

– weishaupt –

manual

Installation and operating instructions



EU conformity certification

Language 02

Product description

Fresh water storage

Type

**WAS 800
WAS 1000
WAS 1500
WAS 2000
WAS 800 Sol
WAS 1000 Sol
WAS 1500 Sol
WAS 2000 Sol**

Manufacturer

Max Weishaupt GmbH

Address

Max-Weishaupt-Straße 14, DE-88475 Schwendi

The sole responsibility for issuing this conformity declaration lies with the manufacturer.

The content of the statement described above complies with the relevant harmonisation legislation of the European Union:

ELD 2010/30/EU

Test regulation: 812/2013/EU

EDD 2009/125/EC

Test regulations: 814/2013/EU, EN 12897:2016

Schwendi, 13/09/2017

Signed for and on behalf of:

MAX WEISHAUPT GMBH

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1. Safety instructions

Please carefully read all information provided in this set of instructions prior to commissioning!

The installation and initial commissioning, as well as all other interventions or repairs, may only be carried out by a licensed installation company in accordance with these instructions.

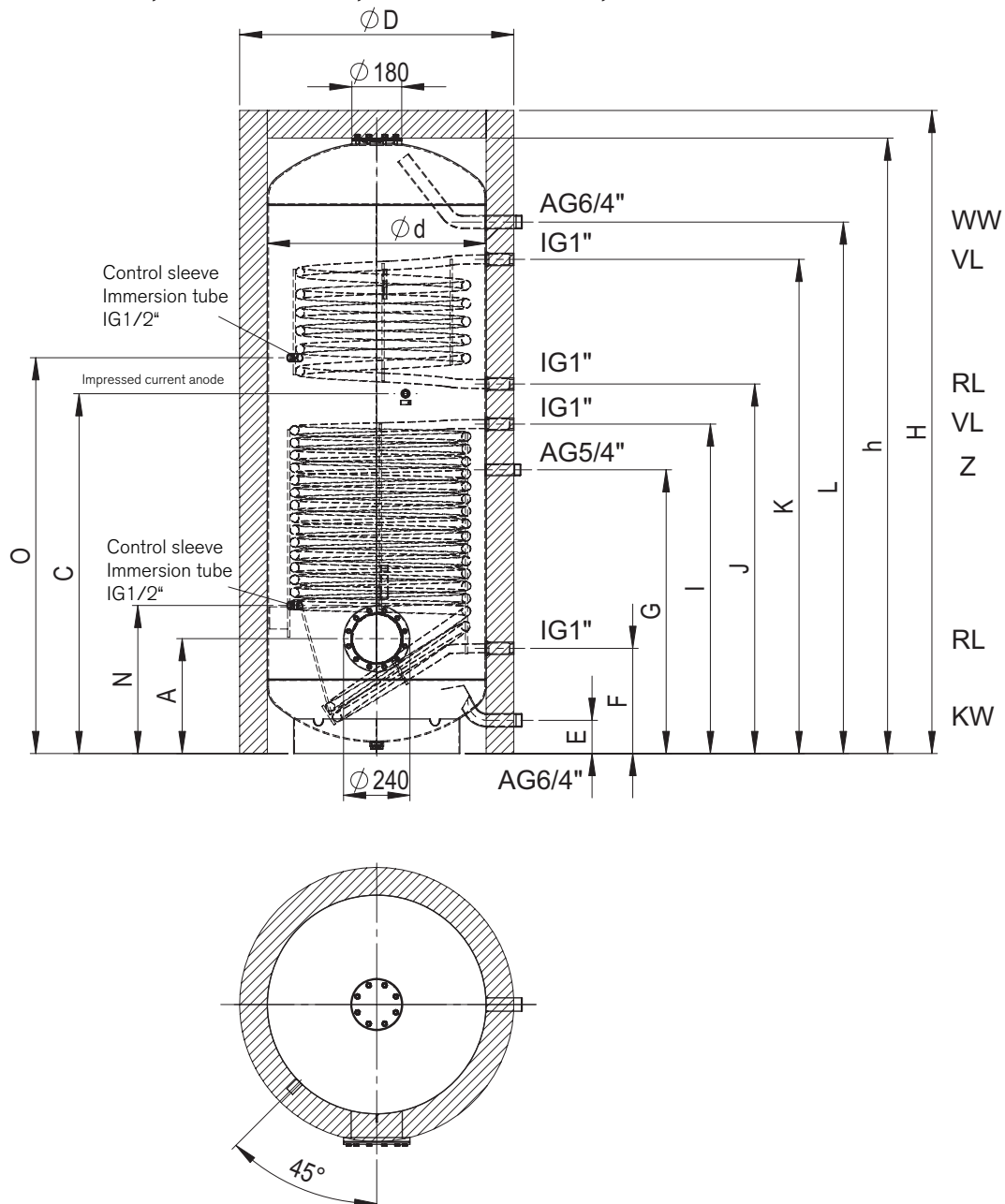
Safety-related defects must be rectified immediately.

This tank can be used by children eight years old and older as well as by persons with reduced physical, sensory or mental capabilities or who lack experience and knowledge if they are supervised or if they have been trained with regard to the safe use of the tank and understand the resulting risks. Children may not play with the tank or its packaging. Cleaning and user maintenance may not be performed by children without supervision.

Materials and components should be disposed of properly and environmentally friendly manner via an authorized body. The local regulations must be observed!

2. Dimensional sketches

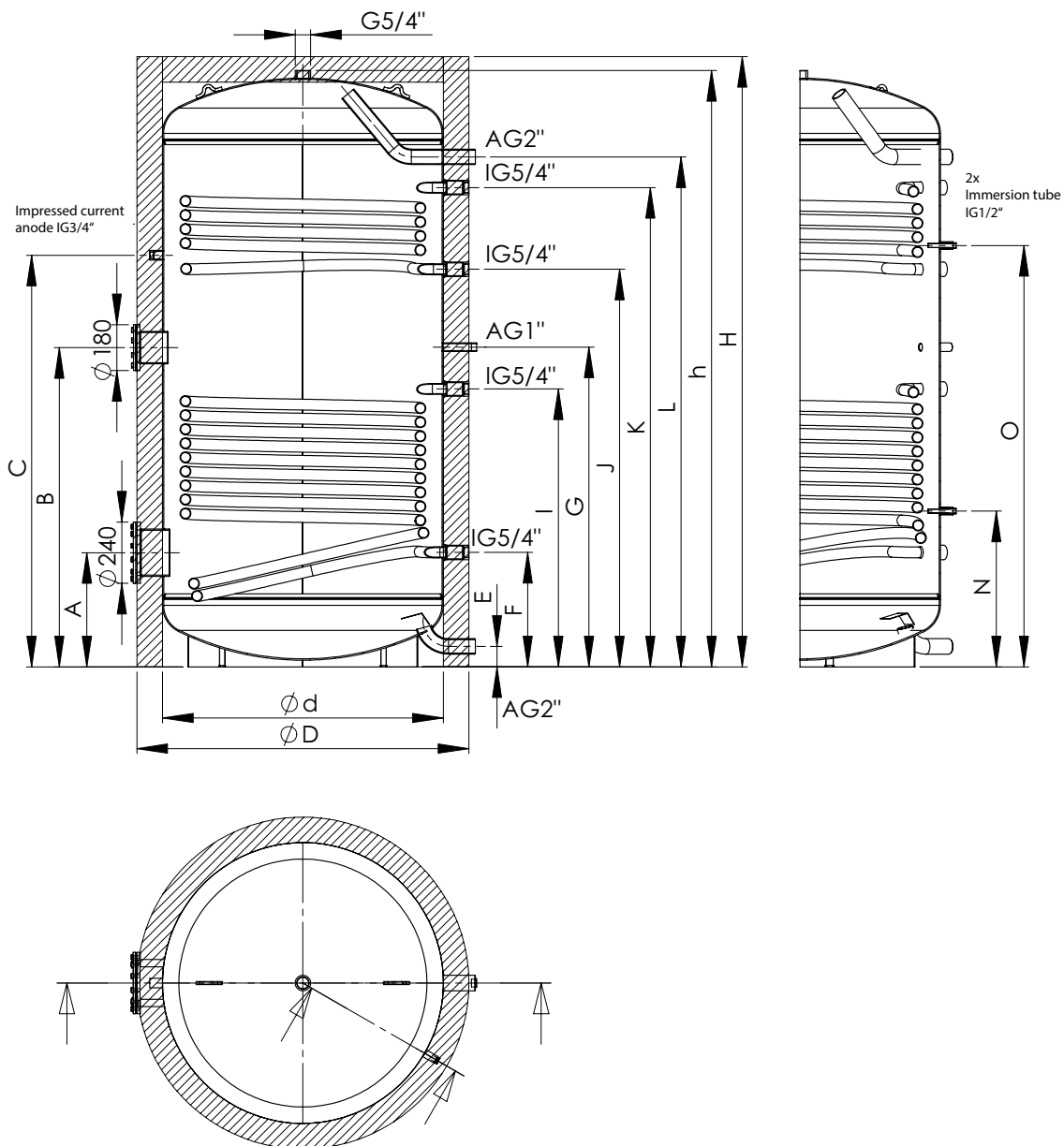
2.1 WAS 800 / B, WAS 1000 / B, WAS 800 Sol / C, WAS 1000 Sol / C



Type	Dimensions in mm														
	H	h	ØD	ød	A	C	E	F	G	I	J	K	L	N	O
WAS 800 / B	1990	1877	990	790	415	1125	120	380	860	1025	-	-	1580	535	940
WAS 1000 / B	2340	2223	990	790	415	1300	120	380	1025	1190	-	-	1920	535	1105
WAS 800 Sol / C	1990	1877	990	790	415	1125	120	380	1250	1025	1150	1465	1580	535	1220
WAS 1000 Sol / C	2340	2223	990	790	415	1250	120	380	1390	1190	1290	1785	1920	535	1430

Type	Tilt dimension mm	Contents Litre	Empty weight kg	max. operating temperature	max. operating pressure	Entry portal	Standby capacity on top
WAS 800 / B	1960	800	263	95 °C	10 bar	850	-
WAS 1000 / B	2300	975	313	95 °C	10 bar	850	-
WAS 800 Sol / C	1960	790	291	95 °C	10 bar	850	298
WAS 1000 Sol / C	2300	950	350	95 °C	10 bar	850	367

2.2 WAS 1500 / C, WAS 2000 / C, WAS 1500 Sol / C, WAS 2000 Sol / C



Type	Dimensions in mm															
	H	h	ØD	ød	A	B	C	E	F	G	I	J	K	L	N	O
WAS 1500 / C	2270	2160	1280	1000	437	1150	1385	80	362	1217	962	-	-	1825	550	920
WAS 2000 / C	2450	2335	1380	1100	447	1250	1612	80	448	1252	1088	-	-	1997	610	1045
WAS 1500 Sol / C	2270	2160	1280	1000	437	1150	1385	80	362	1217	962	1425	1705	1825	550	1530
WAS 2000 Sol / C	2450	2335	1380	1100	447	1250	1612	80	448	1252	1088	1557	1877	1997	610	1650

Type	Tilt dimension mm	Contents Litre	Empty weight kg	max. operating temperature	max. operating pressure	Entry portal	Standby capacity on top
WAS 1500 / C	2250	1500	428	95 °C	10 bar	1010	-
WAS 2000 / C	2430	2000	532	95 °C	10 bar	1110	-
WAS 1500 Sol / C	2250	1500	455	95 °C	10 bar	1010	472
WAS 2000 Sol / C	2430	2000	573	95 °C	10 bar	1110	610

2.3 Product fiche ErP

Type	Energy efficiency class	Standing loss W
WAS 800 / B	C	121
WAS 1000 / B	C	146
WAS 1500 / C	C	159
WAS 2000 / C	C	181
WAS 800 Sol / C	C	121
WAS 1000 Sol / C	C	146
WAS 1500 Sol / C	C	159
WAS 2000 Sol / C	C	181

2.4 Specification plate

On your tank you will find a specification plate with the data and serial number of your device.

The serial number is required for the Weishaupt customer service. Please provide this number for any queries about the device.

Always keep the specification plate on the device legible.

Another specification plate is located in the documentation. After installation of the thermal installation, this is to be adhered next to the closure band and be easily visible.

3. Operating Requirements and Important Information

The device is only suitable for heating drinking water in accordance with the Drinking Water Ordinance within closed spaces and may only be installed by licensed professionals with due consideration of the relevant professional standards (e.g. DIN 1988, DIN EN 806, ÖNORM B2531-1).

The tanks must be used exclusively in accordance with the conditions set out on the specification plate.

In addition to the legally recognised guidelines and standards (Austria: ÖVE, ÖNORM etc.), the connection conditions of the local electricity and water works as well as those set out in the installation and operating instructions must be complied with. Hot water preparation must be done in compliance with the applicable standards (VDI 2035, ÖNORM H 5195-1).

The area in which the device is operated must be frost-free.

The device must be easily accessible in case of necessary servicing, repairs or in case it needs to be replaced. All structural provisions that impede problem-free work must be eliminated by the end customer.

If setting up, installing and operating the water heater in unusual places (e.g. lofts, living quarters with water sensitive flooring, store rooms etc.), potential water leakage must be taken into consideration and therefore a device for capturing and draining off any leaked water must be provided in order to prevent secondary damage. The device may only be installed and operated in the proper configuration on a horizontal surface suitable to support the weight of the full water heater. In the case of extremely hard water, we recommend the upstream installation of a commercially available de-calcification device and a maximum operating temperature of about 65 °C.

The solar heat exchanger is constructed as a single-walled piping.

To exclude a health hazard may in accordance with DIN EN 1717 only one heat carrier category 1,2 or 3 should be used.

We recommend Tyfocor L.

3.1 Operating requirements for impressed current anode

An uninterrupted power supply as well as a minimum conductance value of the medium of 150 µs is necessary for the proper functioning of the installed impressed current anode!

Connection voltage: 230 V - 50 Hz

Max. loss current: 200 mA

Control voltage: 2.75 V

Ambient temperature: 0 °C to 40 °C

If these conditions are not met, no lasting corrosion protection can be ensured. Damage or consequential damage resulting from this is not subject to the warranty offered by the manufacturer.

3.2 Operating requirements for a high tank temperature (solar operation)

Hot water can lead to burns in conjunction with a solar system or similar. In this case, an installation of a thermal mixing valve is recommended at the WW outlet.

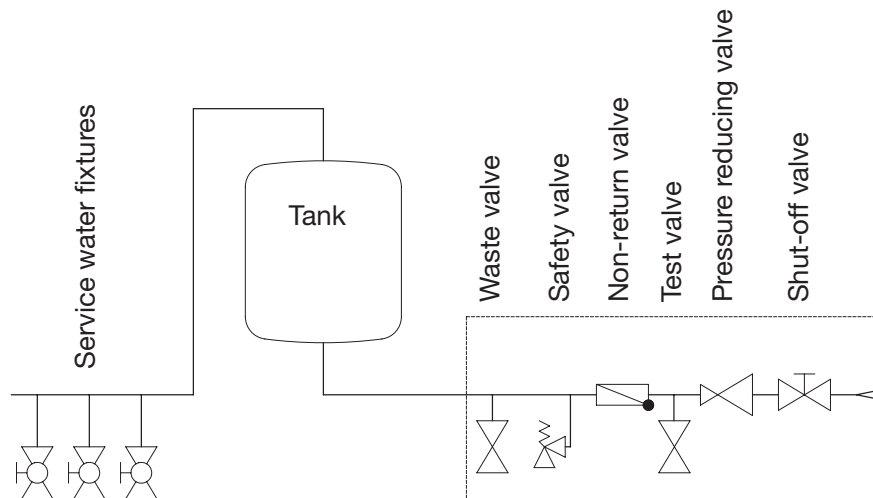
4. Water Side Connection (pressure resistant)

This is a pressure resistant tank with a nominal pressure of 10 bar. It can be connected pressure-resistant if the line pressure is below this value. If the line pressure is higher than a pressure reduction valve must be installed in the cold water input pipe, which must be installed on site.

In cases in which unsuitable or non-functional storage tank connection fittings are used as well as in cases in which the stated operating pressure is exceeded, any guarantee, warranty as well as product liability for the water heater will be refused. That is why only pressure resistant fittings are used. Type-tested safety equipment is to be provided in the cold water pipe according to the connection diagram shown below. It is imperative that a type- tested safety group according to DIN 1988 or ÖNORM B2531-1 is installed for closed water heaters in the water connection of the cold water pipe (cold water inlet).

The water connection must only take place via a certified membrane safety valve or a membrane safety valve combination connection fitting (no piston valve) for pressure-resistant storage tanks! A safety valve combination consists of shut-off, test, back-flow, drainage and safety valves with expandable water outlet and is installed between the storage tank's cold water inlet pipe and cold water inlet in the marked sequence:

Storage tank connection according to DIN 1988 and ÖNORM B2531-1:



The following must be observed:

In order to ensure the faultless functioning of the connection fittings, these may only be installed in frost-protected spaces. The outlet of the safety valve must be open and observable and/or the outlet pipe from the drip tray (water overflow funnel) must be introduced into the sewer line so that neither frost nor blockages due to dirt and the like can result in a malfunction. It is to be ensured that the drip container or the drainage object is free of deposits and dirt. No shut-off valve or any other restriction may be installed between the safety valve and the storage tank cold water inlet.

The outlets of the safety valves (domestic water as well as heating circuits) must lead to a corresponding drainage object in order to prevent any damage from the outlet of hot fluids.

The safety valve must be configured for a trigger pressure that is lower than the nominal pressure of the storage tank. Before the final connection of the storage tank the cold water inflow pipe must be flushed through.

Once the water has been connected and the storage tank has been filled without air bubbles, the function of the connection fittings must be checked.

When lifting or turning (ventilation) the safety valve testing knob, the water must be able to flow properly and without congestion from the excess water funnel.

To check the non-return valve, the shut-off valve is closed and no water should escape via the open test valve. Testing the safety valve must take place according to DIN 1988-8 or ÖNORM B 2531-1.

The operation of the storage tank takes place by tapping hot water at the individual tap connections. Therefore the storage tank is permanently under pressure. In order to protect the inner boiler from overpressure during heating-up, the excess water that arises during every heating is drained off via the safety valve.

The storage tank can be separated from the cold water supply grid through the shut-off valve on the water side and therefore also in terms of pressure and can be drained off via the drainage valve if necessary.

In order to avoid damage, it is necessary to establish the connection to the tank by means of a detachable connection (union). Tank leaks as a result of an improper connection and resulting damage and consequential damage are excluded from the warranty and product liability.

The tank connections on the drinking water side are designed for a flat sealing connection.

The tube registers built into the storage tank are suitable for connection to a hot water heating system at the pressure and temperature noted on the specification plate.

The tube register must be professionally flushed through before carrying out the initial installation (in addition we recommend the installation of a dirt filter). If the tube register is not used during the operation of the storage tank, then this must be completely filled with a glycol mixture to avoid corrosion due to the resulting condensation. Under no circumstances may the filled tube register be closed on both sides due to the fact that otherwise the water within the register could expand, thus risking damage to the tube register.

5. Circulation connection

A circulation connection is to be avoided if possible due to significant energy losses. If a widely ramified domestic water network requires a circulation line, this is to be well-insulated and the circulation pump is to be controlled via a timer switch and/or thermostat. The circulation connection piece is provided with an outer thread.

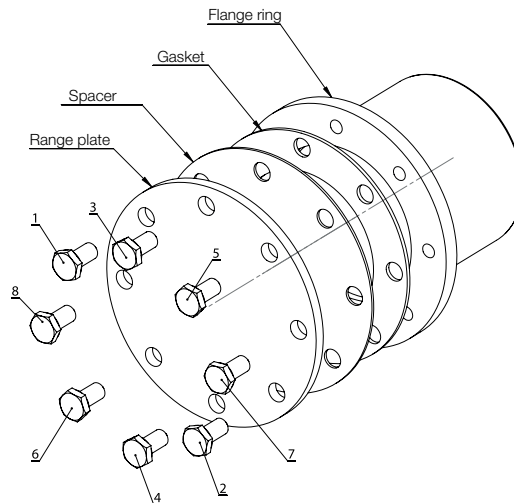
The requirements for drinking water hygiene (e.g. DIN 1988, DVGW W 551, Drinking Water Ordinance) are to be met.

6. Cleaning hatch

The flange Ø 240 mm (inner width Ø 173 mm, pitch circle Ø 210 mm, 12 x M12) and Ø 180 (inner width Ø 117 mm, pitch circle Ø 150 mm, 8 x M12) can be opened for cleaning and inspection work.

Note: The seal should be replaced for any rework!

You will receive the proper seal as a spare part - see spare parts list.



First tighten the nuts by hand and then tighten in the order shown with a torque from 18 to a maximum of 22 Nm.

7. Important Installation Information

For the load bearing capacity, nothing may be screwed into the connections as this may damage the enamel coating. Only use the provided hooks and base rings for transport.

When installing the device due attention must be paid to the dimensional sketches.

CAUTION: The weight of the water heater including the weight of the water content (the nominal capacity) must be taken into consideration for the selection of an installation point and/or the preparation of a device mounting surface that is adequate to meet the technical loading and installation strength requirements.

The required clearances to furnaces are to be taken from the manufacturer's documentation as well as from the relevant ordinances.

There must be a free space of 500 mm for the dismantling of the heating flange.

In terms of the choice and/or sequence of the installation material used on the system side, due consideration must be given to potential electro-chemical processes in accordance with good engineering practice (mixed installations!). The potential equalisation of the pipelines is to take place according to DIN 50927.

This type of corrosion results in the formation of corrosion cells. There is voltage between the anode and cathode area in the corrosion cells. The proceeding processes are mutually dependent, but can take place at various distances apart from each other. Corrosion cells may occur due to different potentials, as is the case with contact corrosion. With this, various metals are in conductive contact with each other via an ion-conducting medium (water).

All metallic built-in parts (e.g. built-in heaters) are to be introduced in a manner that is electrically isolated from the tank. To protect the built-in parts from corrosion, a transition resistance of about 600 Ω is to be provided (if not yet installed in the built-in parts at the factory).

If there is particularly aggressive water, which demands a special solution on the installation side, the potential need for special constructed versions of the storage tank should also be investigated.

In case of damage any failure to heed this instruction shall be deemed to represent an improper usage and will therefore result in this not being covered by the warranty provisions.

8. Corrosion protection

The enamelled tank is equipped with an impressed current anode as standard.

For details about the service of the anodes, see item 12, paragraph c.

For details about the operating requirements or technical details, see item 3.1.

The impressed current anode has a virtually unlimited service life. Its function must be regularly monitored via the control lights (green, yellow, red).

Warning: Corrosion protection is only guaranteed if the green LED lights up continuously.

Should the red or yellow LED light up or flash, please inform Customer Services immediately - corrosion protection is not active!

A prerequisite for perfect functioning is that the container be filled with water and display a conductivity of at least 150 µs/cm.

The connection cable of the impressed current anode may in no case be extended or cut, because otherwise a possible polarity reversal or malfunction of the anode may occur. In addition, it is to be ensured that a permanent power supply is ensured.

Important: All metallic components (e.g. heaters, pipe register) must be introduced in a manner that is electrically isolated from the tank.

9. Temperature Display, Temperature Regulation for Charge Pump

When installing external regulators, it must be ensured that the tank temperature cannot exceed the permitted operating temperature (see specification plate).

10. Initial Commissioning

The area in which the device is operated must be frost-free.

The initial commissioning and heating must be supervised by a trained professional.

Prior to initial commissioning and connection to the electrical power supply of the plant the storage tank must be filled with water. During first filling the outlet valve on the fitting must be opened. The hot water storage tank is completely filled when bubble-free water flows out of the outflow pipe of the valve.

All connections, including those that are locked down in the factory (flange, anode sleeve, immersion sleeve connections, blanking plugs), are to be checked for leaks during commissioning (if necessary, remove insulation again for visual inspection or remove lid).

Then check the plumbing for potential leaks and repair if necessary. As listed in item 4, the safety group as well as the valves between the cold water feed and the hot water tank must be checked for functionality.

After heating up, the configured temperature, the actual temperature of the extracted water as well as any temperature display that may have been built in should be about the same (after deducting the switch hysteresis and the line losses).

When the water within the storage tank is heated, its volume is changed accordingly.

During the heating process, the excess water resulting in the tank must drip out of the safety valve. This dripping is due to functional reasons and may not be prevented.

The automatic switching off of the system of any potentially installed electric heating installations or of the boilers must be checked.

Caution: The hot water drainage pipe as well as parts of the safety fittings can get hot.

11. Decommissioning, Draining

If the storage tank is to be taken out of operation or not used for a considerable period, then it should be completely isolated (all poles) from the electrical power supply - switch off at the mains or disengage the automatic circuit breakers and secure against being switched back on.

In rooms subject to a risk of frost, the hot water storage tank must be emptied prior to the start of the cold weather season if the device is to be unused for several days.

The draining of the domestic water is carried out once the shut-off valve has been closed in the cold water feed via the drainage valve of the safety valve combination whilst all hot water taps of the connected operating mechanisms are simultaneously open.

It is also possible to partially drain the system via the safety valve in the excess water funnel (drip tray). In order to do so, the safety valve is turned to the "Test" position.

Careful: Hot water can escape when draining!

If there is a risk of frost, it is generally to be observed that all water-carrying fittings and pipes (including the heating circuit = register) are to be emptied up until the frost-proof area.

If the storage system is brought back into service then it is crucial to ensure that it is filled with water and that bubble-free water emerges at the valves. A system flush is recommended for hygienic reasons.

12. Inspection, Servicing, Maintenance

- a) During heating, the excess water from the outlet of the safety valve must drain visibly. When fully heated up (about 80 °C), the excess water volume is about 3.5% of the storage tank volume.
The function of the safety valve should be checked regularly. When lifting or turning the safety valve testing knob to the "Test" position the water must flow unhindered out of the body of the safety valve and into the drainage funnel.
Caution: The cold water inlet plumbing and parts of the storage tank connection fittings can become hot as a result. If the storage tank is not heated up or if no hot water is extracted then no water should drip out of the safety valve. If this is the case then either the water pressure exceeds the permissible value or the safety valve is defective. If the water pressure is higher than permitted then a pressure reduction valve must be used.
- b) In the case of extremely hard water, the boiler scale accumulating in the storage tank's inner boiler as well as the freely deposited lime-scale must be removed by a professional after one or two years of operation. Cleaning is carried out by removing the flange opening of the cleaning flange and cleaning the storage tank. When installing the flange, a new seal is to be used. The bolts must be tightened crosswise with a torque of 18 Nm to 22 Nm. The specially enamelled inner container of the hot water heater must not come into contact with boiler scale solvent. Do not use with a de-calcification pump! Afterwards, the device must be thoroughly rinsed and the heating up process is to be observed as per initial commissioning.
- c) For service work, it is appropriate to also open the cleaning and service flange in order to check the tank for the possible ingress of foreign bodies and impurities and to remove them if necessary.
- d) Do not use any scouring agents to clean the device and do not use any paint thinners (such as Nitro, trichloride, etc.) It is best to clean it using a damp cloth with a few drops of a suitable cleaning agent (citric acid or acetic acid). In hospitals and other public buildings, the prevailing regulations for cleaning and disinfection must be observed.
- e) If defective spots are found in the course of cleaning on which calcium deposits have already formed, it is recommended to not remove these deposits, as a limescale layer can protect the defective spot against corrosion.

13. Electrical Connection

General information:

In addition to the legally recognised national guidelines and standards, the connection conditions of the local electricity and water works as well as those set out in the installation and operating instructions must be complied with and must only be carried out by a licensed professional. The mandatory protection measures must be carried out carefully, so that in case of a malfunction or outage of the water heater's electrical power supply no other electrically powered devices are affected by it (e.g. deep freezer, rooms used for medical purposes, intensity maintenance devices etc.).

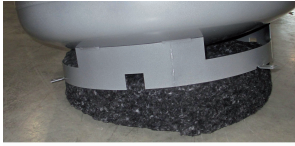
In rooms with baths or showers the device must be installed in compliance with the relevant national legislation and regulations (e.g. from the ÖVE- SEV or VDE).

The technical connection conditions (TAB) of the competent energy supply company responsible must be adhered to without fail. A ground fault circuit interrupter with a trip current of $I_{\Delta n} \leq 30\text{mA}$ must be installed upstream from the electrical circuit. The device may only be connected to permanently installed power lines.

These types of water heaters are to be supplied exclusively via a hard-wired connection cable and are therefore not suitable for connection via a shock-proof plug (SKI). Accidental activation of the upstream RCD is to be avoided in this way.

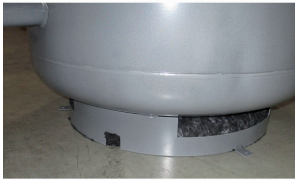
An all-pole isolating device with a contact spacing of at least 3mm must be installed upstream of the device. This requirement is fully met by a circuit breaker for example. Without fail, the tank must be filled with water prior to electrical commissioning. In accordance with safety regulations, the tank must be isolated from the power supply prior to any invasive operation and must be secured against accidental powering up and must be checked to ensure that it is voltage free. Interventions into the device's electrical systems may only be carried out by a licensed professional. The electrical connection must always be implemented in accordance with the circuit diagram pasted in the heating!

14. Thermal insulation installation



After opening the packaging, properly place the floor insulation and border strip.

In order to eliminate hazards for those requiring care (e.g. choking in children), all packaging parts are to be immediately disposed of properly or are to be cut up.



In order to perform a proper installation, the device must be horizontally aligned before installing the thermal installation.



Pull the perforated thermal insulation part with the geomembrane inward over the connections.



Lock the non-perforated thermal insulation part into place on the hook closure strip of the already attached thermal installation part.



In order to avoid the hook closure strip from opening during the additional installation procedure, the delivered cover strips must be clicked into place via the hook closure strip.



After attaching the cover strip, the thermal insulation can be closed by means of the second hook closure strip. In the case of a three-part thermal insulation, repeat the previous two work processes.



Insert the rondles on top of the tank and position them by pressing them lightly. Caution: To obtain an optimal thermal insulation, there may be no air gap present between the rundle and the thermal insulation.



Properly position and attach the lid with the hook strip recesses on top of the thermal insulation.

Note:

The lid of the WAS 1500 (Sol) / C and WAS 2000 (Sol) / C has neither border nor hook strip recesses.



Attach the included rosettes at the connections.



The thermal insulation may not be buckled or crushed, as otherwise there is a risk of damage (stress whitening). A stress whitening resulting from improper handling can be carefully eliminated or minimised by means of a hot air gun.

Caution: Depending on the heat output of the hot air gun, a minimum distance is required between the thermal insulation and gun. An open flame is not permitted (e.g. flames).

Note: The tank temperature may not exceed 110°C for a long time during operation.



Installation of the sensor with accompanying immersion sleeve spring. A total of 3 sensors can be installed per immersion sleeve.

Laying of the lines in the duct under the cover strip.



Attach the enclosed specification plate after the installation of the thermal insulation.

15. Impressed current anode




Connection situation



tension relief

Please observe the attached instructions for the impressed current anode for all other information.

16. Spare parts list

		Type							
		WAS 800	WAS 800 Sol	WAS 1000	WAS 1000 Sol	WAS 1500	WAS 1500 Sol	WAS 2000	WAS 2000 Sol
Designation	Item number								
	Immersion sleeve								
	Immersion sleeve G1/2" x 110mm	47600001157	x	x	x	x	x	x	x
	Clamp spring 14 x 8 x 90 115mm long	47600001167	x	x	x	x	x	x	x
	Flange								
	Flange seal 240	47600001267	x	x	x	x	x	x	x
	Dummy flange 240	47600001277	x	x	x	x	x	x	x
	Screw M12 x 25	401731	x	x	x	x	x	x	x
	Flange seal D172 x d114 x 3 EOM	47600001197	x	x	x	x	x	x	x
	Dummy flange 180 x 5	47600001207	x	x	x	x	x	x	x
	Supporting disc 180 x 2	47600001217	x	x	x	x	x	x	x
	Stud bolt M12 x 25	471234	x	x	x	x			
	Hexagonal nut M12	40900015897	x	x	x	x			
	Cover strip								
	Cover strip 2690mm (can be cut to length)	47600002977	x	x	x	x	x	x	x
	Rosette set								
	Rosette set WAS 800/1000 (Sol)	47600002542	x	x	x				
	Rosette set WAS 1500/2000 (Sol)	47600002752				x	x	x	x
	Cap/covers								
	Flange cover 240	47600002772	x	x	x	x	x	x	x
	Flange cover 180	47600002592				x	x	x	x
	Cover D998 x d60 x 70	47600002387	x	x	x				
	Cover D1270 x 2	47600002897				x	x		
	Cover D1370 x 2	47600002907						x	x
	Thermal insulation (sheath)								
	Thermal insulation WAS 800 (Sol)	47600002987	x	x					
	Thermal insulation WAS 1000 (Sol) / C	47600002997			x				
	Thermal insulation WAS 1500 (Sol) / C	47600002872				x	x		
	Thermal insulation WAS 2000 (Sol) / C	47600002882						x	x
	Impressed current anode								
	Impressed current anode G1/2" 430mm long	47600022062	x	x	x	x			
	Titanium electrode 403mm long, with accessories	47006422017				x	x	x	x
	Connection cable for impressed current anode	47006422022				x	x	x	x
	Plug housing 19	669080				x	x	x	x
	Flange plug 6.3 Ms type G	716240				x	x	x	x
Other									
	Locking screw G1 1/4"	47600001247	x	x	x	x	x	x	x

17. Guarantee, Warranty and Product Liability

Warranty, guarantee and liability claims for personal injury and property damage are excluded if they are due to one or more of the following causes:

- Operation with non-functioning safety or protective equipment,
- Continued use despite the occurrence of a defect,
- Improper installation, commissioning, operation and maintenance,
- Unauthorized modifications to the device,
- Installation of additional components that have not been tested together with the device,
- Improperly executed repairs,
- Not using Weishaupt original parts,
- Unsuitable media,
- Deficiencies in the supply lines.

The following explicitly listed items in each case lead to the exclusion of any warranty, guarantee and liability claims: Improper transportation, normal wear and tear, deliberate damage or damage through negligence, any application of force whatsoever, mechanical damage, damages due to frost or resulting from exceeding the operational pressure stated on the rating plate even once, the use of connection fittings that do not comply with the applicable standards or non-functioning storage tank connection fittings as well as unsuitable and non-functioning operating fittings. Plastic components breakage, any colour differences there may be, damage resulting from improper use, especially resulting from a failure to comply with the installation and operating instructions (Operating and Installation Instructions), damage due to external factors, connection to the wrong voltage, corrosion damage due to aggressive waters not suitable as drinking water in accordance with national guidelines (European Drinking Water Ordinance, national drinking water laws), divergences of the actual drinking water temperature at the storage tank instruments from the stated water temperature of up to 10°K (hysteresis of the regulator and potential cooling through plumbing), too low conductivity of the water (at least 150 µs/cm), operational wear of the magnesium anode (wear part), natural scaling, lack of water, fire, flooding, lightning strike, voltage overloading, power outages or other acts of force majeure. The use of non-original and non-company parts such as for example heating rod, protective anode, thermostat, thermometer, ribbed pipe heat exchanger etc., uninsulated components introduced opposite the tank, the infiltration of foreign bodies or electro-chemical influences (e.g. mixed installations), failure to pay due care and attention to the planning documentation, failure to renew the inbuilt protective anode on time and to document it, lack of or unprofessional cleaning and operation, as well as any divergences from the norm that even slightly reduce the value or the functional capability of the device. In addition, as a matter of basic principle, all regulations set out in DIN 1988 (EN 806), DIN 1717, VDI 2035 as well as the corresponding national regulations and legislation must be complied with.

18. Notes

The entire program: reliable technology and fast professional service

	<p>W-burner up to 570 kW</p> <p>The compact burners proven million times over are economical and reliable. As oil, gas and dual fuel burners, they heat single and multi-family homes as well as commercial operations. As purflam® burners with a special mixing device, they burn oil virtually free of soot and with reduced NOx emissions.</p>	<p>Wall-mounted condensing boiler systems for oil and gas up to 240 kW</p> <p>The wall-mounted condensing boiler systems WTC-GW and WTC-OW were developed for the highest standards of comfort and economy. Its modulating operation makes these devices particularly quiet and economical.</p>	
	<p>WM burner monarch® and industrial burner up to 11,700 kW</p> <p>The legendary industrial burners are durable and versatile in use. Numerous design versions as oil, gas and dual fuel burners are suitable for different heat requirements in various areas and applications.</p>	<p>Upright condensing boiler for oil and gas up to 1,200 kW</p> <p>The upright condensing boilers WTC-GB and WTC-OB are efficient, low emission and versatile in use. Large demands can also be covered by cascading up to four gas condensing boilers.</p>	
	<p>WK burner up to 28,000 kW</p> <p>The industrial burners in the modular system are adaptable, robust and powerful. These oil, gas and dual fuel burners work reliably, even in tough industrial applications.</p>	<p>Solar systems</p> <p>The elegant flat plate collectors are the ideal supplement to Weishaupt heating systems. They are suitable for solar drinking water heating as well as for combined heating support. With versions for roof mounting, mounting integrated in the roof and flat roof installations, solar energy can be used on nearly every roof.</p>	
	<p>multiflam® burner up to 17,000 kW</p> <p>The innovative Weishaupt technology for medium and large burners offers minimal emission values at power levels up to 17 megawatts. The burner with the patented mixing device is available for oil, gas</p>	<p>and dual fuel operation.</p> <p>The attractive program for drinking water heating includes traditional water heaters, solar tanks, heat pump tanks as well as energy storage tanks.</p>	
	<p>MSR technology / building automation by Neuberger</p> <p>From control cabinets to complete building automation solutions – at Weishaupt you will find the entire range of instrumentation and control technology. Future-oriented, economical and flexible.</p>	<p>Heat pumps up to 130 kW</p> <p>The entire heat pump range offers solutions for the use of heat from the air, the earth or groundwater. Some systems are also suitable for cooling buildings.</p>	
	<p>Service</p> <p>Weishaupt customers can rely on the fact that special knowledge and tools are always available when you need them. Our service technicians are universally trained and precisely know every product, from burners to heat pumps, from condensing boiler units to solar collectors.</p>	<p>Geothermal probe drillings</p> <p>With the subsidiary BauGrund Süd, Weishaupt also offers geothermal probe and well drilling. With experience of more than 10,000 systems and more than 2 million meters drilled, BauGrund Süd offers a comprehensive range of services.</p>	