

Ideen aus der Praxis!

MEIER-BRAKENBERG

High-pressure cleaner
- mobile – **hot water** -

Manual for type series MBH:



MBH1260K



MBH1800/2400



MBHST1260/1800/2400

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Soaking units • Disinfection • Animal weighing machines • Intensive cleaning • High-pressure cleaner • Stable cooling • Watering units

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1. Introduction

Dear customer, please read and follow this manual before use. Keep this manual for later use or subsequent owners. Please read the safety regulations before operation!

Guarantee: 12 months when used and maintained! Parts subject to wear and tear excluded.

Liability: The user is responsible for the appropriate use and maintenance of the high-pressure cleaner.

The manual must be directly accessible to the operator to ensure best possible operation and compliance with the safety regulations (see passage 3).

The high-pressure cleaner is constructed with tested components acc. to the regulations for liquid blasters ("Richtlinien für Flüssigkeitsstrahler") and the Equipment Safety Act ("Gesetz über technische Arbeitsmittel").

Please observe the relevant local directives regarding liquid blasters!

2. Use

High-pressure cleaners of type series MBH are exclusively for the indoor use of hog and chicken houses. To be used only with water. Hot water feed (up to 80 °C) increases cleaning effect.

Use only accessories and spare parts approved by MEIER-BRAKENBERG. Mind the correct jet size when using and/ or changing jets and dirt blasters!

3. Safety regulations

Safety devices are intended to protect the user and should not be disabled or bypassed in their function.

The high-pressure cleaner must be used only by trained persons who are perfectly familiar with the function of the device. The following safety rules must be observed before starting up the device and during the operation:

- The device's workplace must be free of dirt and grease during operation to ensure safe use for the person (or persons).
- The cleaning staff may only operate the device when standing firm on the ground. Cleaning while the user is on ladders, platforms or other elevations is strictly prohibited!
- Use only approved and non-aggressive mixing mediums or liquids.
- The reaction of the wash and spray liquid must be safe with the object to be washed. When working in confined areas be aware of any possible occurrence of gases or vapors.
- Do not spray-wash the device!
- **For maintenance and repair work, turn off the device and disconnect from mains!**
- Make sure that the high-pressure hose is not bent, damaged, being passed over or even destroyed.
- Defective high pressure hoses must be replaced with original hoses. They must comply with the "Guidelines for Liquid Blasters". Do not use hydraulic hoses.
- The torch gear must not be fixed in turn-on position.
- Secure the torch with the safety catch during breaks. The safety catch on the torch prevents unintended power-on of the device.
- Do not point the water jet on persons or live animals.
- Do not adjust the maximum limit of the circulation valve.
- Operation is prohibited in explosion hazardous areas. For use in hazardous areas (e.g. filling pumps), observe the appropriate safety precautions.
- Do not use the equipment when others persons are within range, unless they are wearing protective clothing. Do not point the jet at yourself or others person to clean clothes or footwear.

- The ejected water of the high-pressure jet produces repulsive force on the handgun. Hold the spray lance and steel pipe with both hands to ensure firm stand.
- A competent person (customer service) must check the high-pressure cleaner at least every 12 months to verify whether a continued safe operation is ensured.

All repair work must be carried out by qualified personnel. Moreover, observe the following operating rules: "Richtlinien für Flüssigkeitsstrahler" .

Source: Carl Heymanns Verlag
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Please observe the relevant local directives regarding liquid blasters!

Caution :

Apart from the repulsive force the wrist is affected by torsional movement during ejecting.

4. Start of operation

4.1 Components of high pressure cleaner

- | | | |
|-----------------------|-----------------------------|---|
| 1. Chassis frame MBH: | - frame aluminium | MBH1260K:- Frame and cover high-alloyed steel |
| | - cover high-alloyed steel | - wheels 250 mm |
| | - wheels 420 mm | - handle high-alloyed steel |
| | - handle high-alloyed steel | |

Wall bracket MBHST: - bracket aluminium
 - cover high-alloyed steel

Optional: high-grade steel hose coiler

2. Drive motor, high-pressure pump
3. Circulation control / manometer
4. Spraying device
5. Electrical connection

4.2 Oil level check

Check the oil level on the front side at the high-pressure pump of the cleaner. The oil level must be in the middle of the oil level indicator. Refill if necessary.

Suitable oil: SAE 10W-60 fully synthetic (Item.-No.: WB0011-01)

4.3 Power supply

Electricity must be connected by an electrician.

Caution: Verify that the voltage stated on the type plate complies with the voltage of the power supply. Unsuitable extension cables can be dangerous. For outdoor operation use only approved and correspondingly marked leads.

4.4 Water supply

- For connection values refer to type plate. In case the usual water line does not supply sufficient water to the cleaner, use a feed tank to prevent shortage of water in the pump.
Suction from the water pipe destroys the pump!
- When operating in suction process from a feed tank use a 1 1/2 " suction hose of max. 5 m with suction coupling.
- **Devices with control (start/stop automatic): backfitting is required for suction process!**
Cleaners with backfitting kit (see point 4.6): When operating in suction process from a feed tank use a 1 1/2 " suction hose of max. 5 m with suction coupling.
- The water pressure of the feed line must be between +2 bar and +10 bar.
- Observe the regulations of the water supply company.
- There is a filter screen between the Geka-coupling and the high-pressure pump. Check the screen regularly and clean the screen if applicable.
- Connect with a pressure and suction resistant water hose with fabric lining to water supply.
- Connect to the water connection of the device and the building's water tap.
- **Attention:** If there is mounted an non-return valve in the water-supply line, it has to be installed an expansion tank between non-return valve and presure cleaner! Otherwise componentens of the pressure cleaner can be damaged!

4.5 Starting the cleaner

- Couple hoses and electrical connection.
- Open water tap!
- Activate high-pressure torch and wait until water pours out without air entrapment, close torch.
- Turn on operating switch.
- **Start the device with the operating switch on "star" position and switch over to "triangle" after a short start-up period.**

CAUTION: Operate the motor only in "triangle" position when using cleaning mode.

- The device is now ready for operation.
- Pressure must build up immediately!
- In case of no pressure build-up check:
 - jet „clean“
 - feed line filter blocked (unsufficient water supply)
- The rotational direction of the high-pressure pump is irrelevant!

4.6 Function start/stop automatic

Only for start/stop type:

- The motor starts („EIN“) when opening the high-pressure torch.
- The device switches off („AUS“) after the preset overtravel time of approx. 30 sec. (torch not being used for more than approx. 30 sec.)

Operational availability:

- Switch the device to „Betriebsbereit“ (ready for operation) by pressing the green I-button. A green light between the green I-button and the red 0-button shows readiness for operation.
- The high-pressure cleaner works when the pump is activated. The pump continues to work for approx. 20 to 30 sec and stops automatically after releasing the torch.
- Turn off operational availability by pressing the red 0-button. The green LED goes off.

Direct start:

- Pressing the green I-button „Direktstart“ (direct start) makes the high-pressure cleaner operate at turned on operational availability without using the torch. Also turns off after approx. 20 to 30 sec.

Operation of accessories of the high-pressure cleaner MBH in suction mode:

1. Connection of hoses:

- For suction mode connect supplied return valve in front of the filter. The arrow must point towards the device. The suction hose must be coupled to the return valve.
- A second water supply with pressure must be connected to the right hand Geka-coupling.



2. Suction:

- Open water by activating the torch and let air flow out.
- Switch device to operational readiness and activate the torch briefly and release again. Repeat until the lance emits a steady-going water jet.
- For normal operation with water system pressure, mount the supplied Geka-coupling to the Geka-connection, instead of a hose.



5. Mode of operation

The high-pressure pump is driven by an electric motor and is supplied with water through a hose, directly or through a feed tank, increases the pressure to the required operating pressure and leads the water through the high-pressure hose to the torch or jet spraying device. A special nozzle generates a fan-shaped spray sheet with the best possible cleaning effect.

During breaks the pressure circulation valve (by-pass valve) leads the water conveyed by the high-pressure pump in circulation mode back to the suction side of the high-pressure pump.

Standard equipment: The electric motor can be turned on and off by the star/ triangle switch (standard).

Control: The device automatically turns on once the water tap is open and the operational availability is turned on when the torch is activated and turns off automatically during breaks and an overtravel time of approx. 30 sec.
The motor is protected by an motor protection relay.
Always turn off the operational readiness during long breaks!

6. Shutdown

- Turn off operating switch.
- Release high-pressure pump by activating the torch!
- Lock high-pressure torch!
- Close water tap.

7. Maintenance

7.1 Before each use

- Check the power supply cable. The cable must not be damaged (risk of electric shock). An authorised electrician must replace the damaged power lead immediately.
- Check high-pressure hose for damages (risk of bursting); if damaged replace immediately.

Measures at risk of frost: Store the device safe from frost!

7.2 Service notes on high-pressure pump (drawing)

- Tighten screw (pos. 1 in drawing HE006W/HE007W, appendix) with 50 Nm (5.1 kgm)
- Tighten valve cover (pos. 3 in drawing HE006W/HE007W, appendix) with 68 Nm (6.9 kgm)
- Tighten nut bolt (pos. 17 in drawing HE006W/HE007W, appendix) with 12 Nm (1.2 kgm)
- Tighten rod bolt with 10.4 Nm (1.1 kgm)
- Tighten bearing screw (pos. 28 in drawing HE006W/HE007W, appendix) with 24.5 Nm (2.5 kgm)

7.3 Oil level high-pressure pump (check regularly)

- Check the oil level in the crankcase before starting operation of the cleaner.
- Check with oil dipstick.
- Check in fresh oil tank approx. 2 cm.
- First oil change after approx. 50 hours of operation, subsequently every 300 operating hours or every 6 months.

- Oil change:**
- Open oil-drain screw.
 - Let oil drain off into collecting tray.
 - Close oil-drain screw.
 - Fill in new oil slowly, oil must reach the middle of the oil level indicator.

Applicable oil: SAE 10W-60 fully synthetic (Item.-No.: WB0011-01)

7.4 Filter

The standard water filter is on the backside of the device at the water inlet connection behind the Geka-coupling towards the high-pressure pump.

Check the filter regularly (at least 1 x daily) and clean if applicable. Screw off the filter casing and rinse filter.

Contaminated filters lead to water shortages and therefore damages the pump.

8. Standard accessories

8.1 High-grade steel cover

Take off cover for maintenance work:

- Extra equipment „hose coiler“: Disconnect connection hose from device to hose coiler at the swivel joint.
- Unfasten 4 fixing screws mit PVC head on the right and left side of the device chassis (do not unscrew completely).
- Remove cover frontwards.

8.2 Hose coiler

The hose coiler is extra equipment and supplied only on request. The coiler is made of high-grade steel and contains the following components:

- hose drum
- holder
- swivel joint
- crank handle
- hose brake

Hose brake:

The hose brake is adjusted or completely clamped with the clamping pintle on the right side of the device. We recommend to clamp the hose coiler during cleaning operation to prevent unwinding caused by vibration.

Dismantling:

The hose coiler can be completely dismantled with the handle for car transportation to allow easy and comfortable loading over a ramp.

Proceeding:

- Uncouple connection hose from device to hose coiler at the swivel joint of the hose coiler.
- Unfasten 4 fixing screws with PVC head on the back side of the device (do not unscrew completely).
- Remove electric cable from the holder on the side of the handle.
- Remove handle with hose coiler.

8.3 Special lances

Special lances are extra equipment and supplied on request. Lances can be changed with the KEW fast coupling system on the torch.

The **double lance** allows stageless pressure adjustment with the handle.

The **dirt blaster lance** is suitable for very heavy contamination. The rotating pencil-jet generates a very aggressive cleaning jet. Clean only suitable surfaces which are resistant to the strong jet.

The **foam lance** is used for foam output which is injected to the lance from the solution tank.

9 Injector with coupling

Models: HZ07701 f. MBH1260 (jet size, screw-on: 2.1 mm)
HZ07702 f. MBH1800 (jet size, screw-on: 2.3 mm)
HZ07703 f. MBH2400 (jet size, screw-on: 1.9 mm incl. pressure relief valve)

9.1 Use:

- Injectors of type series HZ077 are designed for coupling between device and hose or hose drum at the pressure side of the high-pressure cleaner.
When using a stationary high-pressure line coupling is made between tap and high-pressure hose (ill. right hand side: HZ07701/02).
- The connection for chemicals with integrated non-return valve is located at the injector followed by the suction hose with intake strainer to aspirate the agent from an external container. Arrows indicate the direction of flow.
- Select the suitable injector depending on the high-pressure cleaner model to ensure the correct rate of flow (see table „Models“).
- The injector serves the targeted feeding of cleaning agents to the water and the rinsing operation with water.
- Suitable dosing media are fluids of group 2 of the pressure equipment directive (Druckgeräterichtlinie DGRL).



9.2 General safety information:

- The injector must only be used with bypass and in accordance with this operation manual to ensure safe operation.
- Keep the operation manual in a safe place for future use.
- Please also observe the safety advices of the cleaning agent and the high-pressure cleaner.
- Do not mix cleaning agents.
- Wear proper protective clothing and gloves during operation.
- Do not direct the high-pressure jet towards persons or animals.
- The device must only be operated by qualified and trained persons who do not have any limited physical, sensory or mental capacities. Qualified staff are such persons who are familiar with installation, start-up and shutting-down, operation, maintenance and repair of the device.

9.3 Commissioning:

All connection lines and the injector should be rinsed with clear water prior to operation or change of medium. Please ask the producer if cleaning agents are very aggressive. Any operation exceeding the above mentioned is not permitted.

9.3.1 Connecting the injector

- Switch off the main switch of the high-pressure device.
- Afterward disconnect the fast coupling connection between device and hose or hose drum (KEW coupling system).

When using a stationary high-pressure line coupling must be between tap and high-pressure hose. Couple the injector in flow direction between device and hose.

- Insert the suction hose into the medium container.

9.3.2 Selecting the lance

The output lance must be a double lance for pressure relief or foam lance HZ074Z01. It is necessary to ensure a pressure loss of at least 50 bar in flow direction behind the injector. Otherwise the injector does not aspirate any medium.

- Do not use single flat jet lance or dirt blaster lance.

9.3.3 Start of injection

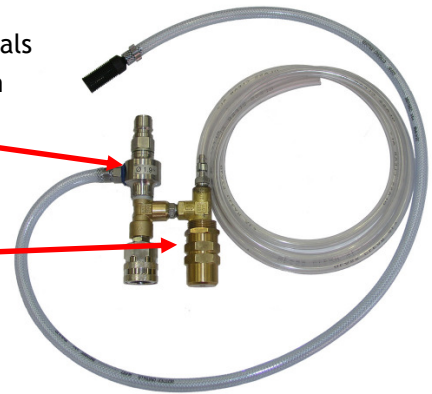
- The device is ready for operation selection of suitable output lance and coupling the lance to the spray gun.
- Activate the spray gun until no more air is released from the lance. Afterwards the high-pressure device can then be switched on and the injector is ready for operation.

9.4 Dosing amount:

The dosing amount can be adjusted with the appropriate jet for chemicals at the injection point of the injector. Dosing inserts from 0.5 to 2.0 mm are included in the scope of delivery.

9.5 Operation with MBH2400:

Because of the high flow rate of the MBH2400 the scope of delivery includes an extra pressure relief valve in addition to the injector. The valve drains off excess water to prevent damages to the control valve of the high-pressure device.



9.6 Foam lance for injector:

The metered medium can be sprayed with the double lance. The foam lance HZ074Z01 with integrated air injector is used for foaming. Connect this lance to the high-pressure gun with the supplied KEW-fitting.



9.7 Troubleshooting:

Injector does not aspirate any medium or does not develop any foam:

- Clogged dosing nozzle - Clean nozzle carefully with a thin wire. Replace nozzle in case of heavy soiling.
- No dosing nozzle installed in suction hose.
- Damaged suction hose.
- Suction hose not correctly inserted into medium.
- Wrong lance -operation requires either double lance with lower set pressure or foam lance HZ074Z01.

- Wrong flow direction: Check the arrows at the injector indicating the direction of flow.
Flow directions differ depending on whether coupling at the tap or direct connection to the high-pressure device.

☛ **Do you have any questions?**

We would be glad to help. Please call us! Tel.: +49 (0) 5262 / 993 99-0