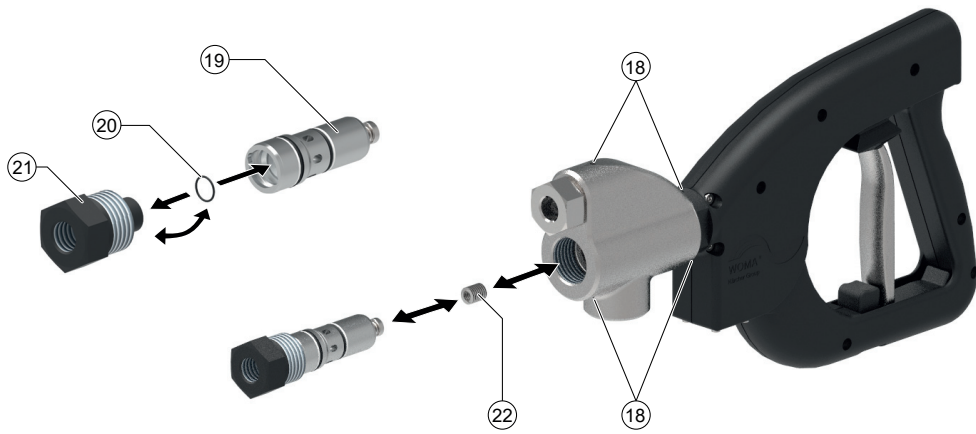
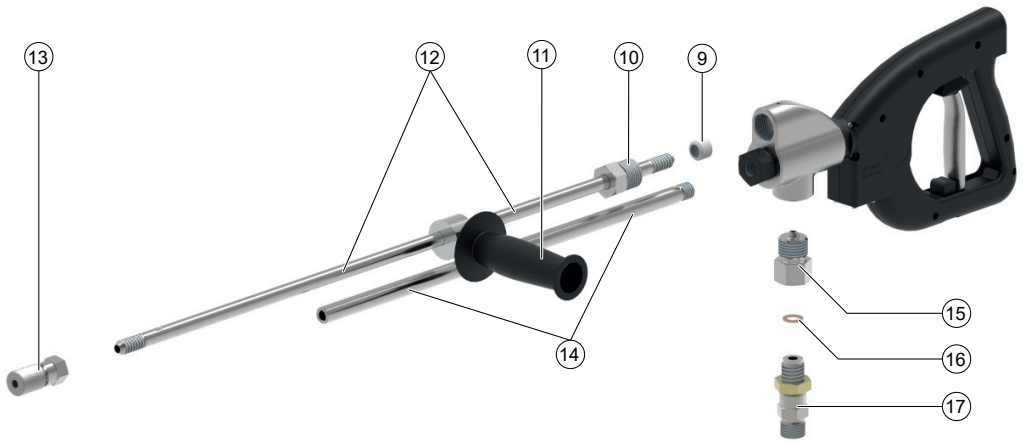
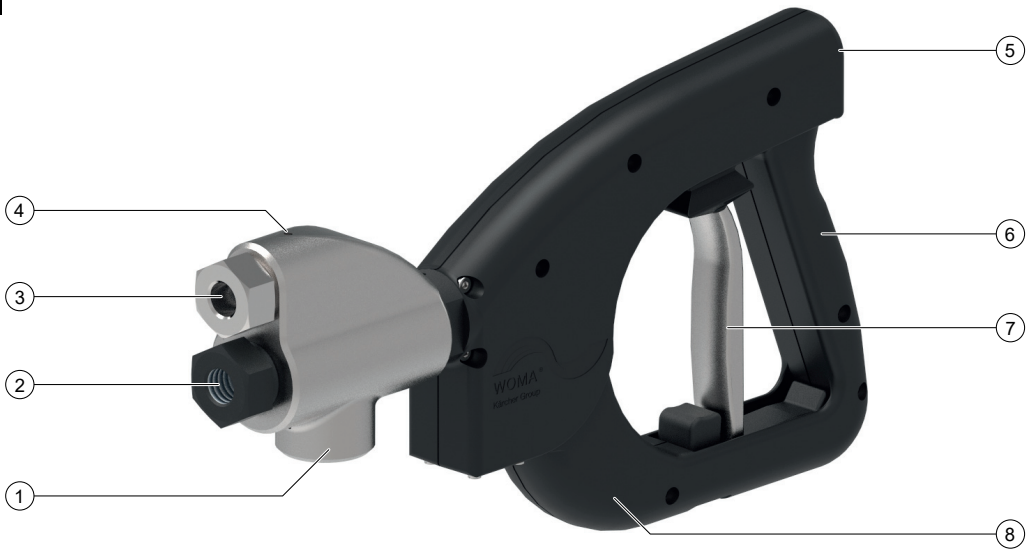


HP-DG

English%2



A



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1 General notes

1.1 Information on these operating instructions

These operating instructions were created according to the Machinery Directive 2006/42/EC guideline. They allow safe and efficient handling of the product HP-DG.

The original operating instructions were created in German.

Read these operating instructions before using the product for the first time, adhere to the instructions contained therein and store these operating instructions for later reference or subsequent owners of the product.

1.2 Manufacturer

WOMA GmbH
Werthausen Straße 77-79
47226 Duisburg
Germany
Ph: + 49 2065-304-0
Fax: + 49 2065-304-200
Email: sales@woma.kaercher.com
www.woma-group.com

1.3 Service

Our worldwide Service department is available for all technical information on WOMA products and their technical system applications.

Please contact the WOMA Service department, the agent responsible or the manufacturer factory if you have problems with our product. We will be happy to help you.

WOMA GmbH
Werthausen Straße 77-79
47226 Duisburg
Germany
Ph: + 49 2065-304-0
Fax: + 49 2065-304-200
Email: service@woma.kaercher.com
www.woma-group.com

Note

Quick assistance and correct order processing is only possible when you can tell us your order number and product serial number. We recommend that you enter this information here:

- Order number: _____
- Serial number: _____

1.4 Formal information on these operating instructions

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1.5 Illustration conventions

1.5.1 Acton steps in the specified sequence

Action steps to be executed are shown as a numbered or alphabetic list. The sequence of the steps must be maintained.

Example:

1. Action step 1
2. Action step 2
 - a Action sub-step a
 - b Action sub-step b

1.5.2 Itemizations

Lists and action steps without a mandatory sequence are shown as a bullet list.

Example:

- Point 1
- Point 2
 - Sub-point 1
 - Sub-point 2

1.6 Product elements

Figure A see page 2

- ① High-pressure hose connection
- ② Bypass connection
- ③ Spray tube/spray lance high-pressure connection
- ④ Pressure housing
- ⑤ Body support connection
- ⑥ Handle
- ⑦ Trigger
- ⑧ Trigger catch
- ⑨ Pressure ring
- ⑩ Pressure screw
- ⑪ Handle for spray tube/spray lance (accessory)
- ⑫ Spray tube/spray lance (accessory)
- ⑬ Nozzle holder/water tool (accessory)
- ⑭ Bypass line (accessory)
- ⑮ Adapter (accessory)
- ⑯ Seal (accessory)
- ⑰ Hose connection (accessory)
- ⑱ Leakage hole
- ⑲ Cartridge (pressure housing)
- ⑳ Seal (pressure housing)
- ㉑ Bypass screw (pressure housing)
- ㉒ Spring (pressure housing)

1.7 Scope of delivery

- Product
- Operating instructions

Check the contents for completeness. Please contact your dealer if the contents are incomplete or shipping damage is present.

1.8 Abbreviations and definitions

In the following sections, the term spray device is used to describe an assembly consisting of a trigger device (high-pressure gun), a spray tube/spray lance and a water tool.

2 Safety

In addition to the notes in the operating instructions, the general safety regulations and accident prevention guidelines applicable by law must be adhered to.

2.1 Warning notices

Warning notices prevent personal injury and material damage when observed.

A warning notice contains the following elements and information:

Danger symbol ⚠

The danger symbol identifies warning notices for preventing personal injury.

Keyword

The hazard level is indicated by the keyword.

Source of danger

The source of danger specifies the cause of the hazard.

Possible consequences of failure to observe

Possible consequences of failing to observe a warning notice are e. g. crushing injuries, burns or other severe injuries.

Measures / Prohibitions

Measures / Prohibitions specifies actions that must be taken to avoid the hazard or that are prohibited in order to avoid the hazard.

2.2 Representation of warning notices

⚠ **DANGER**

Source of danger

Possible consequences of failure to observe

Measures / Prohibitions

2.2.1 Hazard levels

⚠ **DANGER**

- *Indication of an imminent threat of danger that will lead to severe injuries or even death.*

⚠ **WARNING**

- *Indication of a potentially dangerous situation that may lead to severe injuries or even death.*

⚠ **CAUTION**

- *Indication of a potentially dangerous situation that may lead to minor injuries.*

ATTENTION

- *Indication of a potentially dangerous situation that may lead to damage to property.*

2.3 Representation of notes

Note

Indication of useful and important information or suggestions for improving safety when handling the product.

2.4 Personnel qualifications

The personnel must be appropriately qualified for the respective use of the product.

The owner must clearly define the areas of responsibility and the personnel monitoring systems.

Ensure sufficient personnel knowledge through appropriate training and instruction.

2.4.1 Operating personnel

Operating personnel are persons commissioned by the owner to operate the product and who are sufficiently trained in the operation and functionality of the product. The operating personnel must be sufficiently trained in the operation and functionality of the product, must be able to recognize any hazards that may occur and be capable of preventing these hazards through appropriate protective measures.

The operating personnel must be able to recognize any hazards in time and be able to implement the prescribed protective measures accordingly.

The operating personnel is obliged to immediately notify the owner/operator of any safety-relevant changes in the product.

2.4.2 Maintenance personnel

Maintenance personnel are persons commissioned by the owner to perform maintenance work on the product. Maintenance personnel are untrained but have been instructed in inspection and maintenance work, e.g. oil changes, checking screwed connections etc.

The maintenance personnel must be familiar with the operation and functionality of the product, must be able to recognize any hazards that may occur and be capable of preventing these hazards through appropriate protective measures.

The maintenance personnel is obliged to immediately notify the owner/operator of any safety-relevant changes in the product.

2.4.3 Trained technical personnel

Trained technical personnel are persons trained by WOMA GmbH to perform inspection, maintenance and servicing work and who have received the necessary information in the form of a service manual during their training. Trained technical personnel are familiar with the operation and functionality of the product and are able to recognize any hazards that may occur and be capable of preventing these hazards through appropriate protective measures.

2.5 Cables and hoses

⚠ **DANGER**

Contact with high-pressure water jets can cause irreversible injuries or even death. Tripping over, threading or catching the cables and hoses can lead to uncontrolled changes in the direction of the high-pressure water jet.

- *Cables and hoses must not be allowed to form loops.*
- *Remove unused cables and hoses from the work area.*

⚠ **WARNING**

Contact with a high-pressure water jet escaping from a pressurised, damaged hose can cause irreversible injuries or even death.

- *Check the cables and hoses for damage each time before use. Immediately replace damaged cables and hoses.*
- *Do not continue using cables, hoses or extensions if they have been driven over, crushed, pulled or excessively loaded in a similar manner. This also applies when no damage is visible.*
- *Protect cables and hoses from heat and sharp edges.*
- *Use hose catching fixtures. These must be securely fastened.*

2.6 Water connection

⚠ WARNING

Contact with high-pressure water jets escaping from pressurised hoses and screw connections can cause irreversible injuries or even death.

- Use only hoses and accessories approved for the maximum operating pressure of the high-pressure water jet machine.
- Check the screw connections of all connection hoses for leaks before starting the device.
- Do not use a hose connection with a damaged thread.

2.7 Usage

2.7.1 Work area

⚠ DANGER

Contact with high-pressure water jets can cause irreversible injuries or even death.

- Do not direct high-pressure water jets towards humans, animals or electrical equipment.
- Never work alone! For safety reasons, a second person must always be present when using the safety device, who is able to shut down the high-pressure water jet machine in the case of an emergency and obtain help if necessary.
- No persons except the operating personnel may be present within a 10 m radius of the spray device when spraying.
- The spray device work area and the general work area must be fully visible.
- Secure the spray device work area in a clearly visible manner against unauthorised access while spraying. Erect warning signs and cordon off the area.
- Depending on the surface characteristics, the ground can become slippery due to the spray mist or emitted water. Maintain a solid and safe footing when working with a water jet.
- Spray mist impairs direct visibility. Take the local conditions into account and watch out for other persons when working with a water jet.
- The operating personnel must be secured against falling when spraying on scaffolding.
- The operating personnel must be secured by a retaining device (e.g. straps, ropes) when spraying in enclosed spaces (e.g. tanks or autoclaves). Ensure an additional supply of sufficient fresh air.
- Adhere to the respective safety instructions when using the spray device in hazard zones (e.g. service stations).
- The spray device may not be operated in explosive atmospheres.

2.7.2 General usage information

⚠ DANGER

Incorrectly used high-pressure water jets can be dangerous and contact with high-pressure water jets can cause irreversible injuries or even death.

- Do not use spray equipment shorter than 750 mm (measured from trigger to nozzle). A danger of injury exists when working with short spray lances because your hand may come into contact with the high-pressure jet.
- Use the device only in the specified correct manner (see chapter 3 Intended use).
- Check the product and work equipment prior to each use to make sure it is safe and working correctly (see chapter 6 Startup). Do not use a damaged spray device.

- Never lock the trigger of the product.
- The impact of the high-pressure water jet can release particles or larger elements from the surface being cleaned. These are strongly accelerated and can injure the operating personnel. Wear the prescribed personal protective equipment.
- Do not use the high-pressure water jet machine and the spray device when you are tired, medically impaired or under the influence of alcohol or medication.
- Never use liquids containing solvents or undiluted acids and solvents. This includes e.g. petrol, paint thinner or heating oil. The spray mist is highly flammable, explosive and poisonous.
- Materials containing asbestos or other substances harmful to health may not be sprayed.

2.7.3 Temperature

⚠ WARNING

Escaping high-pressure water can cause burns or scalding.

- Wear personal protective equipment.
- Do not touch any hot surfaces of the spray device when using hot water.
- Install a handle for protection (see the WOMA product range).
- Allow the spray device to cool down after hot water operation or flush the spray device using cold water operation.
- The fluid can heat up in cold water operation due to depressurisation of the high-pressure water. Do not touch any hot surfaces of the spray device.

2.7.4 Noise

⚠ WARNING

The high nozzle outlet speed of the high-pressure water jet results in a high noise level that can cause discomfort or hearing damage (e.g. tinnitus) to persons in the immediate vicinity. A continuously high noise level can result in deafness.

- Wear the prescribed personal protective equipment.
- High noise levels can impair vocal communication and impair or prevent your ability to perceive acoustic warning signals. Never work alone. A second person must be present outside the work area.

2.7.5 Recoil forces

⚠ WARNING

The recoil forces occurring when working with a water jet present a risk of falling.

- Maintain a solid and safe footing. Do not work on ladders.
- Hold the spray device by the specified handles with both hands.
- Select the nozzle diameter for manually performed spray work so that the longitudinal recoil force does not exceed 250 N. The spray device must be equipped with a body support (see the WOMA product range) if the recoil force exceeds 150 N.
- When simultaneously operating multiple spray devices from a single high-pressure water jet machine, be aware of the changing recoil forces. The recoil forces occurring at the other spray devices must not change by more than 15% when opening or closing a spray device.

Note

The recoil forces present are specified in the WOMA product data sheets for the nozzles use, which can be requested from WOMA GmbH (see chapter 1.3 Service).

2.7.6 Vibration

⚠ CAUTION

Hand-arm acceleration values exceeding 2.5 m/s^2 can occur, depending on the spray device used. Longer periods of use may lead to poor blood circulation in the hands due to vibration.

A general maximum period of use cannot be specified, because this depends on several influencing factors:

- Personal tendency to suffer from poor circulation (symptoms such as frequently cold fingers, tingling sensation in the fingers etc.).
- Low ambient temperature. Wear warm gloves to protect your hands.
- Grasping tightly reduces the circulation of blood in the hands.
- Working without interruption amplifies the effects of vibration induced blood circulation problems.

Note

We recommend consulting a doctor if corresponding symptoms occur repeatedly after regular, long-duration use of the spray device.

2.8 Protective gear

⚠ WARNING

Risk of injury through incorrect or incomplete protective gear

- The operating personnel must wear protective clothing specially designed for use with high-pressure water jet machines. CE-certified protective clothing made of Dyneema fibres provides tested protection when using rigid or rotating nozzles at pressures of up to 3000 bar / 43,511 psi.
- All the following protective clothing must be worn when working and lingering in the work area:
 - Hard hat with protective visor
 - Safety goggles
 - Encapsulated hearing protection
 - Protective gloves
 - Protective jacket, protective trousers
 - Special safety boots with metatarsal protection

2.9 Safety devices

Safety devices protect the operating personnel and may not be disabled or functionally circumvented.

The product is equipped with a trigger safety catch that prevents the trigger from being actuated unintentionally.

- Never lock the trigger.
- Do not block or modify the trigger catch.

3 Intended use

This product is used for actuating manually operated spray devices from WOMA GmbH, used at permissible operating pressures of up to 1100 bar.

In conjunction with a high-pressure water jet machine, spray tube / spray lance and a water tool, this product is designed for targeted application of a high-pressure fluid to a surface for the purpose of removing, cleaning etc. various surfaces and materials such as steel, concrete etc. This can be achieved using various different water tools from WOMA GmbH.

This product is only to be used with water conforming to the WOMA water quality guideline (see Chapter 12.1 Water quality guideline). The maximum permissible fluid volume flow rate is 45 l/min.

Please check the safety devices on the product each time before use (see chapter 6 Startup).

Intended use also includes using only original spare parts from WOMA GmbH.

Any use other than, or beyond the specified intended use is regarded as incorrect use.


Observe the safety instructions and warning notices.


3.1 Foreseeable misuse

The device is equipped with a trigger safety catch. This prevents unintentional actuation of the trigger.

- Never lock the trigger.
- Do not block or modify the trigger catch.
- Do not use spray equipment shorter than 750 mm (measured from trigger to nozzle).
- Do not use the spray device for cleaning the high-pressure water jet machine or for mechanically loosening contamination or baked deposits (e.g. when cleaning a cement kiln).
- Do not use the spray device as a lever (crowbar).
- Never use liquids containing solvents or undiluted acids and solvents for spraying. This includes e.g. petrol, paint thinner or heating oil. The spray mist is highly flammable, explosive and poisonous.
- Materials containing asbestos or other substances harmful to health may not be sprayed.

4 Environmental protection

 The packing materials can be recycled. Please dispose of packaging in accordance with the environmental regulations.

 Electrical and electronic appliances contain valuable, recyclable materials and often components such as batteries, rechargeable batteries or oil, which - if handled or disposed of incorrectly - can pose a potential threat to human health and the environment. However, these components are required for the correct operation of the appliance. Appliances marked by this symbol are not allowed to be disposed of together with the household rubbish.

Notes on the content materials (REACH)

Current information on content materials can be found at: www.kaercher.com/REACH

5 Installation

5.1 Safety instructions

⚠ WARNING

Risk of injury from the high-pressure water jet

A high-pressure water jet can escape from a pressurised high-pressure water jet machine.

Switch off the high-pressure water jet machine and secure it against being switched on again before installing the product.

Ensure that all components of the high-pressure water jet machine are depressurised.

ATTENTION

Improper installation

Improper installation with damaged or dirty components can lead to malfunctions and damage to the product. Perform a visual inspection of all product elements before installation.

All threads must be clean and undamaged.

The sealing surfaces of mating components must not have any scratches or scoring.

5.2 Installing the spray tube/spray lance

1. Release the pressure screw from the pressure housing and remove together with the pressure ring (see illustration on page 2).
2. Push the pressure screw onto the spray tube/spray lance.
3. Coat all threads with installation paste before installation (see Chapter 12.2 Consumables).
4. Unscrew the pressure ring (left-hand thread) until 1-2 threads are visible.
5. Push the spray tube/spray lance with the pressure screw into the pressure housing.
6. Screw the pressure screw into the pressure housing (30 mm) and tighten to a torque of 160 Nm.
7. When cleaning surfaces (e.g. cleaning concrete), install the splash guard (see Chapter 13 Accessories) on the spray tube/spray lance.
8. Screw the nozzle holder or other water tool onto the spray tube/spray lance and tighten to a torque of 100 Nm unless specified otherwise.

Major characteristics of the water tools

- Water tools (e.g. nozzles, turbo nozzle, Orbimaster, Speedy) used on manually operated spray devices from WOMA GmbH may have multiple nozzle outlet openings. These may be spotlight nozzles or flat jet nozzles. Motor-driven rotation, or self-driven rotation through angled nozzles is possible (see the WOMA product range).
- Water tools extend the range of possible uses for the spray device. Further information is available from your WOMA sales partner.

5.3 Installing the bypass line

1. Coat all threads with installation paste before installation (see Chapter 12.2 Consumables).
2. Screw the bypass pipe or bypass hose connection into the pressure housing (32 mm) and tighten onto the bypass connection to a torque of 100 Nm (see illustration on page 2).

5.4 Installing the hose connection

(see illustration on page 2)

Note

Take care to ensure that only hoses approved for the maximum operating pressure are used.

1. Coat all threads with installation paste before installation (see Chapter 12.2 Consumables).
2. Screw the adapter (material number 9.918-624.0) into the pressure housing and tighten to a torque of 130 Nm.
3. Fit the seal (O-ring) in the adapter.
4. Screw the hose connection into the adapter and tighten to a torque of 130 Nm.
5. Connect the high-pressure water jet machine to the secured spray device using a suitable high-pressure hose.

6 Startup

6.1 Safety instructions

⚠ DANGER

Risk of injury from the high-pressure water jet

Contact with high-pressure water jets can cause irreversible injuries or even death.

Do not direct high-pressure water jets towards humans, animals or electrical equipment.

Ensure that the product is correctly installed before use (see chapter 5 Installation).

Due to the potential hazards (e.g. recoil, cutting effects of the water jet etc.) be sure to use the product only in the intended manner (see chapter 3 Intended use).

The product may only be operated by personnel who have been trained for this and who have been instructed in the potential hazards (see chapter 2.4 Personnel qualifications).

Wear the prescribed personal protective equipment when spraying (see chapter 2.8 Protective gear).

Note

Do not operate the product at temperatures below 0 °C.

6.2 Before switching on the high pressure water jet machine

The product is correctly installed and connected to the high-pressure water jet machine. The high pressure water jet machine is not switched on.

Perform the following steps each time before switching on the high water pressure, i.e. when the high pressure pump is stationary and pressurised:

1. Vent the entire high pressure water jet machine using the filter and the vent hose on the high pressure pump.
2. Rinse the high pressure water jet machine, including the high pressure hose, with fresh water while the product is depressurised.
3. Check the bypass line on the water outlet.
Water must be expelled from the bypass line when the product is not actuated.
4. Check that the trigger and the trigger catch are functioning smoothly and freely.
The trigger must return automatically to its original position after actuation and engage into the trigger. It should only be possible to actuate the trigger when the trigger catch is actuated once again.
5. Check the product condition for differences from its condition on delivery.
Has the position of the pressure point changed, for example? When switching from *Trigger actuated* to *Trigger not actuated*, the water volume flow in the bypass line must be expelled immediately.

Note

Do not use the product if the checks are unsuccessful. In this case, have a safety inspection conducted (see chapter 9.4 Service).

6.3 Before starting spraying

The product is correctly installed and connected to the high-pressure water jet machine.

The high-pressure water jet machine is switched on.

Note

Depressurised jet liquid flows out of the bypass line when the high-pressure water jet machine is switched on and the product is not actuated.

Before starting work with the product using high water pressure, perform the following checks:

1. Check the bypass line on the water outlet.
Water must be expelled from the bypass line when the product is not actuated.
2. Actuate the product under high pressure several times in a safe area and check the valves on the bypass and the leakage holes for leaks.
3. Check that the trigger and the trigger catch are functioning smoothly and freely.
The trigger must return automatically to its original position after actuation and engage into the trigger. It should only be possible to actuate the trigger when the trigger catch is actuated once again.
4. With the help of the supervisor, check whether the planned working pressure of the high pressure water jet machine is reached.

Note

Do not use the product if the checks are unsuccessful or if an abnormality or unexpected situation is determined. In this case, have a safety inspection conducted (see chapter 9.4 Service).

6.4 Starting up the product

The product is correctly installed and connected to the high-pressure water jet machine.

The high-pressure water jet machine is switched on. Product checks in accordance with Chapter 6.2 Before switching on the high pressure water jet machine and Chapter 6.3 Before starting spraying are successful.

Note

Depressurised jet liquid flows out of the bypass line when the high-pressure water jet machine is switched on and the product is not actuated.

1. Actuate the trigger safety catch. Do this by pressing the trigger safety catch down.
2. Actuate the trigger.

Actuating the trigger closes the bypass line and causes the spray fluid to be emitted under pressure out of the nozzle of the water tool.

Note

Non-corrosion resistant materials can be corroded by the emitted high-pressure water jet.

7 Shutting down

7.1 Safety instructions

⚠ DANGER

Risk of injury from the high-pressure water jet

A high-pressure water jet can escape from a pressurised high-pressure water jet machine.

Ensure that all components of the high-pressure water jet machine are depressurised after shutting down the product.

⚠ CAUTION

Hot surfaces

Touching the surface of the product can cause burns or scalding.

Wear personal protective equipment.

Do not touch any elements of the product after using it with hot water.

Allow the product to cool down after hot water operation or flush the spray device using cold water operation.

7.2 Shutting down the product

Note

Depressurised jet liquid flows out of the bypass line when the high-pressure water jet machine is switched on and the product is not actuated.

1. Release the trigger. The trigger automatically locks onto the trigger catch.
2. Check that the trigger catch is correctly engaged by actuating the trigger.
3. Switch off the high-pressure water jet machine and secure it against being switched on again.
4. The high-pressure system must be depressurised. To do this, completely discharge all residual pressure.
5. Disconnect all supply lines from the product in the reverse order (see Chapter 5 Installation).

8 Storage

The following applies to this product and, unless specified otherwise, to all other water tools:

- Clean after finishing work.
- Store in a frost-protected place.
- For long-term storage, blow out the product with compressed air and conserve using a suitable preservative.

9 Maintenance and servicing

9.1 Safety instructions

⚠ DANGER

Risk of injury from the high-pressure water jet

A high-pressure water jet can escape from a pressurised high-pressure water jet machine.

Switch off the high-pressure water jet machine and secure it against being switched on again before performing any work on the product.

Ensure that all components of the high-pressure water jet machine are depressurised.

⚠ WARNING

Improper servicing

The use of third-party parts can impair the functionality and safety of the high-pressure water jet machine.

Only use original spare parts from WOMA GmbH. The WOMA product range includes appropriate spare parts specially matched to the service life of the product. Further information is available from your WOMA sales partner.

The use of third-party spare parts is prohibited. Third-party spare parts often do not conform to the specifications and requirements. Third-party spare parts present an increased risk to the personnel and product. Functionality and safety can be impaired.

9.2 Care and cleaning

Note

Observe the manufacturer's safety data sheets when using cleaning agents.

- If necessary, perform general cleaning of the product.

9.3 Inspection

The operator performs the daily inspection and visual inspection of the product.

9.3.1 Daily inspection

- Perform daily product checks (see Chapter 6.2 Before switching on the high pressure water jet machine and Chapter 6.3 Before starting spraying).

9.3.2 Visual inspection

- Independent of the daily inspection, perform a visual inspection of all components of the spray unit before installation.

Do not use the product if deviations from its condition on delivery are determined. In this case, have a safety inspection to be conducted.

9.4 Service

9.4.1 Safety inspection

For safety reasons, safety inspection and service work may only be performed by service personnel from WOMA GmbH or by trained technical personnel (see chapter 2.4 Personnel qualifications).

- Have the product checked for the correct condition every 12 months.

9.4.2 Changing the cartridge

If additional water is expelled from the bypass line and/or the relief bores in the product when the spray unit is actuated then the cartridge in the pressure housing must be replaced.

A pre-assembled cartridge (material number 9.919-046.0) may be replaced by untrained technical personnel as follows.

ATTENTION

Improper installation

Improper installation with damaged or dirty components can lead to malfunctions and damage to the product. Perform a visual inspection of all spray device elements before installation.

All threads must be clean and undamaged.

The sealing surfaces of mating components must not have any scratches or scoring.

A non-pre-assembled cartridge may only be replaced by trained technical personnel.

(See illustration on page 2)

1. Release the bypass screw from the pressure housing and remove together with the cartridge.
2. Remove the spring from the pressure housing and replace with a new spring.
3. Disconnect the bypass screw from the cartridge.
4. Remove the seal (O-ring) from the groove in the bypass screw.
5. Fit the seal (O-ring) in the groove.
6. Fit the bypass screw positively into the pre-assembled cartridge (material number 9.919-046.0).
7. Coat the thread of the bypass screw with thread installation paste before installation (see Chapter 12.2 Consumables).
8. Coat the fitting surfaces of the cartridge with anti-seize installation (see Chapter 12.2 Consumables).
9. Screw the bypass screw with the cartridge into the pressure housing and tighten to a torque of 100 Nm.

10 Troubleshooting guide

10.1 Safety instructions

For safety reasons, malfunctions may only be corrected by Service personnel from WOMA GmbH or by trained technical personnel.

11 Technical data

Material number	9.918-187.0	
Operating pressure max.	bar	1500
Medium temperature max.	°C	95
Flow rate max.	l/min	45
Recoil force without body support	N	150
Recoil force with body support	N	250
Weight (without attachments) approx.	kg	3.3
Length without spray lance approx.	mm	340
Height approx.	mm	200
Width approx.	mm	50
Connection for hose connection	M22x1.5-24°DKO	
High-pressure hose connection	9/16"-18 UNF-LH M24x1.5-24°DKO	
Spray tube / spray lance connection	9/16"-18 UNF-LH	
Bypass connection	G 3/8"	
Controller	Mechanical bypass	

Subject to technical modifications.

12 Appendix

12.1 Water quality guideline

The limit values for the required water quality are an excerpt from the WOMA water quality guideline, which can be obtained from the WOMA GmbH (see Chapter 1.3 Service).

Solid body content, max.	200 mg/l
Total water hardness	1 - 20 °H
CaO	10 - 200 mg/l
CaCO ₃	18 - 357 mg/l
Calcium hardness	0.89 - 3.39 mmol/l
pH value	6.5 - 9.5
Base capacity (pH 8.2)	0 - 0.25 mmol/l
Proportion of total dissolved material	10 - 75 mg/l
Conductivity	100 - 1000 µS/cm
Chloride (e. g. NaCl)	< 100 mg/l
Iron (Fe)	< 0.2 mg/l
Fluoride (F)	< 0.15 mg/l
Free chlorine (Cl)	< 1 mg/l
Copper (Cu)	< 2 mg/l
Manganese (Mn)	< 0.05 mg/l
Phosphate (H ₃ PO ₄)	< 50 mg/l
Silicate (Si _x O _y)	< 20 mg/l
Sulphate (SO ₄)	< 100 mg/l

12.2 Consumables

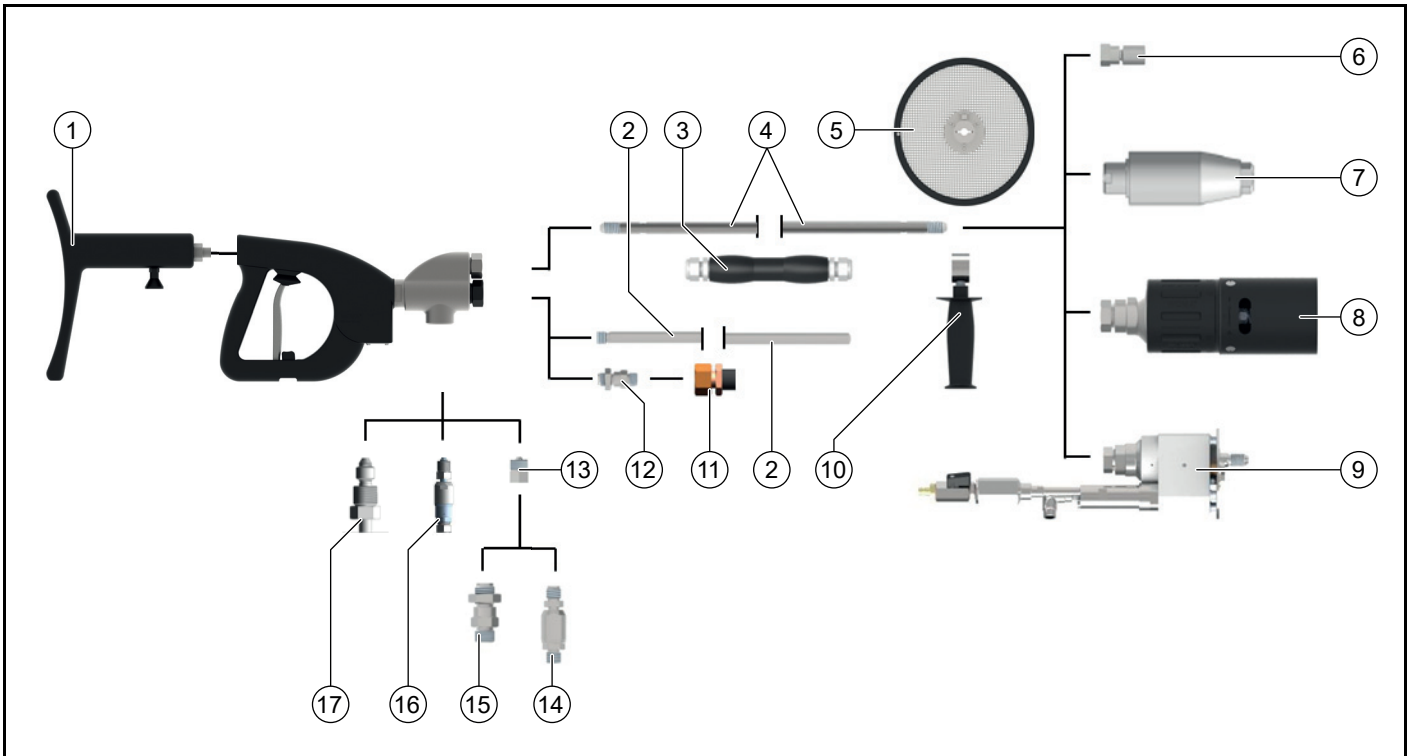
Description	Container	Material number
Thread installation paste	500 g	9.892-362.0
Thread installation paste	207 g	9.740-194.0
Anti-seize installation paste	450 g	9.892-352.0
Anti-seize installation paste	85 g	9.740-195.0

13 Accessories

The following sections show example accessory combinations for various different areas of application for the spray device. Further information is available from your WOMA sales partner.

The material numbers may deviate depending on their configuration. See the WOMA product range for more information.

13.1 Example configuration



	Accessories	Variant	Material number
1	Body support		9.918-752.0
2	Installing the bypass	500 mm length	9.918-623.0
3	Handle*		6.025-300.0
4	Spray lance 1500 bar	300–7000 mm in length	See WOMA product range
	Spray lance 3000 bar	300–6000 mm in length	See WOMA product range
5	Splash guard		9.871-040.0
6	Nozzle holder	50–76 mm in length	9.872-008.0, 9.872-183.0, 9.873-090.0, 9.878-291.0
7	Orbimaster		See WOMA product range
8	Turbo nozzle		See WOMA product range
9	Speedy		See WOMA product range
10	Handle		9.871-675.0
11	Bypass hose	1500 mm length	9.887-970.0
12	Bypass hose connection	Reduction 3/4" to 3/8"	9.897-958.0
13	Adapter	1500 bar	9.918-624.0
14	Rotatable hose connection	1500 bar	9.872-437.0
15	Hose connection	1500 bar	9.871-969.0
16	Rotatable hose connection	3000 bar	9.872-640.0
17	Hose connection	3000 bar	9.872-023.0

*) only useful for the bypass hose