Operator's manual

TruTool N 700 (1A2)

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english

TRUMPF

Contents

1. Safety

1.1 General safety information

- Before starting-up the machine, read the operator's manual and the safety information (order no. 0373678) in their entirety and carefully follow the instructions given.
- Comply with the safety regulations in accordance with DIN VDE, CEE, AFNOR as well as any other regulations valid in the individual countries.

Danger

Risk of fatal injury from electric shock.

- When working with the machine do not touch any electrical lines. The machine is not insulated.

Warning

Risk of injury due to improper handling.

- Always detach the compressed air hose from the machine prior to maintenance work.
- Check the compressed air hose, connection coupling, and machine for damage before each use.
- Wear safety glasses, hearing protection, protective gloves and work shoes when working at the machine.
- Only connect compressed air when the machine is switched off.
- Always lay the compressed air hose away from the back of the machine.

1.2 Specific safety information

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!

Hot and sharp chips are discharged from the chip dumping at high speed.

- Make sure the chips are discharged downwards.
- Use a chip bag (optional).

Warning

Risk of injury due to improper handling.

- When working with the machine, make sure it is always in a stable position.
- 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.

Warning

Risk of injury from falling machinery.

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

- Use suspension bracket (optional) with a balancer or a securing rope.

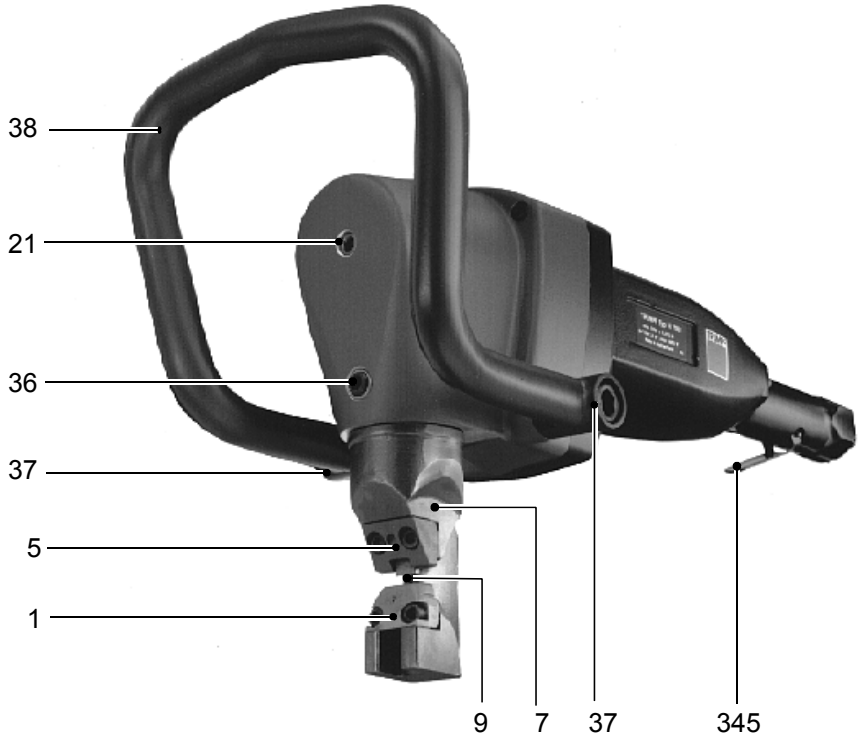
Caution

Damage to property due to improper handling.

The machine will be damaged or destroyed.

- Always position the compressed air hose leading away from the machine, at back of the machine. Do not pull the cable over sharp edges.
- Have servicing and inspections of hand-held compressed air tools carried out by a qualified technician. Only use original TRUMPF accessories.

2. Description



1	Die	21	Eccentric shaft	38	Handle (can be mounted in 2 different positions)
5	Punch guide	36	Clamping screw for the die carrier	345	On/Off switch
7	Die carrier	37	Cap screw (2 pieces) for fastening the handle		
9	Punch				

Nibbler TruTool N 700 Fig. 9545

2.1 Intended use

Warning

Risk of injury.

- Only use the machine for the work and materials described under "Intended use".

The TRUMPF Nibbler N 700 is a hand-held device powered by compressed air used for the following applications:

- Slitting plate-shaped workpieces made of a punchable material such as steel, aluminum, non-ferrous heavy metals and plastic.
- Slitting tubes and processing edged sheet profiles and press brake bendings, e.g. for tanks, crash barriers, troughs, etc.
- Nibbling straight or curved exterior and interior cutouts.
- Nibbling along scribed lines or templates.

Note
The nibbling process produces cutting edges free of deformations.

2.2 Technical data

	Other countries	USA
	Value	**Value**
Max. material thickness: • **Steel 400 N/mm².** • **Steel 600 N/mm².** • **Steel 800 N/mm².** • **Aluminum 250 N/mm².**	 7.0 mm 5.0 mm 3.5 mm 10.0 mm	 0.28 in / Ga 0.20 in / Ga 0.14 in / Ga 0.40 in / Ga
Working speed	1.4 m/min	4.6 ft/min
Smallest radius with curved cuts	135 mm	5.3 in
Sheet profile (90°): inner bend radius	Min. 10 mm	0.4 in
Start hole diameter for die	Min. 60 mm	2.4 in
Cutting track width	11 mm	0.433 in
Nominal power consumption	2900 W	2900 W
Stroke rate with nominal load	400/min	400/min
Weight	12.2 kg	26.9 lbs
Max. operating pressure (flow pressure)	6 bar	87 psi
Air consumption at 6 bar	3.1 m³/min	110 cubic ft/min
Inside diameter of the compressed air hose	18 mm	0.7 in (3/4")

Table 1

Vibration	**Measured values in accordance with EN 50144**
Hand-arm vibration	≤ 2.5 m/s²

Table 2

Values were measured while cutting sheet steel 400 N/mm² with max. material thickness.

Noise emissions	**Measured values in accordance with EN 50144**
A-weighted sound pressure level L_{WA}	86 dB
A-weighted sound power level at the work station L_{PA}	94 dB

Table 3

The noise emission values given are the sum of the measured values and the corresponding uncertainties. They represent an upper limit of the possible measured values.

3. Setting work

3.1 Choosing a dieen

One of 3 types of dies can be selected for the machining process according to material thickness, tensile strength and type of workpiece.

Make sure that the clearance (X) is as small as possible so that the machine is well clamped and does not hammer.

(see Fig. 16811, p. 9)

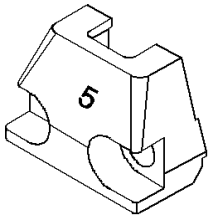
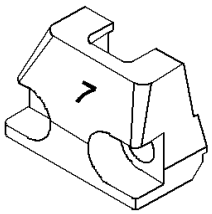
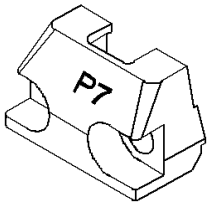
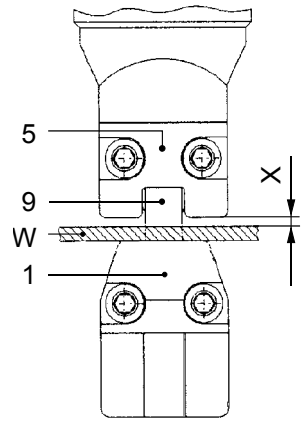
Material	**Type of die**					
	5		**7**		**P7**	
						
	Order no. 0098723		Order no. 0098722		Order no. 0098721	
	Material thickness		Material thickness		Material thickness	
	Level workpieces	Profiles with press brake bends of up to 90°	Level workpieces	Profiles with press brake bends of up to 90°	Level workpieces	Profiles with press brake bends of up to 90°
Aluminum 250 N/mm	3-5 mm	-3 mm	> 5-7 mm	> 3-5 mm	7-10 mm	5-7 mm
Mild steel 400 N/mm	3-5 mm	-3 mm	> 5-7 mm	> 3-5 mm	-	5-7 mm
Stainless steel 600 N/mm²	3-5 mm	-3 mm	-	> 3-5 mm	-	-
Stainless steel 800 N/mm²	Max. 2.5 mm	-2.5 mm	-	-	-	-

Table 4

Use the die with the greatest available height



1	Die	W	Workpiece
5	Punch guide	X	Clearance between sheet surface and punch guide
9	Punch		

Die clearance for punch guide Fig. 16811

Note
The clearance (x) between the sheet surface and the punch must remain as small as possible.

Does severe back-and-forth movement (hammering) occur during the cutting process?

This is caused by using an unsuitable die, and can result in excessive tool wear and increase the load on the machine.

➢ Use the die with the greatest available height.

3.2 Selecting a punch

There are 2 different punches for machining sheets with different tensile strengths:

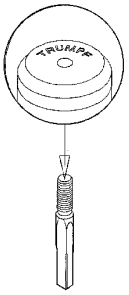
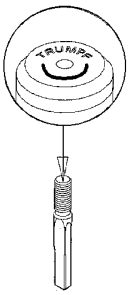
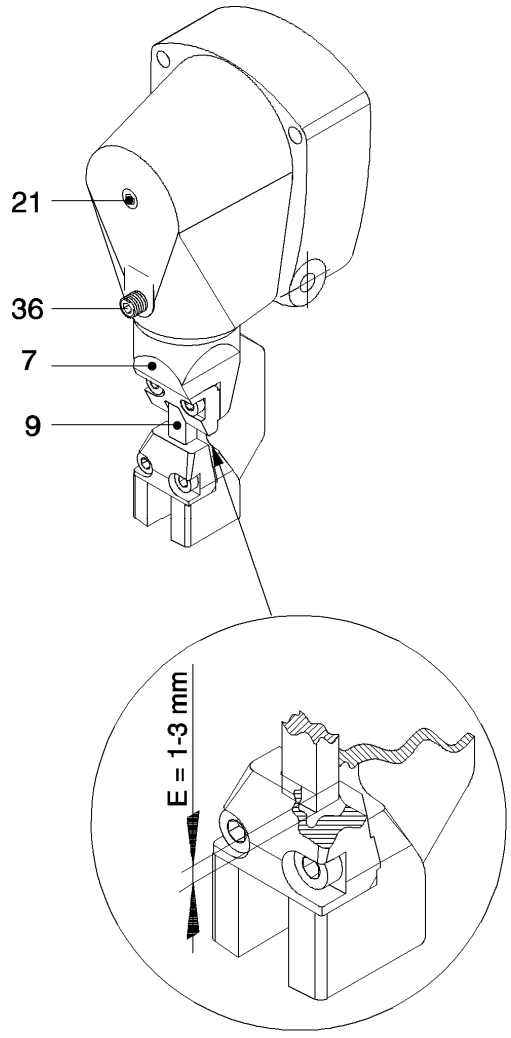
Components	Punch	
	Standard	High-tensile
		
Order no.	104589	104590
Aluminum 250 N/mm	+	
Mild steel 400 N/mm	+	
Stainless steel 600 N/mm²		+
Stainless steel 800 N/mm²		+

Table 5

3.3 Checking penetration depth of the punch



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

Penetration depth of the punch Fig. 9015

The penetration depth of the punch into the die should be 1 to 3 mm.

1. Rotate the eccentric shaft (21) until the punch (9) has reached its maximum penetration depth.
2. Loosen the clamping screw (36).
3. Rotate the die carrier (7) by 360° as often as needed until the punch penetration depth of 1-3 mm has been achieved. One rotation (360°) corresponds to a height adjustment of 1.75 mm.
4. Tighten clamping screw (36).

4. Operation

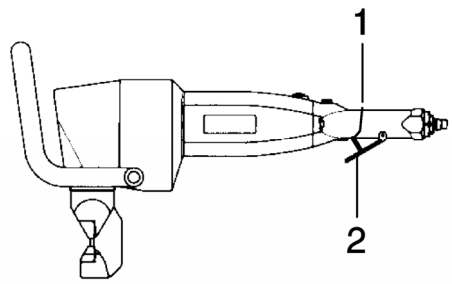
4.1 Working with TruTool N 700

Warning

Risk of injury 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.

Switching on the TruTool N 700



1 Bracket 2 Lever

Fig. 54641

Continuous operation

1. Push the bracket (1) forwards.
2. Push the lever (2) against the motor housing.

Working with TruTool N 700

1. Do not move the machine towards the workpiece until full speed has been reached.
2. Machine the material.
   - Machine the desired nibbling line
3. If the cutting track accidentally runs into the sheet, keep the machine running and pull it a few millimeters back towards where the cutting track has already been cut open.
4. Switch off the machine.

Note
The cutting result is improved and the service life of the punch increased if the cutting track is coated with oil before machining the workpiece.

Material	Oil
Steel	Punching and nibbling oil, order no.103387
Aluminum	Wisura oil, order no.125874

Oil recommendations Table 6

Switching off the TruTool N 700

➢ Release the lever (2).

The lever springs back to the initial position and the compressed air is interrupted.

4.2 Changing the cutting direction

In situations where space is limited, the tool can be mounted so it has a different cutting direction:

- Mount the tool at an angle of 90° to the right or to the left (cutting profiles).
- Mount the tool at a 180° rotation (nibbling backwards).

1. Loosen clamping screw (36).
2. Turn the die carrier (7) in the desired direction.
3. Retighten the clamping screw (36).

4.3 Nibbling with templates

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 11 mm between the contour of the template and the contour to be nibbled out.
- Guide the nibbler so that the exterior cutout of the punch guide (5) rests against the template for the enitirety of the nibbling process.
- Observe a minimum radius of 135 mm.

4.4 Making interior cutouts

Interior cutouts require a start hole at least 60 mm in diameter.

5. Maintenance

Warning

Risk of injury due to uncontrolled machine movements.

- Remove the compressed air hose when changing tools and before performing any maintenance work on the machine.

Warning

Risk of injury due to repair work not being carried out properly.

Machine does not work properly.

- Repair work may only be carried out by a qualified technician.

Caution

Damage to property caused by blunt tools.

Machine overload.

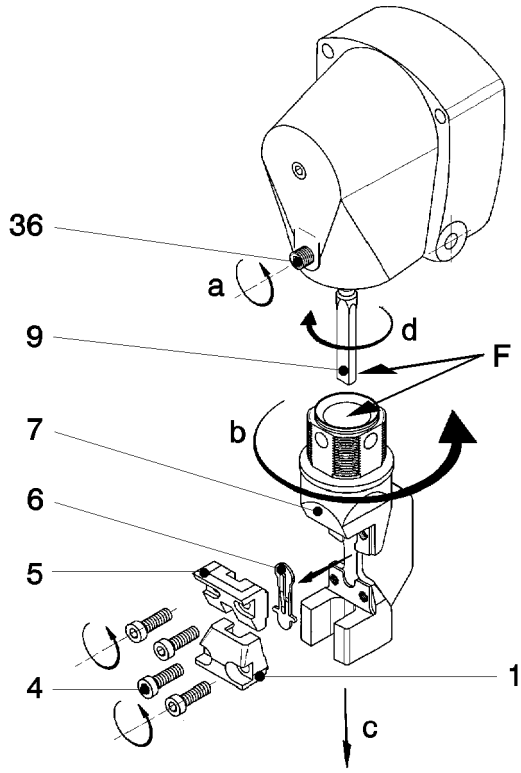
- Check the cutting edge of the punch for wear every hour. Sharp punches provide good cutting performance and are easier on the machine. Replace punches promptly.

Maintenance point	Procedure and interval	Recommended lubricant	Lubricant order no.
Punch	Change as needed.	-	-
Punch guide	Lubricate upon tool change.	Lubricating grease "G1"	0344969
Die	Change as needed.	-	-
Wearing plate	Change as needed.	-	-
Motor bearing	Lubricate every 10 operating hours.	Lubricating grease "G1"	0139440
Oil mist lubrication device	Maintain daily in accordance with the manufacturer's specifications (see "Supplying with power and guaranteeing lubrication", p. 18).	-	-
Segments	Have checked and replaced by a qualified technician as needed.	-	-
Filter	Clean every 10 operating hours or if there is a decline in power.	-	-
Gearbox and gear head	Have a qualified technician relubricate or replace the lubricating grease every 300 operating hours.	Lubricating grease "G1"	0139440

Maintenance table Table 7

5.1 Changing the tool

If the punch and/or die are blunt or the type of operation changes, the tools must be reground or changed.



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

Changing the tool Fig. 9016

Changing the punch

1. Loosen clamping screw (36).
2. Rotate the die carrier (7) by 45°.
3. Pull the die carrier (7) out towards the bottom.
4. Remove the punch (9) by rotating it.
5. Lightly lubricate the square part of the punch and the die carrier bore hole with lubricating grease "G1" (order no. 139440).

6. Insert the punch (9) by rotating it
7. Align the punch to 45°.
8. Install the die carrier (7).
9. Check the penetration depth of the punch.

Changing the die and the punch guide

1. To replace the die and the punch guide, unscrew the fixing screws (4).
2. Clean the support areas on the die carrier (7).
3. Take care to ensure that the replacement parts are clean.
4. Lubricate the guide surfaces of the punch guide with lubricating grease "G1" (order no. 139440).
5. Screw the fastening screws tightly when mounting the die and the punch guide (tightening torque 16.5 Nm). Use original screws only.

5.2 Regrinding tools

Punch

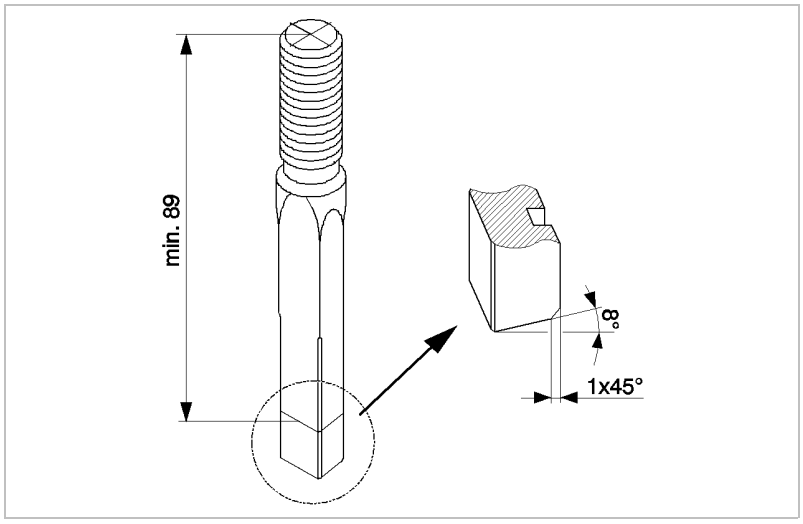


Fig. 9432

The punch can be reground by a total of approximately 10 mm

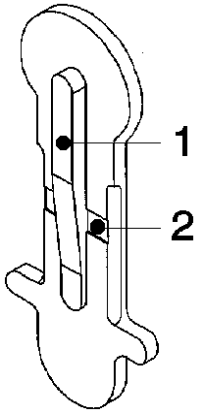
- Regrind the grinding surface in accordance with the above sketch, making sure that it is well-cooled during the process.

- Lightly apply fine-grained oil stone to the cutting edge.
- Observe a minimum length of 89 mm Shorter punches must be replaced (risk of collision).

Dies

Dies can not be resharpened.

5.3 Checking/replacing the wearing plate



1 Elevation 2 Depression

Fig. 9468

Wearing plate

The wearing plate protects the die carrier against excessive wear (order no. 0119173).

1. Replace the wearing plate when the elevation (1) is worn down.
2. Replace the wearing plate when the depression (2) is no longer visible.

Note
Excessive wear can overload the machine and lead to a deteriation in cutting quality.

5.4 Supplying with power and guaranteeing lubrication

Caution

Damage to property due to improper handling.

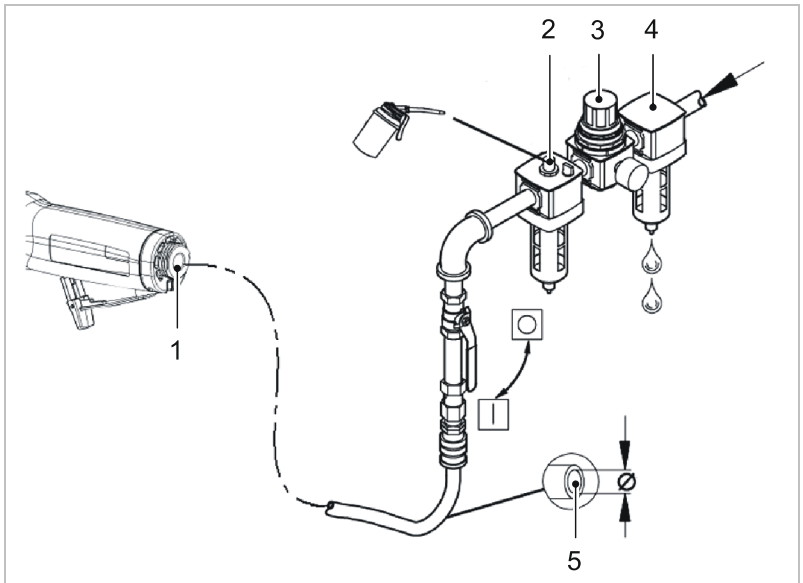
Failure of the compressed air motor.

- ➢ Do not exceed the maximum operating pressure.
- ➢ Lubricate the compressed air motor regularly. Alternatively, install an oil mist lubrication device into the compressed air line.

Supplying compressed air

Prerequisite

- Pressure regulating valve and connecting thread must be designed accordingly.



1	Connecting thread	5	Inside diameter of the compressed air hose min. 18 mm or 3/4"
2	Oil mist lubrication device		
3	Pressure regulating valve		
4	Filter and water separator		

Compressed air supply Fig. 52385

1. Install the filter and water separator (4).
2. Drain/check the water separator daily.

Notes

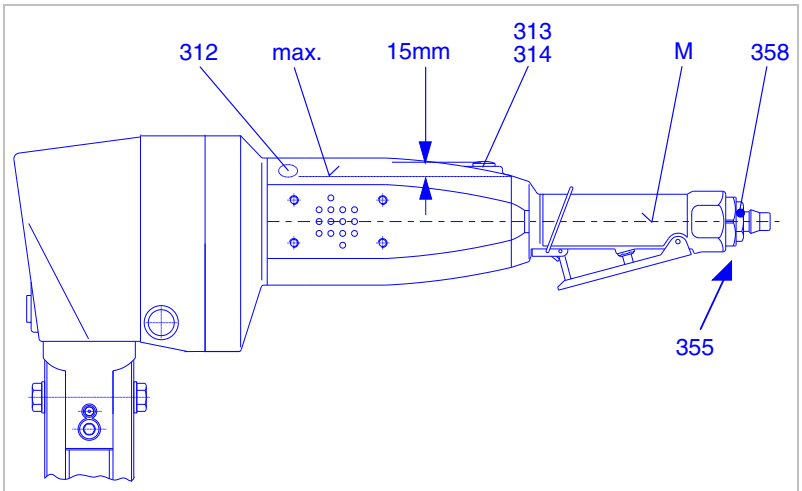
- To ensure a supply of compressed air the tube cross-sections in the entire line system must be twice to three times the size of the inside diameter of the compressed air hose.
- Secure the compressed air hose against undesired movements using a compressed air safety device.

Checking the oil supply

➢ Hold a piece of paper in front of the exhaust air vent in the motor housing while the machine is running.

The oil supply is sufficient when oil spots appear.

Lubricating the compressed-air motor



312	Grease nipple for lubricating the motor bearing	M	Machine middle axis
313	Oil filling nozzle screw plug	max.	Maximum the oil level when refilling oil (15 mm below the filling nozzle when the middle axis of the machine is horizontal)
314	O-Ring (9.2 x 1.8) under the screw plug		
355	Filter		
358	Quick-release coupling		

Fig. 10776

There are two ways of lubricating the compressed-air motor:

1. For short operating times or if frequently changing the operation site, use the **internal oil chamber**.
   - Before start-up, always check whether the oil chamber is filled to the top (see Fig. 10776, p. 19).
   - Refill the oil via the screw plug opening (313) once every operating hour.

   Notes
   The oil level in the machine must not exceed the maximum height (max.).
   If the oil level exceeds this height, oil will overflow from the vent in the motor housing.

2. For long periods of use, install an **oil mist lubrication device** in the compressed air line (e. g. Atlas Copco DIM 25).

Lubricating the speed limiter and ball bearings

- Lubricate the speed limiter (324) and ball bearings with lubricating grease during the regular maintenance of the machine (see replacement parts list).

Note
Handle the speed limiter (324) especially carefully, as damage can lead to excessive rotation speed.

Lubricating the motor bearings

- Relubricate the ball bearings in the motor flange via the grease nipple (312) every 10 operating hours using a grease gun (see Fig. 10776, p. 19).

Recommended lubricant:

- BP Energol RD 80 (-15° to +10 °C/+5° to +50°F).
- BP Energol RD-E80 (+10° to +30 °C/+50° to +86°F).
- Shell Tellus Oil 15 (-15° to +10 °C/+5° to +50°F).
- Torculla 33 (+10° to +30 °C/+50° to +86°F).

5.5 Replacing fins

Worn fins decrease machine power.

- Have the fin set checked and replaced as needed by a qualified technician.

Note
Only use original replacement parts and observe the information on the rating plate.

5.6 Cleaning the filter

In order to avoid reduction in speed and power:

- Clean the filter (355) every 10 operating hours (see Fig. 10776, p. 19).

6. Original accessories and irreparable parts

TruTool N 700	Supplied original accessories	Irreparable parts	Options	Order no.
Block tools (punch and die, installed)	+			
Quick-release coupling (part on the machine side)	+			114094
Quick-release coupling (part on the hose side)	+			114095
Handle	+			103555
Allen key DIN 911-12	+			067920
Allen key	+			118860
Allen key DIN 911-5	+			067857
2 cap screws M14x45 for fastening the handle DIN 912	+			105083
Lubricating grease "S1" (25 g)	+			0121486
Lubricating grease "G1"			+	0139440
Operator's manual	+			0128640
Safety instructions (printed in red)	+			125699
Punch		+		104589
Punch for high-tensile sheets		+		104590
Die for 3-5 mm (type of die: 5)		+		098723
Die for 5-7 mm (type of die: 7)		+		098722
Die for profile sheets 5-7 mm (type of die: P7)		+		098721
Wearing plate		+		119173
Chip bag			+	109275
Punching and nibbling oil for steel (0.5 l)			+	103387
Punching and nibbling oil for aluminum (1 l)			+	125874
Case			+	121585
Suspension bracket			+	105001
Muffler for motor, complete			+	114244
Sleeve	+			0376078
Fin set (4 pieces)		+		1440002

Table 8

Ordering original parts and irreparable parts

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

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).
4. Send the order to the TRUMPF representative office. Refer to the address list at the end of the document for TRUMPF service addresses.