REMS Unimat 75 & 77

INSTRUCTION MANUAL


REMS UNIMAT 77 - Pipe threads up to 4”. Tangential-chaser-threading-system. Fast working, short resetting time. For single and series production.
REMS Unimat

Deutsch: Feineinstellungstablette
Englisch: Fine adjustment table
Español: Tabla de ajustes de precisión
Italiano: Tabella per la regolazione di precisione
Niederländisch: Fijninstellingstabel
Svenska: Fininställningstabell
Slovenský: Tabuľka pre presné nastavenie
Немецка: Feineinstellungstablette
Русский: Таблица прецизионной настройки
General Power Tool Safety Warnings

**A 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
   a) **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
   b) **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.
   c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) Electrical safety
   a) **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.
   b) **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.
   c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
   d) **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.
   e) **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.
   f) **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
   a) **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.
   b) **Use personal protective equipment.** Always wear eye protection. Protective equipment such as dust mask, non-slip safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
   c) **Prevent unintentional starting.** Ensure the switch is in the off-position before selecting the power tool. Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
   d) **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.
   e) **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
   f) **Dress properly.** Do not wear loose clothing or jewellery. Keep your hair, head, hands and clothing away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
   g) **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 hazards.

4) Power tool use and care
   a) **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.
   b) **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.
   c) **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.
   d) **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.
   e) **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.
   f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
   g) **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.
   h) **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
   a) **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.

Threading Machine Safety Warnings

**Work area safety**

- **Keep floor dry and free of slippery materials such as oil.** Slippery floors invite accidents.
- **Restrict access or barricade the area when work piece extends beyond machine to provide a minimum of one metre clearance from the work piece.** Restricting access or barricading the work area around the work piece will reduce the risk of entanglement.

**Electrical safety**

- **Keep all electric connections dry and off the ground.** Do not touch plugs or tool with wet hands. These precautions will reduce the risk of electrical shock.

**Personal safety**

- **Do not wear gloves or loose clothing when operating machine.** Keep sleeves and jackets buttoned. Do not reach across the machine or pipe. Clothing can be caught by the pipe or machine resulting in entanglement.

**Machine safety**

- **Follow instructions on proper use of this machine.** Do not use for other purposes such as drilling holes or turning winches. Other uses or modifying this machine for other applications may increase the risk of serious injury.
- **Secure machine to bench or stand.** Support long heavy pipe with pipe supports. This practice will reduce the chance of entanglement in rotating parts.
- **Keep hands away from rotating pipe and fittings.** Stop the machine before wiping pipe threads or screwing on fittings. Allow the machine to come to a complete stop before touching the pipe. This practice will reduce the chance of entanglement in rotating parts.
- **Do not use this machine to install or remove fittings, it is not the intended use of the machine.** This practice could lead to trapping, entanglement and loss of control.
- **Keep covers in place.** Do not operate the machine with covers removed. Exposing moving parts increases the probability of entanglement.

**Special Safety Warnings**

**WARNING**

- **Never operate the machine without protective covers.**
- **Never reach into the die head.**
- **Never watch the thread cutting process through the opening in the end of the protective cover.** Chips can be flung out there. Only look through the safety window in the protective cover.
- **Only fix short lengths of pipe with REMS Nippelspanner or REMS Nippelfix.**
- **Concentrated thread cutting materials may not be allowed to get into the drain system, water or ground.**
- **Thread cutting materials REMS Spezial and REMS Sanitol.**

First aid measures:

- **General notes:** Consult a doctor if symptoms occur or if in doubt. In case the victim loses consciousness, do not administer anything via the mouth, place in the stable side position and call a doctor. Take off soiled clothing immediately and dispose of safely.
After inhalation: Get the victim into the fresh air. Place the victim in stable side position and keep warm.

After skin contact: In case of contact with the skin, wash off immediately with large amounts of water and soap.

After eye contact: If the product gets into the eyes, rinse for at least 5 minutes with large amounts of water with open eyelids. Then consult an eye specialist.

After ingestion: REMS Spezial
In case of swallowing, rinse out mouth with water (only if the victim is conscious). Consult a doctor immediately. Keep the victim calm. Do not force vomiting.

After ingestion: REMS Sanitol
Rinse out mouth immediately and drink lots of water. Consult a doctor immediately. Keep the victim calm. Do not force vomiting.

For further information, see www.rems.de → Downloads → Safety data sheets.

Explanation of symbols
Read the operating instructions before use
The machine complies with protection class I
Environmentally friendly disposal
CE conformity mark

1. Technical data
Use for the intended purpose
Use REMS Unimat 75 for cutting bolt and pipe threads as well as chamfering and peeling.
Use REMS Unimat 77 for cutting pipe threads.

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

1.1. Article numbers
Die sets (chase dies and holders) see REMS Catalogue

Universal automatic die head Unimat 75
751000

Universal automatic die head Unimat 77
771000

Closing lever R for tapered right hand pipe thread
751040

Closing lever R-L for tapered left hand pipe thread
751050

Closing lever G for parallel right hand pipe thread
751060

Closing lever G-L for parallel left hand pipe thread
751070

Closing lever M for all right hand bolt threads
751080

Closing lever M-L for all left hand bolt threads
751090

Chamfering/peeling head 7 - 62
751100

Chamfering/peeling chasers 7 - 62 mm, with holder
751096

Chamfering/peeling chasers 7 - 62 mm
751097

1 set of clamping jaws for ¼ – ⅜ (Unimat 77)
773060

Special clamping jaws for Ø 6 – 42 mm
753240

Key
383015

REMS Herkules
120100

REMS Nippelfix ⅛
110000

REMS Nippelfix ¼
111000

REMS Nippelfix ⅜
111200

REMS Nippelfix ⅜
111300

REMS Nippelfix ⅜
111400

REMS Nippelfix ⅜
111500

REMS Nippelfix ¾
111700

REMS Nippelfix ⅜
111800

REMS Nippelfix 4
119000

MINERAL OIL-BASED THREAD CUTTING MATERIALS:
- REMS Spezial, 5 l canister
- REMS Spezial, 5 l canister
- REMS Special, 50 l barrel

SYNTHETIC THREAD CUTTING MATERIALS, MINERAL OIL-FREE:
- REMS Sanitol, 5 l canister
- REMS Sanitol, 5 l canister
- REMS Sanitol, 50 l barrel

1.2. Working range

**Unimat 75**

- Thread diameter:
  - ⅛ - ⅜, 16 – 63 mm
  - ⅜ – ⅝, 6 – 72 mm, ⅛ – ⅜

- Pipe threads, tapered
  - R (DIN 2999, BSPT) NPT
  - R, NPT

- Pipe threads, parallel
  - G (DIN 259, BSPP), NPSM, G, NPSM

- Steel conduit thread
  - Pg (DIN 40430), M × 1.5 (IEC)

- Bolt thread
  - M, BSW, UNC

- Thread length
  - 200 mm
  - 120 mm
  - Up to 30 mm dia. unlimited

**Unimat 77**

- Thread diameter:
  - ⅛ – 2¾”, 16 – 63 mm
  - ¼ – ⅜

- Pipes
  - ⅛ – 2¾”, 16 – 63 mm
  - ¼ – ½

- Bolts
  - 6 – 72 mm, ⅛ – ⅜

- Thread types
  - Pipe thread, tapered
  - R (DIN 2999, BSPT) NPT
  - R, NPT

- Pipe thread, parallel
  - G (DIN 259, BSPP), NPSM, G, NPSM

- Steel conduit thread
  - Pg (DIN 40430), M × 1.5 (IEC)

- Bolt thread
  - M, BSW, UNC

- Thread length
  - 200 mm
  - 120 mm
  - Up to 30 mm dia. unlimited

1.3. Speeds of working spindle

**REMS Unimat 75**, pole-reversing
70/35 rpm

**REMS Unimat 77**, pole-reversing and gear unit
50/25/16/8 rpm

1.4. Electrical data

- 400 V 3~; 50 Hz; 1.8/1.5 kW (pole-reversing) or 230 V 3~; 50 Hz; 1.8/1.5 kW (pole-reversing) or see rating plate

1.5. Compressed air (for pneumatic vice only)

- Working pressure 6 bar
- With weak stock (e.g. plastic or thin-walled pipes), the pressure must be reduced at the maintenance unit.

1.6. Dimensions L × W × H

- REMS Unimat 75 1200 × 620 × 1210 mm
- REMS Unimat 77 1260 × 620 × 1210 mm

1.7. Weights

- REMS Unimat 75 227 kg (500 lbs)
- REMS Unimat 77 255 kg (560 lbs)

1.8. Noise data

- Workstation-related emission data REMS Unimat 75 83 dB (A)
- REMS Unimat 77 81 dB (A)

2. Commissioning

2.1. Transport and Installation

REMS Unimat is delivered in a wooden crate. A forklift truck is required for transport and installation (Fig. 1).

A WARNING Only transport the machine when the gear/motor unit has been fixed on the machine. The machine can otherwise tip over on the motor side. Make sure that the machine is tied securely to the lifting mast of the forklift truck during transport.

The machine must be installed so that long bars can also be clamped. There must be enough room for the emerging workpiece on the motor side according to the maximum thread length (hollow shaft up to Ø 30 mm) (only applies for REMS Unimat 75). The machine can be bolted to the floor.

2.2. Electrical Connections

A WARNING Mains voltage present! Before connecting the machine, check whether the voltage given on the rating plate corresponds to the mains voltage.

The machine can be connected to mains with or without a neutral conductor (N). The control voltage is generated by a built-in transformer in the terminal box. Open the and close the terminal box (43) (Fig. 5) with the key. If the machine is connected directly to mains (without a plug device), a main switch must be installed. However, a protective earth conductor (PE) must be available in any case.

The machine complies with protection class I.

A WARNING When connecting the machine and before installing the die head (Fig. 2) on the hollow spindle (41) (Fig. 11), check the direction of rotation. The changeover switch (5) (Fig. 3) must be in position "2" for right hand threads for this. The direction of rotation must correspond to the direction arrow (42) (Fig. 11) on the hollow spindle (41) (Fig. 11). The direction of rotation must be changed by changing the phase (reversal of the electric conductors) by an electrician if necessary.

A coil thermostat switches off the electric motor if the machine is overloaded. The machine can be restarted after a few minutes whereby a lower speed must be selected.

2.3. Thread cutting materials

Only use REMS thread cutting materials. They ensure perfect cutting results, long life of the chase dies and considerably relieve stress on the machine.

REMS Spezial Mineral oil-based thread cutting material is high alloyed and can be used for all types of pipe and bolt threads. It can be washed out with water (tested and certified by an expert) and is therefore suitable for drinking water pipes. By careful flushing of the system after installation, the drinking water will not be impaired by smell or taste.

REMS Sanitol Mineral oil-free thread cutting material, synthetic, completely soluble in water, has the lubricating property of mineral oil and can be used for all pipe and bolt threads. It must be used for drinking water pipes in Germany, Austria and Switzerland and complies with regulations (DVGW Test No. DW-021AS2032; OVGW Test No. 1.303; SVGW Test No. 7808-649).

NOTICE All thread cutting materials may only be used in undiluted form! Do not use an emulsion!

Fill 80 litres of thread cutting material into the tank.
2.4. Material support

NOTICE

Longer pipes and bars must be supported by the height-adjustable REMS-Herkules (Art. No. 120100). This has steel balls for easy movement of the pipes and bars in all directions without the material support tipping over. Two REMS-Herkules are an advantage for frequent processing of long pipes or bars.

3. Setting the thread type and size

3.1. Mounting / changing the die head

To avoid having to change the die set (chase dies and holder) in the die head, interchangeable die heads with mounted die sets and closing levers are recommended. Here, the complete die head is changed instead of the die set in the die head so that the tooling time can be reduced considerably. The tube for the thread cutting material must be turned to the side (28) (Fig. 4) before applying the die head. To do this, loosen the fillister head screw (30) (Fig. 11) and turn the tube. When mounting the die head, make sure that the contact surfaces of the die head and the contact surface for holding the die head on the hollow spindle (41) are cleaned carefully. To apply the die head to the contact surface of the hollow spindle, it is an advantage of the driver holder (41) (Fig. 11) is positioned on the hollow spindle to face upwards. The driver (29) (Fig. 11) of the closing lever (1) (Fig. 11) which protrudes over the rear of the die head must be inserted into the mating piece in the hollow spindle in a certain position when mounting the die head. Make sure that the closing pin (39) (Fig. 11) which closes the die head when moving back is at the same height as the mark (40) (Fig. 11). The handle of the closing lever (1) (Fig. 11) must stand radially when applying the die head and must be turned to the left or right if necessary until the driver engages the closing lever. Tighten the 3 screws (6) (Fig. 6) of the die head with the pin wrench (7) (Fig. 5). Position the tube for the thread cutting material (28) (Fig. 4) so that the chase dies are cooled/lubricated during the thread cutting process.

Before removing the die head from the machine, the closing pin (39) (Fig. 11) should be at the same height as the mark (40) (Fig. 11). Remove the 3 screws (6) (Fig. 6) of the die head with the pin wrench (7) (Fig. 5) and remove the die head from the contact surface to the front.

3.2. Mounting (changing) the closing lever

The following closing levers, with the appropriate different designations, are required depending on the type of thread:

R for right hand tapped pipe thread (ISO R 7, DIN 2999, BSPT, NPT)

R-L for left hand tapped pipe thread (ISO R 7, DIN 2999, BSPT, NPT)

G for right hand parallel pipe thread (ISO 228, DIN 259, BSPP, NPSM, Pg, Fg, BSCE, M x 1.5 (IEC))

G-L for left hand parallel pipe thread (ISO 228, DIN 259, BSPP, NPSM)

M for right hand metric bolt thread (ISO 261, DIN 13, UN-thread (UNC, UNF), BS-thread (BSW, BSF))

M-L for left hand metric bolt thread (ISO 261, DIN 13, UN-thread (UNC, UNF), BS-thread (BSW, BSF))

The respective closing lever can only be changed in a certain position.

Mounting/changing the closing lever with die head mounted on the machine:

Before changing the closing lever, it must be turned so that the closing pin (39) (Fig. 11) is at the same height as the mark (40) (Fig. 11). Now unscrew the fillister head screws (8) (Fig. 2), remove the cover (4) (Fig. 2) and unscrew the locking screw (36) (Fig. 11) with a screwdriver. Mount/change the closing lever.

Mounting/changing the closing lever with die head removed from the machine:

Unscrew the fillister head screws (8) (Fig. 2), remove the cover (4) (Fig. 2) and unscrew the locking screw (36) (Fig. 11) with a screwdriver. If the die head with the closing lever at the top is seen as a clock, the closing lever can be changed at approx. 7 o'clock for a parallel right hand thread and at approx. 9 o'clock for a tapered right hand thread (approx. 9 o'clock for parallel left hand thread and approx. 3 o'clock for tapered left hand thread).

CLOSING LEVER FOR LEFT HAND THREAD:

For right hand threads (as-delivered state) the stop screw (3) is mounted to the left of the closing lever (1) when looking onto the die head from above (Fig. 2). For left hand threads the cover (4) (Fig. 2) must be turned over and the stop screw (3) (Fig. 2) moved, i.e. the stop screw (3) must be mounted on the right of the closing lever (1).

NOTICE

An incorrectly mounted stop screw (3) (Fig. 2) will be sheared off when it hits the trigger cam! The die head must be in the end position to check the direction of rotation. To do this, turn the start cutting lever (17) (Fig. 4) clockwise to the stop. Note position of the changeover switch (5): position 2 = right hand thread, position 1 = left hand thread. The machine will be damaged if the wrong closing lever is used or the stop screw is mounted incorrectly!

3.3. Mounting (changing) the die set

It is an advantage to remove the die head from the machine and place it on a bench to change the die set (chase dies and holder) as described in 3.1. Then remove the two cover screws (8) (Fig. 2) with the pin wrench (7) (Fig. 5), remove the cover (4) (Fig. 2), open the holder with closing lever and lever out the holder no. 3 with a screwdriver as shown in Fig. 6. Remove the other holders.

Clean the holder, cover and square bar of the die head thoroughly.

Insert the new die set. Insert holder no. 1 in position 1, holder no. 2 in position 2, holder no. 4 in position 4 and holder no. 3 in position 3 of the die head. The last holder must fit exactly and exactly without using tools, e.g. a hammer. If there is too much play, e.g. due to a worn holder, increase the thread tolerances. If there is no play, i.e. the holders jam, the closing lever can no longer open and close the die head.

NOTICE

This leads to breaking of the closing lever.

Fit the cover (4) (Fig. 2), tighten the screws and check the smooth action of the closing lever. This must move backwards and forwards to both end positions by hand (open and close the die set). If not, the dies set must be removed again and the square bar, holder and cover reclamed. Improper handling can also damage the edges of the holders. This damage must be repaired properly with a fine file or stone. If the die set is changed in the machine, the die head is aligned with the closing lever at the top to remove the holders from the die head so that no chips can fall into the gap between the adjustment spindle. Only remove the holders in the order 1, 2, 4, 3.

Set the closing lever to the down position before inserting the new die set. First insert holder no. 1 then the other holders in the order 2, 4, 3.

4. Operation

4.1. Right hand thread – left hand thread

NOTICE

Make sure that the right closing lever has been inserted and the stop screw mounted correctly for the selected die set (see 3.2.) and that the direction of rotation of the die head is set correctly at the changeover switch (5) (see 2.2.).

4.2. Setting the thread size

Make absolutely sure that the closing lever (1) (Fig. 2) is touching the stop screw (3) (Fig. 2) during the setting process, i.e. the die head is closed. The desired thread size is set with the square wrench (9) (Fig. 5) at the setting spindle (10) (Fig. 2). The rough setting is made by adjusting the setting spindle until the appropriate mark on holder no. 1 in the oval window (11) (Fig. 2) is in line with the mark in the die head (38) (Fig. 2). The fine setting is made using the fine setting table enclosed with every die set (Fig. 14) the number of which must match the number of the corresponding die head. A setting number (45) (Fig. 14) of the adjusting spindle is noted in the fine setting table for every thread size (44) (Fig. 14). This setting number must be brought into line with the mark on the die head above the adjusting spindle (12) (Fig. 2). Always approach the setting number by turning to the right. If the setting number is “8”, for example, the adjusting spindle must be set to “0” or “7” and then moved to the “8”. The mark on the opposite side (13) (Fig. 2) applies for left hand threads. Approach this setting number by turning to the left. If die sets were delivered without a fine setting table, the setting number must be defined by the user himself with a calliper gauge, a thread gauge mug or a sample thread. In any case the achieved thread size must be remeasured after every setting.

4.3. Setting the length stop

The desired thread length is set at the length stop (14) (Fig. 4). To do this, release the clamping lever (15) and set the length according to the scale (16) (Fig. 4). Move the gear unit with the start cutting lever (17) to the left if necessary. On a tapered pipe thread the standard thread length is achieved automatically when the length stop is set to the desired thread size according to the scale (16). The zero mark on the length stop must be set to the respective thread size for this.

Long thread see 4.6.

4.4. Selecting the speed

REMS Umitat 77 has 2 speeds. For smaller thread diameters (up to approx. 45 mm) the speed 70 rpm is selected by pressing button II (18) (Fig. 4). For larger thread diameters (from approx. 45 mm) the speed 35 rpm is selected by pressing button I (19). Harder material or very coarse threads may require earlier switchover to the speed 35 rpm (button I (19)). REMS Umitat 77 has 4 speeds. In addition to the electric speed selection by buttons I (19) and II (18) 2 other speeds are set by pushing or pulling the gear shift lever (20):

8 rpm: gear shift lever pushed
+ button I difficult to cut materials 3 to 4
16 rpm: gear shift lever pushed
+ button II normally cuttable materials 3 to 4 difficult to cut materials 1½ – 2½
25 rpm: gear shift lever pulled
+ button I normally cuttable materials 1½ – 2½ difficult to cut materials up to 1
50 rpm: gear shift lever pulled
+ button II normally cuttable materials up to 1

4.5. Clamping the material

Close the holders with the closing lever (1) (Fig. 2), move the die head to the right end position by turning the start cutting lever (17) (Fig. 4), set the thread length (see 4.2. and 4.3.).

Mechanical vice:

Insert the material carefully until it is touching the chase dies. The material is clamped self-centring with the clamping lever (23) (Fig. 4).
**5. Maintenance / inspection / service**

Pull out the mains plug before performing maintenance, inspection and setting work!

**5.1. Maintenance**

REMS Unimat 75 and 7 are maintenance-free in normal operation. The gears run dry by means of a life-long oil column and need no oil filling.

If the closing lever is difficult to move by hand, the complete die head must be cleaned thoroughly. To do this, it is best to remove the die head from the machine (see 3.1). Dissemble the cover, closing lever and die set and unscrew the label plate (24) from the die head. Now dirt and chips can be blown through from above, preferably with compressed air. The adjusting spindle (10) may now be removed or adjusted. Clean the cover, tee in the die head and die set with a clean, lint-free cloth. Remove stuck residue of thread cutting material and dust with petroleum or benzene. Reinstall the closing lever, plate, die set and cover, tighten the fillister head screw (8) (Fig. 4) and check the smooth action of the closing lever. Remove the die head again if necessary and check the cover, square bar in the die head and die set for burr or other damage and remove this properly with a fine file or olive stone.

In case of heavy stress, e.g. series production, the oil level in the gear must be checked on the REMS Unimat 75. To do this, remove the screw cap with oil dipstick (34) (Fig. 11), wipe off the dipstick, screw back in completely, remove again and check the oil level on the dipstick. The oil level must be between the two marks at the end of the dipstick. Refill gear oil (Art. No. 091040 R1.0) if necessary.

The tank for the thread cutting material in the machine stand must be cleaned at certain intervals. To do this, remove, empty and clean the chip collector (37) (Fig. 4). Drain the thread cutting material at the drain nozzle (35) (Fig. 1) and filter or dispose of properly. Clean the tank for the thread cutting material thoroughly with cloth through the opening for the chip collector. Preferably fill with new REMS thread cutting material.

**5.2. Sharpening the chase dies**

The value \( \gamma = 20^\circ \) has proven most effective as a cutting angle (Fig. 7) for general applications. A notch which corresponds to the value \( \gamma = 20^\circ \) has been cut in the enclosed setting gauge (Fig. 8). It may be advisable to increase the cutting angle for harder materials. On the other hand, it may be necessary to reduce the value of \( \gamma \) especially when the chase dies stick, e.g. with thin-walled pipes, nonferrous metals and plastics. The following values generally apply from experience:

- **Medium strength steels (300...400 N/mm²), high grade steel**
  \( \gamma = 20^\circ \)

- **High strength steels**
  \( \gamma = 20...25^\circ \)

- **Nonferrous metals**
  \( \gamma = 10...20^\circ \)

- **Plastics, e.g. PVC hard (special chase dies)**

For thread diameters > 33 mm an angle of 45° must be made at the end of the face on the chase dies (Fig. 7). This must be big enough so that the chase dies do not protrude over the gliding surface (26) (Fig. 10).

The chase dies are angled in the holder according to the thread pitch. According to this angle, the angle of the thread (Fig. 9) must be applied to the chase dies so that the teeth tips of the chase dies are on a level parallel with the base surface of the holder after installation in the holder. A tolerance of 0.05 mm must be kept here. A change in the angle is also possible to be observed when installing replaceable chase dies because different chase dies can be installed in several holders to produce fine threads.

Guide teeth must be ground onto certain chase dies to improve the pitch tolerance for longer threads. These must be reground when regirling the chase dies.

**5.3. Setting the chase dies in the holder**

Make sure that the number of the chase dies matches the numbering of the holders and that the mounting chamfering plates including the screw does not protrude over the holder surfaces. Overhangs must be removed if necessary (e.g. grinding off). Chase dies delivered already in holders are ground to size at the factory and should fit without modification, clean the die head if necessary.

To set the chase dies and the chamfering/peeling dies in the holder to dimension 55.4 mm in REMS Unimat 75 (Fig. 10) or 95.4 mm in REMS Unimat 77, the end of the chamfering plate (25) is screwed tight. The specified dimension must now be set with a dial gauge or the setting gauge provided (Fig. 8) between the bottom edge of the holder and the first tooth after the cutting start (Fig. 10).

To do this, the chase die is pressed forward with the adjusting screw on the bottom of the holder. The adjusting screw must be under pressure to the chase die. For REMS Unimat 75 the dimension 55.4 mm (Fig. 10) must be kept with a tolerance of \( \pm 0.05 \) mm. For smaller threads (Ø 6 ... 12 mm) it can be set preferably to 54.3 mm. However, it is important that the tolerance of \( \pm 0.05 \) mm is kept within the 4 chase dies of a die set. For REMS Unimat 77 the value 95.4 mm \( \pm 0.05 \) mm must be kept accordingly.

**5.4. Service**

Pull out the mains plug before carrying out maintenance or repair work!

This work may only be performed by qualified personnel. If the plug or power cable needs to be replaced, this must be done by REMS or an authorised REMS customer service workshop to avoid a safety risk.
6. Behaviour in case of faults

6.1. Trouble: Thread is not cut cleanly, thread tips are torn off.

Cause:
- Blunt chase dies.
- Poor thread cutting material.
- Wrong setting of the chase dies in the holder.
- Wrong speed.
- Difficult to cut material.
- Wrong choice of material of the chase dies.

6.2. Trouble: Thread is cut badly, "inaccurate fine thread".

Cause:
- Holders inserted in the die head incorrectly. Observe the order!
- Chase dies mounted incorrectly in the holder. Observe the order!
- Chase dies in the wrong holder type (angle of inclination).

6.3. Trouble: Thread not cut centrically on the workpiece.

Cause:
- Vice centring changed Contact an authorised REMS customer service workshop.
- Vice set incorrectly (see 4.5.).
- Dies soiled or worn.

6.4. Trouble: Die head does not open wide enough.

Cause:
- Wrong closing lever mounted.
- Closing lever worn.
- Trigger cam worn.

6.5. Trouble: Die head does not close.

Cause:
- Soiling.
- Improper insertion of the die set (see 3.3.).
- Improper mounting of the chase dies in the holder (see 5.4.).
- Closing pin (39) (Fig. 11) worn or broken.

7. Disposal

REMS Unimat 75 and REMS Unimat 77 may not be thrown in the domestic waste when no longer used. They 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).