


Operator's manual



N 700 - 1

english

TRUMPF


- 1 Die
- 5 Punch guide
- 7 Die carrier
- 9 Punch
- 21 Eccentric shaft
- 36 Clamping screw (= Mounting screw for die carrier)
- 37 Cheesehead screw (2) for mounting the handle
- 38 Handle (can be mounted in 2 positions)
- 345 Lever, or on/off switch



N i b b l e r N700-1

Fig. 9545

N700-1 Specifications

Max. material thickness:

- Steel up to 400 N/ mm² 7.0 mm
- Steel up to 600 N/ mm² 5.0 mm
- Steel up to 800 N/ mm² 3.5 mm
- Aluminium 250 N/ mm² 10 mm

Smallest radius in curved cutouts 135 mm

Sheet profile (90°): Bend radius inside min. 10 mm

Start hole Ø for die min. 60 mm

Width of cut 11 mm

Working speed approx. 1.4 m/min

Nominal power consumption 2900W

Number of strokes at nominal load 400/min

Weight 12.2kg

Operating pressure (flow pressure) 6 bar

Air consumption at 6 bar 3.1m³/min

Required inner Ø of compressed air hose 18 mm
(max. output not reached if Ø is smaller)

Noise / Vibration

Measured values established in acc. with EN 50 144.

The A-weighted noise level of the unit is typically: sound level 86 dB (A); acoustic capacity level 94 dB (A).
Wear ear protection!

The hand-arm vibration is typically lower than 2.5 m/s².

Proper use

The **TRUMPF Nibbler N-700-1** is a portable pneumatic tool used to

- cutting flat workpieces from materials that can be punched, such as steel, aluminium, non-ferrous heavy metals, and plastic
- cutting tubes or profile workpieces such as tanks, crash barriers, troughs etc.
- nibbling straight or curved outside edges and inside cutouts
- nibbling according to scribed line or with a template

Nibbling of material produces distortion-free cut edges.

Safety instructions



Hazardless working with this unit is only feasible if you read the operating manual and safety instructions (red print with the TRUMPF identity number 125699) completely and follow the instructions included therein.



Danger of injury

Check the unit, compressed-air tube and reception coupling before each use. Have all damaged parts repaired by an expert.



Danger of injury

Hot chips are ejected from the chip ejector at extremely high speeds. You should therefore use a swarf box to collect the ejected chips.

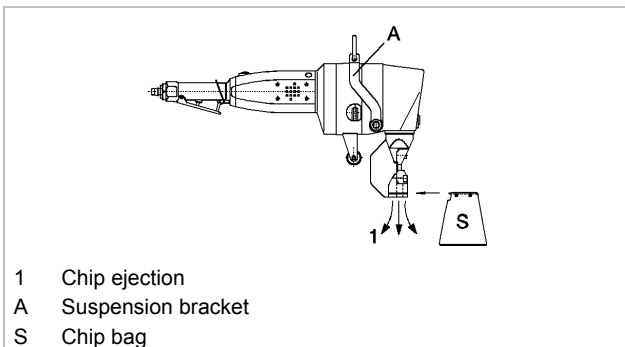


Fig. 10672



Danger of injury

The machine is supported by the workpiece as long as they are in contact when the cutting arrangement is "normal" (workpiece is horizontal). Remember that the entire weight of the machine must be supported as soon as it is removed from the machined edge. (aid: suspension bracket with balancer or retaining rope).



Always wear safety glasses, ear protection, protective gloves and proper footwear when working with the machine.

- Do not connect the compressed air unless the machine is turned off.
- Always disconnect the compressed-air tube from the machine before beginning any work on the machine!
- Always guide the compressed-air tube back away from the unit.
- **Use only original TRUMPF accessories.**

Before start-up

1. Read chapter on safety.



For your safety

2. Mount the handle (new machines are delivered with the handle detached).
3. Examine the wearing plate
4. Assure yourself that the built-in die is suitable for the sheet thickness to be cut.



Wearing plate



Die selection

5. Assure yourself that the built-in punch is suitable for the material in question. Use special punches for sheets of higher tensile strength ($> 400 \text{ N/mm}^2$)!



Punch selection

6. Sharpen or replace the tools if blunt.



Regrind the tools

7. The flow pressure of the compressed air must be 6 bar at the point of extraction.
8. Oil lubrication must take place for the compressed-air motor.



Maintenance

Operating instructions



Damage to property

Check the tools, wearing plate and oil lubrication of the compressed-air motor every hour.

Never work with blunt tools!
(the compressed-air motor may stop).

Turning the unit on and off

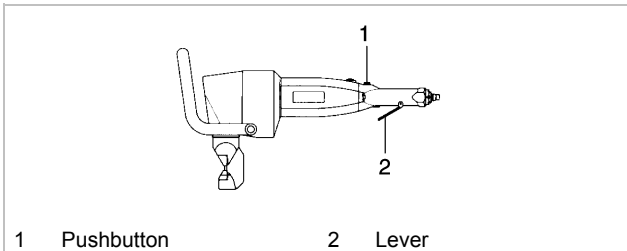


Fig. 9599

Turning on the unit:

- Press pushbutton 1 (releases compressed-air).
- Shift lever 2 (= motor ON).
- The motor runs as long as the lever is pressed. Pushbutton 1 can be released.

Turning off the unit:

- Release lever 2
(the lever springs back into initial position and the flow of compressed air is interrupted).



Damage to property

Do not begin machining the workpiece until after the machine has been turned on and has reached maximum speed!

The machine must never be turned off while the punch is in the workpiece when the cutting tracks end in the workpiece. In this case, guide the machine back along the freshly cut track a few millimeters before turning it off.

Changing cutting directions Fig. 9015

The tool (i.e. the cutting direction) can be turned 90° to the left or right or 180° if necessary, e.g. if space is restricted.

- Unscrew the clamping screw (36).
- Turn the die carrier (7) in the desired direction.
- Tighten the clamping screw (36) with your hand.

A 90° cutting direction is favourable when cutting profiles.

Setting the direction of the die carrier to 180° (nibbling backwards) can be useful, particularly in confined areas.

Cooling and lubrication

Cutting results can be improved and tool service life prolonged if

- **before cutting the workpiece,**

oil is applied to the cutting line.

Recommended for steel:

Punching and Nibbling oil, Order No. 103387

Recommended for aluminium:

Wisura-Oil, Order No. 125874

Nibbling to template

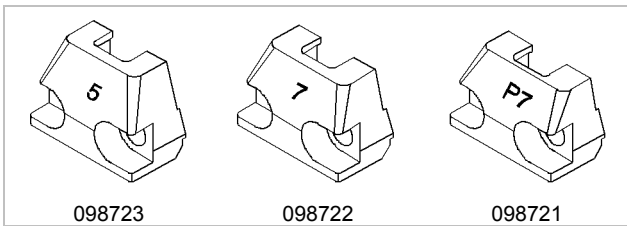
- The template should be at least **5 mm** thick.
- The offset of the template from the contour should be **11 mm**.
- The nibbler must be guided in such a way that the outer edge of the punch guide (5) always comes to rest against the template.
- Keep in mind the minimum radius of **135 mm!**

Inside cutouts

Make a starting hole at least **60 mm** diameter in the workpiece.

Die selection

Depending on the thickness, tensile strength and type of material being worked, one of the 3 following die types can be used:

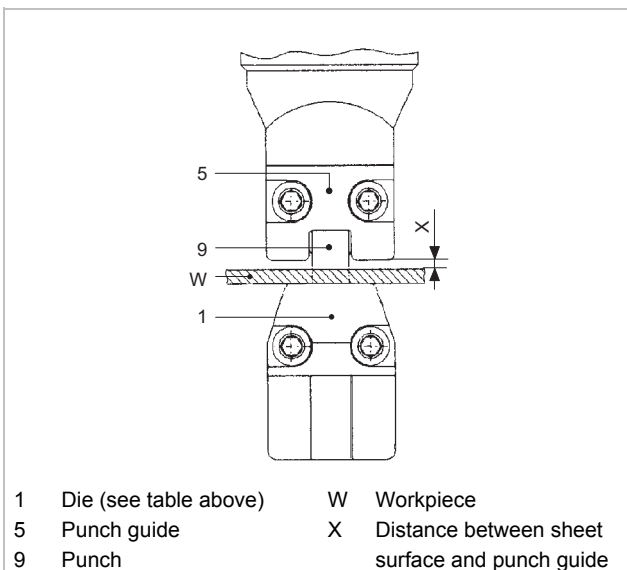


Die types with ordering numbers

Fig. 9431

Die type	5	7	P7
Material thick. (mm) in flat sheets			
Aluminium 250 N/mm ²	3-5	> 5-7	> 7-10
Mild steel 400 N/mm ²	3-5	>> 5-7	-
Stainless 600 N/mm ²	3-5	-	-
Stainless 800 N/mm ²	max. 2.5	-	-
Material thick. (mm) if working with "profiles", i.e. workpieces with folds up to 90°	3 (2.5)	> 3-5	> 5-7

Use highest possible dies



Distance between die and punch guide

Fig. 16811



Ensure that the distance X is as small as possible!

Extreme up and down movements (wobbling) may occur during the cutting process if an incorrect die is used.

Result:

- excessive tool wear
- increased load on the machine

Remedy:

- use the highest die whenever possible



See Fig. 16811

Punch selection

Two different punches may be used to machine sheets with various tensile strengths:

Punch type	Standard punch	Punches for high tensile sheets
Order No.	104589	104590
Tensile strength of material	up to 400 N/mm ²	greater than 400 N/mm ²

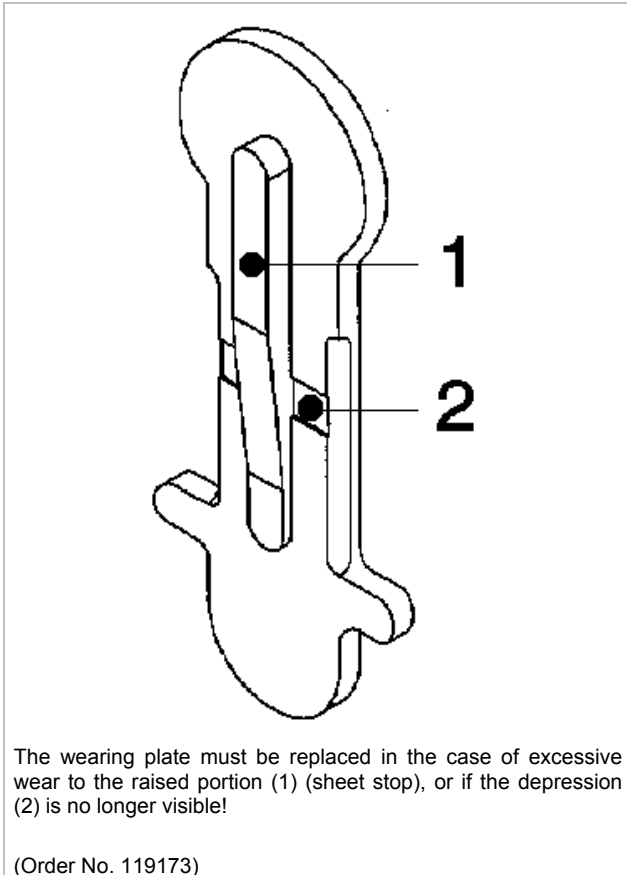
Wearing plate

The wearing plate protects the die carrier from excessive wear. Check the wearing plate regularly and replace when worn.



Damage to property

Excessive wear can overstrain the machine and negatively affect the cutting quality.



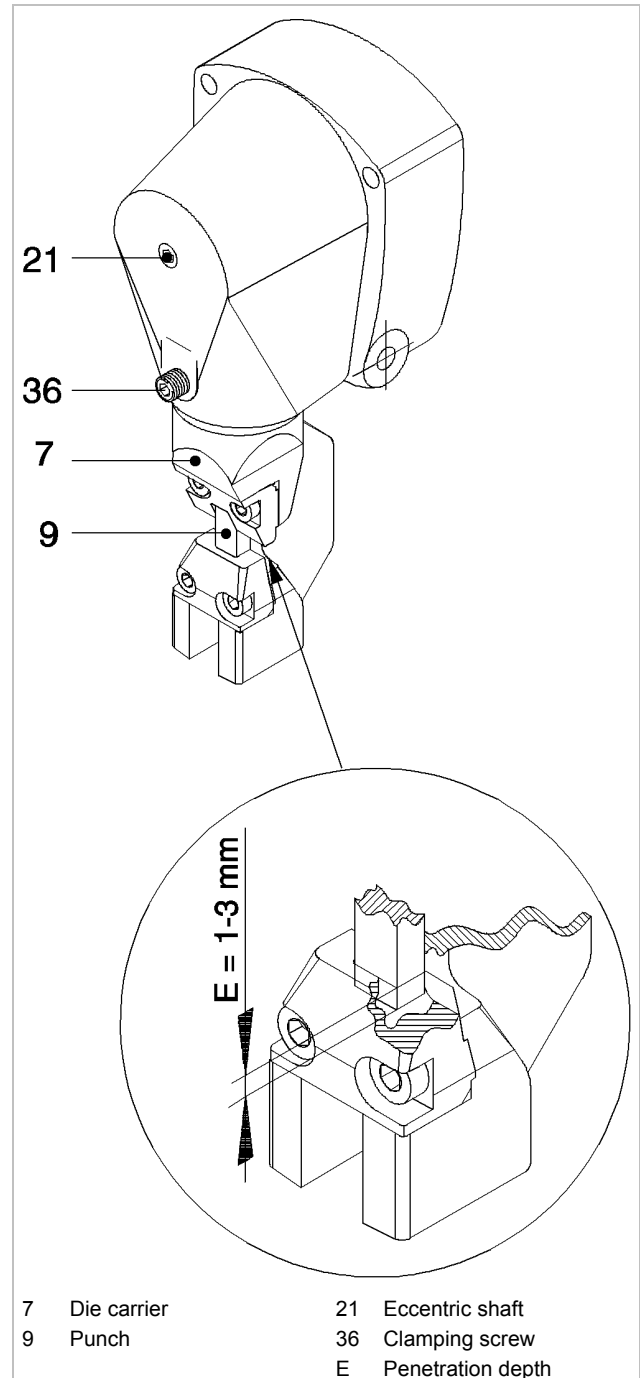
The wearing plate must be replaced in the case of excessive wear to the raised portion (1) (sheet stop), or if the depression (2) is no longer visible!

(Order No. 119173)

Fig. 9468

Punch penetration depth

The punch should penetrate 1 to 3 mm into the die.



7	Die carrier	21	Eccentric shaft
9	Punch	36	Clamping screw
		E	Penetration depth

Punch penetration depth

Fig. 9015

- Turn eccentric shaft (21) until the punch (9) reaches its maximum depth of penetration.
- Loosen screw (36)
- Turn die carrier (7) repeatedly through 360° until the punch penetration depth of 1-3 mm is reached.
- Re-tighten screw (36).

Tool change



Danger of injury

Always disconnect the compressed-air tube from the machine before beginning any work on the machine!

If the punch and/or die is blunt, sharpen the punch or replace the tool.



Resharpen punch

Disassemble the punch



Fig. 9016

- Loosen screw (36)
- Turn die carrier (7) 45°
- Pull die carrier (7) out downward
- Turn the punch (9) out

Mounting the punch



Fig. 9016

Lightly grease the square end of the punch and the die carrier hole with Lubricating grease "S1" TRUMPF Order No. 121486



see "F" in Fig. 9016

Ensure that the penetration depth is correct.

Changing the die and punch guide



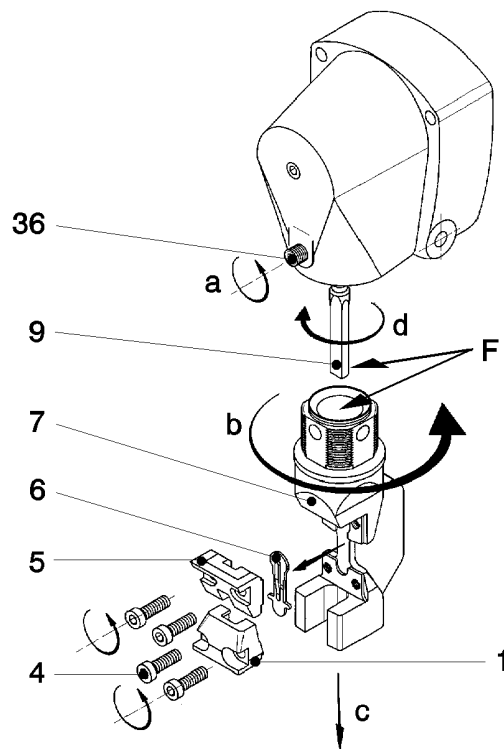
Fig. 9016

- Remove the screws (4) to change the die and punch guide.
- Clean the bearing areas of the die carrier (7).
- Make sure the replacement parts are clean.
- Grease the guide surfaces of the punch guide with lubricating grease "S1" TRUMPF order no. 121486.
- Mount the die and punch guide, tightening the screws.

(Tightening torque 16.5 Nm)

Use original screws only!

- | | |
|----|--|
| 1 | Die |
| 4 | Screws for fastening the die and punch guide |
| 5 | Punch guide |
| 6 | Wearing plate |
| 7 | Die carrier |
| 9 | Punch |
| 36 | Clamping screw |
| F | Lubricating grease "S1"
TRUMPF order no. 121486 |



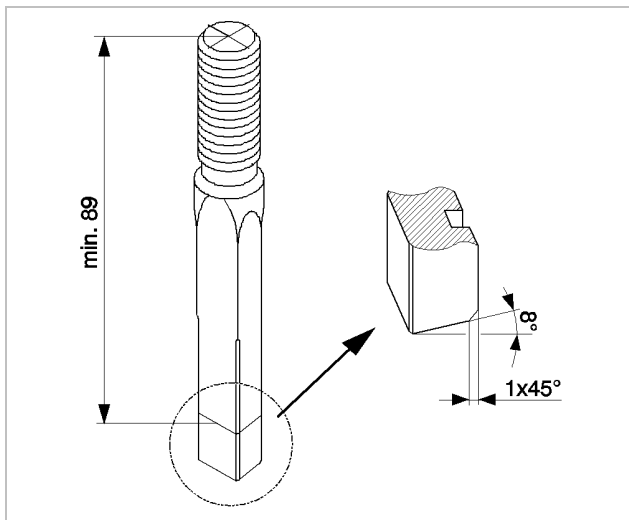
Tool change

Fig. 9016

Regrinding the tools

Punch

- The punch can be ground a total of appr. 10 mm.
- Regrind the front face as shown in the sketch below. Provide for ample coolant.
- Slightly dress the cutting edge with an oilstone.
- Observe the minimum length of 89 mm. Shorter punches must be replaced (danger of collision).



Punch grinding sketch

Fig. 9432

Dies cannot be reground.

Maintenance



Danger of injury

Always disconnect the compressed-air tube from the machine before beginning any work on the machine!

Lubricating the punch guide/die carrier

Lubricate the punch guide and die carrier after every tool change.

Original grease: Lubricating grease "S1" (Tube)
TRUMPF Order No. 121486

Lubricating the gears/gearhead

The gear grease must be replenished or changed after repairs but no later, however, than after 300 hours of operation.

Original grease: Lubricating grease "G1"
TRUMPF Order No. 139440

Alternative grease: BLASER BLASOLUBE 308
BP Energrease HTB2
FUCHS Renoplex EP 1
MOBIL Mobiltemp SHC 32

Compressed-air motor lubrication



Damage to property

Lubrication of the compressed-air motor is very important. The motor will fail if it is operated without lubrication even for a short time.

There are two ways to check that the compressed-air motor is properly lubricated:

1. For short operating times or varying operating sites via the **internal oil chamber**.
 - You must ensure that the oil level in the oil chamber is sufficient before each use.
 - Lubricating interval: approx. 1 operating hour
 - Oil is refilled through the opening in the sealing screw, screw-plug (313).
 - Ensure that the oil level is not too high.

 See Fig. 10776

2. It is recommended that an **oil mist lubricating device** (e.g. Atlas Copco DIM 25) be installed in the compressed-air line for continuous operation.

Checking the oil supply of the motor

Hold a piece of paper in front of the exhaust opening in the motor housing while the machine is running. The oil supply is sufficient if oil stains form.

Recommended oils (compressed-air motor lubrication):

- BP Energol RD 80 (-15 to +10° C),
- BP Energol RD-E80 (+10 to +30° C),
- Shell Tellus Oil 15 (-15 to +10° C),
- Torculla 33 (+10 to +30° C).

Motor bearing lubrication

The ball bearing in the motor flange is to be lubricated via the lubricating head using a grease gun.

Lubricating interval: every 10 operating hours

Recommended greases: BP Energrease LS-EP 2
SHELL Alvania Grease EP 2

Cleaning

Clean the filter 355 every 10 operating hours in order to prevent throttling or power loss.

See the spare parts list for an diagram of filter 355.

Speed limiter and ball bearing are to be lubricated with gear grease during regular machine maintenance.

Warning: Speed limiter 324 is to be handled with particular care, as damage can cause overspeed.

See diagram in the spare parts list.

Changing vanes

The performance of the machine decreases if the vanes are excessively worn.

Vane replacement and all other repair work is to be carried out by an expert!

Vane set (4) on the rotor of the compressed-air motor. See Item 310 in the spare parts list for corresponding diagram.

Repairs



Danger of injury

Pneumatic tools conform to the applicable safety regulations. Repairs may only be carried out by qualified electricians in order to prevent unnecessary accidents.



Use only original spare parts.

Please note the specifications on the output plate.

You will find a list of TRUMPF representatives at the back of this operating manual.

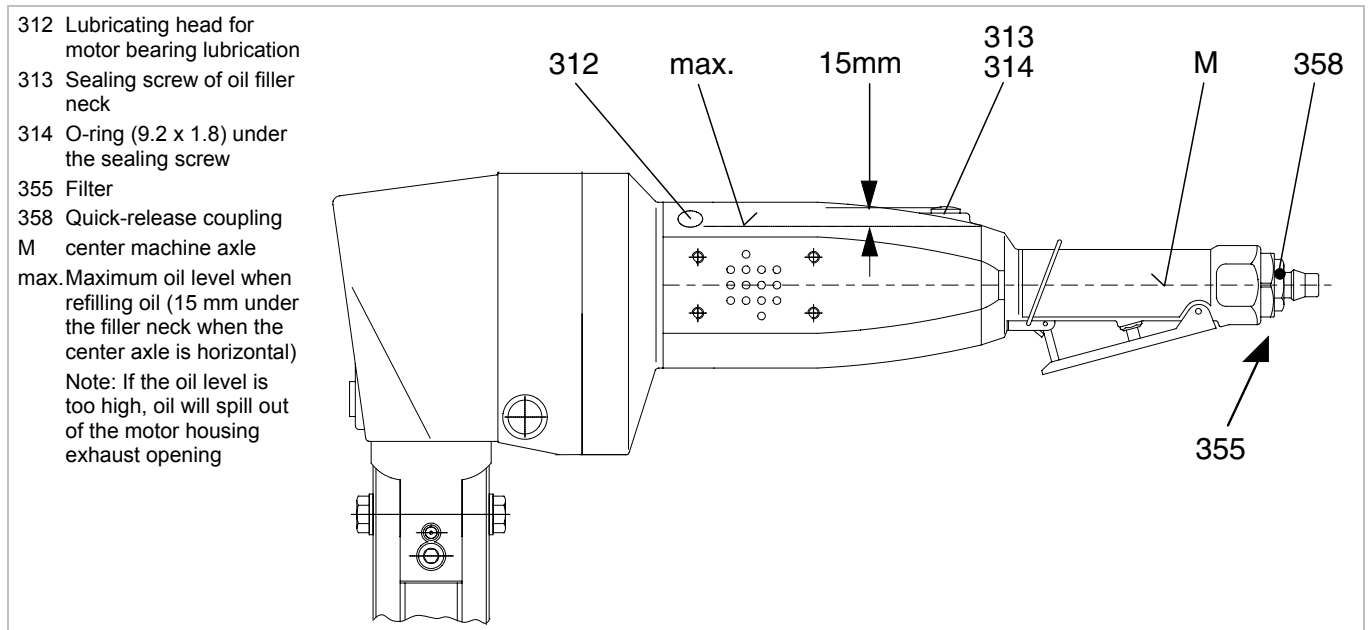


Fig. 10776

Wearing parts

N700	Order No.
Punch	104589
Punch for high-tensile sheets	104590
Die for 3-5 mm (die type 5)	098723
Die for 5-7 mm (die type 7)	098722
Die for profile sheet 5-7 mm (die type P7)	098721
Wearing plate	119173

Original accessories

Accessories delivered with the machine

Description	Order no.
Tool set (punch and die, installed)	
Quick-release coupling (machine part)	114094
Quick-release coupling (hose part)	114095
Handle	103555
Allan key DIN 911-12	067920
Allan key	118860
Allan key DIN 911-5	067857
2 cheesehead screws M14x45 to fasten the handle DIN 912	105083
Tube of lubricating grease "S1"	121486
Operating manual	128631
Safety instructions (red print)	125699

Optional

Chip bag	109275
Punching and nibbling oil for steel (0.5l)	103387
Punching and nibbling oil for aluminium (1l)	125874
Case	121585
Suspension bracket	105001
Muffler for motor, complete	114244

Ordering spare parts and wearing parts

To avoid delays and wrong deliveries, please proceed as follows when ordering replacement parts:

- When ordering spare parts or wearing parts, please use the TRUMPF stock number of the respective part.
- Other information required with an order:
 - for electrical parts: voltage
 - required quantity
 - machine type
- Information required for shipping:
 - your exact address
 - desired mode of shipment (e.g. air mail, express mail, ordinary freight, parcel post, etc.)
- Send your order to your TRUMPF representative.



You will find a list of TRUMPF representatives at the back of this operating manual.

Notes on documentation

The document was written by the Technical Documentation department of TRUMPF Werkzeugmaschinen GmbH + Co. KG.

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