blade	10	On/Off switch		

Fig. 28483

2.1 Correct use

Warning

Risk of injury!

- For processing and materials, only use machines which are named in "Correct use".

The TRUMPF portable shears TruTool S 450 are an electric hand tool used for the following applications:

- Chip-free slitting and edge-planing of plate-shaped workpieces made of steel, aluminium, non-ferrous heavy metals and plastic.
- Production of straight or curved exterior and interior cutouts.
- Slitting along scribed lines.
- Slitting of coils.

2.2 Technical data TruTool S 450

	Rest of the world			USA
	Values	Values	Values	Values
Voltage	230 V	120 V	110 V	120 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
• Steel 400 N/mm² • Steel 600 N/mm² • Steel 800 N/mm² • Aluminium 250 N/mm²	4.5 mm (Coil 4.0 mm) 3.5 mm (Coil 3.0 mm) 2.5 mm (Coil 2.0 mm) 5.0 mm	4.5 mm (Coil 4.0 mm) 3.5 mm (Coil 3.0 mm) 2.5 mm (Coil 2.0 mm) 5.0 mm	4.5 mm (Coil 4.0 mm) 3.5 mm (Coil 3.0 mm) 2.5 mm (Coil 2.0 mm) 5.0 mm	0.179 mm (Coil 0.157 in) 0.138 in (Coil 0.12 in) 0.1 in (Coil 0.079 in) 0.2 in
Working speed	4-6 m/min	4-6 m/min	4-6 m/min	13-20 ft/min
Nominal power consumption	1400 W	1200 W	1140 W	1200 W
Stroke rate with idle run	1640/min	1480/min	1480/min	1480/min
Weight	6.2 kg	6.2 kg	6.2 kg	13.8 lbs
Start hole diameter	75 in	75 in	75 in	2.95 in
Smallest radius	35 mm (right) 25 mm (left)	35 mm (right) 25 mm (left)	35 mm (right) 25 mm (left)	1.38 in (right) 0.984 in (left)
Protective insulation	Class II	Class II	Class II	Class II

Technical data Table 1

Noise and vibration	**Measured values in accordance with EN 50144**
A-weighted sound level	Typically 86 dB (A)
A-weighted acoustic power level	Typically 94 dB (A)
Hand-arm vibration	Typically less than or equal to 2.7 m/s²

Measured values for noise and vibration Table 2

Note
The measured values specified above may be exceeded while working.

3. Tool assembly

3.1 Changing the stroke rate

1 Setting wheel for speed controller on motor

Speed controller Fig. 27948

Reducing the stroke rate

➢ Rotate the setting wheel for the speed controller counter-clockwise.

Reducing the number of strokes improves the quality of the work

- for precise machining along scribed lines.
- for machining radiuses.
- for machining steel with a tensile strength > 400 N/mm² (improved service life).

3.2 Configuring workstation (optional)

Danger

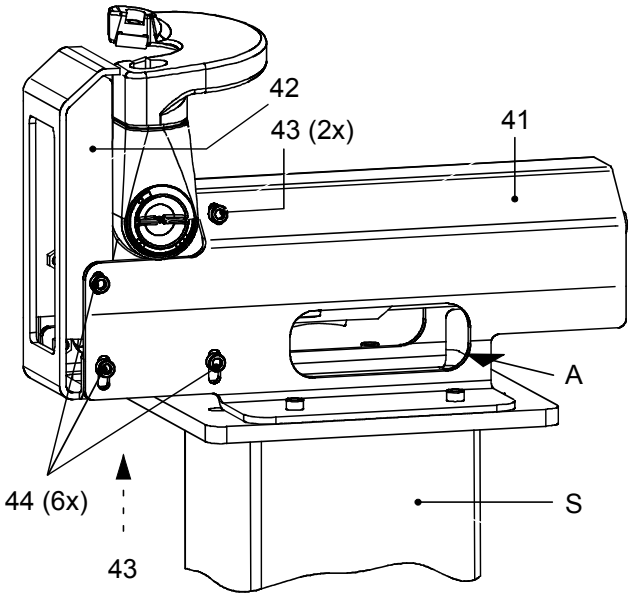
Possible lethal danger due to electric shock!

- Remove the plug from the plug socket before undertaking any maintenance work on the machine.
- Check the plug, the cable and the machine for damage each time before the appliance is used.
- Keep the machine dry and do not operate in damp rooms.
- When using the electric tool outside, connect the fault current (FI) protective switch with a maximum breaking current of 30 mA.

Caution

Damage to property can result from improper operation!

- Do not slide the workpiece into the machine until the machine has been switched on and it has reached its full revolutions per minute.



41	Casing	44	2x3 Screws for connecting the casing
42	Front casing	A	Recess for the On/Off switch
43	Screw for fastening the machine in the workstation	S	Pedestal for the workstation

Work station Fig. 17461

Example: machining a workpiece

Fig. 17464

The workstation (Order No. 979371) in which the machine can be fastened is used for machining small workpieces.

This workstation can be bolted down solidly through mounting holes

- to a table (workbench)

or

- to a pedestal (Order No. 003677) with four screws.

1. Unscrew bow-handle and chip deflector.
2. Place machine in the casing (41).
3. Use the screws (43 and 44) to secure the machine and the forward casing tightly in the casing.

3.3 Selecting the blade

Caution

Damage to property can result from improper blade selection!

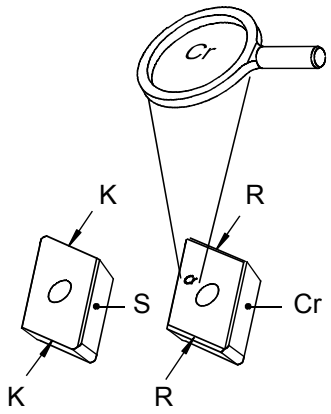
The quality of the cut will be severely impaired and the individual tools will be overloaded.

➢ Use suitable tools only.

The blade is notable for the following points:

- Moving cutter blade (upper blade) and fixed cutter blade (lower blade) are identical in shape and can be used interchangeably (above or below).
- All blades have two cutting edges.
- They are non-regrindable "2-way multi-edge, throw-away cutters".

Note
2 different blade types can be selected for the machining process, depending on the thickness or the tensile strength of the workpiece (see Table 3, Pg. 12).



K	Sharp cutting edge on the standard blade	Cr	Chromium steel blade
S	Standard blade	R	Radius 0.2 mm at the cutting edge of the chromium steel blade

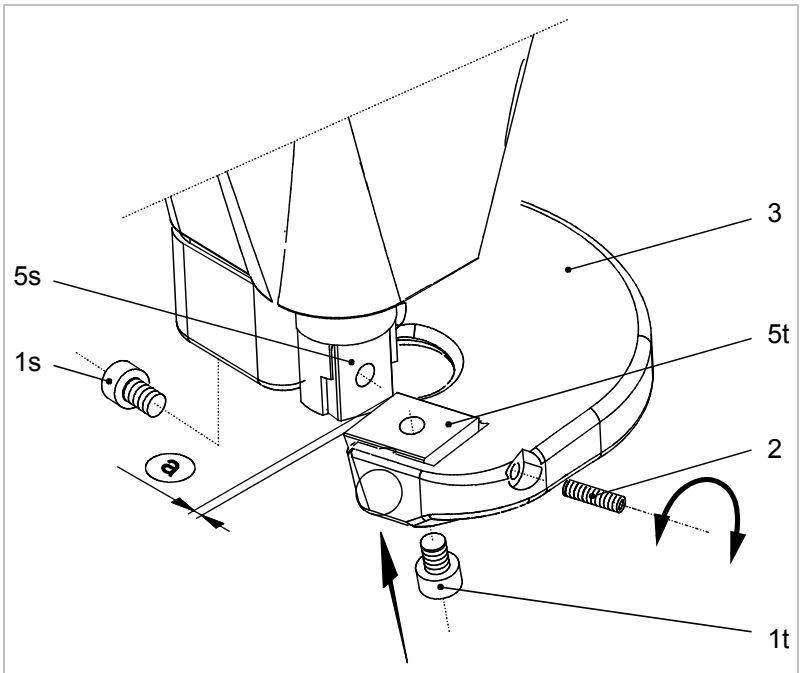
Blade with type identification Fig. 14843

Note
Standard blades with a tensile strength of ≤400 N/mm² have no special identification marking. Chromium steel blades are marked with "Cr".

Blade type	Sheet thickness ranges [mm]	Type of material and Tensile strength	Material No.
Standard	1.0-5.0	Aluminium 250 N/mm²	140451
Standard	1.5-4.5 (Coil 1.0-4.0	Mild steel 400 N/mm²	140451
Standard	1.0-1.5	Stainless steel 600 N/mm²	140451
Cr	1.5-3.5 (Coil 1.0-3.0)	Stainless steel 600 N/mm²	140452
Cr	1.0-2.5 (Coil 1.0-2.0)	Stainless steel 800 N/mm²	140452

Table 3

3.4 Setting the cutting clearance



a	Blade clearance = cutting clearance	2	Adjusting screw
1s	Fixing screw for the moving cutter blade	3	Fixed blade carrier
1t	Fixing screw for the fixed cutter blade	5s	Moving cutter blade
		5t	Fixed cutter blade

Fig. 14844

1. Push the On/Off switch several times until the moving cutter blade (5s) has reached the lower dead point.
2. Pull the machine plug out of the plug socket.
3. Screw on the fixed cutter blade (5t) loosely with the fixing screw (1t).
4. Using the adjusting screw (2), set the fixed cutter blade (5t) to the desired cutting clearance.
5. Check the cutting clearance with a feeler gauge.
6. Tighten the fixing screw (1t).
7. Tighten the adjusting screw (2) slightly.

Cutting clearance

The cutting clearance must be 0.2 x

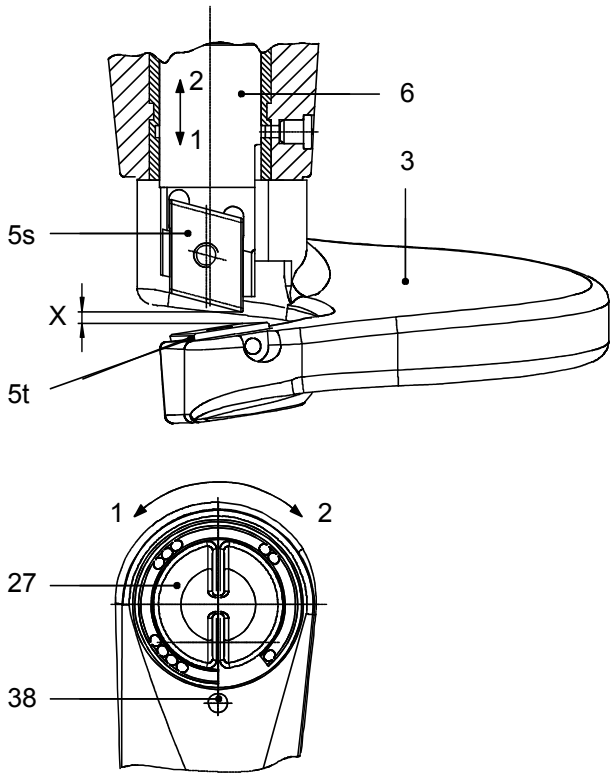
Examples:

Sheet thickness s [mm]	Blade clearance = cutting clearance "a" [mm]
1.0	0.2
2.0	0.4
3.0	0.6
4.0	0.8
4.5	0.9

Table 4

3.5 Setting the height of the moving cutter blade

In order to ensure the realisation of optimum cutting behaviour for both the slitting of metal sheets and the cutting of curved lines, the clearance between the moving cutter blade and the fixed cutter blade (penetration depth into the sheet) must be adjusted in accordance with both the projected cutting task and the sheet thickness.



1	Direction of rotation 1: Setting value x becomes smaller	27	Turning handle with scale for height adjustment of the moving cutter blade (example for sheet thickness of 4.5 mm)
2	Direction of rotation 2: Setting value x becomes larger	38	Fixed point on the scale
3	Fixed blade carrier	x	Setting value (height clearance between upper and lower blades) [1]
5s	Moving cutter blade (upper blade)		
5t	Fixed cutter blade (lower blade)		
6	Ram		

Height adjustment of the moving cutter blade Fig. 17460

[1]* The ram is located at the upper dead point

Changing the height clearance between moving cutter blade and fixed cutter blade

1. Push the turning handle when the machine is either at a standstill or running and rotate it.
2. The turning handle locks into place when it is released.

Note
Marker points have been placed on the turning handle (27) which are to be positioned in accordance with sheet thickness and the particular application to be carried out.
Altering the clearance between the two blades allows optimisation of cutting behaviour to match particular applications.
(+) intermediate stage in direction of rotation 2
(-) intermediate stage in direction of rotation 1

Sheet thickness [mm]	Adjusting the turning handle		
	Cutting curves	Cutting straight lines	Cutting coils
4.5	4(+)	4(+)	-
4.0	4(+)	4	1
3.5	4	3(+)	1
3.0	3(+)	3	1
2.5	3	2(+)	1
2.0	2(+)	2	1
1.5	2	1(+)	1
1.0	1(+)	1	1

Table 5

4. Operation

Caution

Damage to property possible due to too-high network voltage!

Damage to the motor.

- Check the power supply. The power supply must correspond to the information on the machine type plate.

Warning

Danger of injury possible due to improper handling!

- When working with the machine, always ensure that it has a secure base.
- Never touch the tool while the machine is running.
- Always guide the machine away from the body while working.

Electromagnetic faults

The appliance may switch off prematurely when affected by electromagnetic disruptions. The appliance will resume operation once the faults have been cleared.

Motor overload protection

If the motor temperature is too high, the motor will switch off. The red indicator light (LED) with the motor lights up.

- Allow the machine to run in idle until it has cooled down.

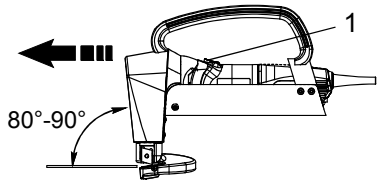
The machine can be operated again normally after it has cooled down.

Working with the TruTool S 450

Switching on the TruTool S 450

➢ Move the On/Off switch to the front.

Working with the TruTool S 450



1 On/Off switch

Fig. 28475

1. Do not move the machine towards the workpiece until full speed has been reached.
2. Machine/process the material.
   - Move the device forward at an angle of 80 to 90° to the sheet surface (Illustration).

Cutting radiuses

- Do not tilt the machine.
- Proceed with a low feed rate.

Cutting on the edge

- Cut in upside-down position.
- The fixed blade carrier faces upwards.

Switching off the TruTool S 450

➢ Move the On/Off switch to the front.

5. Maintenance

Danger

Possible lethal danger due to electric shock!

- Pull the plug out of the socket when carrying out tool changes and before all maintenance work on the machine.

Caution

Damage to property possible due to blunt tools!

Overloading of the machine.

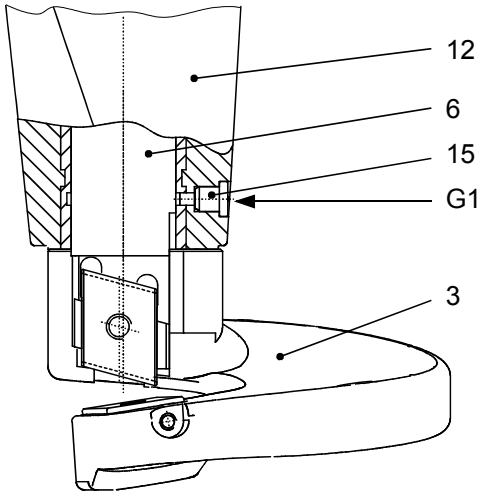
- Check the cutting edge of the cutting tool hourly for wear. Sharp cutting tools provide good cutting performance and are easier on the machine. Replace blades promptly.

Warning

Risk of possible injury due to improper repairs!

The machine does not function properly.

- Repairs should be carried out only by a trained specialist.



3	Fixed blade carrier	15	Lubricating heads
6	Ram	G1	Lubricating grease TRUMPF Material No.139440
12	Housing		

Grease nipple, ram guide Fig. 28476

Maintenance point	Procedure and time interval	Recommended lubricants	Order No. Lubrication agents
Ram guide	Lubricate every 20 hours of operation	Lubricating grease "G1"	139440
Gearbox and gear head (2)	After 300 operating hours, arrange for a trained specialist to lubricate or to replace the lubricating grease	Lubricating grease "G1"	139440
Fixed cutter blade	Turn over as needed	-	-
Fixed cutter blade	Replace as needed	-	-
Moving cutter blade	Turn over as needed	-	-
Moving cutter blade	Replace as needed	-	-
Ventilation slots	Clean as needed	-	-

Maintenance positions and maintenance intervals Table 6

5.1 Replacing carbon brushes

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

- Have the carbon brushes checked and replaced as needed by a trained technician.

Note
Only use original replacement parts and observe the specifications on the type plate.

5.2 Changing the blade

Turning the moving cutter blade over or replacing it

Danger

Possible lethal danger due to electric shock!

- Pull the plug out of the socket when carrying out tool changes and before all maintenance work on the machine.

1. Position turning handle (27) to Stage "0" (ram in lower position).
2. Loosen fixing screw (1s).
3. Rotate moving cutter blade (5s) by 180° and remount it (or mount a new blade).
4. Screw in fixing screw (1s) and tighten it. (see Fig. 14844, Pg. 13).

Turning the fixed cutter blade over or replacing it

1. Loosen fixing screw (1t).
2. Rotate fixed cutter blade (5t) by 180° and retighten the fixing screw (1t).

Note
Observe cutting clearance.

6. Wearing parts

Designation	Material identification number
2 Standard blade for the machining of mild steel	140451
2 Chromium steel blades for the machining of high-tensile sheets	140452

Table 7

Note
Moving cutter blade (upper blade) and fixed cutter blade (lower blade) are identical in shape and can be used interchangeably (above or below).
All blades have 2 cutting edges. They are non-regrindable "2-way multi-edge, throw-away cutters".

Ordering wearing parts

To ensure fast delivery of the correct original and wearing parts:

1. Give the order number.
2. Enter further order data:
   - Tension data
   - Number of pieces
   - Machine type
3. Give complete dispatch data:
   - Correct address.
   - Required delivery type (e.g. air mail, courier, express mail, ordinary freight, parcel post).
4. Send the order to the TRUMPF representative office. For TRUMPF service addresses, see the address list at the end of the document.

7. Original accessories

Designation	Material No.
2 Standard blades (moving cutter blade	
and fixed cutter blade, mounted)	140451
Allen key DIN 911-2	002946
Allen key DIN 911-5	067857
Feeler gauge	056856
Lubricating grease "G1", tube	344969
Grease gun	068624
Case	982541
Operator's manual	976149
Safety information (red document), other countries	125699
Safety information (red document), USA	1239438

Table 8

8. Options

Designation	Material No.
Traction eyelet	107668
Work station	979371
Pedestal for workstation	003677
Workstation and pedestal	918382

Table 9