

# REMS Turbo K Turbo Cu-INOX

## INSTRUCTION MANUAL

### TURBO K

Universal circular metal sawing machine with  
automatic cooling lubricant unit

### TURBO Cu-INOX

Circular Pipe Sawing machine



**REMS**

**ANCRA**  
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TURBO K/Cu-INOX

Fig. 1



Fig. 2



Fig. 4

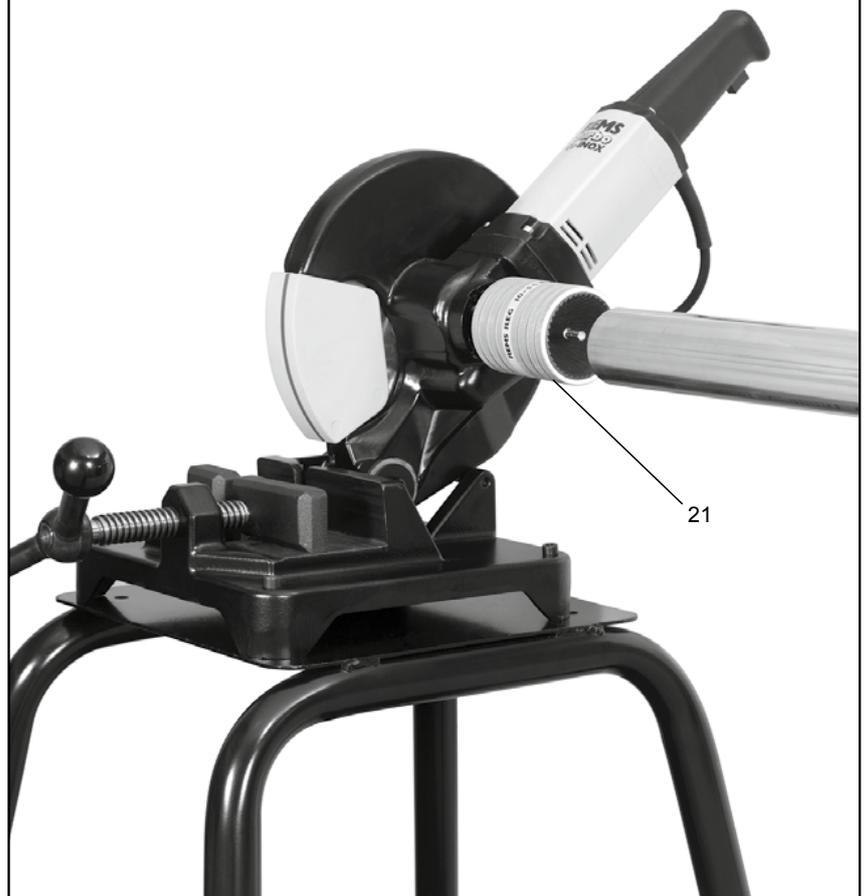
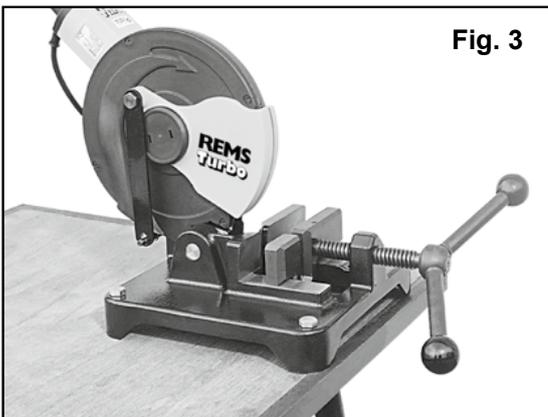


Fig. 3



# Translation of the Original Instruction Manual

Fig. 1–4

1 Tension spring	12 Length stop
2 Fingertip switch in feed handle	(only REMS Turbo K)
3 Connection strap	14 Cooling lubricant container
4 Safety cover	(only REMS Turbo K)
5 Housing	15 Stand
6 Visor	16 Chucking lever
7 Sawblade	18 Cooling lubricant pump
8 Clamping lever	(REMS Turbo K)
(only REMS Turbo K)	19 Hole for cooling lubricant hose
9 Scale (only REMS Turbo K)	20 Bolts for stand / cooling
10 Bearing block	lubricant container
(only REMS Turbo K)	21 REMS REG 10–54 E
11 Hexagonal bolt (only REMS Turbo K)	

## General Power Tool Safety Warnings

### WARNING

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

#### 1) Work area safety

- Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

#### 2) Electrical safety

- Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- If operating a power tool in a damp location is unavoidable or there is the likelihood of cutting into the cord, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

#### 3) Personal safety

- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
- Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- Dress properly. Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
- If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

#### 4) Power tool use and care

- Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- Store idle power tools out of the reach of children and do not allow persons

unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

- Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.
- Keep handles dry, clean and free from oil and grease. Slippery handles do not allow for safe handling and control of the tool in unexpected situations.

#### 5) Service

- Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

## Safety instructions for circular saw machines

### WARNING

- Do not overload the sawblade and saw. Do not use damaged sawblades. Do not apply excessive feed pressure.
- Attention! Cut parts become warm.
- Machine not suited for dust generating jobs.
- Wear ear protectors.
- Never operate the saw without its safety cover.
- Wear clothes when touching saw blades and rigid materials (saw blades must be carried in a box whenever practicable).
- Failures of the machine, including the protection devices or saw blade, must be reported to the responsible person for safety whenever discovered.
- The floor in the vicinity of the machine must be even, clean and free from loose particles, e.g. chips and cutting waste.
- Do not remove cutting waste or other material from the cutting area as long as the machine is running and the sawing aggregate still in motion.
- REMS cooling lubricants in spray cans (REMS Spezial, REMS Sanitol) are environment-friendly but contain combustible propellant (butane). Spray cans are pressurized-do not force open. Also, protect them from exposure to strong sunlight and heating above 50°C.
- Due to the degreasing effect of the cooling lubricants (thread-cutting oils), an intensive skin contact has to be avoided. An appropriate skin protector has to be applied.
- Due to hygienical reasons the trough has to be cleaned regularly from dirt and chips, at least, however, once a year.
- It is not required to check the cooling lubricant because, due to the consumption, new cooling lubricant is refilled from time to time.
- Do not allow undiluted cooling lubricant to get into drainage, water systems or the soil. Remaining cooling lubricants have to be delivered to specialized waste disposal companies. Disposal identity number for mineral-based cooling lubricants 54401, for synthetic 54109.
- If the extension cable needs to be replaced, this may only be done by qualified personnel to avoid safety risks.

### Explanation of symbols

-  Read the operating manual before starting
-  Power tool complies with protection class II
-  Environmentally friendly disposal
-  CE conformity mark

## 1. Technical data

### Use for the intended purpose

REMS Turbo K is intended for sawing steel, stainless steel, nonferrous metal, light metal, plastic etc. up to a strength of approx. 1,000 N/mm<sup>2</sup>.  
REMS Turbo Cu-INOX is intended for sawing stainless steel pipes, copper pipes and other materials as well as for removing burr from the outside and inside of the pipes with REMS REG 10–54 E.

### WARNING

All other uses are not for the intended purpose and are prohibited.

#### 1.1. Article numbers

REMS Turbo K with automatic cooling lubricant unit	849007
REMS Turbo Cu-INOX circular pipe saw for dry-sawing	849006
REMS universal circular metal saw blade HSS, 225×2×32, 120 teeth	849700
REMS circular metal saw blade HSS especially for stainless steel pipes, fine toothing, 225×2×32, 220 teeth	849703
REMS circular metal saw blade HSS-E (cobalt alloyed), especially for stainless steel pipes, fine toothing, 225×2×32, 220 teeth. Very long life.	849706
Ring spanner WAF 27/17	849112
Electronic speed controller (REMS Turbo K)	565061

Allen-key	074005
REMS Herkules stock support	120100
REMS REG 10–54 E	113835

### 1.2.1. Working range REMS Turbo K

Sawblade	225 × 2 × Ø 32 mm
Max. cutting depth	78 mm
Cross-sections:	pipe, section, solid
Materials:	steel, stainless steel, non-ferrous metal, light metal, plastic etc. up to a strength of approx. 1000 N/mm <sup>2</sup>

Right-angled cuts and bevel cuts up to 45°

90°	78	55	70×50	50×50	40	40	50×30
45°	60	55	60×40	50×50	40	40	50×30

### 1.2.2. Working range REMS Turbo Cu-INOX

Sawblade	225 × 2 × Ø 32 mm
Stainless steel pipes, copper pipes and other materials	Ø ≤ 76 mm

### 1.3.1. Speed/cutting rate REMS Turbo K

Sawblade speed, no-load	115 rpm
Sawblade speed, full-load	73 rpm
Cutting rate at full load	52 m/min

### 1.3.2. Speed/cutting rate REMS Turbo Cu-INOX

Sawblade speed, no-load	60 rpm
Sawblade speed, full-load	40 rpm
Cutting rate at full load	28 m/min

### 1.4.1. Electrical data REMS Turbo K

230 V 1~; 50–60 Hz; 1200 W; 5.7 A or  
110 V 1~; 50–60 Hz; 1200 W; 11.4 A;  
fuse (mains) 10 A (B), intermittent operation S3 20% 2/10 min, all-insulated,  
interference-suppressed.

### 1.4.2. Electrical data REMS Turbo Cu-INOX

230 V; 50–60 Hz; 500 W; 2.5 A or 110 V; 50–60 Hz; 500 W; 5.0 A;  
fuse (mains) 10 A (B), intermittent operation S3 20% 2/10 min, all-insulated,  
interference-suppressed.

### 1.5. Dimensions

L × W × H: 425 × 490 × 600 mm (16<sup>3</sup>/<sub>4</sub>" × 19<sup>1</sup>/<sub>2</sub>" × 23<sup>3</sup>/<sub>8</sub>" )

### 1.6. Weights

REMS Turbo K	22 kg (48 lbs)
REMS Turbo Cu-INOX	17 kg (37 lbs)

### 1.7. Noise data

Workstation-related emission data	90 dB (A)
Sound capacity level	105 dB (A)

### 1.8. Vibrations

Weighted effective value of acceleration	
REMS Turbo Cu-INOX	12.2 m/s <sup>2</sup>
REMS Turbo K	20.1 m/s <sup>2</sup>

The indicated weighted effective value of acceleration has been measured against standard test procedures and can be used by way of comparison with another device. The indicated weighted effective value of acceleration can also be used as a preliminary evaluation of the exposure.

#### ⚠ CAUTION

The indicated weighted effective value of acceleration can differ during operation from the indicated value, dependent on the manner in which the device is used. Dependent upon the actual conditions of use (periodic duty) it may be necessary to establish safety precautions for the protection of the operator.

## 2. Commissioning

#### ⚠ CAUTION

**Do not carry the machine by the motor handle, but with both hands on the stand.**

### 2.1. Electrical connection

#### ⚠ DANGER

**Note the mains voltage!** Before connecting the machine, check whether the voltage on the rating plate matches the mains voltage. If you work with cooling lubricant or in humid environment, the machine has to be run with a residual current – operated circuit – breaker (a.e.: earth leakage circuit breaker, FI-breaker 30 mA).

### 2.2.1. Setting up REMS Turbo K

Attachment to workbench by four M 10 bolts (length 20 mm plus worktop thickness) from underneath into the cooling lubricant container.

Fill the cooling lubricant container (14) with the supplied cooling lubricant REMS Spezial (2 liters). For drinking water pipes use REMS Sanitol.

To empty the coolant lubricant container detach the short hose section of the coolant lubricant pump from the gear unit housing, hold it in a container, and switch on the machine.

### 2.2.2. Setting up REMS Turbo Cu-INOX

Attachment to workbench by four M 10 bolts (length 65 mm plus worktop thickness) and nuts.

### 2.3. Mounting (changing) the sawblade

#### ⚠ WARNING

#### Pull out the mains plug!

While making a selection of a sawblade, please note that the space of the toothing shall be smaller than the wall thickness of the material to be cut. Otherwise the sawblade gets jammed and breaks.

Unhook the tension spring (1) using a screwdriver. Disconnect the connecting strap (3). Remove the four screws from the safety cover (4) using the supplied Allen key and take off the complete safety cover (4) to the front (do not dismantle it!). Undo the hex. nut for fastening the sawblade (right-hand thread) using the supplied ring spanner, size WAF 27. Remove the shim. Insert (change) the sawblade (7).

#### NOTICE

#### Only use genuine REMS universal circular sawblades!

The extra holes in the sawblades for the REMS Turbo are arranged offset, so that the sawblade can only be fitted with its teeth pointing in the sawing direction.

Fit the shim, tighten the hex. nut,

#### ⚠ WARNING

**on no account omit to fit the safety cover (risk of accidents).** Attach the tension spring (1) and the connecting strap(3).

## 3. Operation

#### ⚠ WARNING

#### Chuck material savely! Apply moderate feed pressure!

### 3.1. Operating sequence

Chuck the material such that the mark on the visor (6) is above the required parting point. Clamp the material with the chucking lever (16). Do not chuck excessively, particularly thin-walled pipes, to avoid oval deformation. Otherwise, during operation, tensions will break free which could lead to a breakage of the sawblade. Operate the fingertip switch in the feed handle (2) and saw through the material. If the material to be chucked is less than half the width of the vice, a stock of identical size must be placed in the empty side of the vice so that the vice holds the material parallel. If, e.g. due to a resharpened sawblade, the workpiece cannot be thoroughly cut, a support is to be put under the workpiece.

**REMS Turbo K:** For thin-walled pipes use clamp insert (Art.No. 849170)!

### 3.2. Material support

#### ⚠ WARNING

Long bar stock must be supported using the REMS Herkules (Art.No. 120100).

### 3.3. Cooling lubricant (REMS Turbo K)

If operation is with an automatic cooling lubricant unit, cooling and lubrication must be with REMS Spezial or REMS Sanitol (for drinking water pipes). These cooling lubricants ensure a tidy sawing cut, long life of the sawblades and a smooth sawing sequence.

### 3.4. Length stop (REMS Turbo K)

If several parts of identical length have to be sawn off, the length stop can be set to the required part length in the range from 5 to 300 mm. To do so, loosen the clamping bolt (11), position the length stop to the required part length, and retighten the clamping bolt.

### 3.5. Sawing bevels (REMS Turbo K)

Release the clamping lever (8) on the bearing block (10). Set the bevel angle using the scale (9). Tighten the clamping lever. The position of the clamping lever handle can be changed by lifting the handle vertically upwards and turning it.

### 3.6. Sawing of hard-to-machine materials (REMS Turbo K)

To saw stainless steel, use the electronic speed control (Art.No. 565051). Cool and lubricate with REMS Spezial or REMS Sanitol (for drinking water pipes).

According to the regulations of pipe manufacturers, stainless steel pipes of pressfitting-systems have to be dry-cut. For this, apply REMS Turbo Cu-INOX (Art.No. 849005) with REMS circular metal sawblade HSS, especially for stainless steel pipes.

### 3.7. Deburring

#### Outside/inside pipe deburring (only REMS Turbo Cu-INOX)

With the REMS REG 10–54 E pipes of Ø 10–54 mm, Ø 1/2 – 2 1/8" can be deburred on the inside and outside. There is a bit holder on the back of the cutting wheel shaft (Fig. 4).

## 4. Cooling lubricant

**REMS Spezial:** High alloy mineral oil-based cooling lubricant. For all materials: steels, stainless steels, nonferrous metals, plastics. Convenient to work with. Can be washed out with water, tested by experts.

#### NOTICE

Mineral oil-based cooling lubricants are not approved for drinking water pipes

in various countries, e.g. Germany, Austria and Switzerland – in this case use mineral oil-free REMS Sanitol!

**REMS Sanitol:** Mineral oil-free, synthetic cooling lubricant for drinking water pipes. Completely soluble in water. According to regulations. In Germany DVGW test no. DW-0201AS2032, Austria ÖVGW test no. W 1.303, Switzerland SVGW test no. 7808-649. Viscosity at  $-10^{\circ}\text{C}$ : 190 mPa s (cP). Pumpable up to  $-28^{\circ}\text{C}$ . Without added water. Easy to use. Dyed red for checking washout.

Both cooling lubricants are available both as sprays and in canisters and barrels.

**All cooling lubricants must only be used undiluted!**

## 5. Maintenance

### DANGER

**Pull out the mains plug before maintenance and repair work!** This work may only be performed by qualified personnel.

#### 5.1. Servicing

The REMS Turbo is maintenance-free. The gear unit runs in a permanent grease filling and therefore requires no lubrications.

#### 5.2. Inspection/maintenance

The motor of the REMS Turbo has carbon brushes. As these are subject to wear, they must be checked and if necessary replaced from time to time. To do so, undo the 4 bolts on the motor handle by approx. 3 mm, pull the motor handle to the rear and remove the two covers from the motor housing. See also 6. Action in the event of faults.

## 6. Action in the event of fault

**6.1. Fault:** Saw stops during sawing.

**Cause:**

- Feed pressure too high.
- Blunt sawblade.
- Inadequate lubrication (REMS Turbo K)
- Worn out or faulty carbon brushes.

**6.2. Fault:** Cut not at right-angles when sawing pipes and sections.

**Cause:**

- Bevel angle on bearing block (10) not set at  $0^{\circ}$  (REMS Turbo K).
- Blunt sawblade.
- Sawdust in vice or under bearing block (10) (REMS Turbo K).

**6.3. Fault:** Saw does not start.

**Cause:**

- Connecting line defective.
- Unit defective.

## 7. Disposal

REMS Turbo may not be thrown into the domestic waste at the end of use. The machine must be disposed of properly by law.

## 8. Manufacturer's Warranty

The warranty period shall be 12 months from delivery of the new product to the first user. The date of delivery shall be documented by the submission of the original purchase documents, which must include the date of purchase and the designation of the product. All functional defects occurring within the warranty period, which are clearly the consequence of defects in production or materials, will be remedied free of charge. The remedy of defects shall not extend or renew the warranty period for the product. Damage attributable to natural wear and tear, incorrect treatment or misuse, failure to observe the operational instructions, unsuitable operating materials, excessive demand, use for unauthorized purposes, interventions by the customer or a third party or other reasons, for which REMS is not responsible, shall be excluded from the warranty. Services under the warranty may only be provided by customer service stations authorized for this purpose by REMS. Complaints will only be accepted if the product is returned to a customer service station authorized by REMS without prior interference in an unassembled condition. Replaced products and parts shall become the property of REMS.

The user shall be responsible for the cost of shipping and returning the product.

The legal rights of the user, in particular the right to make claims against the seller under the warranty terms, shall not be affected. This manufacturer's warranty only applies for new products which are purchased in the European Union, in Norway or in Switzerland.

This warranty is subject to German law with the exclusion of the United Nations Convention on Contracts for the International Sales of Goods (CISG).