



REHAU®

Unlimited Polymer Solutions



RAUTOOL A2

OPERATING INSTRUCTIONS 856692 EN

RAUTOOL A2

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RAUTOOL A2

SAFETY WARNINGS

The tool is intended to be used with original REHAU supplementary sets for machining all REHAU compression sleeve systems in the size range (12) of 16 – 40 mm.



Read all safety warnings and assembly instructions before using the tool.



Follow these operating instructions and always keep the safety warnings with the tool. In addition to the operating instructions, always observe generally applicable statutory and other binding regulations relating to the prevention of and protection against accidents.

General safety warnings:

1. Keep your workplace tidy and free of obstructions. Make sure there is always sufficient light.
2. Keep children, pets and unauthorised persons away from the place at which you are working.
3. Wear suitable working clothing. Do not wear loosely fitting clothes or jewellery. They may get caught in moving parts. Wear a hairnet if you have long hair. Use goggles.
4. Do not touch moving parts (risk of trapping fingers).
5. Be alert. Only use the tool if you have received instructions in using it.
6. Keep your tools in a safe place. When not in use, tools should be kept in dry, closed rooms out of the reach of children.
7. The tool is suitable for creating REHAU compression sleeve joints only. Do not use the tool for other purposes.
8. Only operate the tool with original REHAU parts and accessories.
9. Maintenance and repair work should be done only in a REHAU-authorized service center. We will not be responsible for any work performed by an unauthorized person. The addresses of authorized service centers can be found in the attachment or they can be obtained from your REHAU sales office.

Tool-specific safety warnings:

1. Keep the tool, the batteries and the charger away from moisture, extreme heat, oil and solvents. The charger is only intended for use in dry, indoor rooms. It must not be used outdoors.

2. Do not operate the tool in the vicinity of flammable liquids or explosive gases.
3. Before use, examine the tool and accessories for damage or defects for example cracks in the cable insulation, oil leaks from the tool, bent compression cylinder, damage or visible wear of the jaw sets etc.. Check whether the moving parts are in proper working order, that they are not jammed and that parts are not damaged. All parts must be correctly assembled and satisfy all of the conditions to ensure proper tool operation.
4. Never work with a damaged tool or accessory. Immediately send the damaged tool to the nearest service center.
5. The battery may only be charged using the charger supplied. The use of other types of battery or charger may create an explosion hazard.
6. At every tool alteration (replacement of jaw sets) remove the battery from the tool to prevent unintended actuation.
7. Make sure that the rechargeable battery contacts cannot be shorted by metal objects, such as screws, instruments, nails etc.. A short circuit between the battery contacts can cause burns or fire.
8. For charging use only one-phase alternating current at the voltage indicated on the power rating label.
9. Do not insert foreign objects into the ventilation grills on the charger.
10. To prevent the motor from overheating, do not operate at maximum pressure for any prolonged period.
The tool is not suited for long-term use. After about 50 consecutive compressions, it should be made to rest for at least 15 min. to allow it to cool.
11. Do not burn the tool or rechargeable batteries. Rechargeable batteries may explode and flare up.
12. As a result of improper use, liquid can leak from the battery. Avoid contact with this liquid. In the event of inadvertent contact, rinse it off with water. Should the liquid enter the eyes, obtain medical assistance as well.



REHAU will not accept any liability for damage or injury attributable to unsafe product use, poor maintenance or improper product or system usage.

For planning and assembly kindly use our current Technical Information brochure. You can obtain the up-to-date brochure from your wholesale dealer, your REHAU sales office or by downloading from www.rehau.com.

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ITEMS SUPPLIED

RAUTOOL A2, Art. No.: 248381

- A2 basic tool
- 2 pins
- A2 charger
- 2 A2 batteries
- Pipe cutter 40 stabil
- R0 expander
- Tube of lubricant
- Cleaning brush
- A2 transport case
- Operating instructions



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REPLACEMENT PARTS/ACCESSORIES

Supplementary set 16-32 manual expansion, blue

Art. No.: 137283

- expander head 16 x 2.2 RO
- expander head 20 x 2.8 RO
- expander head 25 x 3.5 RO
- expander head 32 x 4.4 RO
- set of hydraulic clamping jaws
16 x 2.2 / 20 x 2.8



Supplementary set 16-32 stabil manual expansion, green

Art. No.: 247524

- expander head
16.2 x 2.6 RO stabil
- expander head
20 x 2.9 RO stabil
- expander head
25 x 3.7 RO stabil
- expander head
32 x 4.7 RO stabil
- pipe cutter
RAUTITAN stabil 16/20



Supplementary set 17-32 manual expansion, red

Art. No.: 268630

- expander head 17 x 2.0 RO
- expander head 20 x 2.0 RO
- expander head 25 x 2.3 RO
- expander head 32 x 2.9 RO
- set of hydraulic clamping jaws
17 x 2.0 / 20 x 2.0



Supplementary set 16-32 hydraulic expansion, blue

Art. No.: 248421

- expander set 16 x 2.2 /
20 x 2.8
- expander bit 25 x 3.5
- expander bit 32 x 4.4
- set of hydraulic clamping jaws
16 x 2.2 / 20 x 2.8



Supplementary set 40 hydraulic expansion, blue

Art. No.: 138223

- expander bit 40 x 5.5
- set of clamping jaws 40



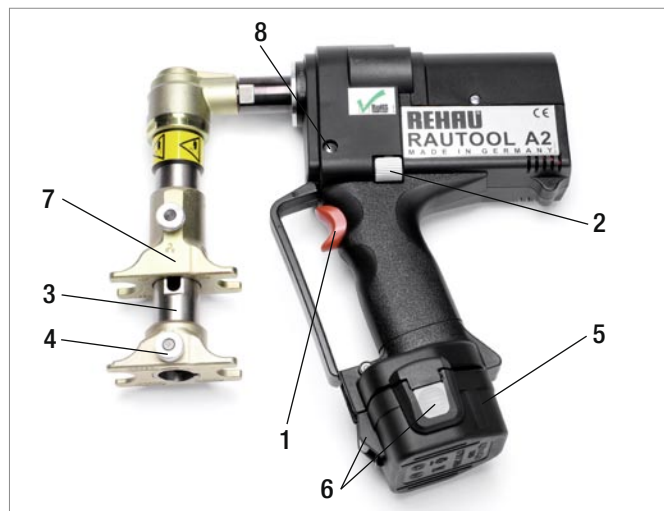
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TECHNICAL DATA

Max. working pressure:	450 bars
Max. shear force:	18 kN (linear)
Mains voltage	
battery charger:	230 V/50Hz or 110V (extra)
Battery voltage:	12 V
Battery capacity:	3.0 Ah
Battery technology:	NiMH
Battery charge time:	approx. 60 min
Hydraulic oil:	AVIA HVI 15 / Shell Tellus T15
Ambient temperature:	- 10 °C to + 40 °C
Noise level:	75 dB (A) at 1m distance
Vibrations:	< 2.5 m/s ² (weighted effective value of the acceleration)
Weight:	approx. 4.1 kg (basic tool with battery)

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EQUIPMENT DESCRIPTION AND OPERATING PRINCIPLE



Pos. No.	Tool elements	Function
1	Operating switch	Actuating the compression process
2	Reset knob	Slider for opening the release valve, to return the tool to its starting position
3	Compression cylinder	Working unit for accepting the jaw sets (rotatable 360 °)
4	Pins	Devices for fastening the jaw sets to the compression cylinder
5	Battery	Rechargeable NiMH battery
6	Battery release	Release knobs and retaining clip for the battery
7	Jaw set	Rotatable double jaw set for two sizes
8	LED	Information about the battery charge level and about tool maintenance

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TOOL PREPARATION

Charging the battery



Caution! Risk of injury.

Improper tool handling can cause harm to people and/or the tool.

- To charge the battery, use only single-phase alternating current of the voltage stated on the power rating label.
- Charge the battery only by using the charger provided. The use of a different battery or different charger may cause an explosion.
- Never operate the charger in an environment presenting the risk of fire or explosion.
- Do not expose the charger to rain or snow.
- After charging or before any cleaning, disconnect the charger from the power source.
- Make sure that the battery contacts cannot be shorted by metallic objects such as screws, cutlery, nails etc. (for example, by carrying them in the pockets of your pants or the like).

To charge the battery, connect the charger to the electric power mains and push the battery securely into the charger. The charging lasts about 40 minutes. The battery charge level is indicated by the right-hand LED (multicolored) on the charger.



Description of the LED display on the charger

	LED flashes green	Charger is ready for use.
	LED displays a steady red	Charging process begins
	LED displays a steady green	Battery is full. Charger automatically switches to trickle charge. The battery can stay in the charger for an indefinite length of time without sustaining damage.
	LED flashes red	Battery is either too hot or cold. Remove the battery from the charger.
	LED alternates red and green flashes	A malfunction exists. The battery cannot be charged. The contacts of the charger or of the battery may be dirty or the battery is worn out or damaged.

Charge the battery only at a room temperature of 10 °C to 40 °C. If you want to charge a hot or too cold battery, the red LED may flash. In this case remove the battery from the charger and wait until the battery has reached room temperature. Charging will begin after the

battery has warmed up or cooled. Initial failure to reach the rated capacity does not necessarily indicate a defect. Full capacity can again be reached by applying 3 charge/discharge cycles.

Description of the LED display on the tool

The light-emitting diode together with the electronic control system serves to provide information about the battery charge levels and about the tool.



- | | | |
|---------|--------------------------------------|--|
| — — | Self-test! | When the battery is inserted, the light-emitting diode flashes a few times. This indicates that the electronic control is performing its self-test satisfactorily.
Attention! Wait about 30 seconds after removing the discharged battery and inserting the charged battery, that the self-test can be started. |
| — | Battery is flat! | If the diode lights up and remains on for about 20 seconds after a work operation this means that the battery is low and needs recharging. |
| — — — — | Service! | If the diode flashes for about 20 seconds upon completion of a work operation, this means that the equipment needs servicing (after 10,000 connections). The tool should be returned to the REHAU service center as soon as possible. |
| — — — — | Service!
Battery is flat! | If the LED lights up for 20 seconds and then flashes, this means that the battery is flat and also that the tool needs servicing. |



Caution! Risk of injury.

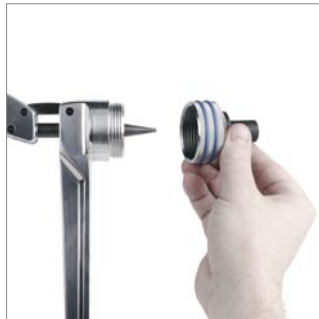
Improper handling of the REHAU tool can cause harm to people and/or the tool.

- Make sure that whenever the jaw sets are changed the pins are completely and safely locked in place.
- Before changing the jaw sets, the battery must definitely be removed from the tool (inadvertent actuation).
- Before each use, check the jaw sets, expander bits, expander sets and the tool for damage or visible wear. Damaged tools must no longer be used and should immediately be sent to an authorized service center for repair.
- When introducing the expander bit, always insert it completely into the clamping jaws.
- The entire surface of the receiving groove of the bit must lie in the clamping jaws.
- Before actuating the tool, check to make sure that the seating and clamping action of the bit are correct (to avoid falling out). If necessary, increase the clamping pressure through short activation of the tool's control switch.

Expanding tool

Expander:

When screwing on expander heads, open expander completely (> 90° position). Always screw expander heads fully on. Use expander heads that conform to the pipe dimensions (for example 16 x 2.2).



Turn the expander set until the pin slips into the groove. Then fix the jaws and expander set using the pins.

Attention!

Insert the pins completely!



Expander set:

When using the expander set, push the jaws (first long and then short) first and then insert the expander set into the cylinder.



Expander bit:

When inserting the expander bit for hydraulic expansion, clip the expander bit of the respective dimension into the corresponding clamping jaws and check for fit (clamping).



Attention!

As a matter of principle, insert the expanding tool into the pipe up to the stop.



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USING THE CLAMPING TOOL

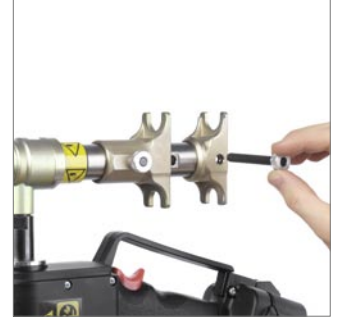
1. When changing the clamping jaws, always push onto the tool cylinder first the long clamping jaw and then the short one.



2. Fix the clamping jaws with the pins.

Attention!

Ensure the identical alignment of the double jaws (for example, size 25)! Always push the pins in all the way!



3. The clamping jaws can be brought into the proper working position by rotating the tool cylinder.



4. To insert the battery, push it completely into the holding grip until it stops on its own. Allow the retaining clip to lock.



In the manufacture of vertical pipes, the compression sleeve can be held by means of the **pipe gripper**.

The pipe gripper also serves to push back or hold the insulation or corrugated tube so as to provide the space needed for making the compression sleeve joints.



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ASSEMBLY PROCEDURE

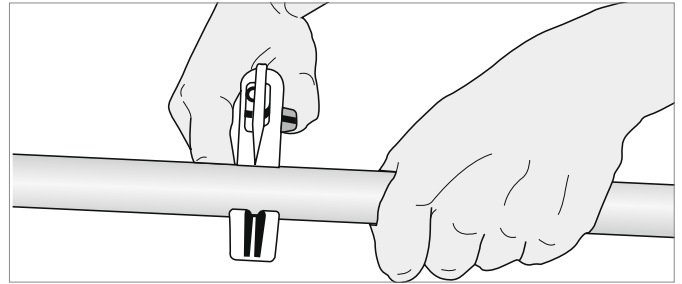


Failure to observe these instructions may result in damage to the jointing system, to the tool and in personal injury.

1. Using pipe cutters, cut pipe to required length at right angles and without leaving burrs.

Attention!

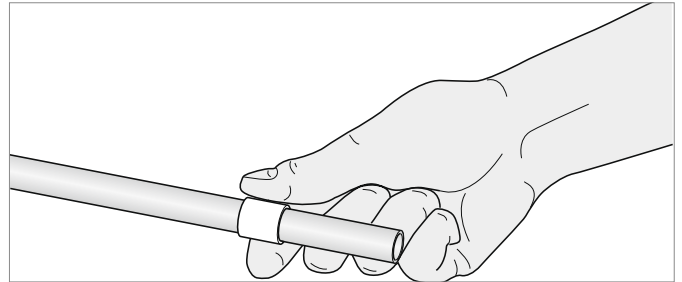
Keep your hand at a safe distance from the tool. Do not use saws, or similar.



2. Slide compression sleeve onto pipe.

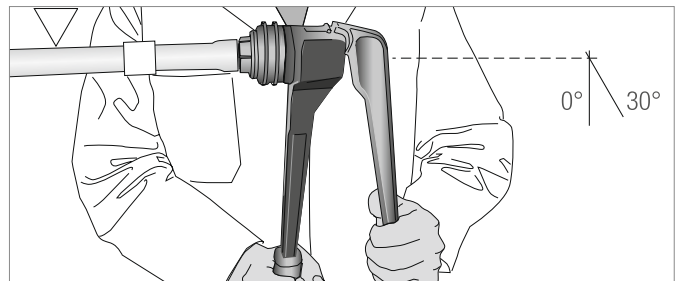
Attention!

With metal compression sleeves, the inside taper must point towards the joint!



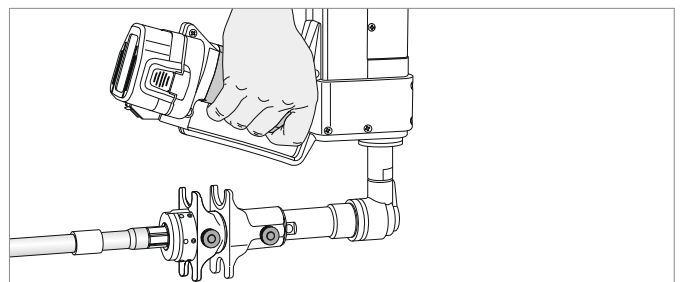
3a. Expansion using expanders:

Expand pipe, rotate 30°, and repeat. The min. distance between expander head and compression sleeve must be two compression sleeve lengths.



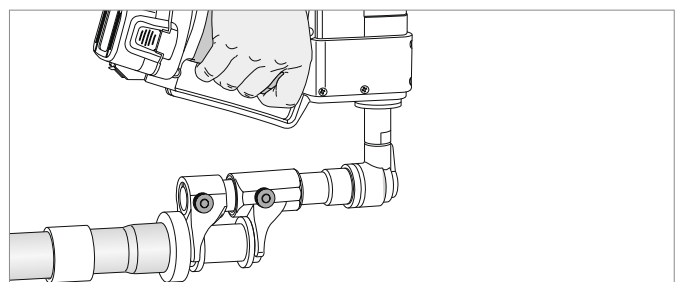
3b. Expansion using expander set:

Expand pipe, rotate 30°, and repeat. The min. distance between expander head and compression sleeve must be two compression sleeve lengths.



3c. Expansion using expander bit:

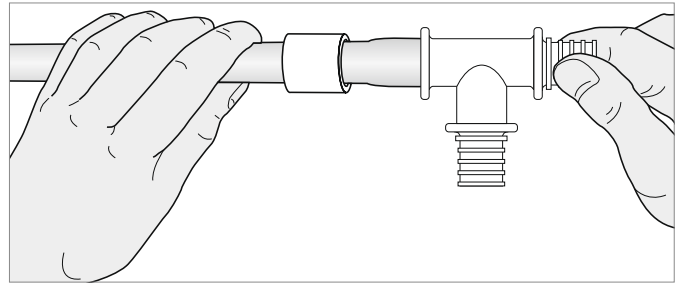
Expand pipe, rotate 30°, and repeat. The min. distance between expander head and compression sleeve must be two compression sleeve lengths.



4. Insert fitting into pipe up to the stop. After a brief period the fitting will sit tightly in the pipe (memory effect).

Attention!

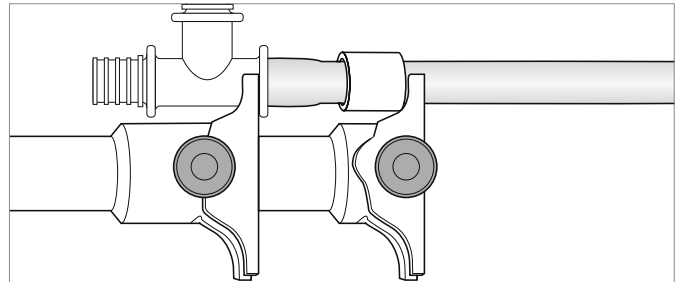
All sealing lips must be covered! Until the memory effect sets in fully, the fitting can fall out of the pipe! Make sure to seat the fitting in level position.



5. Fully insert the joint to be made into the clamping tool.

Caution:

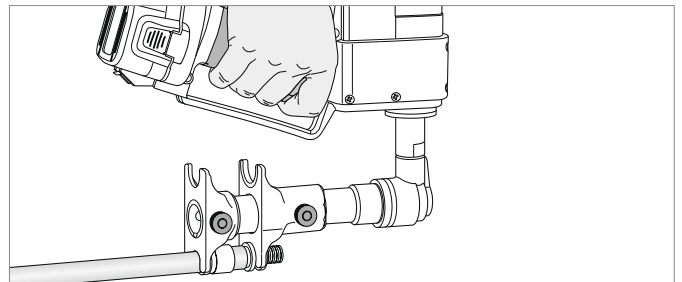
Do not tilt. Tool must be applied over full surface and at right angles.



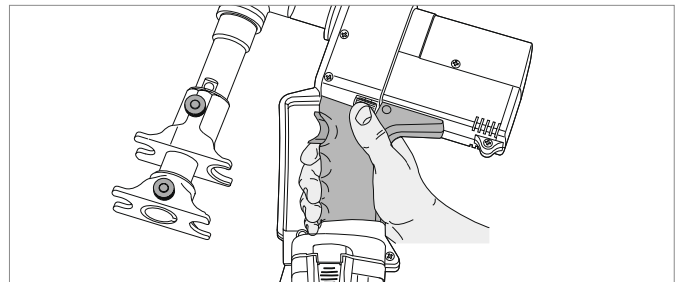
6. Start compression process by actuating the control switch (orange-colored press knob) and press in the compression sleeve up to the fitting collar.

Attention!

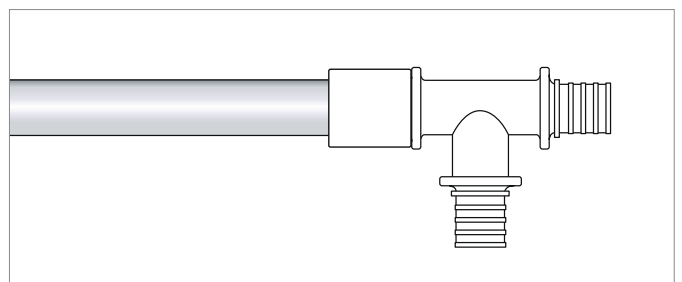
Do not touch moving parts (risk of trapping fingers). The compression process can be interrupted at any time by releasing the operating switch.



7. By actuating the release valve (silver-colored press knob), the tool is brought into its starting position.



8. Completely compressed compression sleeve joint.



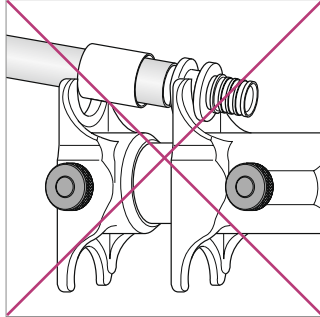
Processing at temperatures of under -10°C and over 45°C may result in damage to the jointing components, the tool and/or people.

- Do not work below the minimum processing temperature of -10°C .
- At low temperatures (below 0°C), it is recommended that the jointing components be stored in a warm environment before processing.

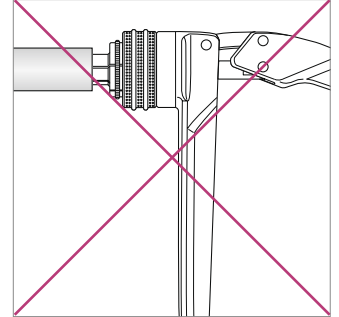
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IMPORTANT NOTES

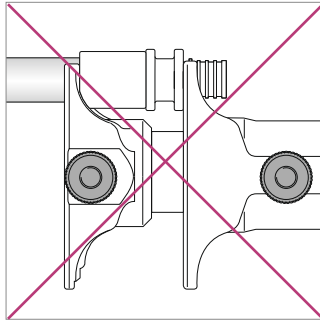
Always apply clamping jaws or jointing technique at right angles, making sure they completely contact the entire surface.



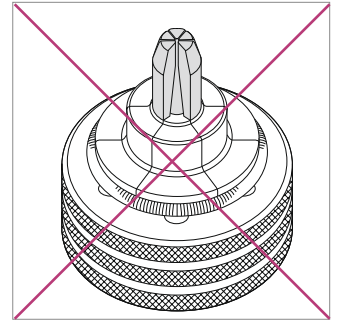
Always insert expanding tool into pipe up to the stop. Do not tilt the expanding tool.



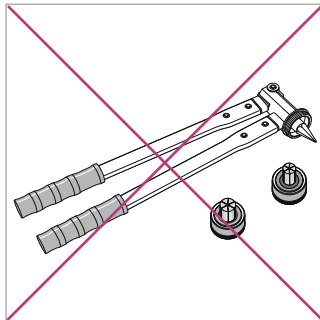
Make sure fitting is correctly seated in tool. Applying the tool to the wrong fitting collar will over-compress the joint!



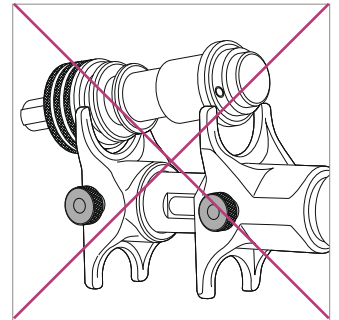
Never use damaged expander head as this will damage the pipe. Replacements are available from your dealer or from the REHAU sales office.



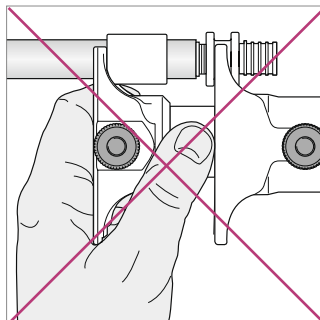
The tool is equipped with the REHAU RO expander system. In order to avoid damage to the pipe, do not use REHAU RE expander system parts (until 1996) with RO expander system components.



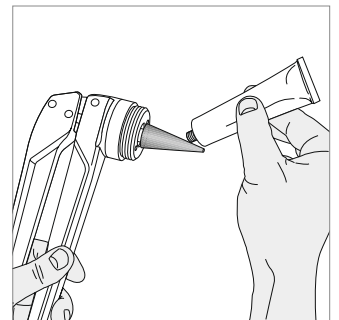
When using an expander bit, it must be ensured, before initial operation of the tool, that the position (fully inside the jaws) and the clamping action of the bit are correct (to avoid falling out).



Attention!
Do not touch moving parts (risk of trapping fingers)!



Regularly grease expander taper (tube of lubricant is supplied with tool). Take care not to apply too much grease to taper so as to prevent excess grease from entering the pipe.
Attention!
Do not grease the surface of those expander segments that are in contact with the pipe!



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IMPORTANT NOTES RAUTITAN

Compatibility dimension 40



NEU / NEW / NOUVEAU / NUOVO / NUEVO / НОВЫЙ ø 40		ø 40	
201801-001 201803-001		+	
		+	



Unbedingt vermeiden! Under no circumstances!
A éviter impérativement! Da evitare assolutamente!
¡Evitar siempre!

ALT / OLD / ANCIEN / VECCHIO / ANTIGUO ø 40		ø 40	
137805-001 138223-001		+	



201801-001 201803-001		
137805-001 138223-001		

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MAINTENANCE NOTES

Regular inspection:



- Always keep jaw sets, expanding tools and cylinder clean. When soiled, clean them with a brush and oil them. Then store the tool in a dry place.
- Before every use, check the jaw sets, expanding tools and basic A2 tool for damage or visible wear. Damaged tools must not be used. They should be sent right away to an authorized service center for repair.
- Make sure that the jaw sets are fully applied across the whole surface and at a right angle during the compression process, and the compression sleeve is inserted up to the fitting collar.
- Regularly grease the expanding tool tapers. Do not apply any grease to the surface of the expander segments! Should excess grease reach the expander segments, the segments must be thoroughly cleaned (e.g. cleaning solvent) and then dried.

Repairs:



Risk of accident!

Do not yourself perform any repairs on the tool. Repairs should only be carried out by an authorized service center.

- For list of authorized service centers see page 71.

Storage:

Never store the tool if wet! Dry the tool and grease it. Then store it in a dry place.

To extend the service life of the tool, as a matter of principle store the tool in its final position (extended cylinder or jaw sets).



Notes concerning correction of functional defects

Defect	Correction
The tool leaks oil	<ul style="list-style-type: none">- Do not open the tool and do not remove or damage the tool seal.- Send the tool immediately to a REHAU service center.
The tool does not reach the final pressure.	<ul style="list-style-type: none">- Interrupt the compression process.- Hold reset knob under tension (see page 8/item No. 2) and at the same time continuously actuate the control switch for about 10 seconds. If this does not correct the defect, the tool must be sent to a REHAU service center.

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Insofar as the intended application deviates from that described in the relevant Technical Information brochure, the user must consult REHAU and must receive express written consent from REHAU before commencing this utilization. If the user fails to do so, the sole responsibility for the utilization shall lie with the individual user. In this case, the application, use and processing of products are beyond our control. Should a case of liability arise, however, this shall be limited to the value of the goods delivered by us and used by you in all cases of damage. Claims arising from granted guarantees shall become invalid in the case of intended applications that are not described in the Technical Information brochures.

L'utilisateur qui envisage une application différente de celles décrites dans la présente Information Technique est tenu de consulter REHAU et de demander formellement une autorisation préalable écrite. En cas d'omission l'utilisateur est seul responsable de l'application du produit.

L'application, l'utilisation et la mise en œuvre de nos produits se trouvent dans ce cas hors des possibilités de contrôle de REHAU. S'il est toutefois question de responsabilité, celle-ci est exclusivement limitée pour tout dommage à la valeur de la marchandise que nous vous avons livrée et que vous avez mise en œuvre. Des prétentions qui pourraient résulter d'éventuelles attestations de garantie seront considérées comme nulles et non avenues si l'utilisation du produit ne correspond pas à celle décrite dans la présente Information Technique.

Se è previsto un impiego diverso da quelli descritti nell'Informazione Tecnica attualmente in vigore, l'utilizzatore deve contattare la REHAU e, prima dell'impiego, chiedere espressamente il nulla osta scritto della REHAU. Altrimenti l'impiego è esclusivamente a rischio dell'utilizzatore.

In questi casi l'impiego, l'uso e la lavorazione dei nostri prodotti sono al di fuori delle nostre possibilità di controllo. Se nonostante tutto, dovesse sorgere una controversia su una nostra responsabilità, questa sarà limitata al valore dei prodotti da noi forniti e impiegati da Voi.

Diritti derivati da dichiarazioni di garanzia non sono più validi in caso d'applicazioni non descritte nelle Informazioni Tecniche.

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