

REMS E-Push 2



eng Instruction Manual

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Fig. 1



Translation of the Original Instruction Manual

Fig. 1

1 On/Off switch	8 "Pressure" regulating valve
2 Suction hose	9 Pressure gauge
3 Nozzle for suction hose	10 Suction filter with check valve
4 Suction filter	11 Pressure limit adjusting wheel
5 High-pressure hose	12 Connection piece with pressure gauge and shutoff valve (accessory)
6 Nozzle for high-pressure hose	
7 "Test" shutoff valve	

General power tool safety warnings

WARNING

Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

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, 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 a dust mask, non-skid 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 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.
- 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 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-related hazards.
- h) Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles. A careless action can cause severe injury within a fraction of a second.

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 remove the battery pack, if detachable, 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 and accessories. 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 and grasping surfaces dry, clean and free from oil and grease. Slippery handles and grasping surfaces 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.

Safety instructions for electric pressure testing pump

WARNING

- Only connect the electrical device of protection class I to a socket/extension lead with a functioning protective contact. There is a danger of electric shock.
- The electrical device develops a very high pressure of up to 6 MPa (60 bar, 870 psi). So be very careful. Keep third parties away from the work area when working with the electrical device.
- Do not use the electrical device if it is damaged. There is a danger of accident.
- Examine the high-pressure hose for damage very time before using. Damaged high-pressure hoses can burst and cause injury.
- Only use original high-pressure hoses, fittings and couplings for the electrical device. This ensures that the safety of the device is maintained.
- Apply the electrical device horizontally and dry for operation. Penetration of water into the electrical device increases the risk of electric shock.
- Do not aim liquid jets at the electrical device, not even for cleaning. Penetration of water into the electrical device increases the risk of electric shock.
- Do not suck up inflammable or explosive liquids, for example petrol, oil, alcohol, solvent, with the electrical device. The fumes or liquids can ignite or explode.
- Do not operate the device in rooms where there is a risk of explosion. The fumes or liquids can ignite or explode.
- Protect the electrical device against frost. The device could be damaged. Let the electrical device run empty for about 1 minute, if necessary, to drain off remaining water.
- Never let the electrical device operated unattended. Switch the electrical device off at the On/Off switch (1) and pull out the mains plug for longer work breaks. Electrical devices can cause hazards which lead to material damage or injury when left unattended.
- Do not operate the electrical device for long periods on a closed sanitary or heating system or with closed "Test" shutoff valve (7). The electrical device could be damaged by overheating.
- The electrical device is not intended/suitable for permanent connection to the installation. Disconnect all hoses from the installation after completing the work. Electrical devices can cause hazards which lead to material damage or injury when left unattended.
- Children and persons who, due to their physical, sensory or mental abilities or lack of experience and knowledge are unable to operate the electrical device safely may not use this electrical device without supervision or instruction by a responsible person. Otherwise there is a risk of operating errors and injuries.
- Only allow trained persons to use the electrical device. Apprentices may only operate the electrical device when they are older than 16, when this is necessary for their training and under the supervision of a trained operative.
- Check the power cable of the power tool and extension leads regularly for damage. Have these renewed by qualified experts or an authorised REMS customer service workshop in case of damage.
- Only use approved and appropriate marked extension leads with a sufficient cable cross-section at least with the protection class approved in 1.4. Electrical data. Use extension leads up to a length of 10 m with cable cross-section 1.5 mm², from 10 – 30 m with cable cross-section 2.5 mm².
- The mains connection must be made by a qualified electrician according to valid regulations. It is recommended to connect this machine to a power supply which either has a residual current device (RCD) which cuts off the power supply as soon as the leakage current to earth exceeds 30 mA for 30 ms or an earth tester.

Explanation of symbols

WARNING

Danger with a medium degree of risk which could result in death or severe injury (irreversible) if not heeded.

CAUTION

Danger with a low degree of risk which could result in minor injury (reversible) if not heeded.

NOTICE

Material damage, no safety note! No danger of injury.



Read the operating manual before starting



Use eye protection



Use hand protection



Power tool complies with protection class I



Environmental friendly disposal



CE conformity mark

1. Technical data

Use for the intended purpose

⚠ WARNING

REMS E-Push 2 is designed for pressure and leak testing of pipe systems and vessels. All other uses are not for the intended purpose and are therefore prohibited. Attention: Use for the intended purpose also includes observing and following the respectively valid national safety provisions, rules and regulations for the application site.

1.1. Scope of Supply

Electric pressure test pump with pressure gauge. 1.5 m suction hose 1/2" connection, suction filter, gasket, suction filter with check valve. 1.5 m high-pressure hose with 1/2" connection, 2 gaskets Operating instructions.

1.2. Article numbers

Electric pressure test pump	115500
Connection piece with pressure gauge 6 MPa/60 bar /870 psi and shutoff valve	115110
Fine scaled pressure gauge 1.6 MPa/16 bar/230 psi	115045
REMS CleanM	140119

1.3. Applications

Liquids	water, aqueous solutions, emulsions
Maximum pressure	6 MPa (60 bar/870 psi)
Pressure limit adjustable from	approx. 0.5 MPa (5 bar/73 psi)
in steps of	approx. 1 MPa (10 bar/145 psi)
Pressure gauge 6 MPa (60 bar/870 psi), glycerine damped	Class 1.6
Maximum performance	6.5 l/min (390 l/h)
Temperature of the liquids	5°C – 60°C
Storage temperature	≥ 5°C
pH value of the liquids	6.5 – 9.5
Viscosity of the liquids	≤ 1.5 mPa s
Self-sucking pump	≤ 500 mm

1.4. Electrical data

230 V~; 50 Hz; 1,300 W; 6 A
110 V~; 50 Hz; 1,300 W; 13 A

Protection class	I
Protection class	IP 25
Operating mode	continuous operation

1.5. Dimensions

395 × 270 × 295 mm (15.6" × 10.6" × 11.6")

1.6. Weight

10 kg (22 lb)

1.7. Noise information

Work place-related emission value	$L_{PA} = 74 \text{ dB(A)}$; $L_{WA} = 86 \text{ dB(A)}$; $K = 3 \text{ dB(A)}$
Evaluation standard for measurement:	DIN EN 60335-2-79:2016
Evaluation standard for verification:	EN ISO 4871:2009

2. Start-up

NOTICE

REMS E-Push 2 is not intended/suitable for permanent connection to the installation. Disconnect all hoses from the installation after completing the work. REMS E-Push 2 may not be operated unattended.

2.1. Electrical connection

⚠ WARNING

Caution: Mains voltage present! Before connecting the electric pressure test pump, check whether the voltage given on the rating plate corresponds to the mains voltage. Only connect an electric pressure testing pump of protection class I to a socket/extension lead with a functioning protective contact. On building sites, in a humid environment, indoors or outdoors or in similar types of installation, only operated the electric pressure test pump with a fault current protection switch (FI switch) on the mains which cuts off the energy supply as soon as the leakage current to earth exceeds 30 mA for 30 ms.

The motor of the REMS E-Push 2 is exempted from the directive (EU) 2019/1781 because the motor is installed in a hand-held, mobile, electric device.

2.2. Setting the pressure limit

⚠ CAUTION

Open the "Pressure" regulating valve (8) fully by turning to the left before switching on the electric pressure test pump. If the pressure is set too high, the pipe system or vessel to be tested could be damaged.

The "Pressure" regulating valve (8) can be preset with the pressure limit adjusting wheel (11) in 6 pressure steps from approx. 0.5 – 6 MPa (5 – 60 bar/73 – 870 psi). It is recommended to set the pressure limit adjusting wheel (11) to pressure step 1 for normal pressure and leak testing of pipe systems. This avoids undesirable overloading of the pipe system. The higher pressure settings should only be chosen in special cases in which a higher test pressure is required. The adjusting wheel should be set back to pressure step 1 after pressure testing with the higher test pressure.

To set the pressure step, open the "Pressure" regulating valve (8) to the stop (turn to the left), press in the pressure limit adjusting wheel (11) and set to the desired step.

2.3. Suction hose

Screw the suction hose (2) to the suction hose nozzle (3). Do not kink the suction hose. Only pump clean liquids. Do not remove the suction filter (4) and suction filter with check valve (10). Make sure that the pressure test pump does not suck in air.

NOTICE

Only operate REMS E-Push 2 with the suction filter (4) and suction filter with check valve (10) fitted.

2.4. high-pressure hose

Screw the high-pressure hose (5) with gasket to the high-pressure hose nozzle (6).

3. Operation

NOTICE

REMS E-Push 2 is not intended/suitable for permanent connection to the installation. Disconnect all hoses from the installation after completing the work. REMS E-Push 2 may not be operated unattended.

3.1. Pressure and leak testing of pipe systems (observe EN 806-4 standard and national regulations)

It is prohibited to connect the electric pressure test pump to the public water supply. Water may only be sucked from open vessels (buckets).

Fill and vent the pipe system, e.g. sanitary or heating system. Place the electric pressure test pump on a level surface. Place the suction hose (2) with suction filter with check valve (10) into a vessel (bucket) filled with about 10 litres of water. Connect the high-pressure hose (5) to the sanitary or heating system to be checked for leaks. Open the "Test" shutoff valve (7) and the "Pressure" regulating valve (8). Switch on the electric pressure test pump at the On/Off switch (1). There is a pressure of approx. 0.5 MPa (5 bar/73 psi) on the pipe system. If not, a tapping point is open in the pipe system. If the pressure is to be increased, turn the "Pressure" regulating valve (8) and set the desired pressure: turn clockwise = pressure increase, turn counterclockwise = pressure drop. On reaching the desired pressure, close the "Test" shutoff valve (7), switch off the electric pressure test pump at the On/Off switch (1).

The electric pressure test pump can be disconnected from the pipe system, e.g. sanitary or heating system, to be checked for leaks during the pressure test if the connection piece with pressure gauge and shutoff valve (12) (accessory) is installed between the electric pressure test pump and the sanitary or heating system to be checked for leaks (do not exceed the maximum pressure display of the fine scaled pressure gauge!) In this case, on reaching the desired pressure, close the shutoff valve on the connection piece (12), open the "Pressure" regulating valve (8), switch off the pump and remove the high-pressure hose at the connection piece (12).

Attention: Before connecting the high-pressure hose (5), make sure that the pressure has been relieved completely. Note the pressure on the pressure gauge (9).

NOTICE

Do not operate the electric pressure test pump for long periods on a closed system or with a closed "Test" shutoff valve (7). The electric pressure test pump could be damaged by overheating. Do not operate the electric pressure test pump without water/liquid.

3.2. Pumping liquids

⚠ WARNING

Do not pump inflammable liquids, acids or solvents! Observe permissible values pH, viscosity and temperature of the liquids (see 1.3. Work area).

Place the suction hose (2) with suction filter (4) and suction filter with check valve (10) in the vessel with liquid that is to be pumped. Feed the high-pressure hose (5) into the vessel or system that is to be filled. Open the "Pressure" regulating valve (8) and "Test" shutoff valve (7). Switch on the pump (1) and pump liquid.

3.3. Ending the operation

After ending operation, open the "Pressure" regulating valve (8) and the "Test" shutoff valve (7) and rinse out the pump with hoses (2) and (5) for a few minutes with fresh water.

CAUTION

The nozzles for the suction hose (3) and the high-pressure hose (6) can get very hot in operation. Do not touch them. To remove the hoses (2) and (5), wait until they have cooled down or use suitable hand protection.

3.4. Storage and transport

Empty the electric pressure test pump and hoses completely to avoid damage. Store the electric pressure test pump at $\geq 5^{\circ}\text{C}$ and dry.

4. Maintenance

Notwithstanding the maintenance described below, it is recommended to send in the electrical device to an authorised REMS contract customer service workshop for inspection and periodic testing of electrical devices at least once a year. In Germany, such periodic testing of electrical devices should be performed in accordance with DIN VDE 0701-0702 and also prescribed for mobile electrical equipment according to the accident prevention rules DGUV, regulation 3 "Electrical Systems and Equipment". In addition, the respective national safety provisions, rules and regulations valid for the application site must be considered and observed.

4.1. Maintenance

WARNING

Pull out the mains plug before inspection!

Open the "Test" shutoff valve (7) and "Pressure" regulating valve (8) to release pressure. The residual pressure could otherwise cause injury to the user by flying parts during disassembly. Observe the pressure gauge (9).

Clean the electric pressure testing pump regularly, especially when it has not been used for long periods of time. Store the electric pressure testing pump free from frost. To clean the suction filter (4) and the suction filter with check valve (10), unscrew the suction hose, pull the suction filter (4) out of the hose with a suitable tool, e.g. flat pliers, and clean both filters under running water. Replace damaged suction filters. Check high-pressure hose and suction hose for damage every time before using. Do not use damaged hoses.

Clean plastic parts (e.g. housing) only with REMS CleanM machine cleaner (Art. No. 140119) or a mild soap and a damp cloth. Do not use household cleaners. These often contain chemicals which can damage the plastic parts. Never use petrol, turpentine, thinner or similar products for cleaning.

Make sure that liquids can get onto or inside of the electric pressure testing pump. Never immerse the pressure testing pump in liquids.

4.2. Inspection / Maintenance

WARNING

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

This work may only be performed by qualified personnel.

Open the "Test" shutoff valve (7) and "Pressure" regulating valve (8) to release pressure. The residual pressure could otherwise cause injury to the user by flying parts during disassembly. Observe the pressure gauge (9).

If the pump loses grease, the complete pressure test pump must be sent to an authorised REMS Customer Service Workshop for inspection and repair.

5. Faults

WARNING

To clear faults, switch off the electric pressure test pump at the On/Off switch (1) and pull out the mains plug!

5.1. Fault: Pressure test pump running but builds up no pressure.

Cause:

- "Pressure" regulating valve (8) is open.
- Pressure test pump sucks in air.
- Suction filter (4) and/or suction filter with check valve (10) on the suction hose are blocked.
- Electric pressure test pump defective.

Remedy:

- Set the desired pressure by turning the "Pressure" regulating valve (8) to the right.
- Check whether the suction filter with check valve (10) is immersed completely in the water. Seal screw connections.
- Clean or replace the suction filter (4) and/or suction filter with check valve (10).
- Have the electric pressure test pump inspected by an authorised REMS Customer Service Workshop.

5.2. Fault: Pressure on the pressure gauge (9) fluctuates irregularly.

Cause:

- Air in the pipe system.

Remedy:

- Vent the pipe system.

5.3. Fault: Motor does not start, hums.

Cause:

- Electric pressure test pump blocked.
- Unsuitable voltage supply.
- Unsuitable extension lead.
- Pressure is applied in the pump with closed "Test" shutoff valve (7).

Remedy:

- "Pressure" regulating valve (8) is set to high or max. pressure, open by turning to left or have the electric pressure test pump inspected by an authorised REMS Customer Service Workshop.
- Have the voltage supply tested.
- Use approved extension lead.
- Open "Test" shutoff valve (7).

5.4. Fault: Motor stops suddenly during operation.

Cause:

- Motor circuit breaker has tripped.
- Pump run hot or blocked.

Remedy:

- Switch off electric pressure test pump at the On/Off switch (1) and allow to cool down for approx. 30 minutes.
- Switch off electric pressure test pump at the On/Off switch (1) and allow to cool down for approx. 30 minutes or have the electric pressure test pump inspected by an authorised REMS Customer Service Workshop.

6. Disposal

The electric pressure testing pump may not be thrown in the domestic waste after use. It must be disposed of properly by law.

7. 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 and in a fully assembled 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.

A list of the REMS-authorized customer service stations is available on the Internet under www.rems.de. For countries which are not listed, the product must be sent to the SERVICE-CENTER, Neue Rommelshäuser Strasse 4, 71332 Waiblingen, Deutschland. The legal rights of the user, in particular the right to make claims against the seller in case of defects as well as claims due to wilful violation of obligations and claims under the product liability law are not restricted by this warranty.

This warranty is subject to German law with the exclusion of the conflict of laws rules of German International Private Law as well as with the exclusion of the United Nations Convention on Contracts for the International Sales of Goods (CISG). Warrantor of this world-wide valid manufacturer's warranty is REMS GmbH & Co KG, Stuttgarter Str. 83, 71332 Waiblingen, Deutschland.

8. Spare parts lists

For spare parts lists, see www.rems.de → Downloads → Parts lists.