Operator's manual

TruTool N 700 (1A2)

Nibbler

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TRUMPF

Table of contents

1. Safety

1.1 General safety information

WARNING

Read all the safety information and instructions.

- 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.

1.2 Specific safety information for nibblers

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.

2. Description

1 Die
5 Punch guide
7 Die holder
9 Punch
21 Eccentric shaft
36 Clamping screw for die holder
37 Cheese-head screws for fastening the handle
38 Hand grip
345 On/Off switch

Nibbler TruTool N 700 Fig. 9545

2.1 Intended use

The TRUMPF Nibbler TruTool N 700 is an electric power tool 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

	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
Max. material thickness: Steel 400 N/mm²	7.0 mm	7.0 mm	7.0 mm	0.28 in
Max. material thickness: Steel 600 N/mm²	5.0 mm	5.0 mm	5.0 mm	0.2 in
Max. material thickness: Steel 800 N/mm²	3.5 mm	3.5 mm	3.5 mm	0.14 in
Max. material thickness: Aluminum 250 N/mm²	10 mm	10 mm	10 mm	0.4 in
Working Speed	1.4 m/min	1.4 m/min	1.4 m/min	4.6 ft/min
Nominal power consumption	2900 W	2900 W	2900 W	2900 W
Idle stroke rate	400/min	400/min	400/min	400/min
Weight	12.2 kg	12.2 kg	12.2 kg	26.9 lbs
Cutting track width	11 mm	11 mm	11 mm	0.472 in
Starting hole diameter for die	60 mm	60 mm	60 mm	2.95 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.
W	Watt	Power, power input
mm	Millimeters	Dimensions e.g.: material thickness, chamfer length
in	Inch	Dimensions e.g.: material thickness, chamfer length
m^3/min	Cubic meters per minute	Air flow rate
bar	Bar	Pressure

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

Strong upward and downward movements (striking) due to unsuitable die.

Excessive tool wear and increasing strain on the machine.

➢ Use a die which is as high as possible (keep clearance X in the following drawing 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
Uncertainty K for vibration emission value	m/s^2	2.7
A-class acoustic pressure level L_{PA} typically	dB (A)	86

Designation of measured value	Unit	Value according to EN 60745
A-class acoustic power level L_{WA} typically	dB (A)	94
Uncertainty K for noise emission value	dB	3

Tab. 3

3. Setting work

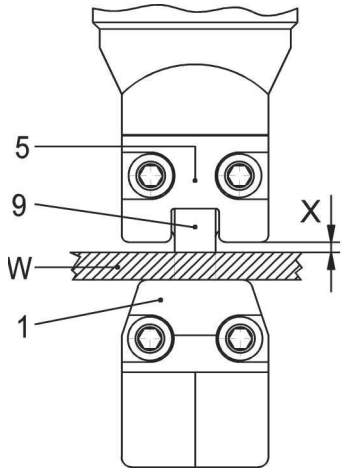
3.1 Selecting a die

⚠ CAUTION

Strong upward and downward movements (striking) due to unsuitable die.

Excessive tool wear and increasing strain on the machine.

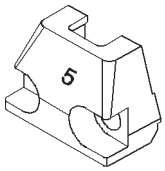
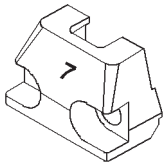
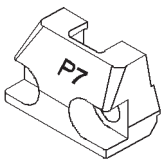
➢ Use a die which is as high as possible (keep clearance X in the following drawing as small as possible).



1	Die (see following table)	W	Workpiece
5	Punch guide	X	Distance between sheet surface and punch guide
9	Punch		

Fig. 16802

One of the following die types can be selected for processing according to the thickness, robustness and type of workpiece:

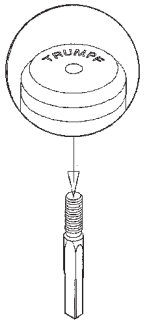
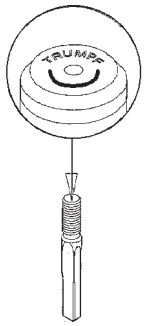
Material	Type of die 5	Type of die 7	Type of die P7
-			
	Mat. no. 0098723	Mat. no.: 0098722	Mat. no. 0098721
Material thickness in mm, flat workpieces			
Aluminum 250 N/mm^2	-5	>5-7	>7-10
Mild steel 400 N/mm^2	-5	>5-7	-

Material	Type of die 5	Type of die 7	Type of die P7
Stainless steel 600 N/mm^2	-5	-	-
Stainless steel 800 N/mm^2	-2.5	-	-
Material thickness in mm, profiles with bends up to 90°			
Aluminum 250 N/mm^2	-3	>3-5	>5-7
Mild steel 400 N/mm^2	-3	>3-5	>5-7
Stainless steel 600 N/mm^2	-3	>3-5	-
Stainless steel 800 N/mm^2	-2.5	-	-

Tab. 4

3.2 Select punch

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

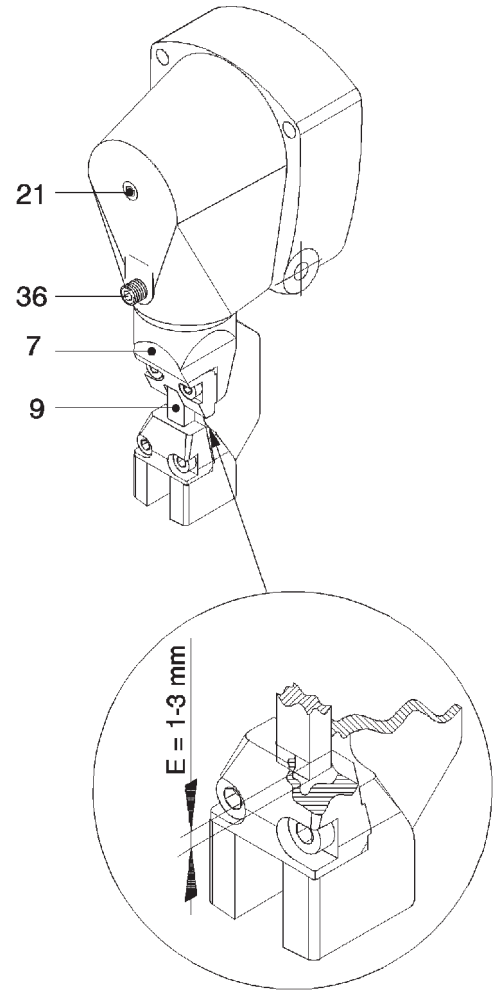
Components	Standard punch	Punch for high-tensile steels
		
Order number	104589	104590
Aluminum 250 N/mm^2	x	-
Mild steel 400 N/mm^2	x	-
Stainless steel 600 N/mm^2	-	x
Stainless steel 800 N/mm^2	-	x

Tab. 5

3.3 Setting the penetration depth

Note

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.



21	Eccentric shaft	36	Clamping screw
7	Die holder	E	Plunging depth
9	Punch		

Fig. 9015

1. Rotate the eccentric shaft (21) until the punch (9) has reached its maximum plunging depth.
2. Loosen the locking screw (36).

Note

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

3. Continue rotating the die holder (7) by 360° until the punch plunging depth of 1–3 mm has been reached.
4. Tighten the clamping screw (36).

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.

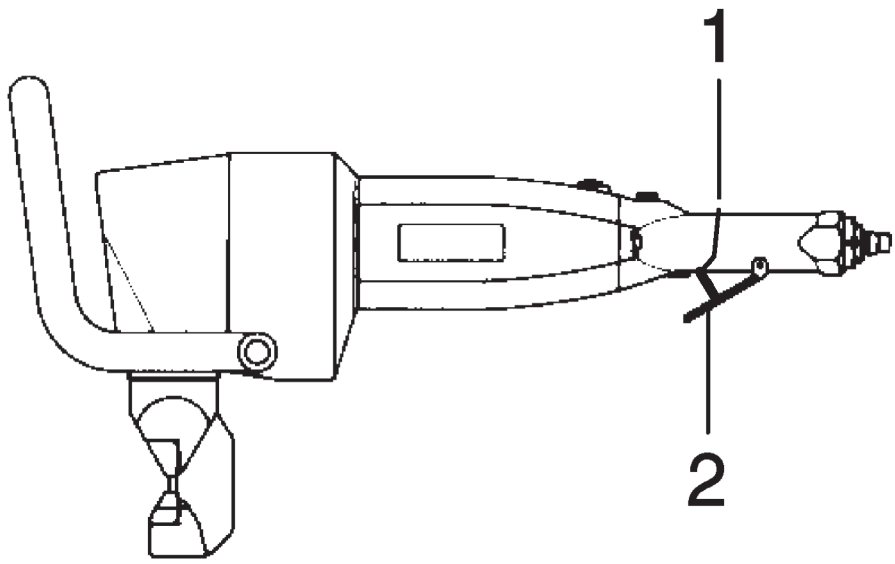
- Check the power supply voltage. The line voltage must correspond to the information on the nameplate of the machine.
- When using an extension cord that is longer than 5 m, it must have a conductor cross-section of at least 2.5 mm².

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 700



1 Bracket 2 On/Off switch

Fig. 54641

Switching on

1. Push clamp (1) forwards and press the on/off switch (2).

Processing the material

2. Once the full speed has been reached: move the machine toward the workpiece.
3. Process the desired cutting line.
4. 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

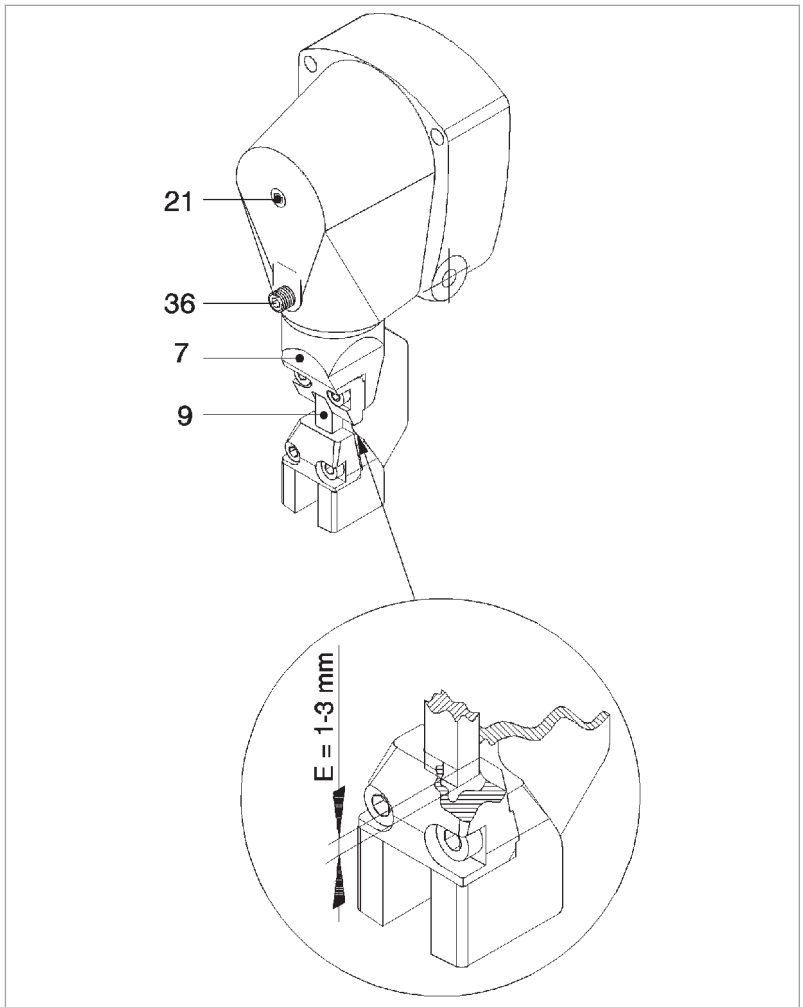
5. Let go of the On/Off switch (2).

   The switches springs back into its initial position and the compressed air is interrupted.

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.



21	Eccentric shaft	36	Clamping screw
7	Die holder	E	Plunging depth
9	Punch		

Fig. 9015

1. Loosen the locking screw (36).
2. Rotate the die holder (7) into the desired direction.
3. Tighten the clamping screw (36) again.
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 11 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 135 mm.

4.4 Producing interior cutouts

➢ Produce start bore with at least a 60 mm diameter.

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 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.

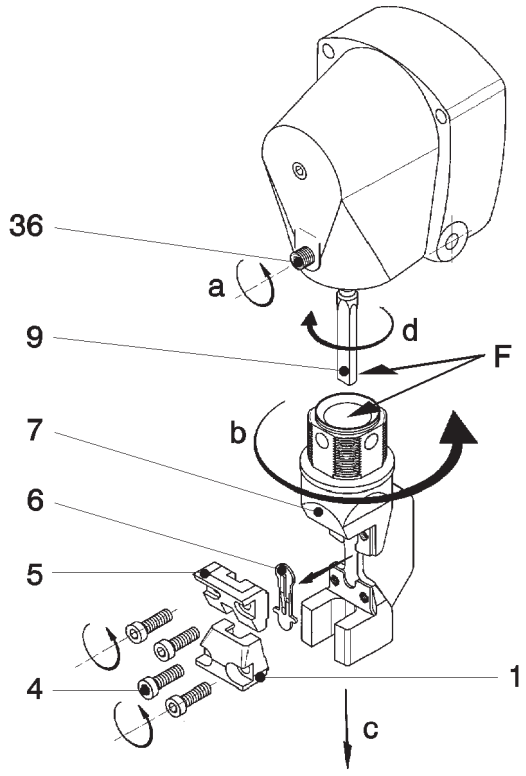
Maintenance point	Procedure and interval	Recommended lubricants	Lubricant order number
Punch	Change as needed	-	-
Punch guide	Lubricate upon tool change.	Lubricating grease "G1"	0344969
Die	Change as needed	-	-
Wearing plate	Change as needed	-	-
Motor bearing	Lubricate every 10 operating hours.	Lubricating grease "G1"	0139440
Oil mist lubrication device	Maintain daily according to manufacturer information. See "energy provision and ensure lubrication".	-	-
Lamellas	Have these checked and replaced as required by a qualified technician.	-	-
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.



1	Die	7	Die holder
4	Screws for fastening the die and punch guide	9	Punch
5	Punch guide	36	Clamping screw
6	Wearing plate	F	Tube of lubricating grease "S1"

Fig. 9016

Changing the punch

1. Loosen the locking screw (36).
2. Rotate the die holder (7) by 45°.
3. Pull the die holder (7) downward and out.
4. Screw out the punch (9).
5. Apply a thin film of grease on the square part of the punch and die holder bore.
6. Screw in the punch (9) and align to 45°.

7. Install the die holder (7).
8. Check the plunging depth of the punch.

Replacing the die and punch guide

1. Unscrew screws (4).
2. Clean the support areas on the die carrier (7).
3. Clean the replacement parts if necessary.
4. Lubricate the guide surfaces of the punch guide.

Note

Only use new original screws at every change (order number 106709).

5. When attaching the die and the punch guide, tighten the screws (tightening torque 16.5 Nm).

5.2 Regrinding the punch

Notes

- Dies cannot be reground.
- Use only original spare parts from TRUMPF.
- The punch can be reground a total of approx. 10 mm. Note that the minimum length is 89 mm: shorter punches must be replaced (risk of collision).

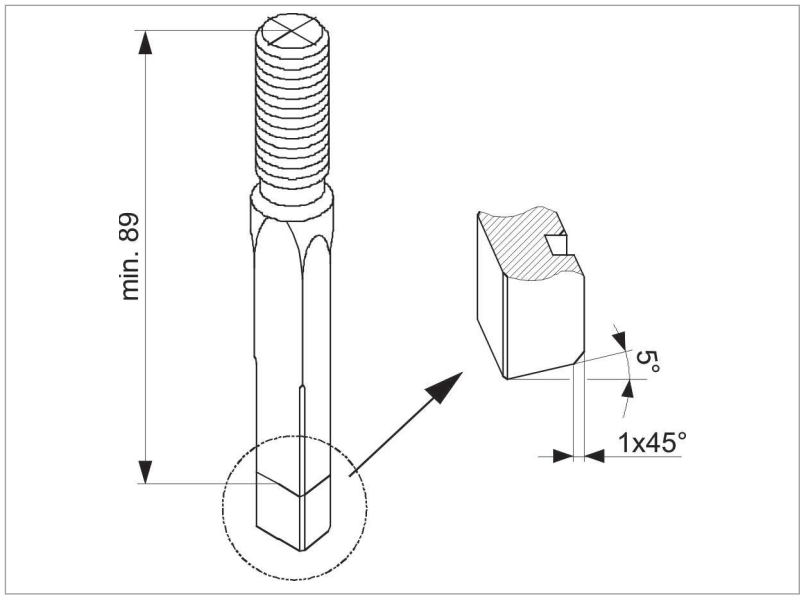


Fig. 9432

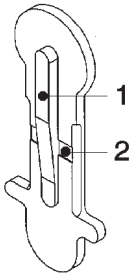
1. Regrind the grinding surface according to the sketch, paying attention to good cooling.
2. Dress the cutting edge lightly with a fine oil stone.

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.



1 Raised part 2 Depression

Fig. 9468

The wearing plate must be replaced when:

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

5.4 Ensuring energy provision and lubrication

Condition

- Pressure control valve and connecting thread are correctly configured.

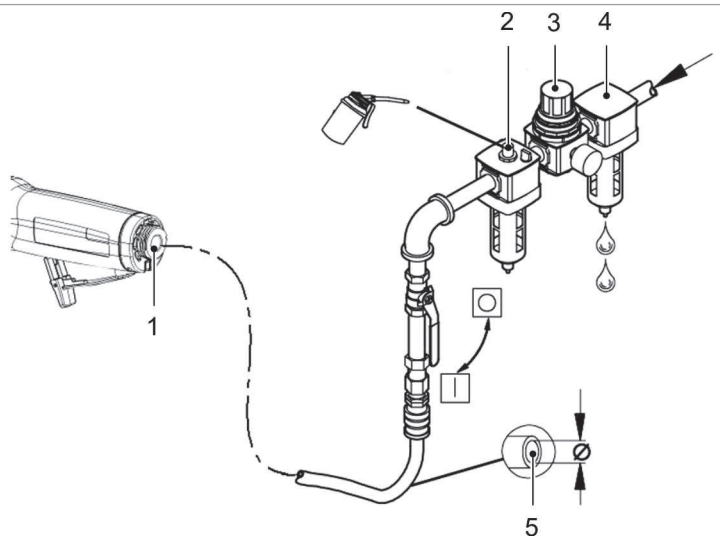
⚠ CAUTION

Damage to property due to improper handling!

Failure of compressed air motor.

- ➢ Do not exceed maximum operating pressure.
- ➢ Lubricate the compressed air motor regularly. During continuous operation, insert an oil lubrication device into the compressed air line.

Supplying compressed air



1	Connecting thread 1/4"	4	Filter and water separator
2	Oil mist lubrication device	5	Inside diameter of pneumatic hose min. 10 mm or 3/8"
3	Pressure control valve		

Compressed air supply Fig. 52385

1. Insert the filter and water separator (4).

Note

To safeguard the compressed air supply, the tube cross-sections must be two to three times as large as the inside diameter of the pneumatic hose.

2. Check water separator daily and empty it if necessary.

Checking the oil supply

3. While the motor is running, hold a piece of paper in front of the exhaust air opening in the motor housing.

   If specks of oil appear, the oil supply is sufficient.

Note

Secure the pneumatic hose from unwanted movements using a compressed air lock.

4. If no oil mist lubrication device is available: fill 0.5-1 ccm of oil into the air inlet bore every 2 hours.

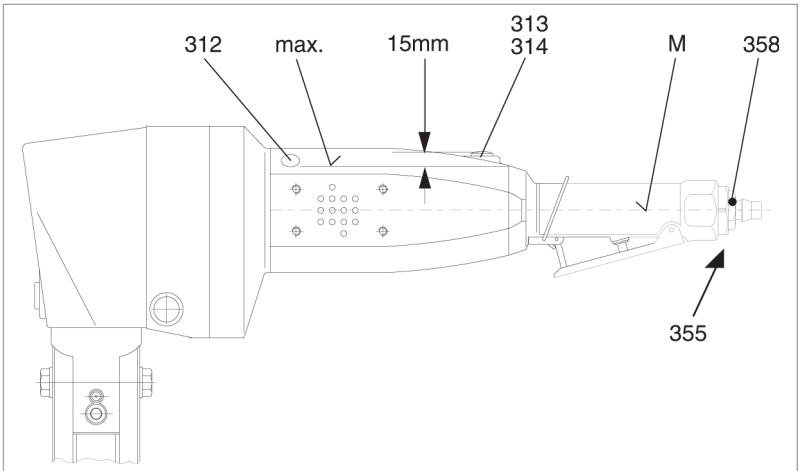
   Recommended lubricants:

   - BP Energol RD 80 (-15° to +10°C/+5° to +50°F)
   - BP Energol RD 80 (-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 Lubricating the compressed air motor

Via internal oil chamber

In case of short operating times or changing usage locations.



312 Grease nipple for lubricating the motor bearing
313 Screw plug for oil fill opening
314 O-ring (9.2 x 1.8) under the screw plug
355 Filters
358 Quick-release coupling
M Machine middle axis
max. Maximum height of oil level when refilling oil (15 mm below the filling opening, with horizontal machine middle axis)

Lubricating the compressed air motor Fig. 10776

1. Before each commissioning, check whether the oil chamber is filled up to the maximum oil level.

Note

The oil level in the machine must not exceed the maximum height (max.).

If more oil is inserted, ejection of unnecessarily high levels of oil will occur via the exhaust air opening in the motor housing.

2. Every operating hour, top up the oil through the opening of the screw plug (313).

With oil mist lubrication device

3. During continuous operation, insert an **oil lubrication device** into the compressed air line (e.g. Atlas Copco DIM 25).

5.6 Lubricating the speed limiter and ball bearings

Note

Treat the speed limiter (324) with particular care since damage can lead to excessive speeds.

➢ Lubricate the speed limiter (324) and ball bearing during regular machine maintenance using gearbox grease (see spare parts list).

5.7 Lubricating the speed limiter and ball bearings

➢ Relubricate the ball bearing in the motor flange every 10 operating hours by means of a grease gun via the lubricating nipple (312).

5.8 Changing fins

If the fins are worn, this will reduce the machine power.

Note

Use only original spare parts from TRUMPF.

➢ Have the set of fins checked and replaced as required by a qualified technician.

5.9 Cleaning the filter

➢ Clean the filter (355) every 10 operating hours in order to avoid throttling or power drops.

6. Accessories and consumables

-	Scope of delivery	Consumables	Accessories	Order number
Set of tools (punch and die, installed)	+			
Quick-acting coupling (part on the machine)	+			114094
Quick-acting coupling (part on the hose)	+			114095
Handle	+			103555
Allen key DIN 911-12	+			067920
Allen key	+			118860
Allen key DIN 911-5	+			067857
2 cheese-head screws M14x45 for fastening the handle, DIN 912	+			105083
Lubricating grease "S1" (25 g)	+			0121486
Lubricating grease "G1"			+	0139440
Operator's manual	+			0128640
Safety information (printed in red)	+			125699
Punch		+		104589
Punch for high-strength 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
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
Silencer for motor, complete			+	114244
Hose sleeve	+			0376078
Fin set (4x)		+		1440002

Tab. 8

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